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Kosciuszko Bridge Project

Cultural Resources Technical Report



September 2007



Appendix M

Cultural Resources Documentation

Appendix M: Cultural Resources Documentation

M-1: Cultural Resources Survey Report

M-2: Cultural Findings Documentation and Supporting Material

M-3: Memorandum of Agreement

M-4: Archaeological Work Plan

I. Title Page

A. Cultural Resources Survey Type: **Archaeological and Architectural Reconnaissance Survey**

B. Program Year: **2010-2015**

C. PIN, BIN and PR# (if available): **PIN X729.77; BIN 1-07569-9;
PR 05PR00256**

D. Project Name- Location: **Kosciuszko Bridge Project, Brooklyn and Queens, New York**

E. Author/ Institution: **Parsons Corporation, Washington, D.C.
The Louis Berger Group, Inc., East Orange, New Jersey
EHT Tracerics, Inc., Washington, D.C.
Versar, Inc., Springfield, Virginia**

F. Prepared for the New York State Museum

G. Date: **September 2007**

H. Sponsored by the New York State Department of Transportation and the Federal Highway Administration

II. Management Summary

- A. DOT PIN and BIN and PR# (if available): PIN X729.77, BIN 1-07569-9, PR 05PR00256
- B. DOT project type (from Form A) and funding (state or federal): Survey, Federal
- C. Cultural resource survey type: Archaeological and Architectural Reconnaissance Survey
- D. LOCATION INFORMATION
Route (from – to): I-278 from Morgan Avenue in Brooklyn to the Long Island Expressway interchange in Queens
Minor Civil Division (give MCD number): _____
County: Kings County; Queens County
- E. SURVEY AREA
Length: 1.1 miles
Width: _____
Acres: _____
- F. U.S.G.S. 7.5 Minute Quadrangle Map: Brooklyn 40073-F7
- G. SENSITIVITY ASSESSMENT
Prehistoric (high, medium, low): Low, Medium and High
Historic (high, medium, low): Low and Medium
- H. ARCHAEOLOGICAL SURVEY METHODOLOGY
Number of shovel test pits: _____
Number of units: _____
Surface survey (yes, no): No
- I. RESULTS OF ARCHAEOLOGICAL SURVEY
Number of prehistoric sites identified: _____
Number of historic sites identified: _____
Number of sites recommended for further investigation: _____
Number of listed/eligible or potentially eligible S/NRHP sites identified: _____
- J. RESULTS OF ARCHITECTURAL SURVEY
See Table V-1, page V-4
Number of buildings/structures in project area: 97
Number of known NR listed/eligible buildings/structures: 0
Number of recommended eligible buildings/structures or districts: 2
Number of S/NRHP listed/eligible or recommended eligible buildings/structures identified: 2
- K. AUTHOR/INSTITUTION: Parsons Corporation of New York, Inc., New York, New York; The Louis Berger Group, Inc., East Orange, New Jersey; EHT Tracerics, Inc., Washington, D.C.; Versar, Inc., Springfield, Virginia
- L. DATE: September 2007
- M. SPONSOR: NYSDOT & FHWA (if appropriate)

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IV. Archaeological Survey

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

This technical report was created to document the results of the cultural resources investigations conducted as part of the Kosciuszko Bridge Project. The purpose of this survey was to identify archaeological sites and architectural properties within the study area that are eligible for the New York State Register and/or National Register of Historic Places (S/NRHP). This effort fulfills the requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended ("Section 106") and its implementing regulations, 36 CFR 800. It also meets the requirements set forth in the New York State Environmental Quality Review Act (SEQRA), the New York State Historic Preservation Act (SHPA), and 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").

Phase 1A archaeological investigations consisting of historical archival research and assessment of archaeological sensitivity, was conducted in September 2004. No archaeological sites have been formally identified within the APE. Because the project area is covered by pavement and/or concrete roads, parking lots, sidewalks, and driveways; concrete loading docks, existing buildings and storage facilities, or contains contaminated soil, archaeological survey areas are inaccessible at this time. As a result, no archaeological testing has been conducted. Archaeological sites, some of which may be considered NRHP-eligible, may be located during construction.

A. DOT PROJECT DESCRIPTION

Archaeological investigations will be conducted on a small portion of the Kosciuszko Bridge project area. The archaeological survey and monitoring areas will be determined in consultation with the NYSHPO and most likely will be based on levels of archaeological sensitivity defined through archival research as discussed in the following subsection C.3.b and C.4.b below and depicted in Figures IV-7 and IV-13.

B. GENERAL PROJECT AREA

The Kosciuszko Bridge Project is located within the City of New York, in the Borough of Brooklyn, Kings County, New York and the Borough of Queens, Queens County, New York. Figure IV-1 shows the project location.

An integral part of the Section 106 process is the determination of the study area within which historic properties would be affected or are likely to be affected. This Area of Potential Effect (APE) represents the "geographic area or areas within which an undertaking could directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)).

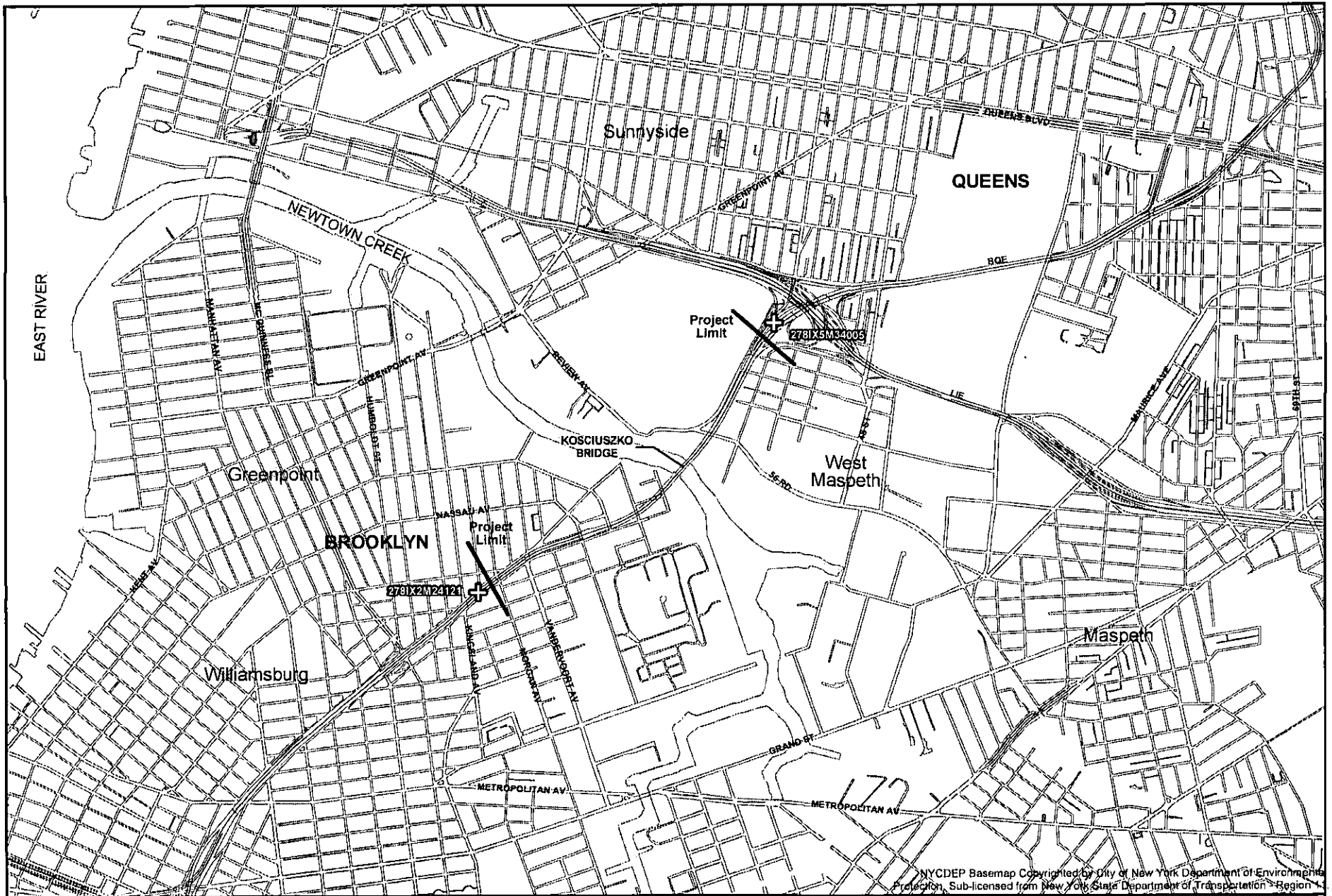
The APE for archaeology for this project, shown in Figure IV-2, takes into account all of the potential construction requirements for the proposed improvements to this section of I-278. It encompasses Limits of Disturbance of all of the bridge components and approach ramps for all of the proposed Build Alternatives under consideration. The New York State Historic Preservation Office (SHPO) concurred with this APE on February 3, 2005 (Douglas Mackey to Robert Laravie, letter, February 3, 2005).

The Brooklyn (western) portion of the APE is composed of industrial, commercial, and residential buildings (Figure IV-3, Figure IV-4). Industrial and commercial uses dominate the blocks closest to Newtown Creek and directly below the elevated roadway. Residential neighborhoods within the APE generally are located north of Meeker Avenue, while warehouses dominate the APE south of Meeker Avenue and Cherry Street between Kingsland Avenue and Gardner Avenue.

The Queens (eastern) section of the APE is dominated by Calvary Cemetery to the west of the BQE and also includes small-scale businesses and residential homes to the east (Figure IV-5). The shoreline of Newtown Creek is occupied by warehouses, the Long Island Rail Road (LIRR), the former Phelps Dodge Refining Company site, and industrial uses.

C. BACKGROUND RESEARCH

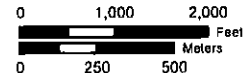
A Phase I archaeological survey is designed to identify the presence of archaeological sites within the project's APE. Archaeological resources are physical, material remains, usually buried, of past cultural activities. They include prehistoric and historical archaeological sites, submerged terrestrial sites (sites that were formerly on dry land, but are now under water as a result of a variety of factors), artifacts, and the remains of buildings, structures, behaviors, and activities. Phase I "reconnaissance" surveys typically include parts: Phase IA, which entails a literature and document review and sensitivity assessment, and Phase IB involves field investigations (New York Archaeological Council 2004:9). The following sections describe the background research conducted in order to locate any previously identified archaeological sites in the vicinity of the project area, and to determine the potential for finding intact archaeological resources within the APE.



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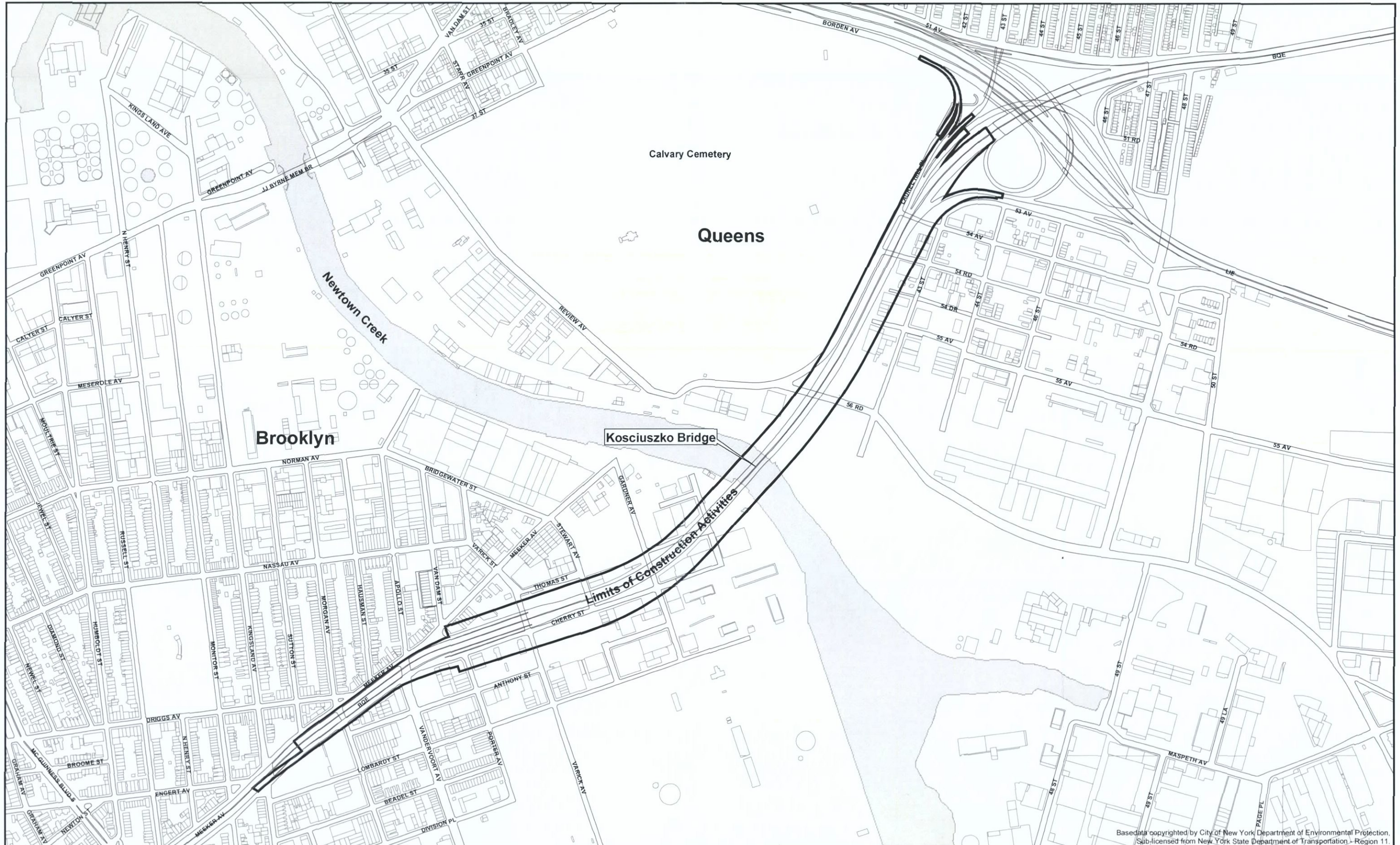


New York State
Department of Transportation



⊕ NYSDOT Reference Marker

Figure IV-1
Kosciuszko Bridge Project Limits



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— Area of Potential Effect - Archaeology

Figure IV-2
Archaeological Area of Potential Effect



Figure IV-3: View of the Brooklyn Approach, looking South (Brooklyn in Foreground; Newtown Creek and Queens in background)



Figure IV-4: View of the Brooklyn Approach and the BQE, looking Southwest (Downtown Brooklyn and Lower Mahattan in background)



Figure IV-5: View of Main Span, Kosciuszko Bridge and Queens Approach, looking north (Calvary Cemetery and Sunnyside, Queens in background)

C.1 Site File Search

A site file search was conducted to collect information from previous archaeological investigations conducted in the vicinity of the project (Figure IV-6). Background information on these investigations was gathered at various repositories, including the New York State Historic Preservation Office (SHPO) and the New York City Landmarks Preservation Commission (NYCLPC). Two previous archaeological investigations were conducted in or near the project area; however, no prehistoric or historic archaeological sites were identified as a result of these investigations.

A search of records at NYCLPC revealed one archaeological study that was completed within the APE for this project. An assessment of archaeological sensitivity at the former Laurel Hill Works at the Phelps Dodge Refining Company site in Queens was undertaken in 1991 as part of the *New York City Sludge Management Plan, Long Range Plan, Final Generic EIS III* (Allen, King, Rosen & Fleming 1991). The project site consisted of former water lots and marshland that had been filled during the nineteenth century. Portions of the marshlands may have been attractive locations for Native American subsistence activities. The proposed sludge management project involved the installation of spread footings 5 to 6 feet below grade and possibly pilings along the perimeter of the building extending down to bedrock. Soil borings revealed a level of fill ranging in depth from 10 to 20 feet below grade, with increasing depth closer to the creek (Allen, King, Rosen & Fleming 1991:1). The spread footings were not expected to extend beneath the fill, so any possible buried cultural resources would not be impacted. The installation of piles "would not be expected to significantly disturb any potential resources below the layer of fill" (Allen, King, Rosen & Fleming 1991:2).

A second archaeological investigation (John Milner Associates 2002) was completed within the APE for this project, in conjunction with preparation of a DEIS for the Cross Harbor Freight Movement Project (U.S. DOT *et al.* 2004). The West Maspeth Rail Yard is proposed to be constructed in the Queens portion of the APE, near the current railroad tracks. A Phase 1A archaeological assessment (John Milner Associates 2002) was conducted within the largest proposed boundary (150 acres) for the yard. No archaeological sites were identified in the portion of the West Maspeth Rail Yard study area that overlaps the APE for this project (U.S. DOT *et al.* 2004:7-22). It was estimated that the fill that typically covered the project area was 10 to 27 feet thick (U.S. DOT *et al.* 2004:7-23). Because potential prehistoric and historic resources associated with eighteenth and nineteenth century occupations may be present underneath the fill, the entire yard was considered "sensitive for archaeological resources" (U.S. DOT *et al.* 2004:7-23). Once detailed construction plans for the proposed yard were prepared, it was recommended that additional work be completed. The future work could include "evaluation of soil boring data, further documentary research, and Stage 1B subsurface archaeological testing in the form of trenching/shovel pits to investigate the sensitive sections that would be affected by proposed construction" in consultation with the SHPO (U.S. DOT *et al.* 2004:7-31).

C.2 Environmental Setting

The project area on both sides of Newtown Creek consists of a highly disturbed 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 LIRR spur was constructed parallel to the creek on the Queens side.

C.2.a. Topography

Elevations in the project area vary from 10 feet above mean sea level (amsl) to 70 feet amsl at Calvary Cemetery in Queens.

C.2.b. Geology

The general geology of eastern Brooklyn and western Queens, including the study area consists of Pleistocene soil deposits associated with glacial and post-glacial geologic events. There is evidence that the Wisconsin glacier advancing in a southerly direction deposited, as a plow pushes, soil materials (moraine) in a berm known as the terminal moraine. The soil materials are mixtures of sand, gravel, silt, clay, cobbles and boulders. As the glacier receded the meltwater deposited stratified granular soils that exist at shallow locations along the alignment. Subsequent glaciation overrode and consolidated the stratified deposits and first moraine and also deposited soil material known as glacial till in depressions between the moraine deposits. The resulting landform traverses from Queens to south of Newtown Creek and is commonly referred to as the terminal moraine. These deposits are dense to very dense heterogeneous soil mixtures with cobbles and boulders.

C.2.c. Surface Hydrology

The Kosciuszko Bridge crosses Newtown Creek approximately two miles east of where the creek enters the East River and New York Harbor. Newtown Creek is approximately 300-feet wide at the bridge crossing. An estuarine tributary, Newtown Creek has been substantially modified over the years, with bulkheads along the entire length. Several "dead end" tributaries flow into Newtown Creek: Dutch Kills and Whale Creek, approximately one mile to the west of the Kosciuszko Bridge, and Maspeth Creek and English Kills, to the east of the bridge. Newtown Creek has no freshwater sources.

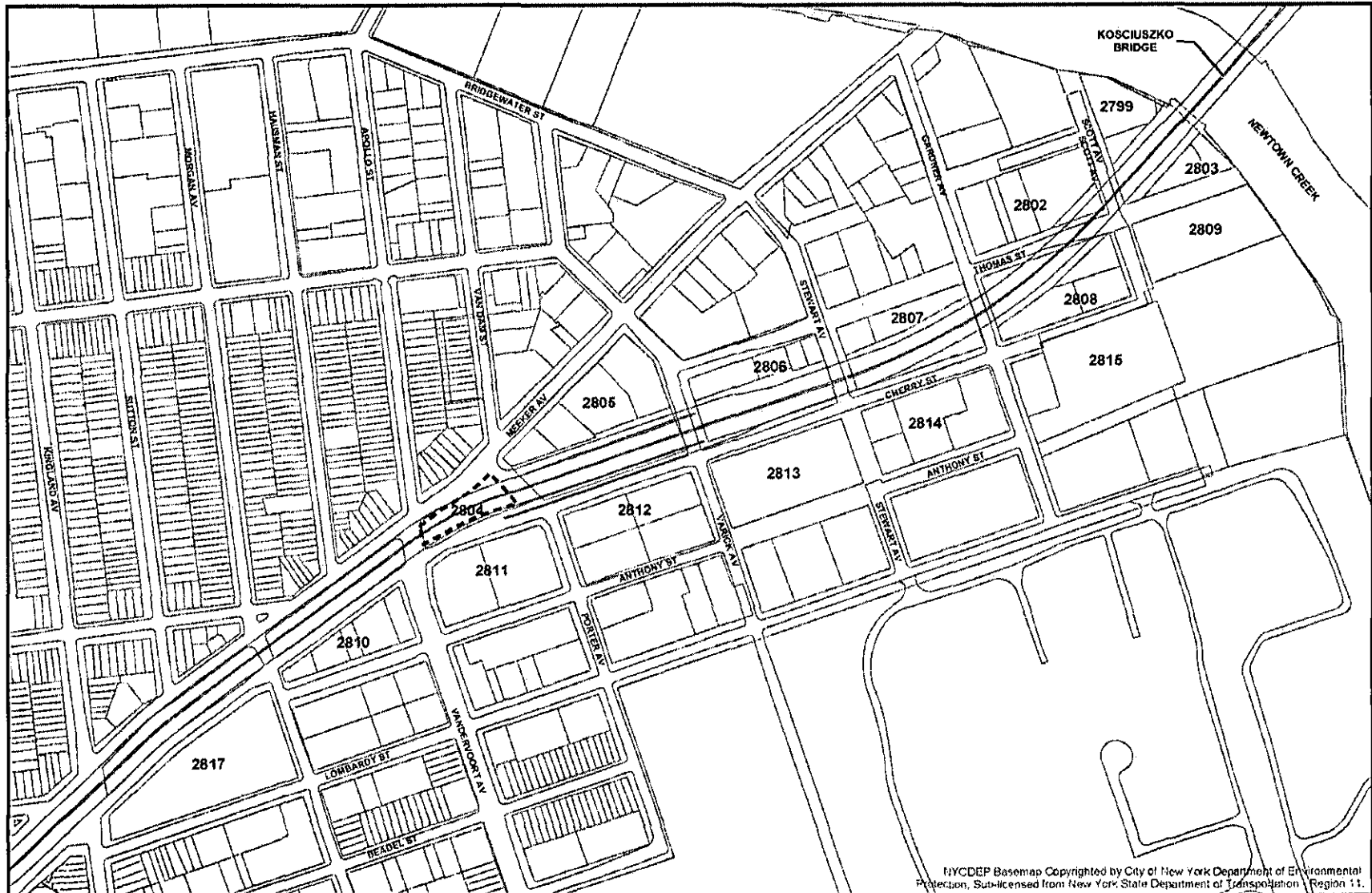
The historical backfilling of land adjacent to the creek has resulted in a channelization of the floodplain in some areas. The 100-year floodplain coincides with the bulkhead system of the creek in many places. In other instances the floodplain extends 50 to 200 feet beyond the edge of the creek. In the area immediately adjacent to the Kosciuszko Bridge, the floodplain ranges from zero to 200 feet on the Queens side and from 40 to 100 feet on the Brooklyn side. The elevation of the 100-year flood is 10 feet in the vicinity of the bridge.

C.3 Prehistoric Context

This section presents a brief summary of prehistoric (Native American prior to European contact) development within the boroughs (counties) of Brooklyn and Queens, developed to help place cultural resources within a historic context and to aid in predicting the types of prehistoric archaeological resources that may be expected to occur within the APE.

C.3.a. Overview of Prehistoric Settlement Pattern

The North American prehistoric period is divided into the Paleoindian, Archaic, Woodland, and Contact periods. The following is a brief summary of the prehistoric period in the New York City area, compiled from a number of sources, including Barber and Roberts (1979), Burrows and Wallace (1999), Funk (1976), Grumet (1995), Ritchie (1980), Ritchie and Funk (1973), Salwen (1975), and Weil (2000).

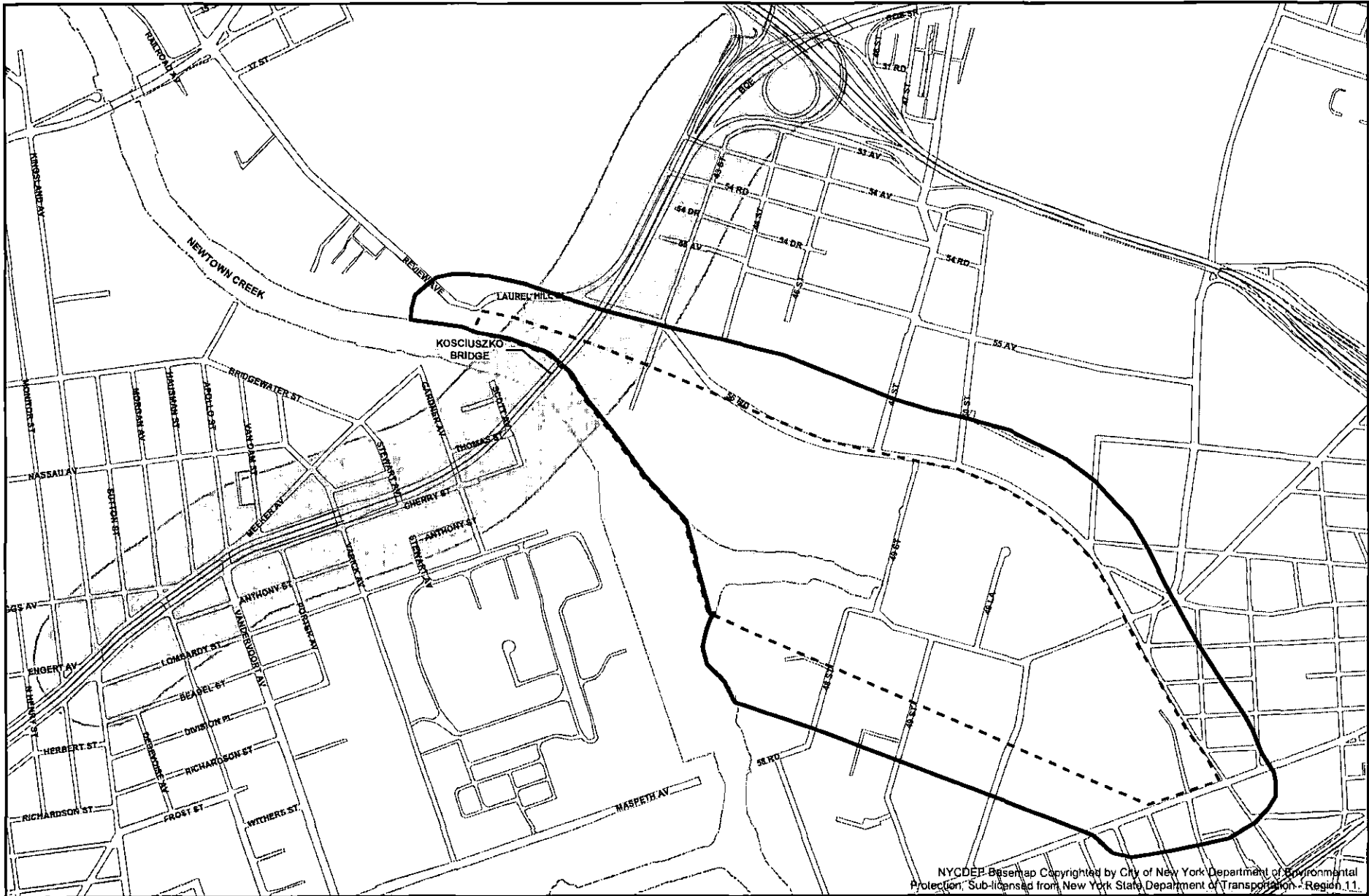


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Figure C-1
Blocks within Kosciuszko Bridge Project APE, Brooklyn

0 100 300 400
Feet
1 inch equals 400 feet

Block in, or partially in, APE for Archaeology
 Former Block



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 Project Site Boundary for Cross Harbor Project
 APE for Cross Harbor Project
 APE for Kosciuszko Bridge Project

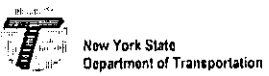


Figure IV-6
Previous Cultural Resources Investigations within APE

Paleoindian Period (ca. 11,000 – 7,000 B.C.). The Northeastern United States was covered by glaciers prior to the arrival of Native Americans. The Wisconsin ice sheet began to retreat slowly to the north, with the New York City area experiencing deglaciation by about 13,000 years ago (11,000 B.C.). As the massive sheet of ice melted, glacial gravel was deposited. The southern extent of the glacier, the terminal moraine, extended in the New York area from northern Queens through Jamaica Hills, Highland Park, Crown Heights, and Bay Ridge, and extended across to the southern side of Staten Island. The terminal moraine is visible as a ridge of glacial debris, overlooking areas of the glacier's sandy outwash plain, including Flatbush and Flatlands in southern Brooklyn. Runoff from the melting ice became trapped behind the moraine, pooling as glacial lakes. After several thousand years, the waters of the glacial lakes broke through the mile-wide gap now called the Narrows, and drained toward the ocean.

Paleoindians were nomadic hunters that occupied the Northeast by approximately 13,000 years ago. The warmer climate fostered the development of flora and fauna, providing resources for foraging and hunting. The time period is characterized by stone tools known as fluted projectile points and scrapers, used to kill and butcher mastodon, elk, bison, and caribou. Big-game animals decreased in population and became extinct by the end of the Paleoindian period.

Paleoindian sites are typically small camps, presumably used for short periods of time, on high, well-drained ground in major river drainages or on streams emptying into major rivers. Paleoindian sites are relatively rare in the New York City area, perhaps due to their small size, the paucity of undisturbed land, and the inundation of former ground surfaces by rising sea levels. A Paleoindian camp site named Port Mobil has been identified on Staten Island.

Archaic Period (7,000 – 1,000 B.C.). The spruce-dominated forests of the Paleoindian period were replaced by mixed pine-deciduous woodlands as the climate warmed. Modern climatic conditions were established by roughly 4,000 B.C., and the modern deciduous forest was dominated by oak. Archaic hunters focused on smaller prey such as wild turkey, rabbit, and white-tailed deer, and began to extract fish and shellfish from the marine environment. Plant foods gathered by Archaic groups included nuts, berries, seeds, roots, and greens. Seasonal movements of Archaic groups appear to have occurred within territories, and camp sites often show repeated occupations over time.

The Archaic period can be divided into three phases: Early, Middle, and Late. Population seems to have increased markedly over the course of these phases. Salwen (1975) estimated Archaic period population in the New York coastal areas as 100 to 125 people per 100 square kilometers.

Additions to the Archaic tool kit included the narrow bladed projectile point, the grooved axe, and the atlatl or spear-thrower. Steatite bowls, and the mortar and pestle appear during the Archaic period. Archaic sites have been identified in a variety of settings, especially in river valleys and in coastal areas. Site types are typically related to the exploitation of resources and seasonal opportunities, including shell middens, quarries, rockshelters, open woodland camps, and secondary processing sites overlooking water sources. Archaic sites have been found in the Bronx (Riverdale Park), on Staten Island (Ward's Point), and Long Island (Stony Brook).

Woodland Period (1,000 B.C. – ca. A.D. 1600). No major climatic changes marked the gradual transition from Archaic to Woodland periods. Sea levels continued to rise gradually, rising roughly 3 feet every thousand years (Salwen 1975). Deciduous forests were dominated by chestnut.

Two major characteristics of the Woodland period are the invention of ceramics and the beginning of horticulture. The Woodland period is usually divided into three phases: Early, Middle, and Late. The types of ceramics and projectile points differed from one phase to another; the Late Woodland

is noted for the presence of maize horticulture and large settlements. Although human burials have been found dating to the Archaic period, mortuary traditions during the Woodland period developed to include cremation, interment, and the inclusion of grave goods.

Woodland habitation sites tend to be located near sources of fresh water, and secondary sites are typically found near the location of the exploited resource. Ritchie and Funk (1973) postulate eight types of settlements by the Late Woodland: semi-permanent villages and hamlets, recurrent and temporary camps, ceremonial dumps, workshops, cemeteries, and ossuaries for mass burials.

Contact Period (A.D. 1600 – 1700). One of the earliest documented contacts between Native Americans and Europeans in the New York area occurred in 1609, during the first voyage of Henry Hudson. Hudson, an English navigator, was seeking a northwest passage to Asia on behalf of the East India Company of Amsterdam. Hudson left Amsterdam on the ship *Half Moon*, and reached the east coast of America. He sailed down the coast to the Chesapeake Bay, then sailed back north. In September, Hudson sailed through the Narrows, entered the Upper Bay, and sailed up the "Great River" or the "North River" (now known as the Hudson River). Hudson reached the Albany area, decided he had not found the northwest passage, and turned back, sailing south on the Hudson River. Robert Juet, a sailor on the *Half Moon*, wrote in the ship's log that the people of the country came aboard, bringing beaver and otter skins. The sailors traded beads, knives, and hatchets for the animal skins.

The fur trade soon attracted other Dutch ships to the Hudson River, and the New Netherland Company was formed in 1614 by a group of merchants. The Dutch States General granted the company a monopoly over trade on the river from 1615 to 1618. The States General chartered the West India Company in 1621, and the company soon decided to send permanent settlers to the Hudson River area to establish a trading post. Approximately 30 families sailed on the ship *Nieew Nederlandt* in 1624. Most settled upriver at the site of Fort Orange (now Albany), but some remained on an island in New York Bay (now Governor's Island). Others established Fort Nassau on the "South River" (now the Delaware River).

The Native Americans inhabiting both banks of the lower Hudson River were termed "Manahata" on a 1610 map by Velasco (Grumet 1981). The island now known as Manhattan was reportedly inhabited by 200 to 300 "old Manhatesen" Indians in 1628 (de Rasieres ca.1628). These Native Americans may have been a subgroup of the Wiechquaesgeck of northern Manhattan; the two groups later combined.

The Native Americans in the New York City area resided mainly in seasonal campsites as opposed to permanent villages. Spring or early summer campsites tended to be near the shore, while fall camps were typically further inland. Contact period sites and a series of trails used by Native Americans have been identified in the five boroughs of New York City. Maspeth, at the head of Newtown Creek in Queens, was a Native American habitation site with cultivated areas; no other major Contact period sites or Native American trails have been identified along Newtown Creek (Burrows and Wallace 1999). A Contact period site, Sapohanikan Point, has been identified in Manhattan in what is now Greenwich Village.

C.3.b. Prehistoric Site Sensitivity/Archaeological Potential

In this section, the potential of finding intact prehistoric archaeological resources in the project area is analyzed using the modern block as the unit of analysis. Prehistoric sites may include camps, villages, houses, farms, hamlets, palisades, ditches, mounds, middens, trash and storage pits, hearths, processing areas, rockshelters, caves, 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.

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 prehistoric archaeological resources. Data sources consulted include maps, local histories, archival information, 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 project area that have the potential to contain prehistoric resources.

Archaeological potential has two aspects, the archaeological sensitivity for the presence of different site types on the landscape, and the level of subsequent ground disturbance that affects the likelihood for encountering intact subsurface archaeological remains:

- **Site Sensitivity.** Site sensitivity is a relative measure of an area's potential for the presence of important prehistoric resources. Such resources include sites with the potential to provide information on past cultural lifeways. For example, primary archaeological deposits like those found at campsites have the potential to provide important information on the activities and behaviors of the people that occupied the sites. Some sites, such as lithic scatters and secondary refuse deposits (re-deposited trash), have a more limited potential to provide information on past cultural behavior.

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 are those that were lightly used by past inhabitants or contain archaeological information that is redundant or supplementary, offering limited information about past cultural lifeways. These locations could include fish weirs and other limited-use sites.

Areas identified as having high sensitivity for the presence of prehistoric resources are those areas that are likely to contain 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.

- **Level of Disturbance.** Documentary and cartographic research on land use and development provided information on the level of ground disturbance in each block. Late nineteenth and early twentieth century development activities may have disturbed or destroyed prehistoric resources. Activities such as grading, soil stripping or mining, and excavation may have removed soils containing archaeological resources. Disturbed sites lack integrity and have limited research potential. Information on the level of disturbance contributed to the potential ratings for each block, and resulted in the addition of the category of "no potential," reflecting the destruction or removal of potential archaeological deposits in a given location. The levels of surface and subsurface ground disturbance for each block were identified based on analysis of maps and historical sources.

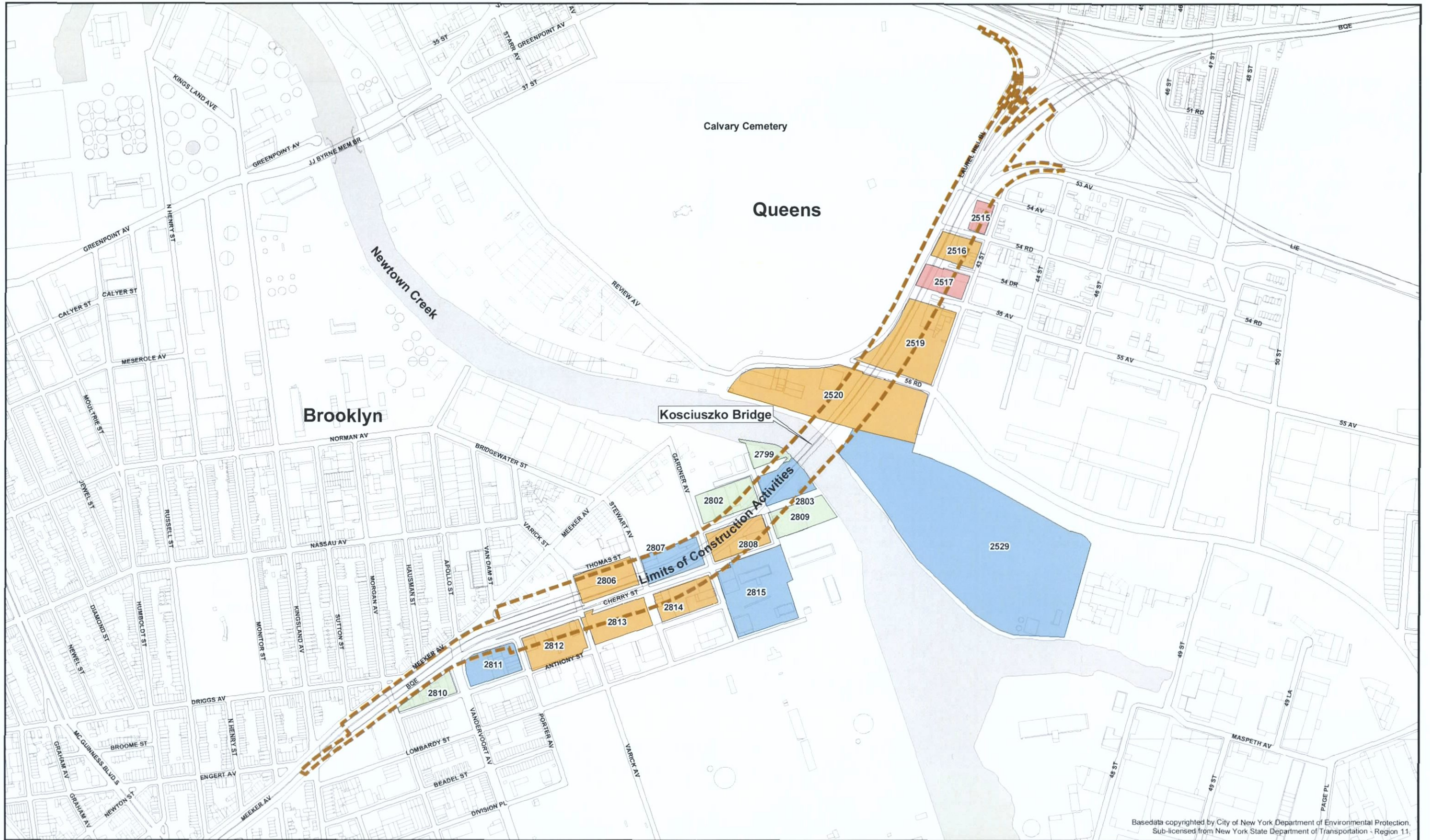
Based on documentary and cartographic background research conducted for the project, the study area was characterized as having a mixed sensitivity for the presence of prehistoric resources, with areas of low, moderate, and high potential all identified within the APE (Figure IV-7). The New York SHPO 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 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 having no integrity or intact subsurface remains because the culture-bearing soil strata were removed. Such locations include 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.

Locations within the project area 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 Project APE include the remains of fish weirs along former creek and stream edges, 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).



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- Areas with Low Archeological Potential within APE with Block #
- Areas with Mixed (Low) Archeological Potential within APE with Block #
- Areas with Mixed (Moderate) Archeological Potential within APE with Block #
- Areas with Mixed (High) Archeological Potential within APE with Block #
- Area of Potential Effect - Archaeology



Figure IV-7
Archaeological Sensitivity for Prehistoric Resources in the Area of Potential Effect

C.4 Historic Context

This section presents a brief summary of historic (*i.e.*, since European immigration to the Americas) development within the boroughs of Brooklyn and Queens, to help place cultural resources within a historic context and to aid in predicting the types of historic archaeological resources that may be expected to occur within the APE.

C.4.a. Historic Trends and Themes

The following is a brief summary of the history of Brooklyn and Queens, with an emphasis on the historic neighborhoods in the project area: Greenpoint and Laurel Hill. The divisions into chronological periods are based primarily on changes in governmental body. The information was compiled from a number of sources including published histories (Burrows and Wallace 1999; Weil 2000; White 1987), local newspapers and clippings (*Brooklyn Daily Eagle*, Brooklyn Collection), and an examination of numerous historic maps, including road, railroad, coastal surveys, and insurance maps.

Colonial New Amsterdam (1626-1664). The Dutch West India Company planned to consolidate its widely-scattered settlements in the New World by establishing a fortified trading post at the southern tip of the island of Manhattan. The trading post was settled by the Dutch in the spring of 1626 and was named New Amsterdam. The settlement was lead by Willem Verhulst and later by Peter Minuit; the local Native Americans were paid a nominal sum (60 florins) for the land (Weil 2000). Dutch engineer Cryn Fredericks constructed Fort Amsterdam on Manhattan Island with guns pointing to the river and the bay. By September, the company was able to fill a ship with furs of beaver, otter, mink, and wildcat. The ship's arrival in Amsterdam in November was the beginning of an enterprise that did not prove to be profitable. The company was not able to monopolize the fur trade in the region, and the Native Americans tended not to want the objects offered for trade, such as copper cauldrons (Weil 2000).

Private colonization was attempted by the company in the 1620s. Large tracts of land along the Hudson River Valley were sold to property owners called patroons; the company reserved Manhattan Island for itself. The grants included fur trade rights, but this resulted in competition for the company. The competition and threats from Native Americans caused the patroons along the Hudson River to renounce their claims by the mid-1630s; one exception was a large tract near Fort Orange (now Albany) owned by Kiliaen Van Rensselaer, an Amsterdam merchant (Weil 2000).

The Dutch West India Company then tried open trade, relinquishing its monopolies on commerce in 1638 and 1639. A period of prosperity for New Amsterdam followed the opening of trade, and the colony grew from 400 to 1,500 inhabitants from 1640 to 1664 (Weil 2000:9). Settlement in New Netherland is depicted in a Dutch map dating to 1639 (Figure IV-8). Most of the homes and other buildings depicted were clustered along the shores of the island of Manhattan. Scattered settlement had taken place by 1639 along the nearby coastlines of Staten Island and Long Island.

What is now the Greenpoint neighborhood in northwestern Brooklyn was part of land purchased by the Dutch West India Company from the Keskachauge Indians in 1638 (*Daily News* 1999). The land extended from Rennegackonck Creek (later known as Wallabout Creek) on the south to Mespaches (later Mispot Kill and now Newtown Creek) on the north, and from the East River on the west to the swamps of Mespaches on the east. The price paid for the land was "eight fathoms of duffel cloth, eight fathoms of wampum, twelve kettles, eight adzes, eight axes and some knives, corals and awls" (*Brooklyn Eagle* 1887).

One of the first settlers in what became the Village of Greenpoint was Dierck Volkertsen, who was granted land in 1645. His grant included almost all of the peninsula bounded by the East River, Mispit Kill (now Newtown Creek), and Norman's Kill (later called Bushwick Creek). Volkertsen lived in a stone house near the East River at the mouth of Norman's Kill. The land on this peninsula upstream from Volkertsen was granted to Herry Satley. Satley's land was divided into two tracts, with Gysbert Rycken and Abraham Rycken receiving the west and east portions, respectively. The land tract that includes the Brooklyn portion of the APE was on Abraham Rycken's tracts (Armbruster 1942).

The tract upstream from Abraham Rycken's land, on the south side of Newtown Creek up to the head of the creek, was granted to Hans Hansen (Armbruster 1942). Hansen, also known as Hans Hansen Bergen (he was born in Bergen, Norway), was a ship's carpenter who emigrated from Holland to New Amsterdam in 1633. Hansen lived on Manhattan Island on Pearl Street, and died in 1653 (Stipak 2001). The Village of Bushwick, known originally as Het Dorp, was established on Hansen's former tract in 1660 at a point near the intersection of modern-day Bushwick and Metropolitan Avenues in Brooklyn (*Brooklyn Daily Eagle* 1946).

The Village of Breukelen (later Brooklyn Village) was chartered by the Dutch West India Company in 1646 (*Brooklyn Daily Eagle* 1946). Breukelen was situated on the East River, south of Wall Bout Bay (later Wallabout Bay). The Town of Bushwick, including the Village of Greenpoint, was formed in 1648. Bushwick became part of a civil union called the "Five Dutch Towns" along with Breucklyn, Flatbush, New Utrecht, and Flatlands (*Brooklyn Eagle* 1898). Bushwick, from the Dutch "Bos-ijck" meaning "the wooden district", included the land north of Broadway and Division Avenue in modern Brooklyn (Freudenheim and Wiener 2004).

The portion of modern-day Queens north of Newtown Creek was granted by the Dutch in five separate parcels from 1642 to 1652. From the mouth of Newtown Creek to the head of the creek, the grantees were: Dominie Bogardus, Jan Jansen, Tyman Jansen, Richard Brutnel, and Francis Doughty, respectively. Richard Brutnel was granted the tract between Dutch Kills and Maspeth Creek (land that now includes the Laurel Hill neighborhood and the Queens portion of the APE) on July 28, 1643 (Cravens 2000:i).

Colonial New York (1664-1783). King Charles II of England granted his brother and heir, James, Duke of York, all of the land between the British colonies in Virginia and New England in March 1664. The king felt that the Dutch had no rights to their lands in the New World and wanted to increase the British share of trade. In the summer of 1664, an English squadron under Colonel Richard Nicolls sailed into New York Bay and demanded the surrender of the town on the island known as Manhatoes. Stuyvesant agreed, in part to avoid an attack and plunder of the town, and the surrender was signed on September 8th (Weil 2000). Nicolls became the first governor of the new British colony that was named New York in honor of the Duke.

Counties were organized in the province of New York in 1683. Bushwick was one of the six towns that formed Kings County, along with Brooklyn, Flatbush, Flatlands, New Utrecht, and Gravesend. Queens County and Suffolk County were the other original counties on Long Island (Brooklyn On Line n.d.). Manhattan became New York County, Staten Island was Richmond County, and the Bronx was part of Westchester County.

The majority of inhabitants of the New York area were Dutch throughout the early years of the British colony. French Huguenot and English merchants arrived in the 1670s and 1680s to join the Dutch merchants. Population growth was relatively slow, with only about 10,000 residents by 1737 (Weil 2000:15). Shipping into and out of the port ranked third behind Boston and Philadelphia but ahead of Charleston and Newport.



Figure IV-8
Dutch Settlement in New York Harbor Area in 1639

Source: Vinckeboons 1639



New York merchants, innkeepers, and craftsmen profited from the city being the headquarters in 1755 for many of the British troops engaged in the French and Indian War. Peace was established in 1763 with the signing of the Treaty of Paris. New York increasingly became a center for colonial dissent over British rule. Colonists organized as the New York Sons of Liberty and rioted in protest of the 1765 Stamp Act, which imposed a tax on colonial publications. The same colonial group fought the British garrison in 1770 in a skirmish known as the Battle of Golden Hill. New Yorkers threw tea into New York harbor in 1774 to protest taxes on tea in their own "tea party" (Weil 2000).

When the American Revolution began, New York was divided between loyalists and patriots, but many loyalists soon left the city. The Continental Army under General George Washington and Major General Charles Lee camped in New York early in 1776. Hundreds of British ships arrived in New York Bay in the summer of 1776 and landed on Staten Island. The British, with the help of Hessian soldiers, launched an attack in August 1776 that came to be known as the Battle of Brooklyn. The British forces landed at Gravesend Bay on the southern shore of Long Island and advanced northward (Figure IV-9). The outnumbered American forces were overwhelmed and retreated to the East River. British General William Howe entered Manhattan by September 15th, but Washington's forces did not leave the area until November. New York was occupied by the British and used as its headquarters until 1783 (Weil 2000).

At the time of the Revolutionary War, five families were living in what is now Greenpoint in Brooklyn. Jacob Hay had left the land to his only child, Maria Hay. Jacob Hay's grandson, Pieter Praa, obtained all of Greenpoint and much of Hunter's Point by purchase. The five families all were lineal descendants of Pieter Praa (Tiebout 1929).

Early American New York (1783-1820). George Washington returned to New York on November 25, 1783. The Continental Congress convened in New York in 1785. Washington took his Presidential oath of office at City Hall (now Federal Hall) in New York on Inauguration Day, April 30, 1789. New York was the official capital of the new nation until relinquishing the title to Philadelphia in 1790 (Weil 2000).

An act was passed by the New York State Legislature in 1784 that confiscated the estates of all who had remained loyal to the British during the Revolution (*Brooklyn Eagle* 1898). The loyalists also were prohibited from holding property in the future. A significant percentage of the population of Queens County (estimated to be 90 percent) was loyalist, as were almost two-thirds of Kings County residents. A number of the loyalists emigrated to New Brunswick and Nova Scotia in Canada.

During the 1790s, America remained neutral while revolutionary wars were disrupting Europe, and commerce at the port of New York grew rapidly. Exports increased from \$2.5 million in 1792 to more than \$26 million in 1807 (Weil 2000:26). Tensions with England and the subsequent War of 1812 lessened commercial trade temporarily, but trade was bolstered by the creation of a regular shipping line between Liverpool and New York in 1817. The Black Ball Line operated successfully for 60 years, carrying passengers, mail, and cargo between the two cities (Weil 2000).

Greenpoint and the Town of Bushwick (1810-1854). By 1811, the Town of Bushwick was connected to the Newtown area by a turnpike and a toll bridge (Figure IV-10). The Newtown and Bushwick Road Company, incorporated in 1814, reportedly built a bridge on piles over Newtown Creek near the foot of present-day Meeker Avenue after 1812 (Brooklyn Genealogy District Streets n.d.a). The Newtown Bridge and Turnpike Company, incorporated in 1836, later built a toll bridge upon stone piers to replace the earlier bridge (Brooklyn Genealogy Streets n.d.). This circa 1836 bridge may have been the "Penny Bridge" that stood until the 1880s, named for the one cent toll charged to cross it.

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The road through Bushwick leading to the bridge was reportedly covered with shell and was known as the North Road to Newtown. A second road headed from the East River in the Village of Williamsburg through the Village of Bushwick, and ended at the turnpike to the west of the toll bridge. A third road crossed the other two, heading from the Bogerts area through the Village of Bushwick, toward Greenpoint.

Most of the Dutch residents of Greenpoint were farmers and slaveholders prior to 1824, when New York State freed all slaves (Felter n.d.). Greenpoint was composed of a mere eight farms in 1835 (Schwartz 1966:13). The Ravenswood, Greenpoint, and Halletts Cove Turnpike opened in 1839, following the path of present-day Franklin and Commercial Streets. The first coal yard in Greenpoint opened in 1843, and the first public school in 1846. The Greenpoint Ferry began operation in 1852, connecting the foot of Greenpoint Avenue to Tenth Street in Manhattan (Schwartz 1966:15).

Greenpoint was well-suited for shipbuilding due to its deep-water, low-lying shore line (Tiebout 1929:37). The first shipyard in Greenpoint, Webb & Bell, was built in the 1840s by Eckerd Webb. John Englis soon constructed a second shipyard. As many as a dozen shipyards operated in Greenpoint in the 1850s, attracting ship carpenters and ship smiths from New England, England, and New York. The population of Greenpoint reached 2,000 by 1850 (Tiebout 1929:37).

Laurel Hill and Queens County (1810-1898). Queens County was composed of scattered villages in the early nineteenth century. The closest village to the project area was Newtown, several miles away (Queens Borough Public Library 2002). The Penny Bridge connected present-day Brooklyn and Queens (Figure IV-10).

The Catholic Church purchased the former Alsop estate in Laurel Hill in 1845, and established Calvary Cemetery on the tract. The cemetery was accessible from Brooklyn via the Penny Bridge, and steamboat services were initiated from East 23rd Street in Manhattan to accommodate funeral corteges. Other cemeteries were founded soon thereafter in Queens, including Mount Olivet in Maspeth in 1851 (Burrows and Wallace 1999:751).

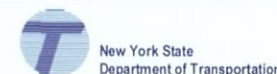
The Long Island Rail Road (LIRR) began as a connection between Atlantic Avenue in Brooklyn and Jamaica in Queens in 1836 (Queens Borough Public Library 2004). The LIRR line that currently runs along the north side of Newtown Creek was built by 1861, when the terminus was relocated to Hunters Point. Hunters Point lies at the southwest corner of Queens, north of the mouth of Newtown Creek; ferries connected the new railroad terminus to Manhattan. The Penny Bridge Station was constructed on the LIRR in Laurel Hill (Figure IV-11).

The Laurel Hill Chemical Works was founded on the north side of Newtown Creek in 1866. The firm, then known as Walter and Nichols Company, purchased additional land in Laurel Hill in 1871, and enlarged its property several more times during the next 30 years. Renamed G.H. Nichols and Company, the firm employed 60 men by 1880 (Cravens 2000:10). The Laurel Hill works was one of the country's leading copper producers, a metal integral to the electrical and telecommunications boon in the late nineteenth century (McGowan 2001).



Figure IV-9
 Battle of Brooklyn, August 1776

Source: Faden 1776



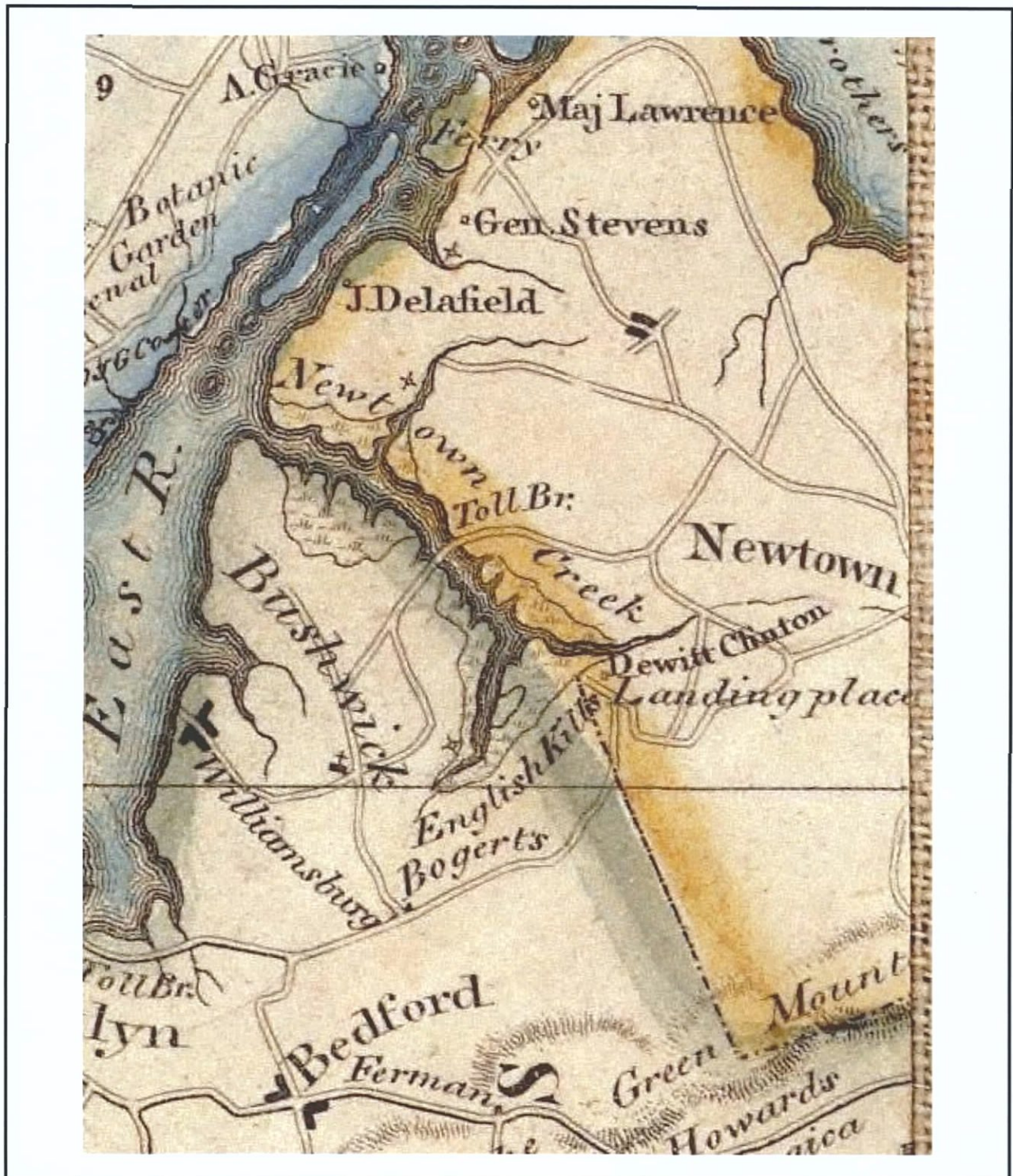


Figure IV-10
Newtown Creek Area in 1811

Source: Eddy 1811



New York State
Department of Transportation

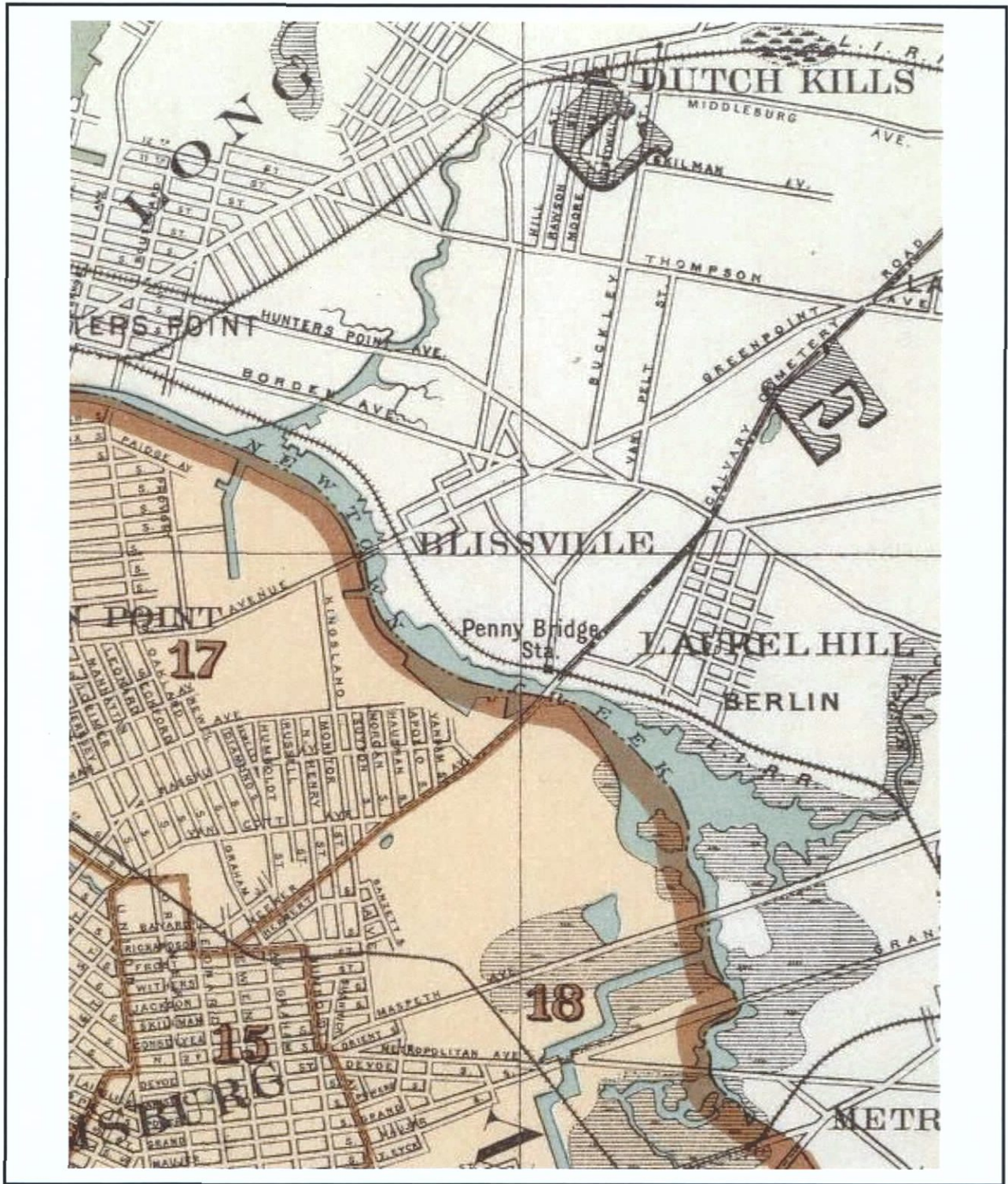


Figure IV-11
Newtown Creek Area in 1895

Source: Bien 1895



There were 18 oil refineries along both sides of Newtown Creek by 1880 (Cravens 2000:15). The Charles Pratt Company, founded in 1867 in Greenpoint along the East River, had a refinery on the north bank of Newtown Creek along the south side of Review Avenue in Queens as early as 1898. The plant produced Pratt's patented lamp oil called Astral Oil. In 1874 the Pratt Company merged with John D. Rockefeller's Standard Oil Company (Department of City Planning 1987:13; Jackson 2004:145; Sanborn 1903). Fertilizer companies and fat renderers/glue factories also lined the creek by the last quarter of the nineteenth century. These sites were chosen for industrial development because of their convenient locations to multiple modes of transportation, where they could receive raw materials overland, by water, or train (Flagg 1991:3)

An amendment of the Bushwick and Newtown Bridge and Turnpike Company's charter was passed in May 1875, reducing by about one-half the toll for crossing Penny Bridge, and eliminating the toll for foot traffic altogether. The company stopped charging foot passengers tolls for several months after the law was enacted, but then resumed charging the penny toll.

Those on both sides of Newtown Creek expressed pollution concerns by the early 1880s (*Brooklyn Eagle* 1881, 1886a). Foul odors, dead fish, and water turned purplish black in color characterized the creek, in which nothing seemed to be able to survive except eels. The State Board of Health investigated the factories along the creek in the 1880s and blamed much of the problem on the "distillation of bones in the manufacture of bone black" (*Brooklyn Eagle* 1886b:4). Even after the modification or removal of offending industries, a reporter called it "the vilest body of water of any size in the world" in 1894 (*Brooklyn Eagle* 1894d).

The Penny Bridge was replaced or rehabilitated in 1894; the new bridge also was named Penny Bridge (*Brooklyn Daily Eagle* 1951). The New York City Borough of Queens was created in 1898 from the towns of Flushing, Newtown, Jamaica, and the Rockaway peninsula. The eastern portion of Queens County was not part of the new borough; it became part of Nassau County, Long Island (Queens Borough Public Library 2002).

Greenpoint and the City of Brooklyn (1854-1898). The Greenpoint, Williamsburg, and Bushwick neighborhoods were united with the City of Brooklyn in 1854 (Felter n.d.). The first Roman Catholic Church in Greenpoint joined the existing Dutch Reformed, Methodist, and Baptist churches in 1856 (Tiebout 1929:37). Thirty-five percent of Greenpoint's workers were engaged in the shipbuilding industry from 1840 to 1870 (Felter n.d.:32). Shipbuilding declined after 1875 due to a number of factors: rising costs of labor and copper, labor troubles, the steamboat law of 1852, and the preference for building vessels of iron instead of wood (Felter n.d.:33).

Several potteries were established at the mouth of Newtown Creek in the mid-nineteenth century; the sandy beach in this location came to be known as "Pottery Beach" (Tiebout 1929:37). Other industries followed, and Greenpoint became the site of glass factories, lumber yards, pencil manufacturing, sugar refineries, jute mills, and a glue factory. By the turn of the twentieth century, a number of oil refineries made Greenpoint their home, including Sone & Fleming, the Brooklyn Oil Refinery, Empire Refining Company, and Charles Pratt & Co. (Tiebout 1929:38). The creek was described in 1891 as being "navigable for a mile or two from the East River for vessels of light draught" (Appleton & Company 1891:185).

In the immediate vicinity of Penny Bridge, industries included a marble works providing monuments to Calvary Cemetery, three tallow factories south of Meeker Avenue, including the American Carbon Works at Thomas Street and Scott Avenue (established in 1882), and the Locust Hill Oil Refinery just north of Meeker Avenue along the creek (Sanborn 1888; Cravens 2000:15).

Immigrants flocked to Greenpoint to work in the numerous manufacturing industries. Many came from Ireland, Germany, and Sweden, and population in Greenpoint swelled to 30,000 by 1870 (Tiebout 1929:37). Later waves of immigration were dominated by Poles and Italians (Tielbold 1929:38). Charles Pratt built the Astral Apartments in Greenpoint in the mid-1880s to house 95 families of workers in his Astral Oil Works (Morrone 2001:244-246). The six-story building occupied an entire block and offered modern conveniences including bathtubs in the apartments, and hot and cold water.

Greenpoint and the Borough of Brooklyn (1898-1955). Before Brooklyn became part of New York City in 1898, it was the third most populous city in the country (Weil 2000:166). Population mushroomed in Brooklyn from 840,000 in 1890 to 2.7 million residents in 1940 (Weil 2000:187). The city evidenced a building boom for housing after World War I (Figure IV-12). Roughly 40 percent of the housing built in Brooklyn in the 1920s consisted of private homes; the remainder were apartment buildings, typically three or four stories tall (Weil 2000:181). The New York City Housing Authority was created during the Great Depression, and real estate programs for low-income New Yorkers were offered in the mid-1930s (Weil 2000:182).

The Greenpoint business district shifted in the early twentieth century from the East River waterfront area (Franklin Street) to the midsection (Manhattan Avenue) (Tiebout 1929:39). Greenpoint was described in 1929 as "one of the most important industrial communities in Brooklyn, with plants lining its waterfront on Newtown Creek..." (Tiebout 1929:22).

Industrialization around the Meeker Avenue/Newtown Creek crossing continued throughout the first half of the twentieth century. Among businesses in the area in 1951 were tallow factories, a dog food manufacturer, ice manufacturing, textile businesses, and metal foundries. The warehouses and factories were built along the waterfront and extended west as far as Van Dam Street north of Meeker and to Kingsland Avenue south of Meeker. The construction of the Brooklyn-Queens Expressway in 1939 severed the relationship between buildings primarily fronting both sides along Meeker Avenue, and necessitated the demolition of residences and other buildings. (Sanborn 1951a).

Manhattan was the site of almost 75 percent of New York's industrial jobs in 1899. By 1937, Manhattan's share dropped to under 60 percent, and over a third of the jobs were located in Brooklyn and Queens (Weil 2000:183). The U.S. Navy Yard on the East River in Brooklyn employed 10,000 people in the 1930s (Weil 2000:185).

Laurel Hill and the Borough of Queens (1898-1955). Long Island City in Queens, north of Newtown Creek and 1.5 miles west of the Laurel Hill neighborhood, was the focus of much of the borough's industrial activity at the turn of the twentieth century. Roughly 1,400 factories were clustered within an area of a few square miles, including pasta manufacturers, paint manufacturers, and industrial bakeries (Weil 2000:185). The Standard Oil and Nichols Chemical Company plants remained the dominant industries in the project area. Residential development was concentrated along 43rd Street and other north-south streets north of the waterfront. Calvary Cemetery, the primary Catholic burial ground for New York City and the surrounding boroughs, expanded by acquiring discontinuous tracts of land primarily along 58th Street.

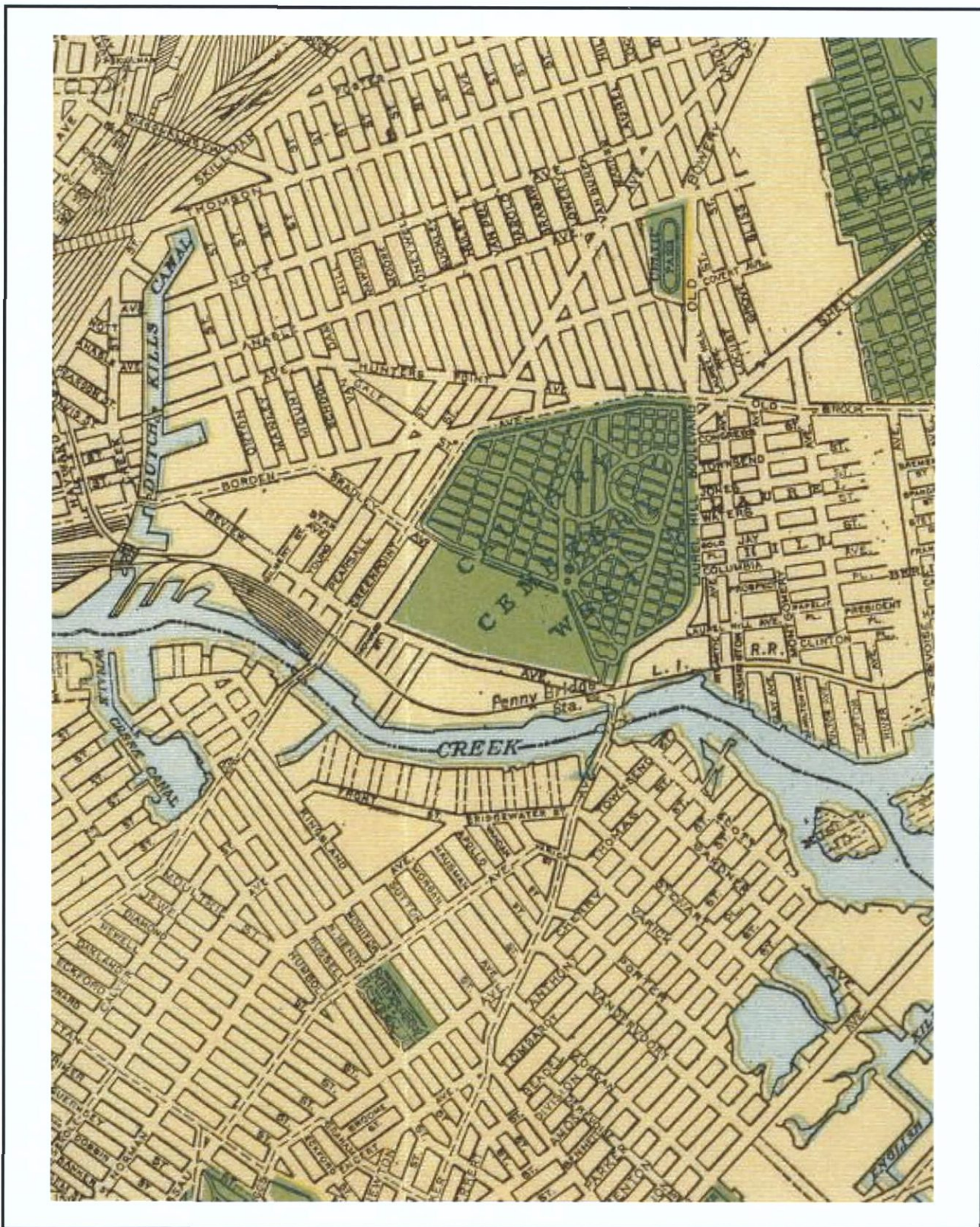


Figure IV-12
Newtown Creek Area in 1918

Source: New York Central
Railroad Company 1918



The population of Queens grew from only 87,000 in 1890 to 1.4 million people in 1940 (Weil 2000:187). The first bridge linking Manhattan and Queens, Blackwell's Island Bridge (now the Queensboro Bridge) opened in 1909. The subway extended from Manhattan to Queens in 1915. Real estate developers purchased farmland in Queens in the 1910s and 1920s to build houses and apartment buildings for the anticipated influx of residents that the subway would bring (Queens Borough Public Library 2002). Roughly 70 percent of the housing built in Queens in the 1920s consisted of private homes; the remainder were apartment buildings, typically three or four stories tall (Weil 2000:181). Several blocks of Queens northwest of Laurel Hill were transformed from wetlands to a housing project named Sunnyside Gardens in 1924. The middle-class houses consist of two-story rowhouses surrounding common central gardens (White 1987:126).

The 1930s in general and 1939 specifically, brought significant changes and events in Queens. Robert Moses and the Regional Plan Association developed two highways, the Long Island Expressway (LIE) and the Brooklyn-Queens Express (BQE), portions of which both opened in 1939. Construction of the BQE took several blocks of residential development between Laurel Hill Boulevard and 43rd Street, and left only scattered residences in the project area. Other major events of 1939 were the opening of LaGuardia Airport, built on landfill at North Beach, and the New York World's Fair held in Flushing Meadows-Corona on a site created by filling a tidal marsh with soil from subway excavations, and garbage and ash from Brooklyn. After World War II, Queens experienced another increase in housing and industrial growth. Residential development was concentrated mainly along the subway lines. Forty-third Street from the Laurel Hill Works of the Nichols Chemical Company north to the LIE was built up with warehouses after 1951 (Sanborn 1951b).

Project Area (1955-present). Many of Greenpoint's major industries closed in the mid-twentieth century. The iron foundries and oil refineries along Newtown Creek were replaced with sewage treatment plants, a garbage incinerator, and solid waste transfer stations, like the one at Stewart Avenue and Thomas Street (Reiss 2001:2). Many of the early and mid-twentieth century warehouses have been remodeled and expanded - many for use as restaurant or food warehouses. In Queens, the Laurel Hill Works of the Nichols Company was purchased by the Phelps Dodge Corporation, and the operation was closed in 1983. The vacant copper refining buildings sat vacant until they were razed in 2000 as part of the environmental clean up of the site (McGowan 2001; Cravens 2000:7).

The Kosciuszko Bridge over Newtown Creek. The Penny Bridge was considered inadequate by the mid-1920s, and discussions of another replacement bridge began to circulate. The commercial and industrial enterprises in the area continued to grow, and the daily use of the Penny Bridge increased significantly. The bridge's need to allow for waterway traffic to pass by would cause back-ups with the vehicular traffic as it waited for the bridge to turn back landwards. In addition, the design of the Penny Bridge caused "bottlenecks" on the creek. The process of ships passing through the creek by the Penny Bridge was difficult because of the width of the creek at that point, a mere 144 feet wide. "The bridge ahead, like a turnstile, pivots on an island one-third as wide as the waterway...the creek ...cannot be deepened there [because] the bridge foundations would collapse" (*Brooklyn Eagle*, August 4, 1939a:13). Local businessmen and the Borough Chamber hoped a new bridge would allow the creek to be widened considerably at this location and allow for a substantial increase in business for industries in both Queens and Brooklyn.

The Brooklyn Borough President Henry Hesterberg introduced the first official proposal for a new span in 1930. The new bridge was to be built as part of an expansive interborough express highway that was to "extend from Grand Army Plaza, Brooklyn, to the Astoria Boulevard approach of the Triborough Bridge, in Queens" (*New York Times*, July 13, 1930:25). The new bridge was designed as a moveable structure at the behest of the War Department to allow "the passage of

high-masted ships. The cost of building it high enough as a fixed bridge to gain the sanction of the War department was prohibitive" (*New York Times*, July 13, 1930:25). However, this proposal was not funded, and the Penny Bridge continued in its capacity. A second proposal, submitted by Mayor Fiorello LaGuardia to the Public Works Administration (PWA) in 1935, requested \$1 billion worth of work in New York City to cover construction of new schools, parks, housing projects, road construction, and a new bridge over Newtown Creek (*New York Times*, February 11, 1935:1). The cost of the bridge was estimated to be \$2.6 million. The PWA did not immediately provide funding for the bridge, but city officials fully anticipated that the construction of the new bridge at Meeker Avenue would be executed at some point and planned other projects based on that assumption.

The planning for the 1939 World's Fair at Flushing Meadow, Queens began in 1936, and the city aggressively initiated road improvement projects to handle the anticipated crowds for the exhibition. In 1937, the approval for construction of the crosstown Brooklyn highway (Brooklyn-Queens Expressway) described the route as extending from "Flushing Avenue and Emerson Place to the proposed new Newtown Creek Bridge at Meeker Avenue" (*New York Times*, March 6, 1937:19). Funding for the new bridge finally became available in 1938, and construction started that year (*New York Times*, August 18, 1938:21). The bridge was completed within the year and was officially dedicated by LaGuardia and the borough presidents in August 1939. Critics of the city's spending on the World's Fair identified the Meeker Avenue Bridge as one of the core improvements constructed specifically for the Fair. However, LaGuardia was quick to point out that "this bridge has been under consideration for 15 years. It has nothing to do with the city's participation in the Fair" (*Brooklyn Eagle*, August 24, 1939b:26). The following year, the Meeker Avenue Bridge was renamed the Kosciuszko Bridge in honor of General Thaddeus Kosciuszko.

Thaddeus Kosciuszko (1746-1817) was a native of Poland and attended the Cadet Academy in Warsaw before continuing his studies in engineering in Paris. Kosciuszko arrived in Philadelphia in 1776 and was commissioned as Colonel of Engineers in the Continental Army in October (Polish American Cultural Center 2005). Kosciuszko's responsibilities included fortification of the Philadelphia waterfront and the Hudson River, and the defense of Saratoga, New York. In addition, Kosciuszko was responsible for the design and construction of the fortification at West Point, New York (National Park Service 2005). Appointed Brigadier General in 1783, Kosciuszko was presented with the Cincinnati Order Medal by General Washington in recognition of his contributions to the Revolution. Upon returning to Poland in 1784, Kosciuszko was involved with the 1794 insurrection against the foreign occupying forces in Poland. He was captured by the Russians, and upon his release returned to the United States in 1797 (National Park Service 2005). Kosciuszko was close friends with Thomas Jefferson and spent a number of years in Philadelphia before returning to Europe in 1816. At the age of 72, Kosciuszko died in Switzerland (Polish American Cultural Center 2005).

The design of the Kosciuszko Bridge was executed through the City of New York's Department of Plant and Structure/Department of Public Works. Due to the extensive number of cargo ships, freighters, and other vessels that utilized Newtown Creek, the bridge was required to be high enough to allow for ships to pass underneath. The steel bridge soared 125 feet above the creek at its highest point, and its length from tower to tower was long enough to allow the creek to be widened to 250 feet or more (*Brooklyn Eagle*, August 4, 1939a:13). The *Brooklyn Eagle* boasted in its August 4, 1939 edition that the bridge was "384 feet longer than the Brooklyn Bridge" and due to ground instability at the Brooklyn side, "bigger, wider foundations" were required. On the Queens side, the foundations were "oversized" and coated with a "special acid-proof compound" as a result of the discovery of copper slag, sulphur compounds, and acids in the ground. It was also reported that the construction of the bridge required an "ingenious new method of laying and forming the 12,800 feet of concrete roadway" (*Brooklyn Eagle*, August 4, 1939a:13).

In a 1951 interview with Emil Praeger, the *Brooklyn Eagle* identifies Praeger as the chief engineer for the bridge. He stated that the Kosciuszko Bridge was the "first example in this city where a prefabricated steel surface had been used. He explained it would not damage automobile tires more than the average pavement. He added that horses could walk on it safely," (*Brooklyn Daily Eagle* 1951: Bridge File 0184-0197, Photograph BRID 0192). With the exception of this 1951 article, no additional documentation confirms Praeger's association with the design and execution of the Kosciuszko Bridge. According to the dedication plaque located on the bridge, J. Frank Johnson of the Department of Public Works is listed as the chief engineer.

C.4.b. Historic Site Sensitivity/ Archaeological Potential

In this section, the potential of finding intact historic archaeological resources in the project area is analyzed using the modern block as the unit of analysis. Detailed land use history and block by block analysis are provided in Appendices B and C. Historic archaeological sites may include the remains of foundations and building outlines for residences, mills, factories, warehouses, stores, taverns, halls, churches and schools; foundations for outbuildings such as barns, sheds, icehouses, and garages; cemeteries and burials; cellars; wells; privies; remnants of road and railroad beds, fences, boundary walls, mines, forges, kilns, ovens, millraces, dams, and weirs; middens; refuse concentrations and scatters associated with the historic period of occupation.

As with the background research conducted for prehistoric resources, documentary and cartographic research were used to identify the land use and depositional history at the block level, in order to determine the likelihood for the presence of intact historic 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, and aerial photos. Historic site potential determinations were based on a review of historic and modern maps and photographs, local histories, historic newspaper articles, and a site visit in September 2004.

Based on the documentary and cartographic background research conducted for the project, the study area was characterized as having a mixed sensitivity for the presence of historic archaeological resources, with areas of low and medium or moderate potential identified within the APE (Figure IV-13). A block was determined to have high potential for historic archaeological sites if historic maps or photographs depicted a building or structure greater than 50 years old had been present, and if there was a low level of disturbance. Higher levels of disturbance reduce the potential that intact historical archaeological sites would be present. 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. Locations of former structures that have been subsequently covered by new buildings with deep foundations or are located in areas having later ground-disturbing activities have low potential for intact historical archaeological resources. The landfill itself may preserve intact features related to made-land creation, such as the retaining and cribbing structures used to stabilize the fill; however, the potential of locating such structures is low.

Brooklyn. In the Brooklyn portion of the APE, expected historic site types include historic industrial foundations, historic industrial and commercial secondary refuse deposits, and historic roads. Historic house foundations are not expected in most of the Brooklyn APE because the locations of houses have been documented and are typically beyond the APE. However, portions of two blocks (2810 and 2817) containing dwellings were taken in the late 1930s for construction of the approach to the Kosciuszko Bridge and the reconstruction of Meeker Avenue to the north and south of the bridge approach. Historic domestic deposits such as wells, privies, and primary and secondary refuse deposits dating from the late nineteenth century to the 1930s may be expected in the former footprints of these two blocks.

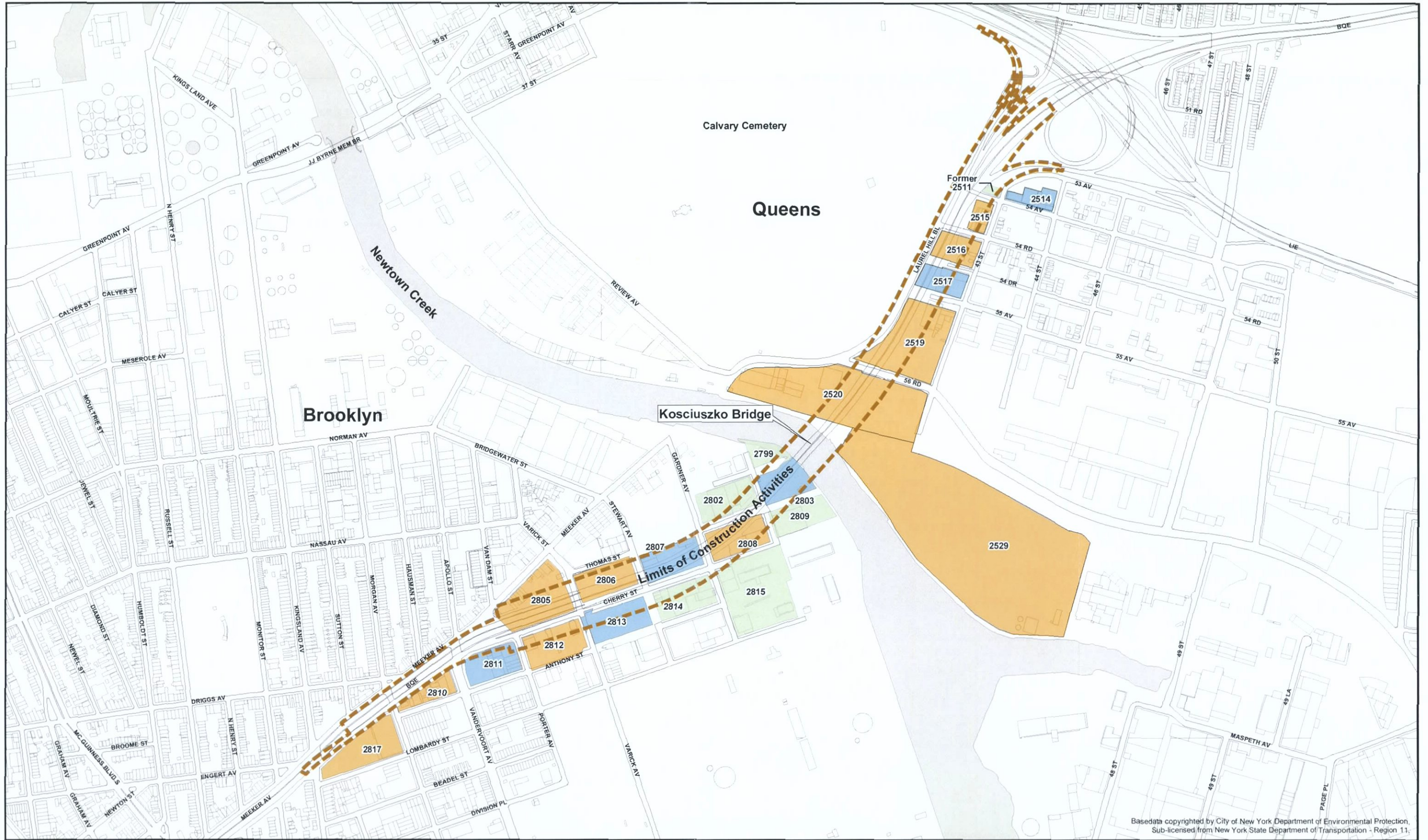
Historic burials are not expected within the Brooklyn APE. A family cemetery associated with the owners of the former Humphrey Clay farm was located in the rear yard of the 1667 Clay/Duryea house (demolished in 1921), north of the APE (in Block 2798). The remains were removed to a local cemetery in the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

The burial of Native Americans after they were reportedly shot by historic occupants of the Clay/Duryea house was mentioned by an elderly local informant in a newspaper interview in the 1880s. The informant described the burials as taking place at the base of the slope to the rear of the Clay/Duryea house, and mentioned that skeletal remains had recently been discovered in the base of the cliff. Based on the known location of the Clay/Duryea house in Block 2798, and the approximate location of the cliff edge as depicted on the 1828 plat of Peter Duryea's estate, the base of the slope to the rear of the house most likely would have been near the eastern edge of Block 2798 or possibly within Gardner Avenue adjacent to Block 2798. This block is not within or near the APE for archaeology.

Queens. In the Queens portion of the APE, expected historic site types include industrial foundations, commercial structure foundations, greenhouse foundations, industrial and commercial secondary refuse deposits, historic roads, foundations of sheds, outbuildings, privies, stables, and garages. Numerous dwelling foundations are likely present, including those of detached houses, farmhouses, and apartment buildings. Primary and secondary domestic refuse deposits related to domestic occupations may also be present in middens, pits, privies, wells, and as broadcast scatters in yards.

Five blocks of the APE were dominated by the Laurel Hill/Nichols/Phelps Dodge chemical and refining complex, beginning just after the Civil War until 1983. All of the remaining structures were demolished in 2000, and the site was reported as being capped by concrete and gravel (U.S. DOT 2004). This parcel was in the process of being nominated to the NRHP when it was discovered that the landfill itself is highly contaminated with the byproducts of copper refining and chemical manufacturing. The nomination was rescinded, and the property is now a Superfund site awaiting remediation.

Historic burials are not expected within the Queens portion of the APE. 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 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.



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Areas with Low Archeological Potential within APE with Block #
 Areas with Mixed (Low) Archeological Potential within APE with Block #
 Areas with Mixed (Moderate) Archeological Potential within APE with Block #
 Areas with Mixed (High) Archeological Potential within APE with Block #
 Area of Potential Effect - Archaeology



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0 300 600
0 75 150
Feet
Meters

Figure IV-13
Archaeological Sensitivity for Historic Resources in the Area of Potential Effect

D. ARCHAEOLOGICAL SURVEY METHODOLOGY

The archaeological APE is covered by paved or concrete roads, parking lots, sidewalks, and driveways; concrete loading docks, existing buildings and storage facilities, and/or contaminated soil. Archaeological sensitivity, current conditions and accessible locations by block are summarized in Table IV-1.

Because the identification, evaluation (NRHP eligibility), and determination of effects on specific archaeological sites cannot be determined at this time, NYSDOT has prepared of a Programmatic Agreement (PA) in accordance with Section 106 of the NHPA and in accordance with 36 CFR 800.14(b)(ii). The PA establishes the requirement for archaeological investigations for specific project areas associated with the preferred alternative during the final design phase, prior to construction. The PA addresses:

Additional cultural resources investigations required to identify and evaluate archaeological resources in the APE of the preferred alternative that will be affected by the Undertaking;

Determination of effects to NRHP-eligible archaeological resources, once identified; and

Mitigation measures for NRHP-eligible archaeological resources if adversely affected by the Undertaking.

NYSDOT has also prepared an archaeological work plan which follows established methodology and procedures identified in the SED Scope (New York State Museum 2004). The archaeological work plan includes Phase IB archaeological survey (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, and archaeological monitoring of construction, as needed. Archaeological investigations will be conducted in specific areas of the APE of the preferred alternative, once impervious surface materials have been removed during the final design phase, prior to construction. Archaeological monitoring will be conducted in specific project areas (i.e. excavation footprints for footings and abutments) designated as moderate to high sensitivity for intact archaeological resources.

Table IV-1: Archaeological Sensitivity, Current Conditions and Accessible Locations

Block	Prehistoric			Historic			Current Conditions	Accessible Location
	Archaeological Site Types	Disturbance	Sensitivity	Archaeological Site Type	Disturbance	Sensitivity		
Brooklyn								
2799	Fish weirs	Twentieth century fill	Low	Scattered refuse	Twentieth century fill	Low	Paved	No, buried beneath fill
2802		Demolition of 1920s garage; construction of garbage recycling building	Low		Demolition of 1920s garage; construction of garbage recycling building	Low	Building	No
2803	Fish weirs	Twentieth century fill; bridge approach concrete piers	None, Low	Scattered refuse	Twentieth century fill; bridge approach concrete piers	None, Low	Paved	No, buried beneath fill
2804		Construction of 1939 Kosciuszko Bridge; reconstruction of the bridge approach in 1970s	None		Construction of 1939 Kosciuszko Bridge; reconstruction of the bridge approach in 1970s	None		
2805		Demolition of 1933 manufacturing building; construction of 1939 Kosciuszko Bridge; reconstruction of the bridge approach in 1970s	None	1866-1888 dwelling rear yard with possible wells and privies	Demolition of 1933 manufacturing building; construction of 1939 Kosciuszko Bridge; reconstruction of the bridge approach in 1970s	Low, Moderate	Paved; Building	No
2806	Temporary and permanent campsites; special use and resource processing areas	Reconstruction of the bridge approach in 1970s	Low, Moderate	North Road to Newtown	Reconstruction of the bridge approach in 1970s	Low, Moderate	Paved	No

Block	Prehistoric			Historic			Current Conditions	Accessible Location
	Archaeological Site Types	Disturbance	Sensitivity	Archaeological Site Type	Disturbance	Sensitivity		
2807	Temporary and permanent campsites; special use and resource processing areas	Demolition, grading and construction activities	None, Low	Secondary deposits associated with industrial facilities (e.g., 1933 fat rendering plant)	Demolition, grading and construction activities	None, Low	Paved; Building	No
2808	Temporary and permanent campsites; special use and resource processing areas	Nineteenth century fill; modern building construction; construction of curbing; excavation of underground utilities	None, Low, Moderate	Historic industrial foundations, primary and secondary refuse deposits associated with late nineteenth century carbon works or 1933 fish rendering operation	Nineteenth century fill; modern building construction; construction of curbing; excavation of underground utilities	Low, Moderate	Paved; Building	No, buried beneath fill
2809	Fish weirs	Nineteenth century fill; modern building construction	Low	Primary and secondary refuse deposits associated with late nineteenth century carbon works, piers, docks, landfill stabilization features	Nineteenth century fill; modern building construction	Low	Paved; Building	No, buried beneath fill
2811		Construction of sidewalks and curbing; excavation of underground utilities	None, Low		Construction of sidewalks and curbing; excavation of underground utilities	None, Low	Paved; Building	No
2812		Construction of sidewalks and curbing; excavation of underground utilities	None, Low, Moderate		Construction of sidewalks and curbing; excavation of underground utilities	None, Low, Moderate	Paved; Building	No
2813		Construction of sidewalks and curbing; excavation of underground utilities	None, Moderate		Construction of sidewalks and curbing; excavation of underground utilities	None, Low	Paved	No

Block	Prehistoric			Historic			Current Conditions	Accessible Location
	Archaeological Site Types	Disturbance	Sensitivity	Archaeological Site Type	Disturbance	Sensitivity		
2814		Construction and excavation of modern building	Low, Moderate		Construction and excavation of modern building	Low	Paved; Building	No
2815	Temporary and permanent campsites; special use and resource processing areas	Fill; modern building construction and demolition	None, Low		Fill; modern building construction and demolition	Low	Paved; Building	No, buried beneath fill
Queens								
2511	None	Fill; modern building construction and demolition	None	Secondary refuse scatters; privies, wells, cisterns, and historic activity areas	Fill; modern building construction and demolition	Low		No, buried beneath fill
2514	None	Modern building construction and demolition	None	None	Modern building construction and demolition	None		No
2515	Campsites, middens, and activity areas	Bridge and modern building construction and excavation	None, Low to Moderate, High	Secondary refuse scatters; privies, wells, cisterns, and historic activity areas	Bridge and modern building construction and excavation	None, Low, Moderate	Paved; Building	No
2516	Campsites, middens and activity areas	Bridge construction	None, Low to Moderate	Secondary refuse scatters; privies, wells, cisterns, and historic activity areas	Bridge construction	None, Moderate		1 linear parcel (5444 43 rd Street); back portions of 2 parcels (5438 43 rd Street and 4221 54 th Drive/Road; landowner denied access
2517		Bridge and modern building construction and excavation	None, Moderate to High		Bridge and modern building construction and excavation	None, Low	Paved; Building	No
2519	Campsites, middens and activity areas	Modern building construction	None, Low to Moderate	Domestic and farm activities for early to mid-nineteenth century residences; activity areas related to adjacent church	Modern building construction	None, Low to Moderate, Moderate	Concrete/ Paved; Building	No
2520 (3)	Fish weirs, shell middens,	20 foot thick fill; LIRR	None, None to Low, Low,	Landfill cribbing structures;	20 foot thick fill; LIRR	None to Low, Low, Low to	Paved; Building	No, buried beneath fill

Block	Prehistoric			Historic			Current Conditions	Accessible Location
	Archaeological Site Types	Disturbance	Sensitivity	Archaeological Site Type	Disturbance	Sensitivity		
	Paleoindian and Early Archaic sites; Campsites, middens and activity areas	construction	Low to Moderate	domestic and farm activities for early to mid nineteenth century residences; activities associated with craft and industrial businesses; railroad related features	construction	Moderate		
2520 (4)	Campsites, middens and activity areas	LIRR construction	None, Low, Low to Moderate	Domestic and farm activities for early to mid-nineteenth century residences; industrial activities associated with chemical manufacturing and copper refining; Phelps Dodge electric railway features (pre-1929); railroad-related features	LIRR construction	Low, Low to Moderate, Moderate	Concrete; Contaminated Soil (Superfund Site)	None
2529	Fish weirs, shell middens, Paleoindian and Early Archaic sites	20-25 foot thick fill	None, Low	Landfill cribbing structures; Phelps Dodge electric railway features (pre-1929), ore crusher features (pre-1929); acid tank foundations (1902+); activities related to nineteenth and twentieth century crafts, industries and businesses such as stone cutting	20-25 foot thick fill	Low, Moderate	Concrete; Contaminated Soil (Superfund Site)	None

V. Architectural Survey

A location, identification and evaluation survey of historical architectural resources in the vicinity of the Kosciuszko Bridge Project was undertaken between March 2005 and March 2006. The survey identified 97 resources 50 years of age or older that have not been previously recorded or evaluated for NRHP eligibility, and have the potential to be temporarily or permanently disturbed under one or more of the proposed alternatives. The historic context presented in Chapter IV was used to evaluate each property's significance in terms of S/NRHP criteria. This chapter describes the results of the reconnaissance level survey and identifies two properties that are recommended as eligible for the State/National Register of Historic Places. A formal evaluation of one resource, the Kosciuszko Bridge, was conducted (see Appendix E).

A. METHODOLOGY

The first step of the Kosciuszko Bridge Project architectural survey was to determine the Area of Potential Effect for historic architectural resources. A preliminary APE was developed in September 2004 consisting of the area 500 feet on either side of the center line of the existing Brooklyn-Queens Expressway (BQE), from the Long Island Expressway (LIE) at the northern end of the project area to a point 500 feet beyond the proposed limits of disturbance at the project's southern terminus. This preliminary APE, with which the SHPO concurred in February 2005 (Douglas Mackey to Robert Laravie, letter, February 3, 2005), was intended to conservatively estimate all potential physical, audible, or visual impacts of the project alternatives under consideration.

This APE was refined in February 2006 based on observations during subsequent site visits and a better understanding of the potential construction impacts of the various project alternatives (Figure V-1). This revised APE received SHPO concurrence in February 2006 (Kathleen A. Howe to Robert Laravie, letter, March 6, 2006). The revised APE takes into account the potential of the project to diminish the integrity of a historic property's significant historic features, which are limited to the following locations in which the existing bridge and/or its approaches are dominant features of the immediate setting:

Brooklyn, north of BQE

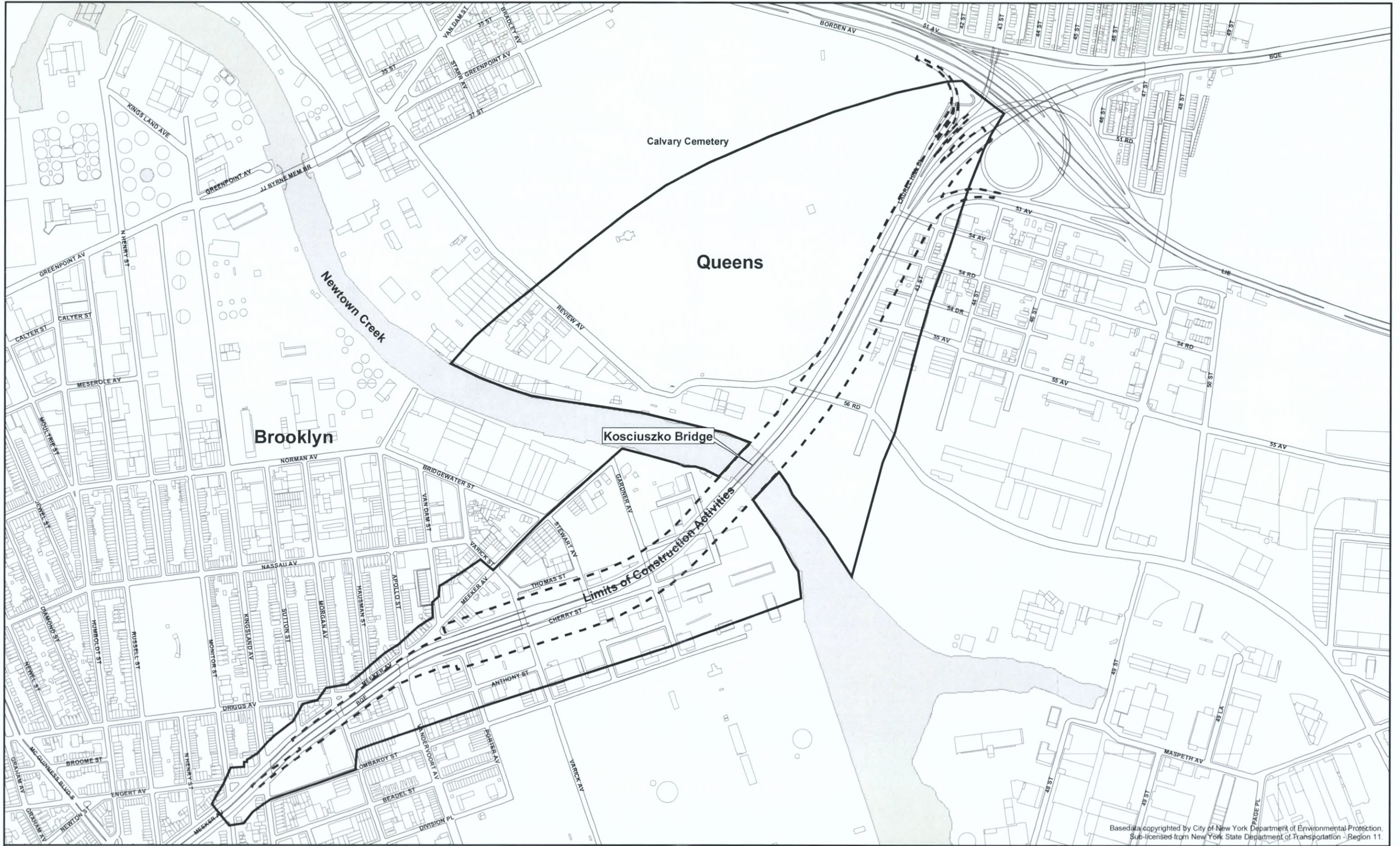
- Between Monitor and Van Dam Streets, all lots fronting Meeker Avenue.
- East of Van Dam Street, entire area between Meeker Avenue, the BQE, and Newtown Creek.

Brooklyn, south of BQE

- Between Monitor Street and Morgan Avenue, the area between the BQE and Lombardy Street; also lots fronting on the north side of Lombardy Street.
- East of Morgan Avenue, the area between the BQE and Anthony Street, plus lots fronting on the south side of Anthony Street, to Newtown Creek.

Queens, west of BQE

- Eastern portion of Old Calvary Cemetery.



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- Limits of Construction Activities
- Area of Potential Effect - Architecture

Figure V-1
Revised Architectural Area of Potential Effect

- Areas between Review Avenue and Newtown Creek for a distance of approximately 1,000 feet along Review Avenue; and between Laurel Hill Boulevard and Newtown Creek.

Queens, east of BQE

- Blocks between the BQE and 43rd Street, plus lots fronting on west side of 43rd Street from 53rd Avenue to 56th Road.

Survey files maintained by the SHPO and NYCLPC were reviewed to identify any previously inventoried properties within the APE. Although the neighborhoods in both Brooklyn and Queens that occur within the APE date from the late nineteenth century to the early twentieth century; no systematic survey and evaluation of these resources had been undertaken prior to the present survey (Lorraine Roach Steele to Laurie Paonessa, Memorandum, February 10, 2005).

Architectural investigations were, however, undertaken in association with the 1991 sludge management plan and the Cross Harbor EIS (see Section IV.C.1 above). The *New York City Sludge Management Plan, Long Range Plan, Final Generic EIS III* described the former Laurel Hill Works of the Phelps Dodge Refining Company site (Stone & Webster Engineering Corp. *et al.* 1992), which is located within the APE of the Kosciuszko Bridge project. The buildings associated with this site had been previously identified as potential historic properties. The site is located east of the Kosciuszko Bridge and south of the LIRR. The demolition of the Laurel Hill Works building and the compromise of the site's integrity resulted in the SHPO determining that the Laurel Hill Works were no longer eligible for listing in the NRHP (U.S. DOT *et al.* 2004).

The Cross Harbor EIS included an investigation of the proposed West Maspeth Yard in Queens. No historic properties were identified within the Cross Harbor study area that occur within the APE for this project (U.S. DOT *et al.* 2004).

Early in 2006, FHWA asked state transportation departments, including NYSDOT, to recommend elements of the Interstate Highway System in each state for exclusion from the Advisory Council on Historic Preservation's *Section 106 Exemption Regarding Effects to the Interstate Highway System* (Federal Register, Vol. 70, No. 46, p. 11931.) NYSDOT recommended the Kosciuszko Bridge for exclusion from the exemption. However, on June 16, 2006, the FHWA published the *Preliminary List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System* (Federal Register, Vol. 71, No. 116, pp. 34988-34990) which did not include the Kosciuszko Bridge, thereby requiring stripping the bridge of its exemption status as part of the Interstate Highway System's overall exemption prior to SAFETEA-LU. In anticipation of the list, a formal NRHP evaluation of Kosciuszko Bridge was conducted in June 2006 and the bridge was recommended as NRHP eligible under NYSDOT criterion C-6 (Hughes *et al.* 2006; Appendix E, this report).

Architectural field survey in the Kosciuszko Bridge Project's APE identified 97 previously unrecorded resources. All surveyed resources were mapped and recorded in 35mm color photographs. New York State Historic Resource Inventory forms were completed for each potentially eligible resource. Resource-specific research was undertaken as necessary for interpretation and evaluation. The following sections describe the results of this effort.

B. RESULTS

Of the 97 resources recorded in this study, two are recommended as eligible for inclusion in the National Register of Historic Places. As indicated above, Kosciuszko Bridge has been formally evaluated for eligibility to the NRHP and has been recommended eligible under criterion C-6 (Hughes *et al.* 2006; Appendix E, this report). The NYSHPO concurred with all NRHP recommendations in July 2006 (Kathleen A. Howe to Robert Adams, letter, July 21, 2006).

Table V-1 lists all recorded architectural resources in the APE and their eligibility recommendations. Architectural resources less than 50 years of age were not evaluated for eligibility to the NRHP because they do not meet the age requirement.

TABLE V-1: LIST OF ARCHITECTURAL PROPERTIES IN THE APE

Address/Location	NR-Eligible	Not NR-Eligible	≤ 50 Years Old	Existing NR Status/Comments
BROOKLYN APE				
Engert Avenue				
197-203 Engert Avenue		X		NYSHPO Concurrence, July 21, 2006
Monitor Street				
71-75 Monitor Street		X		NYSHPO Concurrence, July 21, 2006
62 Monitor Street		X		NYSHPO Concurrence, July 21, 2006
60 Monitor Street		X		NYSHPO Concurrence, July 21, 2006
Meeker Avenue				
621 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
625-629 Meeker Avenue			X	NYSHPO Concurrence, July 21, 2006
583-585 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
679 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
685 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
687 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
695 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
729 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
733-735 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
737 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
757-759 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
761-763 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
765 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
767 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
771 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
773 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
777 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
779 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
787-795 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
797-805 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
810-822 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
843-845 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
855 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
857-869 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
824-830 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
844-856 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
858-870 Meeker Avenue			X	NYSHPO Concurrence, July 21, 2006
880 Meeker Avenue			X	NYSHPO Concurrence, July 21, 2006
890-892 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006

TABLE V-1: LIST OF ARCHITECTURAL PROPERTIES IN THE APE

Address/Location	NR-Eligible	Not NR-Eligible	≤ 50 Years Old	Existing NR Status/Comments
902-912 Meeker Avenue			X	NYSHPO Concurrence, July 21, 2006
914-922 Meeker Avenue			X	NYSHPO Concurrence, July 21, 2006
944 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
952-956 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
958-972 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
974-984 Meeker Avenue		X		NYSHPO Concurrence, July 21, 2006
Driggs Avenue				
13-25 Driggs Avenue		X		NYSHPO Concurrence, July 21, 2006
27 Driggs Avenue		X		NYSHPO Concurrence, July 21, 2006
35 Driggs Avenue		X		NYSHPO Concurrence, July 21, 2006
14-24 Driggs Avenue		X		NYSHPO Concurrence, July 21, 2006
4 Driggs Avenue		X		NYSHPO Concurrence, July 21, 2006
Kingsland Avenue				
167-171 Kingsland Avenue		X		NYSHPO Concurrence, July 21, 2006
145-151 Kingsland Avenue		X		NYSHPO Concurrence, July 21, 2006
148 Kingsland Avenue		X		NYSHPO Concurrence, July 21, 2006
Hausman Street				
1-3 Hausman Street		X		NYSHPO Concurrence, July 21, 2006
2-4 Hausman Street		X		NYSHPO Concurrence, July 21, 2006
Van Dam Street				
2-18 Van Dam Street		X		NYSHPO Concurrence, July 21, 2006
Lombardy Street				
1-55 Lombardy Street			X	NYSHPO Concurrence, July 21, 2006
2 Lombardy Street		X		NYSHPO Concurrence, July 21, 2006
4-6 Lombardy Street		X		NYSHPO Concurrence, July 21, 2006
8-12 Lombardy Street		X		NYSHPO Concurrence, July 21, 2006
171-179 Lombardy Street		X		NYSHPO Concurrence, July 21, 2006
279-289 Lombardy Street			X	NYSHPO Concurrence, July 21, 2006
Anthony Street				
2-18 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
35 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
23-27 Anthony Street			X	NYSHPO Concurrence, July 21, 2006
19-21 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
11-15 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
1 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
38 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
46-52 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
54-70 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
72 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
96-102 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
104-110 Anthony Street		X		NYSHPO Concurrence, July 21, 2006

TABLE V-1: LIST OF ARCHITECTURAL PROPERTIES IN THE APE

Address/Location	NR-Eligible	Not NR-Eligible	≤ 50 Years Old	Existing NR Status/Comments
148-182 Anthony Street			X	NYSHPO Concurrence, July 21, 2006
149 Anthony Street			X	NYSHPO Concurrence, July 21, 2006
167-183 Anthony Street		X		NYSHPO Concurrence, July 21, 2006
Porter Avenue				
503-513 Porter Avenue		X		NYSHPO Concurrence, July 21, 2006
Stewart Avenue				
551 Stewart Avenue		X		NYSHPO Concurrence, July 21, 2006
538-542 Stewart Avenue		X		NYSHPO Concurrence, July 21, 2006
Cherry Street				
22-32 Cherry Street		X		NYSHPO Concurrence, July 21, 2006
38 Cherry Street		X		NYSHPO Concurrence, July 21, 2006
66-68 Cherry Street		X		NYSHPO Concurrence, July 21, 2006
116-120 Cherry Street			X	NYSHPO Concurrence, July 21, 2006
126 Cherry Street			X	NYSHPO Concurrence, July 21, 2006
152 Cherry Street			X	NYSHPO Concurrence, July 21, 2006
153 Cherry Street			X	NYSHPO Concurrence, July 21, 2006
186 Cherry Street			X	NYSHPO Concurrence, July 21, 2006
Gardner Avenue				
570 Gardner Avenue		X		NYSHPO Concurrence, July 21, 2006
494 Gardner Avenue			X	NYSHPO Concurrence, July 21, 2006
541 Gardner Avenue			X	NYSHPO Concurrence, July 21, 2006
Thomas Street				
85-91 Thomas Street			X	NYSHPO Concurrence, July 21, 2006
83 Thomas Street			X	NYSHPO Concurrence, July 21, 2006
Scott Avenue				
473 Scott Avenue			X	NYSHPO Concurrence, July 21, 2006
485-495 Scott Avenue			X	NYSHPO Concurrence, July 21, 2006
497 Scott Avenue			X	NYSHPO Concurrence, July 21, 2006
462-476 Scott Avenue			X	NYSHPO Concurrence, July 21, 2006
QUEENS APE				
Laurel Hill Boulevard				
Old Calvary Cemetery	X			NYSHPO Concurrence, July 21, 2006
34-52 Laurel Hill Boulevard		X		NYSHPO Concurrence, July 21, 2006
34-40 Laurel Hill Boulevard		X		NYSHPO Concurrence, July 21, 2006
34-02 Laurel Hill Boulevard		X		NYSHPO Concurrence, July 21, 2006
Review Avenue				
39-30 Review Avenue		X		NYSHPO Concurrence, July 21, 2006
38-98 Review Avenue		X		NYSHPO Concurrence, July 21, 2006
36-60 Review Avenue		X		NYSHPO Concurrence, July 21, 2006
38-50 Review Avenue		X		NYSHPO Concurrence, July 21, 2006
38-52 Review Avenue		X		NYSHPO Concurrence, July 21, 2006
38-58 Rear Review Avenue		X		NYSHPO Concurrence, July 21, 2006

TABLE V-1: LIST OF ARCHITECTURAL PROPERTIES IN THE APE

Address/Location	NR-Eligible	Not NR-Eligible	≤ 50 Years Old	Existing NR Status/Comments
38-78 Review Avenue		X		NYSHPO Concurrence, July 21, 2006
39-14 Review Avenue		X		NYSHPO Concurrence, July 21, 2006
38-42 Review Avenue		X		NYSHPO Concurrence, July 21, 2006
43rd Street				
55-16-55-18 43 rd Street			X	NYSHPO Concurrence, July 21, 2006
55-06 43 rd Street			X	NYSHPO Concurrence, July 21, 2006
55-15 43 rd Street			X	NYSHPO Concurrence, July 21, 2006
55-05 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
55-01 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-54 43 rd Street			X	NYSHPO Concurrence, July 21, 2006
54-59 43 rd Street			X	NYSHPO Concurrence, July 21, 2006
54-42 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-38 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-30 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-37 43 rd Street			X	NYSHPO Concurrence, July 21, 2006
54-19 43 rd Street			X	NYSHPO Concurrence, July 21, 2006
54-17 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-13 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-11 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-09 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-01 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-18 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-14 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54-08 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
53-17 43 rd Street		X		NYSHPO Concurrence, July 21, 2006
54th Drive				
42-21 54 th Drive		X		NYSHPO Concurrence, July 21, 2006
55th Avenue				
42-20 55 th Avenue			X	NYSHPO Concurrence, July 21, 2006
KOSCIUSZKO BRIDGE				
Kosciuszko Bridge	X			NYSHPO Concurrence, July 21, 2006

B.1 Surveyed Properties Recommended as Eligible for the NRHP

This architectural survey recommends two resources in the APE as eligible for inclusion in the NRHP (Table V-2).

TABLE V-2: CONTRIBUTING LANDSCAPING OF NRHP-LISTED AND NRHP-ELIGIBLE PROPERTIES

Name/Address	SHPO Unique Site Number	Other Inventory	Contributing Landscaping With/Adjacent to Project Area
Old Calvary Cemetery, 49-02 Laurel Hill Boulevard.			Curvilinear paths and roads, stone walls, wrought iron fences, monuments and mausoleums, entrance gates, gatehouse, chapel, stone outbuildings.
Kosciuszko Bridge			Fixed, multiple span, Warren combination (deck and through) truss bridge and polygonal top chords with overhead bracing

B.1.a. Old Calvary Cemetery

Old Calvary Cemetery, overlooking Newtown Creek in Queens is roughly bounded by the BQE, the LIE, Greenpoint Avenue, and Review Avenue. The site, a former farm, was acquired by the New York Roman Catholic Diocese in 1845 and served as the primary Catholic burial ground in New York City until the early twentieth century. Making use of the formerly rural setting and natural topography, Calvary Cemetery, which with successive additions throughout the late nineteenth and early twentieth century came to be known as Old Calvary Cemetery, was laid out with winding and curving paths and roads that follow the natural contours of the land. Minor improvements were made to improve drainage, but the circulation system was intended to maintain the pastoral setting. Throughout the nineteenth century the landscape evolved to include stone walls and wrought iron fences to enclose the cemetery and some individual plots within it, and in 1892 and 1895 respectively, a substantial Queen Anne style gatehouse and a Roman-Byzantine style chapel were built.

Old Calvary Cemetery is recommended eligible for the National Register of Historic Places under Criteria A and C. It derives its primary significance under Criterion C, for its distinctive design values. Although the landscape designer of the cemetery was not determined through available resources, the cemetery clearly follows the aesthetic of other large nineteenth century cemeteries, creating a naturalistic setting for burials. The mortuary art and sculpture associated with many of the burials contribute to the character of this designed landscape. Architecturally, the gatehouse on Greenpoint Avenue and the chapel are significant examples of their respective styles. They are exemplary illustrations of the Queen Anne and Roman-Byzantine styles that represent high degrees of craftsmanship, embody the distinctive characteristics of the period, and possess high artistic value. Within this setting, the gatehouse, chapel, related outbuildings, headstones and mausoleums which, although burial markers, display distinctive architectural styles and merit, together convey the historical trend in nineteenth centurial burial practices (Criterion C). The NYSHPO concurred with this NRHP determination in July 2006 (Kathleen A. Howe to Robert Adams, letter, July 21, 2006). Old Calvary Cemetery is also considered eligible under Criterion A by the NYSHPO because it served as a primary burial ground for Roman Catholics in New York City and as an example of the design of the popular rural cemetery movement.



HISTORIC RESOURCE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION
& HISTORIC PRESERVATION
P.O. BOX 189, WATERFORD, NY 12188
(518) 237-8643

OFFICE USE ONLY
USN: _____

IDENTIFICATION

Property name (if any) Old Calvary Cemetery

Address or Street Location Bounded by the Long Island Expressway to the north, the Brooklyn-Queens Expressway to the east, Review Ave. to the south and Greenpoint Ave. to the west

County Queens Town/City Maspeth Village/Hamlet: _____

Owner Calvary Cemetery Address 4902 Laurel Hill Boulevard, Flushing, New York 11377

Original use Cemetery Current use Cemetery

Architect/Builder, if known Unknown Date of construction, if known 1848-present

DESCRIPTION

Materials -- please check those materials that are visible

Exterior Walls:	<input type="checkbox"/> wood clapboard	<input type="checkbox"/> wood shingle	<input type="checkbox"/> vertical boards	<input type="checkbox"/> plywood
	<input type="checkbox"/> stone	<input type="checkbox"/> brick	<input type="checkbox"/> poured concrete	<input type="checkbox"/> concrete block
	<input type="checkbox"/> vinyl siding	<input type="checkbox"/> aluminum siding	<input type="checkbox"/> cement-asbestos	<input type="checkbox"/> other: _____
Roof:	<input type="checkbox"/> asphalt, shingle	<input type="checkbox"/> asphalt, roll	<input type="checkbox"/> wood shingle	<input type="checkbox"/> metal
				<input type="checkbox"/> terra cotta tile
Foundation:	<input type="checkbox"/> stone	<input type="checkbox"/> brick	<input type="checkbox"/> poured concrete	<input type="checkbox"/> concrete block

Other materials and their location: _____

Alterations, if known: _____ Date: _____

Condition: excellent good fair deteriorated

Photos

Provide several clear, original photographs of the property proposed for nomination. Submitted views should represent the property as a whole. For buildings or structures, this includes exterior and interior views, general setting, outbuildings and landscape features. Color prints are acceptable for initial submissions.

Please staple one photograph providing a complete view of the structure or property to the front of this sheet. Additional views should be submitted in a separate envelope or stapled to a continuation sheet.

A.1. Maps

Attach a printed or drawn locational map indicating the location of the property in relationship to streets, intersections or other widely recognized features so that the property can be accurately positioned. Show a north arrow. Include a scale or estimate distances where possible.

Prepared by: Amy S. Dixon address The Louis Berger Group, Inc. 1001 Elm Street, Ste. 300 Manchester, NH 03101

Telephone: 603-644-5200 email adixon@louisberger.com Date March 2006

(See Reverse)

PLEASE PROVIDE THE FOLLOWING INFORMATION

IF YOU ARE PREPARING A NATIONAL REGISTER NOMINATION. PLEASE REFER TO THE ATTACHED INSTRUCTIONS

Narrative Description of Property: Briefly describe the property and its setting. Include a verbal description of the location (e.g., north side of NY 17, west of Jones Road); a general description of the building, structure or feature including such items as architectural style (if known), number of stories, type and shape of roof (flat, gabled, mansard, shed or other), materials and landscape features. Identify and describe any associated buildings, structures or features on the property, such as garages, silos, privies, pools, gravesites. Identify any known exterior and interior alterations such as additions, replacement windows, aluminum or vinyl siding or changes in plan. Include dates of construction and alteration, if known. Attach additional sheets as needed.

Old Calvary Cemetery¹, in the western half of the Borough of Queens, is located north of Newtown Creek. The cemetery, with its curvilinear roads and paths, is bounded by Review Avenue to the south, the Brooklyn-Queens Expressway to the east, the Long Island Expressway to the north, and Greenpoint Avenue to the west. Due to the somewhat hilly topography of the cemetery, it is enclosed in some areas by a stone wall, in other sections wrought iron fence, chainlink fence, or in other areas stone walls topped with wrought iron. There are two entrances into the cemetery. The original entrance, located near the intersection of Review Avenue and Laurel Hill Boulevard, which parallels the BQE, has four square stone pillars topped with crosses, and is enclosed by a wrought iron gate. Next to the gate is a small gable roofed stone building with off-center entrances on the north and west elevations. The date of construction is not known, however, it may date from the late 19th or early 20th century. Today, it houses public restrooms.

In the late 19th century, a second entrance opened across from Gale Street on Greenpoint Avenue, likely around the same time the 1892 Queen Anne style gatehouse was built. The entrance has two large, and four smaller stone square pillars with pyramidal tops. The two tallest piers support the ends of a wrought iron framework with scrolled detailing containing the cemetery's name topped with a cross. Wrought iron gates enclose the vehicular entry, as well as the pedestrian entrances located between the two large piers and two smaller piers that flank the main opening. The 2-story brick cross-gabled gatehouse has a hexagonal turret with a belfry on the northwest corner. The roof is clad with asphalt shingles. Triple 1/1 windows are on the gable ends with terra cotta decorative panels below the sash and in the gable peaks. Round arched openings on the north and west side provide access to a porch that protects the main entry. The *AIA Guide to New York City* describes the gatehouse as "A romantic, vernacular, spectacular Queen Anne gem. Others of its genre have almost all been confiscated by time."² Another small gable roofed stone shed is situated north of the Greenpoint Avenue gate.

Near the center of the cemetery is an ornate granite chapel, built ca. 1895. Reminiscent of the Roman-Byzantine style executed at Sacre-Coeur of Montmartre in Paris, the chapel at Calvary has a tall beehive tower. The tower, topped by a sculpture of Jesus, rises above a cross gabled Spanish tile roof. The façade (northeast elevation) has a central entry inset in a round arch inscribed with gold lettering that reads: "I am the Resurrection and the Life." Above the arch, inset in the gable peak, is a relief sculpture with Christ at the center surrounded by his disciples. The corners of the main elevation are adorned with pillars surrounded by columns, and topped with smaller beehives.

On axis with the chapel is a hilltop with many ornate mausoleums; some with a Victorian neo-Grecian aesthetic, while others are small domed chapels executed in a neo-Baroque style.³ Other monuments and grave markers throughout the cemetery, primarily of granite or marble, are a mix of modest headstones, small obelisks or pillars topped with sculpture, or large granite vaults with minimal ornament. Before the cemetery was laid out some improvements were made to ensure proper drainage in the otherwise natural landscape. A system of roads and paths, originally of gravel and paved with asphalt in the 20th century, wind through the cemetery grounds and follow the rolling topography. The area's rural and pastoral setting in the 19th century and its location overlooking Newtown Creek was what made the location desirable as a rural cemetery; however, as the city around it grew up, so did the cemetery itself. The successive rows of tall and closely spaced monuments and mausoleums mimic the density and skyline of Manhattan, which is visible to the west. The compact layout was a direct result of the demand for family and individual burial plots.

The cemetery also has a late 19th or early 20th century tool and equipment shed that was expanded in the late 20th century, located in the northeast portion of the parcel. The original portion of the side gable roofed building is constructed of granite blocks and brick; the addition, which extends from the east elevation, is entirely brick with three garage bays.

Narrative Description of Significance: Briefly describe those characteristics by which this property may be considered historically significant. Significance may include, but is not limited to, a structure being an intact representative of an architectural or engineering type or style (e.g., Gothic Revival style cottage, Pratt through-truss bridge); association with historic events or broad patterns of local, state or national history (e.g., a cotton mill from a period of growth in local industry, a seaside cottage representing a locale's history as a resort community, a structure associated with activities of the "underground railroad."); or by association with persons or organizations significant at a local, state or national level. Simply put, why is this property important to you and the community. Attach additional sheets as needed.

Plans for the establishment of a Catholic Cemetery in the Borough of Queens began in the 1840s when Archbishop Hughes of the Roman Catholic Diocese of New York negotiated the purchase of the Alsop Farm on Newtown Creek. Old St. Patrick's Cathedral parish had a cemetery in Manhattan at 11th Street that was becoming too small to support the rapidly growing congregation by the mid-19th century. Development pressures in Manhattan restricted the amount of available land devoted to burials; therefore the Diocese chose a tract of land of approximately 115 acres with

¹ Old Calvary Cemetery is also referred to as First Calvary.

² White, Norval and Elliot Willensky. 2000. *AIA Guide to New York City*. 4th Edition. Three Rivers Press, New York, pg. 821.

³ White and Willensky, pg. 821.

rural character and close proximity to the city to establish Calvary Cemetery⁴. The trustees of the church purchased the Alsop Farm around 1845, including the Alsop family cemetery with burials dating from the 18th century, which were incorporated into the Calvary design. The first interment as a Catholic Cemetery took place in 1848. The grave of Esther Ennis, a 29-year-old Irish immigrant, was marked with a modest wooden cross that is no longer extant⁵.

In the late 1840s there was a land rush in Queens after the establishment of the Rural Cemetery Act by the New York State Legislature. Prior to that time, interment was limited to burials on private land, a churchyard, or town graveyard. The legislation authorized non-profit corporations to buy land, open cemeteries, and sell plots to individuals. The rapid expansion of both Manhattan and Brooklyn made Queens the closest place with land suitable for cemeteries. The western portion of Queens, along the East River, and including the area along Newtown Creek, became known as the "Cemetery Belt." Today, there are 29 cemeteries in Queens: four Catholic, three Protestant, 14 Jewish and 8 nondenominational.⁶

Given Calvary's then rather remote location across the East River from Manhattan and across Newtown Creek from Brooklyn, Archbishop Hughes chartered a steamboat ferry service from Manhattan to Queens to facilitate visitation. The ferries *Boston* and *New York* carried passengers from the 23rd Street Pier in New York to the landing near Penny Bridge in Queens. Eventually the church trustees had a ferry built, which Archbishop Hughes named *Martha* after his sister. The church sold its ferry to the Greenpoint Ferry Company in 1854, which ran from the 10th Street Pier to a landing at Greenpoint Avenue. Also in that year, the Greenpoint and Flushing Plank Road Company built a toll road from the ferry landing along Greenpoint Avenue and over the bridge to the cemetery. Railroad access to the cemetery came in 1860.⁷

By the late 19th century the cemetery was an important local industry. Stone and monument makers located their workshops nearby, and livery and florists provided funerary services. The proliferation of stone and monument makers was in part due to the changing aesthetic in the cemetery with regards to burial markers. Well-off families began building vaults in the style of Roman catacombs. With Classical details, these large granite and marble monuments became increasingly popular. This led the Diocese to print and distribute a guide to the cemetery in 1876, which laid out the rules for proper burials. The rules resulted in a conformity and formality to the cemetery, in which masonry, whether for a monument, headstone, or vault was the only acceptable material. All interments at Calvary had to be "strictly" in accordance with the rules of the Catholic Church as well.⁸

Calvary Cemetery is one of three archdiocesan cemeteries in the greater New York City area; the other two are located in the suburban counties of West Chester and Rockland, established in 1918 and 1966, respectively. As the primary Catholic burial place for city residents for 70 years, Calvary received more than a million interments by 1916. In the process of expanding by more than 200 acres to provide sufficient space for the deceased of New York's Catholic community. The discontinuous sections were numbered and given division names. First or Old Calvary, bordered by Review and Greenpoint avenues, was the St. Calixtus Division. Second Calvary, on the west side of 58th Street between Queens Boulevard and the BQE, was the St. Agnes Division, Third Calvary, on the west side of 58th Street between the BQE and the LIE, was the St. Sebastian Division, and Fourth Calvary, on the west side of 58th Street between the LIE and 55th Avenue, was the St. Domitilla Division.⁹ As the largest Catholic burial ground for the greater New York area, Calvary Cemetery is the final resting place for a cross-section of the city's Catholic population from poor immigrants to notorious members of organized crime, actors, and politicians including the former Governor, Alfred E. Smith, U.S. Senator Robert Wagner, and Wagner's son, Robert, Jr. the former Mayor of New York.

Old Calvary Cemetery, with its formerly rural setting and natural layout, along with its gatehouse, chapel and impressive variety of burial markers possess qualities of design and workmanship that are not found in modern cemeteries. Calvary has many elements similar to other 19th century cemeteries such as Mount Auburn Cemetery in Cambridge, Massachusetts, both of which have designed landscapes with curvilinear roads and paths, monumental entry gates, and significant buildings and monuments that reflect the architectural styles of the time. Old Calvary Cemetery is recommended eligible for the National Register of Historic Places. It derives its primary significance under Criterion C, for its distinctive design values. Although the landscape designer of the cemetery was not determined through available resources, the cemetery clearly follows the 19th century aesthetic of other large cemeteries, creating a natural setting for burials. The mortuary art and sculpture associated with many of the burials contribute to the planned environment. Architecturally, the gatehouse on Greenpoint Avenue and the chapel are in and of themselves, significant examples of their respective styles. They are exemplary of the Queen Anne and Roman-Byzantine styles that represent high degrees of craftsmanship, and embody the distinctive characteristics of the period, and possess high artistic value. Within this setting, the gatehouse, chapel, related outbuildings, headstones and mausoleums which, although burial markers, display distinctive architectural styles and merit, together convey the historical trend in Catholic burial practices in the 19th century (Criterion C). Born out of necessity, as the diocese's first cemetery in Manhattan reached its capacity, Calvary Cemetery was established by the Archdiocese of New York as a pastoral burial ground for the city's burgeoning Catholic population, and served as the primary Catholic cemetery until others were established in the early and mid 20th century. It was one of the first cemeteries not specifically linked to a parish, but to serve a specific denomination. Although there are many notable people buried at Calvary Cemetery, none are persons of transcendent importance, and therefore the cemetery is not considered eligible under Criterion B. Old Calvary Cemetery meets National Register Criterion Consideration D, as a cemetery that displays distinctive design values, and that achieves historic

⁴ Calvary Cemetery. 1876. *The Visitor's Guide to Calvary Cemetery*. John J. Foster, New York, pg. 15.

⁵ Ardolina, Rosemary Muscarella. 1996. *Old Calvary Cemetery: New Yorkers Carved in Stone*. Heritage Books, Inc., Bowie, Maryland, pg. xi.

⁶ Amon, Rhona. 2006. The Cemetery Belt: Why does Queens have so many cemeteries? Answers go back to mid-1800s Manhattan in *Newsday*. Accessed online 22 February 2006 at <http://www.newsday.com/community/guide/lihistory/ny-history-hs517a,0,7026627.story?coll=ny-lihistory-navigation>. Ardolina, pg. xi.

⁷ Calvary Cemetery, pg. 11 and Ardolina, pg. xi.

⁸ Calvary Cemetery, pgs. 74-77.

⁹ *Catholic News*. 1973. History of Calvary Cemetery. Accessed online at <http://www.bklyn-genealogy-info.com/Cemetery/Calvary.hist.html> on 21 March 2006.

significance for relative great age. Within the boundary of Calvary Cemetery lies the Alsop family burial ground, with graves that date from the 18th century. The Alsop plots are the only known Protestant burial places maintained in a Catholic Cemetery.¹⁰

Old Calvary Cemetery, and the buildings and monuments therein retain integrity with respect to location, design, materials, workmanship, association, and feeling.

The boundary for Old Calvary Cemetery is the cemetery limits as bounded by Review Avenue to the south, Laurel Hill Boulevard to the east, the Long Island Expressway to the north, Greenpoint Avenue to the west, Bradley Avenue as it extends eastward past Greenpoint Avenue to Howard Street, and Howard Street as it passes south along the western boundary of the cemetery to Review Avenue. This area encompasses all the land, walls, buildings and graves associated with Old Calvary Cemetery.

¹⁰ Adrolina, pg. xi.

TABLE V-3: Old Calvary Cemetery Photograph Index

Photograph Location Number	Photo Number	Description
<u>1</u>	V- <u>1</u>	Old Calvary Cemetery, Looking Southeast towards Kosciuszko Bridge
<u>2</u>	V- <u>2</u>	Old Calvary Cemetery Stone Building and Gates, Laurel Hill Boulevard, Looking Southeast
<u>3</u>	V- <u>3</u>	Old Calvary Cemetery Gates, Greenpoint Avenue, Looking Southeast
<u>4</u>	V- <u>4</u>	Old Calvary Cemetery, Queen Anne Style Gatehouse, Looking Southwest
<u>5</u>	V- <u>5</u>	Old Calvary Cemetery Roman Byzantine Style Chapel, Looking Southwest
<u>6</u>	V- <u>6</u>	Old Calvary Cemetery Tombs. Looking Northeast
<u>7</u>	V- <u>7</u>	Old Calvary Cemetery Tomb, Looking Northwest
<u>8</u>	V- <u>8</u>	Old Calvary Cemetery Equipment Shed, Looking Northeast
<u>9</u>	V- <u>9</u>	Old Calvary Cemetery, Looking Southeast towards Kosciuszko Bridge
<u>10</u>	V- <u>10</u>	Old Calvary Cemetery, Looking East
<u>11</u>	V- <u>11</u>	Old Calvary Cemetery from Laurel Hill Boulevard, Looking West

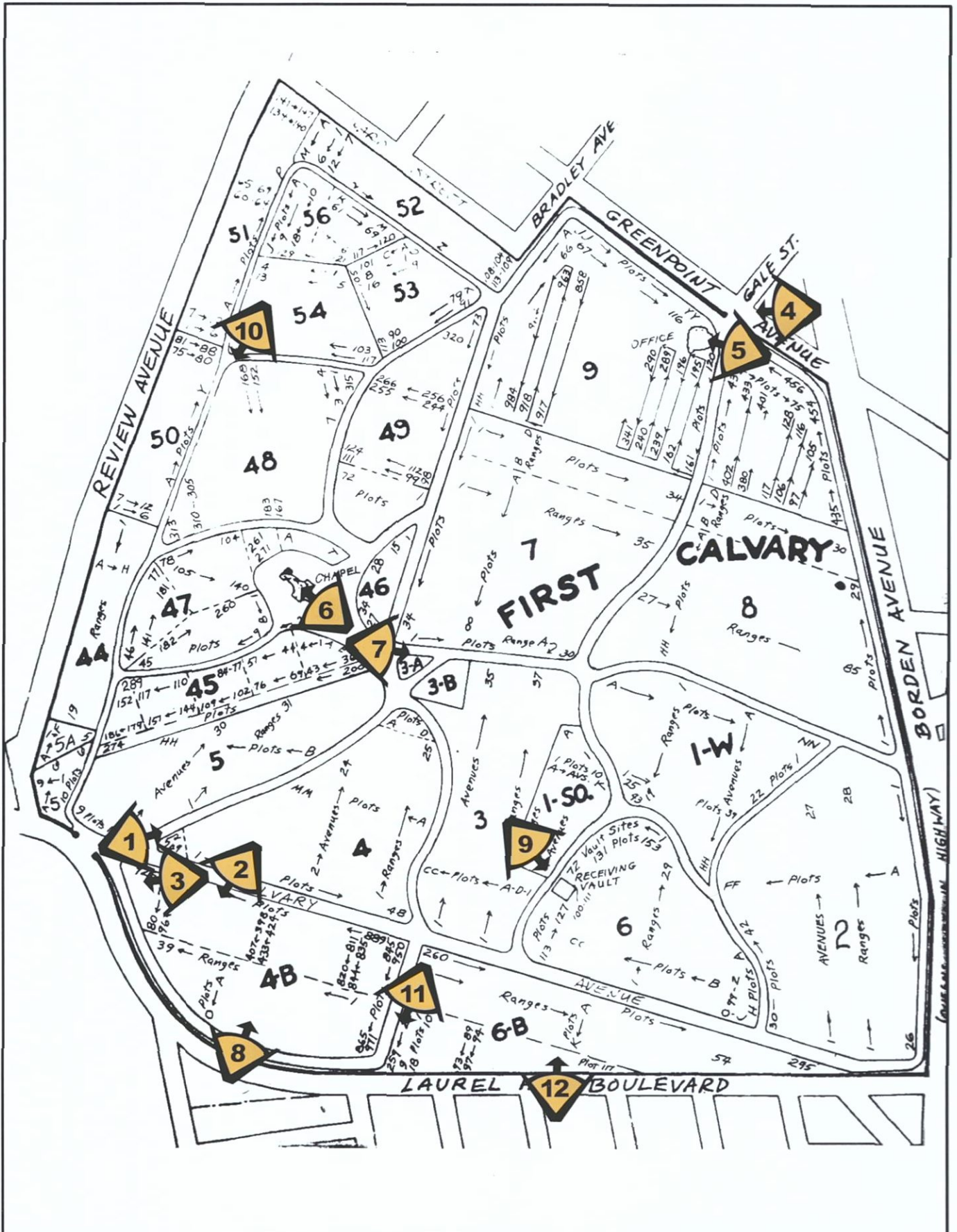




Photo V-1. Old Calvary Cemetery, looking Southeast towards Kosciuszko Bridge



Photo V-2. Old Calvary Cemetery Stone Building and Gates, Laurel Hill Boulevard, Looking Southeast



Photo V-3. Old Calvary Cemetery Gates, Greenpoint Avenue, Looking Southeast



Photo V-4. Old Calvary Cemetery, Queen Anne Style Gatehouse, Looking Southwest

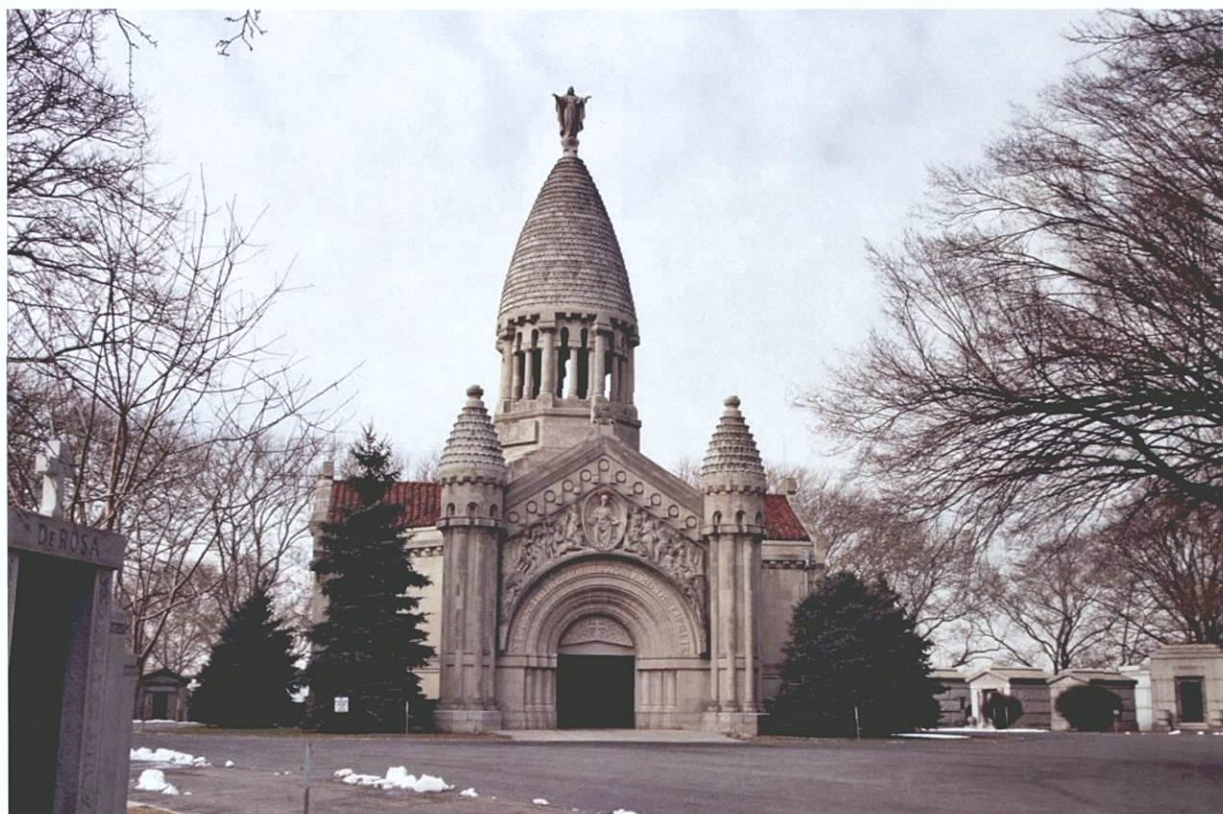


Photo V-5. Old Calvary Cemetery, Roman Byzantine Style Chapel, Looking Southwest



Photo V-6. Old Calvary Cemetery Tombs, Looking Northeast



Photo V-7. Old Calvary Cemetery Tomb, Looking Northwest



Photo V-8. Old Calvary Cemetery Equipment Shed, Looking Northeast



Photo V-9. Old Calvary Cemetery, Looking Southeast towards Kosciuszko Bridge



Photo V-10. Old Calvary Cemetery, Looking East



Photo V-11. Old Calvary Cemetery from Laurel Hill Boulevard, Looking West

B.1.b. Kosciuszko Bridge

The Kosciuszko Bridge is a fixed, multiple span, combination (deck and through) Warren truss bridge with overhead bracing. Part of the six-lane, BQE in Queens and Kings Counties, New York, the bridge spans Newtown Creek extending northeast from Meeker Avenue and Varick Avenue in Greenpoint, Brooklyn, to Laurel Hill Boulevard and 54th Street in Maspeth, Queens. Originally constructed as the Meeker Avenue Bridge in 1939, the bridge was renamed the Kosciuszko Bridge in 1940 to commemorate the Polish Revolutionary War hero, Thaddeus Kosciuszko. In 1960, with the completion of the BQE (I-278), the Kosciuszko Bridge was officially linked to the completed highway system.

The bridge has a vertical clearance of 38.1 m (125 ft) over Newtown Creek, and rises 53.3 m (175 ft) in height at its highest point and is 1835.3 m (6,021.3 ft) in length with a total of 22 spans that rest on 21 cast-in-place, segmental arched, reinforced concrete piers. The span over Newtown Creek measures 91.4 m (300 ft), while the approach spans vary from 36.5 m (120 ft) to 70.1 m (230 ft). There are 10 deck truss spans at the Brooklyn side, 11 deck truss spans at the Queens side, and one through truss span over the Newtown Creek. On the Brooklyn side, the deck truss begins at Meeker Avenue and Varick Avenue. The first two pairs of concrete piers for the structure were constructed parallel to Cherry Street between Varick and Stewart Avenues.

Bridge piers rest on concrete foundations. Constructed of reinforced concrete, shafts for the piers were cast in sections according to the height of the piers—taller piers are made up of four sections, for example. The tallest piers are those supporting the main span. These piers are double cross braced, riveted steel towers on concrete bases. The pattern of the cross bracing on the main span piers has a lattice-like pattern.

The truss spans connect to abutments located at Meeker Avenue and Varick Street in Greenpoint, Brooklyn, and at Laurel Hill Boulevard and 54th Street in Maspeth, Queens. These abutments lead to low level reinforced concrete approaches which are clad in brick in a stretcher bond pattern. The approaches are further decorated with interspersed panels approximately five feet wide that feature sawtooth detailing. A roll-up metal garage bay and a single-leaf metal door are located at the east elevation of the Brooklyn side of the bridge, providing access to the storage areas located within the abutments. Windows for the storage spaces are located beneath the roadway and remain at both the Brooklyn and Queens sides of the bridge. Window openings are enclosed by metal grills and rest on concrete sills. The Brooklyn viaduct has concrete rigid frames that provide vehicular access to the areas perpendicular to the bridge's approaches at Morgan Avenue, Vandervoort Avenue, Varick Avenue and Stewart Avenues.

The main superstructure element of the bridge is of the Warren deck truss type. The riveted steel deck truss extends from the abutments to the main bridge spans at each side of the bridge. The bridge's roadway is supported by concrete filled steel grating and topped by asphalt to create the road surface. The roadway is cantilevered over the trusses, supported by cross bracing beneath the I-beam-supported roadway. The roadway is lined by concrete curbs with a metal railing and three foot steel panels or splash guards. The roadway of the main span is lined with open metal railings. Light for the bridge is provided by light posts spaced evenly at the sides of the bridge.

The Warren through truss main span of the bridge features a superstructure made of polygonal top riveted steel chords and overhead cross bracing. Centrally located on the overhead bracing at the Brooklyn side and the Queens side are commemorative plaques. Installed when the bridge was renamed in 1940, the plaques bear the crests of the United States and Poland in addition to the "new" name of the bridge, the Thaddeus Kosciuszko Bridge. J. Frank Johnson is also recognized on the plaque as the Chief Engineer.

The original bridge was designed with sidewalks at the deck to provide pedestrian access across the bridge to either borough. These sidewalks were removed in 1967 to accommodate a widening of the road. The original center island was replaced during the 1967 renovations, and the original concrete slab at the deck has been subsequently replaced and resurfaced since 1967. As originally designed, the main bridge was approached from both Brooklyn and Queens by elevated Warren deck truss spans. These roadways essential split the neighborhoods in Brooklyn in sections.

Concrete rigid frames provided vehicular access to the areas west and east of the elevated roadways at Morgan Avenue, Vandervoort Avenue, Varick Avenue and Stewart Avenue. These bridges have been altered by the removal of the decorative parapet walls at the elevated roadway surface. The concrete viaduct, enclosed in curtain walls between these bridges, have been re-faced with brick in some sections.

Based on a formal NRHP evaluation conducted by EHT Tracerics Inc. (Hughes et al. 2006, Appendix E, this report), the Kosciuszko Bridge has been recommended as NRHP-eligible under National Register Criterion C and more specifically, under NYSDOT Criterion C-6. Built in 1939, this fixed, multiple span, Warren combination (deck and through) truss bridge with overhead bracing represents a significant and unusual variation of the Warren truss type. Whereas most eligible bridges have one feature of individuality considered to be a significant variation within the post-standardization Warren truss type, the Kosciuszko Bridge possesses several including its multiple spans, Warren combination (deck and through) trusses, and polygonal top chords with overhead bracing. The NYSHPO concurred with this NRHP determination in July 2006 (Kathleen A. Howe to Robert Adams, letter, July 21, 2006).



HISTORIC RESOURCE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
P.O. BOX 189, WATERFORD, NY 12188
(518) 237-8643

OFFICE USE ONLY
USN:

IDENTIFICATION

Property name(if any) Kosciuszko Bridge
Address or Street Location Brooklyn-Queens Expressway / Interstate I-278
County Kings / Queens Town/City Brooklyn / Queens Village/Hamlet: Greenpoint / Maspeth
Owner NYSDOT Address Hunters Point Plaza, 47-40 21st Street; Long Island City, NY 11101
Original use Pedestrian/Vehicular Bridge Current use State Highway Bridge
Architect/Builder, if known City of New York Department of Plant and Structures / Department of Public Works
Date of construction, if known 1939

DESCRIPTION

Materials -- please check those materials that are visible

Exterior Walls: wood clapboard, wood shingle, vertical boards, plywood, stone, brick, poured concrete, concrete block, vinyl siding, aluminum siding, cement-asbestos, other: Steel
Roof: asphalt, shingle, asphalt, roll, wood shingle, metal, slate
Foundation: stone, brick, poured concrete, concrete block

Other materials and their location:

Alterations, if known: Repaved road surface. Replaced concrete decking and sidewalks removed to provide additional lanes of traffic, approaches to bridge widened on the Brooklyn side. Date: 1958, 1966, 1967, 1971

Condition: excellent, good, fair, deteriorated

Photos

Provide several clear, original photographs of the property proposed for nomination. Submitted views should represent the property as a whole. For buildings or structures, this includes exterior and interior views, general setting, outbuildings and landscape features. Color prints are acceptable for initial submissions. Please staple one photograph providing a complete view of the structure or property to the front of this sheet. Additional views should be submitted in a separate envelope or stapled to a continuation sheet.



Prepared by: EHT Traceries, Inc. address 1121 5th Street, N.W.; Washington, D.C. 20001
Telephone: (202) 393-1199 email eht@traceries.com Date 6/2/2006

PLEASE PROVIDE THE FOLLOWING INFORMATION**IF YOU ARE PREPARING A NATIONAL REGISTER NOMINATION, PLEASE REFER TO THE ATTACHED INSTRUCTIONS**

Narrative Description of Property: Briefly describe the property and its setting. Include a verbal description of the location (e.g., north side of NY 17, west of Jones Road); a general description of the building, structure or feature including such items as architectural style (if known), number of stories, type and shape of roof (flat, gabled, mansard, shed or other), materials and landscape features. Identify and describe any associated buildings, structures or features on the property, such as garages, silos, privies, pools, gravesites. Identify any known exterior and interior alterations such as additions, replacement windows, aluminum or vinyl siding or changes in plan. Include dates of construction and alteration, if known. Attach additional sheets as needed.

The Kosciuszko Bridge is a fixed, multiple span, combination (deck and through) Warren truss bridge with overhead bracing. Part of the six-lane, Brooklyn-Queens Expressway (I-278) in Queens and Kings Counties, New York, the bridge spans Newtown Creek and the truss spans extends northeast from Meeker Avenue and Varick Street in Greenpoint, Brooklyn, to Laurel Hill Boulevard and 54th Street in Maspeth, Queens. Originally constructed as the Meeker Avenue Bridge in 1939, the bridge was renamed the Kosciuszko Bridge in 1940 to commemorate the Polish Revolutionary War hero, Thaddeus Kosciuszko. In 1960, with the completion of the Brooklyn-Queens Expressway (Interstate I-278), the Kosciuszko Bridge was officially linked to the completed highway system.

The bridge has a vertical clearance of 125 feet over Newtown Creek, and rises 175 feet in height at its highest point and 6,021.3 feet in length with a total of 22 spans that rest on 21 cast-in-place, segmental arched, reinforced concrete piers. The span over the Newtown Creek measures 300 feet, while the approach spans vary from 120 to 230 feet. There are 10 deck truss spans at the Brooklyn side, 11 deck truss spans at the Queens side, and one through truss span over the Newtown Creek.

Bridge piers rest on concrete foundations. Constructed of reinforced concrete, shafts for the piers were cast in sections according to the height of the piers—taller piers are made up of four sections, for example. The tallest piers are those supporting the main span. These piers are double cross braced, riveted steel towers on concrete bases. The pattern of the cross bracing on the main span piers has a lattice-like pattern.

The truss spans connect to abutments located at Meeker Avenue and Varick Street in Greenpoint, Brooklyn, and at Laurel Hill Boulevard and 54th Street in Maspeth, Queens. These abutments lead to low level reinforced concrete approaches which are clad in brick in a stretcher bond pattern. The approaches are further decorated with interspersed panels approximately five feet wide that feature sawtooth detailing. A roll-up metal garage bay and a single-leaf metal door are located at the east elevation of the Brooklyn side of the bridge, providing access to the storage areas located within the abutments. Windows for the storage spaces are located beneath the roadway and remain at both the Brooklyn and Queens sides of the bridge. Window openings are enclosed by metal grills and rest on concrete sills. The Brooklyn viaduct has concrete rigid frames that provide vehicular access to the areas perpendicular to the bridge's approaches at Morgan Avenue, Vandervoort Avenue, Varick Avenue and Stewart Avenues.

The main superstructure element of the bridge is of the Warren deck truss type. The riveted steel deck truss extends from the abutments to the main bridge spans at each side of the bridge. The bridge's roadway is supported by concrete filled steel grating and topped by asphalt to create the road surface. The roadway is cantilevered over the trusses, supported by cross bracing beneath the I-beam-supported roadway. The roadway is lined by concrete curbs with a metal railing and three foot steel panels or splash guards. The roadway of the main span is lined with open metal railings. Light for the bridge is provided by light posts spaced evenly at the sides of the bridge.

The Warren through truss main span of the bridge features a superstructure made of polygonal top riveted steel chords and overhead cross bracing. Centrally located on the overhead bracing at the Brooklyn side and the Queens side are commemorative plaques. Installed when the bridge was renamed in 1940, the plaques bear the crests of the United States and Poland in addition to the "new" name of the bridge, the Thaddeus Kosciuszko Bridge. J. Frank Johnson is also recognized on the plaque as the Chief Engineer.

The repaving of the existing asphalt-on-concrete deck occurred in 1958. The second repaving project was initiated in 1967, at a cost of \$6 million dollars. The largest improvement to date on the bridge was a 1966 replacement of the concrete deck and the elimination of the two, eight foot wide pedestrian sidewalks to accommodate wider traffic lanes. Subsequent work included the replacement of the barriers, railings, lampposts, crossbeams, and drainage system, with the intention of alleviating bridge traffic. Other rehabilitation work included a three-year repair project initiated in 1996 that reinforced the concrete piers; the general cleaning, painting, and maintenance of the structural system in 2000, and the resurfacing of the deck including general bridge and ramp repairs in 2005.¹¹

Overall, the bridge is in fair condition. The steel members of the bridge, particularly the superstructure, substructure and main span piers appear to be in good condition, despite rusting in some areas. However, the bridge steel that supports the roadway develops cracks in numerous locations and frequent maintenance is required. Additionally, the roadway deck also needs frequent repair to maintain a safe riding surface. Although abutment storage areas were not accessible at the time of this survey effort, it appears as though some of the storage space openings have been sealed or in filled with brick. Despite these modifications and alterations, the original form and structure of the bridge are intact.

¹¹ Parsons, *Kosciuszko Bridge Project*, "Chapter II: Project Identification, Evolution, Conditions and Needs and Objectives," July 1, 2005, pg. II.B-2.

Narrative Description of Significance: Briefly describe those characteristics by which this property may be considered historically significant. Significance may include, but is not limited to, a structure being an intact representative of an architectural or engineering type or style (e.g., Gothic Revival style cottage, Pratt through-truss bridge); association with historic events or broad patterns of local, state or national history (e.g., a cotton mill from a period of growth in local industry, a seaside cottage representing a locale's history as a resort community, a structure associated with activities of the "underground railroad."); or by association with persons or organizations significant at a local, state or national level. Simply put, why is this property important to you and the community. Attach additional sheets as needed.

Applying the methodology of the 2002 Historic Bridge Inventory, it has been determined that BIN 1075699, or the Kosciuszko Bridge, is **eligible** under National Register Criterion C-6. Built in 1939, this fixed, multiple span, Warren deck and thru truss bridge with overhead bracing represents a significant and unusual variation of the Warren truss type. According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, bridges built after 1925 were strongly influenced by standardization and do not represent significant examples of their type. They are recommended as non-eligible unless they possess historical significance, a significant variation or other unique feature or association. Significant variations or features of individuality within the post-standardization Warren truss type include: deck truss, multiple span, double-intersection truss, unusual substruts, and unusual curved top and bottom chords.¹² Structural elements of the Kosciuszko Bridge include multiple spans, Warren deck and thru trusses, and overhead bracing, all categorized as "significant variations or features of individuality." The Kosciuszko Bridge therefore, embodies distinctive characteristics of multiple span bridges, as well as Warren deck and thru truss types with overhead bracing. Built in 1939, the Kosciuszko Bridge reflects its period and methods of its construction. Thus, the Kosciuszko Bridge is considered eligible under Criterion C-6. This determination is supported by the following justification.

The Kosciuszko Bridge exhibits significant variation from common or standardized Warren truss types for many reasons. One of the most characteristic elements of the Kosciuszko Bridge is that it contains 22 spans. Bridges that have one or more piers in addition to the abutments are called multiple span bridges. Long bridges such as the Kosciuszko Bridge are generally multiple span bridges. The multiple spans of the Kosciuszko Bridge are considered a characteristic or defining element of the bridge. The span over the Newtown Creek measures 250 feet, while the approach spans vary from 200-300 feet. The total bridge length is 6,021 feet. There are 10 spans at the Brooklyn side, 11 spans at the Queens side, and one span over the Newtown Creek.

Another significant variation of the standardized Warren truss type is deck trusses. The main component of any bridge is the decking, which comprises of a slab, girder, and trusses. In a deck configuration, traffic travels on top of the main structure. In a deck truss bridge, the truss supports the bridge deck. The approaches of the Kosciuszko Bridge measure approximately 5,771 feet and are supported by Warren deck trusses. While the approach spans at the Brooklyn and Queens sides are supported by Warren deck trusses, the Newtown Creek span is supported by a Warren thru truss with overhead bracing. Polygonal top chords support the overhead bracing, giving it an appearance similar to that of a camelback truss. The overhead bracing of the Warren thru truss is also considered to be a significant variation of the standardized Warren truss type.

The form of the Kosciuszko Bridge follows its function. The design for the Kosciuszko Bridge, although not attributed to a particular designer or engineer, is one that accommodates ships as well as cars. The 125 foot height of the bridge allowed ships to travel beneath it on the Newtown Creek, at one time considered one of the busiest world ports, while the 6,021 foot length provided a straighter and more direct roadway for the expressway of which it was a part. Constructed in 1939, the Kosciuszko Bridge reflects Depression-Era Bridge Construction. Bridges built during this period met the increasing demands of the traveling public.¹³ Built as the first element of the future Brooklyn-Queens Expressway, the Kosciuszko Bridge played a critical part in connecting motorists to Brooklyn and Queens. The Brooklyn-Queens Expressway, a segment of I-278, was vital to the roadway improvement effort initiated in the mid-twentieth century. The purpose of this project was to alleviate congestion and improve traffic flow in and around New York. The engineering difficulties associated with the Kosciuszko Bridge accommodating both cars and boats resulted in the plan of a straighter roadway with a longer approach than that of any previous bridge at this location. The segment between Brooklyn and Queens was built to connect the east and west thoroughfares of Long Island, greatly aiding the transportation network and commerce between the boroughs. The connection also allowed motorists to access the Triborough Bridge, and ultimately, the 1939-1940 World's Fair in Flushing Meadows, Queens.

Of the 211 early- and post-standardization Warren truss bridges in the State of New York, 75 have been determined eligible for listing in the National Register of Historic Places. Of those 75, three are located in the New York City Region. A site visit to the three eligible Warren truss bridges occurred on May 25, 2006. This visit provided an opportunity to compare the Kosciuszko Bridge with the three eligible Warren truss bridges in the New York City Region. The three eligible bridges in the New York City Region were all built during the early-standardization (pre-1925) period. All three of the eligible bridges within the New York City Region are Warren thru truss types. None of the eligible bridges however, have polygonal top chords with overhead bracing, similar in appearance to a camelback truss. The Kosciuszko Bridge was also compared with eligible bridges built post-standardization (post-1925) in the State of New York. The comparison of the Kosciuszko Bridge with other post-standardization bridges in the State emphasized the significance of the fixed, multiple span, Warren deck and thru truss form of the Kosciuszko Bridge because another example of this unusual configuration of structural elements was not found in the State.

¹² Mead & Hunt and Allee King Rosen Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, prepared for the New York State Department of Transportation, Albany, New York and the Federal Highway Administration, Albany, New York, January 2002, pg. 4-50.

¹³ Mead & Hunt, *Contextual Study of New York State's Pre-1961 Bridges*, Prepared for the New York Department of Transportation, November 1999, pg. 61.

Although the construction of the Kosciuszko Bridge as the first element of the Brooklyn-Queens Expressway (BQE) is considered an important event, it is not one of national significance, nor is it more important than the construction of the Expressway itself or the other BQE bridges. The Kosciuszko Bridge is therefore considered not eligible for listing under Criterion A. Although the Kosciuszko Bridge honors Thaddeus Kosciuszko, it does not illustrate his important achievements; rather, it *commemorates* them. Therefore, the Kosciuszko Bridge is not eligible for listing under Criterion B. Additionally, there are other examples of Thaddeus Kosciuszko commemorations in the New York City Region. The Kosciuszko Bridge is not likely to yield information important in prehistory or history and is thus not eligible for listing under Criterion D.

BIBLIOGRAPHY

Daily News. "Bids Readied for Kosciuszko Span Revamp." August 5, 1971.

Mead & Hunt and Allee King Rosen & Fleming, Inc., Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan, prepared for the New York State Department of Transportation, Albany, New York and the Federal Highway Administration, Albany, New York, January 2002.

Mead & Hunt, Contextual Study of New York State's Pre-1961 Bridges, Prepared for the New York Department of Transportation, Albany, New York: November 1999.

Archives and collection consulted include:

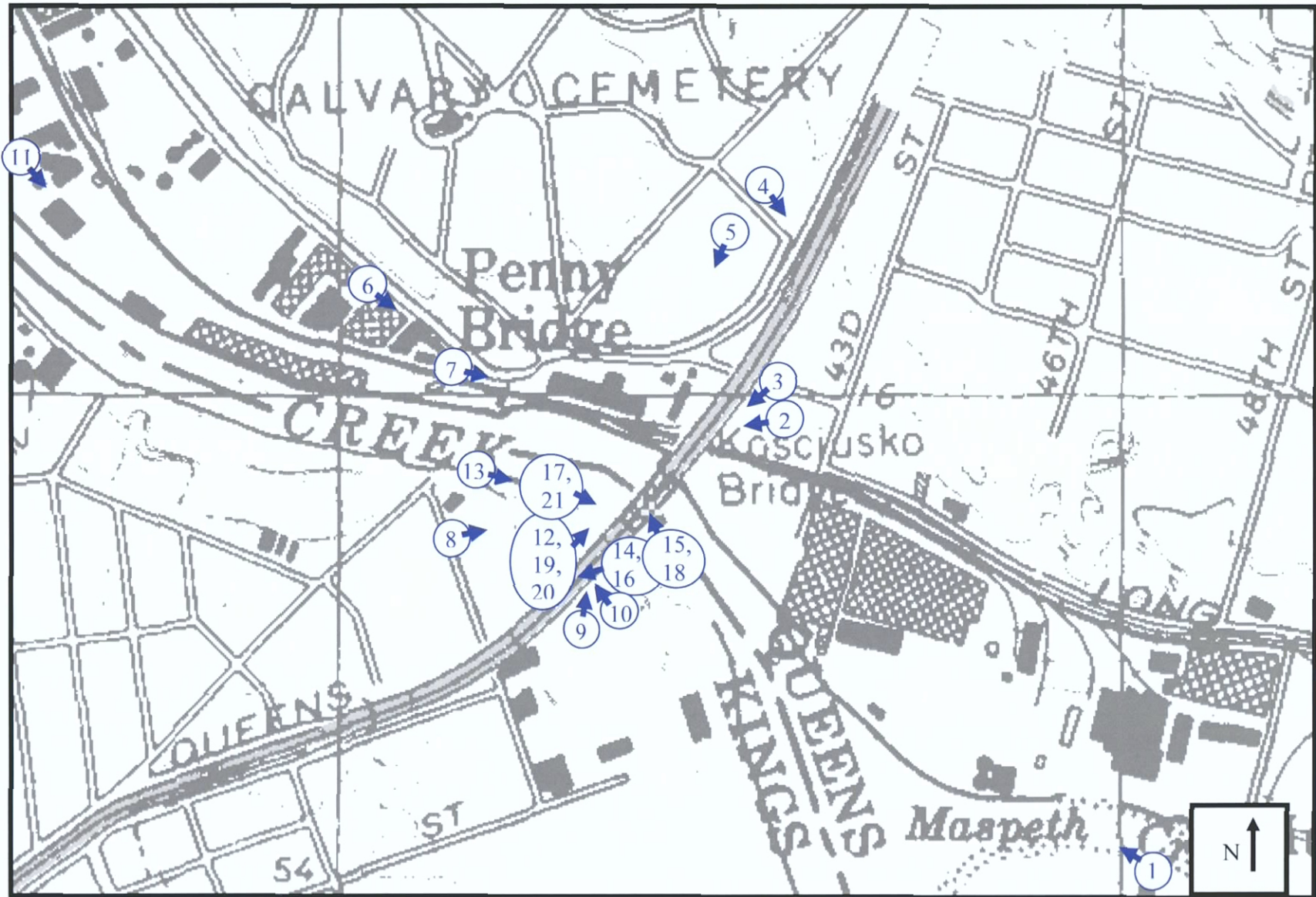
Library of Congress, Geography and Map Division, Washington D.C.
Municipal Archives, NY, NY
New York Historical Society, NY, NY
Queens Borough Public Library, Jamaica, NY
The Brooklyn Public Library, Brooklyn, NY
The New York Public Library, NY, NY

Agencies and organizations consulted by telephone and internet include:

NYC Department of Records, NY, NY
Pratt Institute Library, Brooklyn, NY
The Brooklyn Historical Society, Brooklyn, NY
The Kosciuszko Foundation, Inc., NY, NY
The Queens Historical Society, Flushing, NY

TABLE V-4: Kosciuszko Bridge Photograph Location Index

Photograph Location Number	Photo Number	Description
1	V-12	View of Kosciuszko Bridge, looking east from Greenpoint Avenue Bridge
2	V-13	Extent of Kosciuszko Bridge looking south from Laurel Hill Boulevard, Queens, New York
3	V-14	Kosciuszko Bridge, looking west from 56th Road, Queens, New York
4	V-15	Kosciuszko Bridge, looking northwest from Grand Street Bridge
5	V-16	Detail of steel substructure looking southwest from Greenpoint, Brooklyn, New York
6	V-17	Detail of concrete piers and substructure, looking southwest from Greenpoint, Brooklyn, New York
7	V-18	Detail of the Warren truss main span and overhead bracing, looking northwest from Greenpoint, Brooklyn, New York
8	V-19	View of Kosciuszko Bridge supports over Newtown Creek, looking northeast from Greenpoint, Brooklyn, New York
9	V-20	Detail of truss connection beneath Kosciuszko Bridge
10	V-21	Detail of sawtooth brick elements on exterior of bridge abutments, on the Brooklyn side



Brooklyn/Queens, New York

USGS Map, 2006

Figure V-3. Kosciuszko Bridge Photograph Location Map

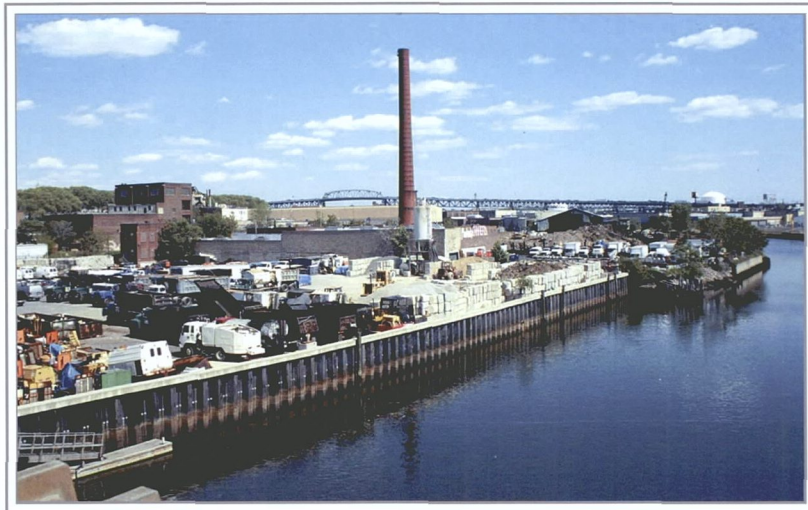


Photo V-12. View of Kosciuszko Bridge, looking east from Greenpoint Avenue Bridge

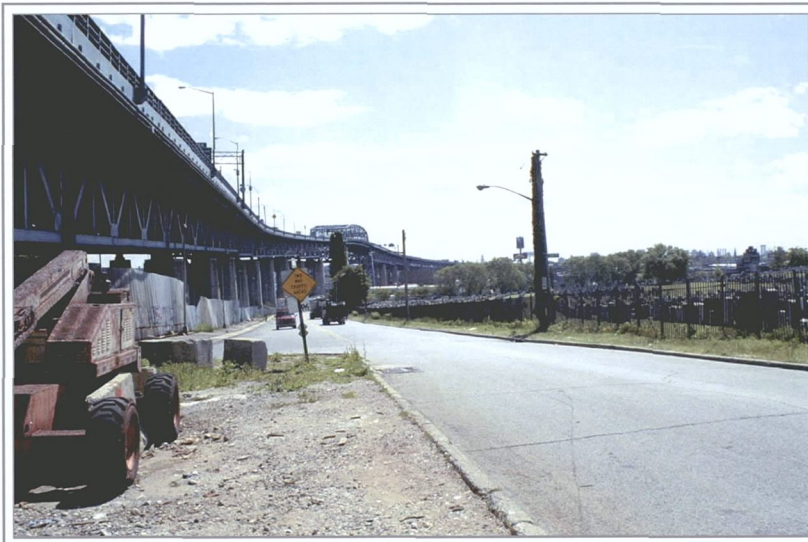


Photo V-13. Extent of Kosciuszko Bridge looking south from Laurel Hill Boulevard, Queens, New York



Photo V-14. Kosciuszko Bridge, looking west from 56th Road, Queens, New York



Photo V-15. Kosciuszko Bridge, looking northwest from Grand Street Bridge

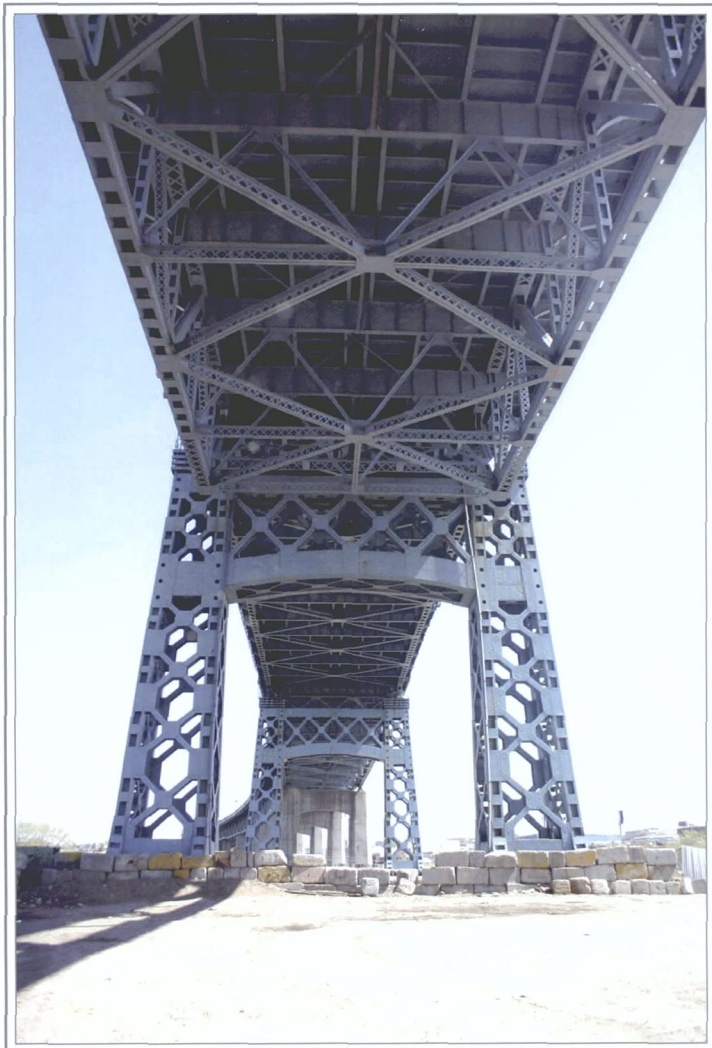


Photo V-16. Detail of steel substructure looking southwest from Greenpoint, Brooklyn, New York



Photo V-17. Detail of concrete piers and substructure, looking southwest from Greenpoint, Brooklyn, New York

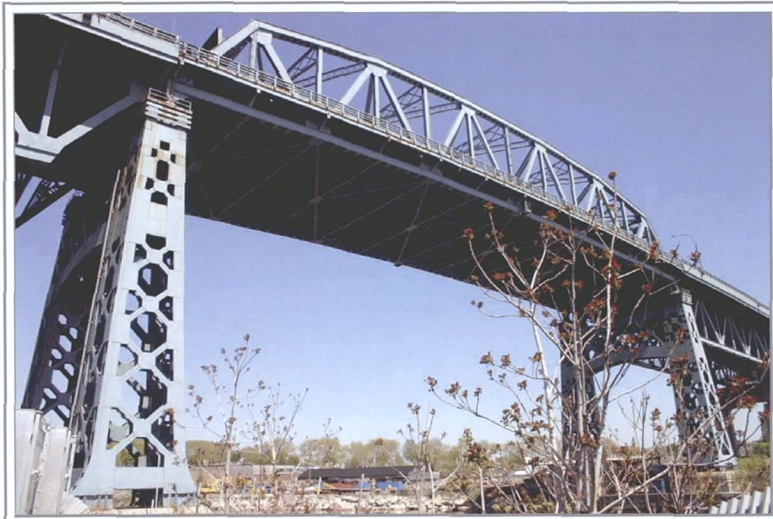


Photo V-18. Detail of the Warren truss main span and overhead bracing, looking northwest from Greenpoint, Brooklyn, New York

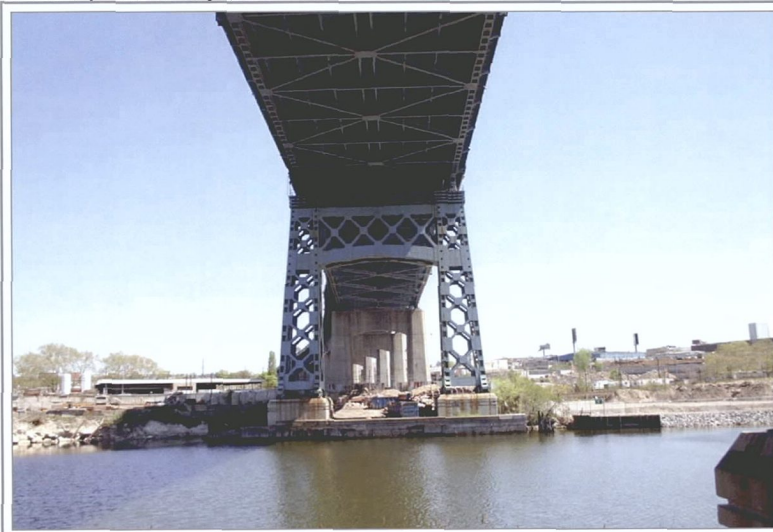


Photo V-19. View of Kosciuszko Bridge supports over Newtown Creek, looking northeast from Greenpoint, Brooklyn, New York



Photo V-20. Detail of truss connection beneath Kosciuszko Bridge



Photo V-21. Detail of sawtooth brick elements on exterior of bridge abutments, on the Brooklyn side

B.2. Surveyed Properties Recommended as Not Eligible for the NRHP

The areas around Kosciuszko Bridge in both Brooklyn and Queens are distinctly dense urban mixed use areas with residential, commercial, industrial and warehouse facilities. To the north and south of the BQE at the western end of the project area in Brooklyn are long, fully built-out blocks with late nineteenth-to early twentieth-century 3-story rowhouses, many with first floor businesses. Closer to Newtown Creek, on both sides of the BQE is a greater mix of industrial and warehouse facilities from the early twentieth century to the present. In Queens, area west of the BQE is dominated by Calvary Cemetery, with several late nineteenth and early twentieth century industrial warehouses and complexes along Review Avenue. East of the BQE in Queens the landscape is dominated by industrial/warehousing facilities, with scattered remnants of residential development near the northern limits of the project area.

The portion of Brooklyn situated in the project area became increasingly industrial and commercial in nature along Newtown Creek during the late nineteenth and early twentieth centuries with mixed residential and commercial uses concentrated west of Van Dam Street north of Meeker Avenue and west of Vandervoort Avenue south of Meeker. The buildings in this area do not exhibit any demonstrable historical or architectural significance. Additionally, most have been altered with synthetic siding, multiple large additions in the late twentieth century, and extensive changes to fenestration patterns resulting in compromised integrity with regard to design, materials and workmanship.

The Queens portion of the project area was farmland until the mid-nineteenth century. Calvary Cemetery was established on the west side of the project area in 1845, and industrial waterfront development began in the late nineteenth and early twentieth centuries. With the industrialization at the southern part of the project area, residential, commercial and industrial buildings began to appear in the area east of Laurel Hill Boulevard. Scattered residential development from this period exists near the northern limits of the project area. The buildings in Queens do not exhibit demonstrable historical or architectural significance. Extensive alterations to the industrial/warehouse and residential buildings in the form of synthetic siding, fenestration changes, and late twentieth century additions also diminish their integrity with regard to design, materials and workmanship.

The residential, commercial, industrial and warehouse facilities in the Project Area are not recommended for inclusion in the NRHP. The properties do not possess demonstrable historical associations under Criterion A. These properties do not achieve significance from, and lack association with, the broader pattern of development, including the waterfront development and industrialization of the Boroughs of Queens and Brooklyn. Historical research has not indicated that there are any persons of significance associated with any of the buildings in the Project Area; therefore, none are eligible under Criterion B. The buildings in the Project Area lack demonstrable architectural significance under Criterion C. Most of the buildings are typical industrial and utilitarian warehouse facilities. The residences in the area do not possess high artistic value; they are typical single and multi-family dwellings from the late nineteenth and early twentieth century that in most cases have been significantly altered and lack distinctive architectural character. Detailed architectural descriptions and NRHP evaluations for 14 buildings scheduled for complete or partial demolition are located in Appendix F.

No historic districts were identified in Brooklyn or Queens owing to the lack of significant or cohesive groupings of buildings. The industrial enclaves in both boroughs have too many modern intrusions and lack demonstrable historical associations and architectural merit to qualify as a historic district. The remaining residential buildings in Queens are too scattered to constitute a

historic district, and the mixed residential and commercial buildings in Brooklyn lack demonstrable historical and architectural significance individually or as a group.

The following set of photographs consist of the 95 properties recommended as not eligible for inclusion in the National Register of Historic Places. The NYSHPO concurred with this NRHP determination in July 2006 (Kathleen A. Howe to Robert Adams, letter, July 21, 2006). Only properties 50 years old or older were recorded with photographs. (Table V-5 provides a photograph location index of the properties. Note: Some photographs contain more than one property recorded.)

TABLE V-5: LIST OF RECORDED ARCHITECTURAL PROPERTIES
PHOTOGRAPH LOCATION INDEX

Photo Number	Address/Location	Recommendation	
		NR-Eligible	Not NR-Eligible
V-22	197-203 Engert Avenue		X
V-22	621 Meeker Avenue		X
V-23	71-75 Monitor Street		X
V-24	62 Monitor Street		X
V-25	60 Monitor Street		X
V-26	583 Meeker Avenue		X
V-27	585 Meeker Avenue		X
V-28	679 Meeker Avenue		X
V-28	685 Meeker Avenue		X
V-28	687 Meeker Avenue		X
V-28	695 Meeker Avenue		X
V-29	729 Meeker Avenue		X
V-29	733-735 Meeker Avenue		X
V-29	737 Meeker Avenue		X
V-30	757-759 Meeker Avenue		X
V-30	761-763 Meeker Avenue		X
V-30	765 Meeker Avenue		X
V-30	767 Meeker Avenue		X
V-30	771 Meeker Avenue		X
V-30	773 Meeker Avenue		X
V-30	777 Meeker Avenue		X
V-31	779 Meeker Avenue		X
V-32	787-795 Meeker Avenue		X
V-32	797-805 Meeker Avenue		X
V-33	810-822 Meeker Avenue		X
V-34	843-845 Meeker Avenue		X
V-34	855 Meeker Avenue		X
V-34	857-869 Meeker Avenue		X
V-35	824-830 Meeker Avenue		X
V-35	844-856 Meeker Avenue		X

TABLE V-5: LIST OF RECORDED ARCHITECTURAL PROPERTIES
PHOTOGRAPH LOCATION INDEX

Photo Number	Address/Location	Recommendation	
		NR-Eligible	Not NR-Eligible
V-36	890-892 Meeker Avenue		X
V-37	944 Meeker Avenue		X
V-37	952-956 Meeker Avenue		X
V-38	958-972 Meeker Avenue		X
V-39	974-984 Meeker Avenue		X
V-40	13-25 Driggs Avenue		X
V-41	27 Driggs Avenue		X
V-42	35 Driggs Avenue		X
V-43	14-24 Driggs Avenue		X
V-44	4 Driggs Avenue		X
V-45	167-171 Kingsland Avenue		X
V-46	145-151 Kingsland Avenue		X
V-47	148 Kingsland Avenue		X
V-48	1-3 Hausman Street		X
V-49	2-4 Hausman Street		X
V-50	2-18 Van Dam Street		X
V-51	2-12 Lombardy Street		X
V-52	171-179 Lombardy Street		X
V-53	2-18 Anthony Street		X
V-54	35 Anthony Street		X
V-54	19-21 Anthony Street		X
V-54	11-15 Anthony Street		X
V-54	1 Anthony Street		X
V-55	38 Anthony Street		X
V-56	46-52 Anthony Street		X
V-57 & V-58	54-70 Anthony Street		X
V-59	72 Anthony Street		X
V-60	96-102 Anthony Street		X
V-61 & V-62	104-110 Anthony Street		X
V-63	167 Anthony Street		X
V-64	169-183 Anthony Street		X
V-65 & V-66	503-513 Porter Avenue		X
V-67	551 Stewart Avenue		X
V-68	538-542 Stewart Avenue		X
V-69 & V-70	22-32 Cherry Street		X
V-71 & V-72	38 Cherry Street		X
V-73	66 Cherry Street		X
V-74	68 Cherry Street		X
V-75	570 Gardner Avenue		X

TABLE V-5: LIST OF RECORDED ARCHITECTURAL PROPERTIES
PHOTOGRAPH LOCATION INDEX

Photo Number	Address/Location	Recommendation	
		NR-Eligible	Not NR-Eligible
V-76	Old Calvary Cemetery	X	
V-77	34-52 Laurel Hill Boulevard		X
V-78	34-40 Laurel Hill Boulevard		X
V-79	34-02 Laurel Hill Boulevard		X
V-80	39-30 Review Avenue		X
V-81	38-98 Review Avenue		X
V-82	36-60 Review Avenue		X
V-83	38-50 Review Avenue		X
V-84	38-52 Review Avenue		X
V-85	38-58 Rear Review Avenue		X
V-86	38-78 Review Avenue		X
V-87	39-14 Review Avenue		X
V-88	38-42 Review Avenue		X
V-89	55-16 43 rd Street		X
V-89	55-18 43 rd Street		X
V-90	55-05 43 rd Street		X
V-90	55-01 43 rd Street		X
V-91	54-59 43 rd Street		X
V-92	54-42 43 rd Street		X
V-92	54-38 43 rd Street		X
V-92	54-30 43 rd Street		X
V-93	54-17 43 rd Street		X
V-93	54-13 43 rd Street		X
V-93	54-11 43 rd Street		X
V-93	54-09 43 rd Street		X
V-94	54-01 43 rd Street		X
V-95	54-18 43 rd Street		X
V-95	54-14 43 rd Street		X
V-95	54-08 43 rd Street		X
V-96	53-17 43 rd Street		X
V-97	42-21 54 th Drive		X
V-98	Kosciuszko Bridge	X	



Photo V-22. 197-203 Engert Avenue and 621 Meeker Avenue, Looking North



Photo V-23. 71-75 Monitor Street, Looking West



Photo V-24. 62 Monitor Street, Looking Northeast



Photo V-25. 60 Monitor Street, Looking Northeast



Photo V-26. 583 Meeker Avenue, Looking Northwest



Photo V-27. 585 Meeker Avenue, Looking Northwest



Photo V-28. 679, 685, 687, and 695 Meeker Avenue, Looking Northeast



Photo V-29. 729, 733-735, and 737 Meeker Avenue, Looking Northeast



Photo V-30. 757-759, 761-763, 765, 767, 771, 773, and 777 Meeker Avenue, Looking West



Photo V-31. 779 Meeker Avenue, Looking Northeast



Photo V-32. 787-795 and 797-805 Meeker Avenue, Looking West



Photo V-33. 810-822 Meeker Avenue, Looking Southwest



Photo V-34. 843-845, 855, and 857-869 Meeker Avenue, Looking Northeast



Photo V-35. 824-830 and 844-856 Meeker Avenue, Looking Southwest



Photo V-36. 890-892 Meeker Avenue, Looking Southeast



Photo V-37. 944 and 952-956 Meeker Avenue, Looking Southwest



Photo V-38. 958-972 Meeker Avenue, Looking Southwest



Photo V-39. 974-984 Meeker Avenue, Looking South



Photo V-40. 13-25 Driggs Avenue, Looking West



Photo V-41. 27 Driggs Avenue, Looking South



Photo V-42. 35 Driggs Avenue, Looking South



Photo V-43. 14-24 Driggs Avenue, Looking Northwest



Photo V-44. 4 Driggs Avenue, Looking Northeast



Photo V-45. 167-171 Kingsland Avenue, Looking North



Photo V-46. 145-151 Kingsland Avenue, Looking South



Photo V-47. 148 Kingsland Avenue, Looking South

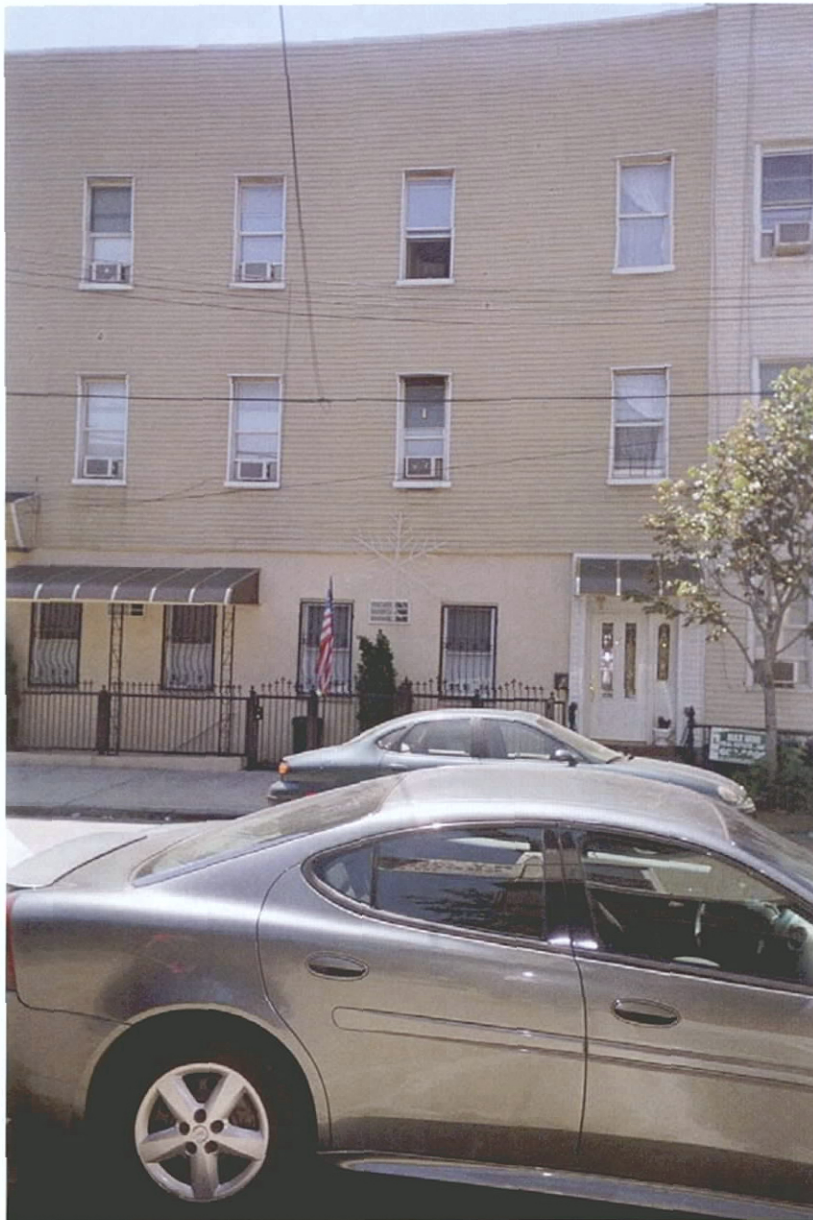


Photo V-48. 1-3 Hausman Street, Looking West



Photo V-49. 2-4 Hausman Street, Looking Northeast



Photo V-50. 2-18 Van Dam Street, Looking Northeast



Photo V-51. 2, 4-6, and 8-12 Lombardy Street, Looking East



Photo V-52. 171-179 Lombardy Street, Looking Northwest



Photo V-53. 2-18 Anthony Street, Looking East



Photo V-54. 1, 11-15, 19-21, and 35 Anthony Street, Looking Northeast



Photo V-55. 38 Anthony Street, Looking Southwest



Photo V-56. 46-52 Anthony Street, Looking Southwest



Photo V-57. 54-70 Anthony Street, Looking South



Photo V-58. 54-70 Anthony Street, Looking Southwest



Photo V-59. 72 Anthony Street, Looking Southwest



Photo V-60. 96-102 Anthony Street, Looking Southwest



Photo V-61. 104-110 Anthony Street, Looking West



Photo V-62. 104-110 Anthony Street, Looking Southwest



Photo V-63. 167 Anthony Street, Looking North



Photo V-64. 169-183 Anthony Street, Looking Northeast



Photo V-65. 503-513 Porter Avenue, Looking Southwest Along Cherry Street



Photo V-66. 503-513 Porter Avenue, Looking South Along Porter Avenue



Photo V-67. 551 Stewart Avenue, Looking Northwest



Photo V-68. 538-542 Stewart Avenue, Looking East



Photo V-69. 22-32 Cherry Street, Looking Southeast



Photo V-70. 22-32 Cherry Street, Looking Southwest



Photo V-71. 38 Cherry Street, Looking Northeast



Photo V-72. 38 Cherry Street, Looking Southeast



Photo V-73. 66 Cherry Street, Looking Southwest



Photo V-74. 68 Cherry Street, Looking Southwest



Photo V-75. 570 Gardner Avenue, Looking Southeast

Queens Photos



Photo V-76. Old Calvary Cemetery, Looking Southeast Towards Kosciuszko Bridge



Photo V-77. 34-52 Laurel Hill Boulevard, Looking South



Photo V-78. 34-40 Laurel Hill Boulevard, Looking South



Photo V-79. 34-02 Laurel Hill Boulevard, Looking South



Photo V-80. 39-30 Review Avenue, Looking Southwest



Photo V-81. 38-98 Review Avenue, Looking Southwest



Photo V-82. 36-60 Review Avenue, Looking Northwest



Photo V-83. 38-50 Review Avenue, Looking Southeast

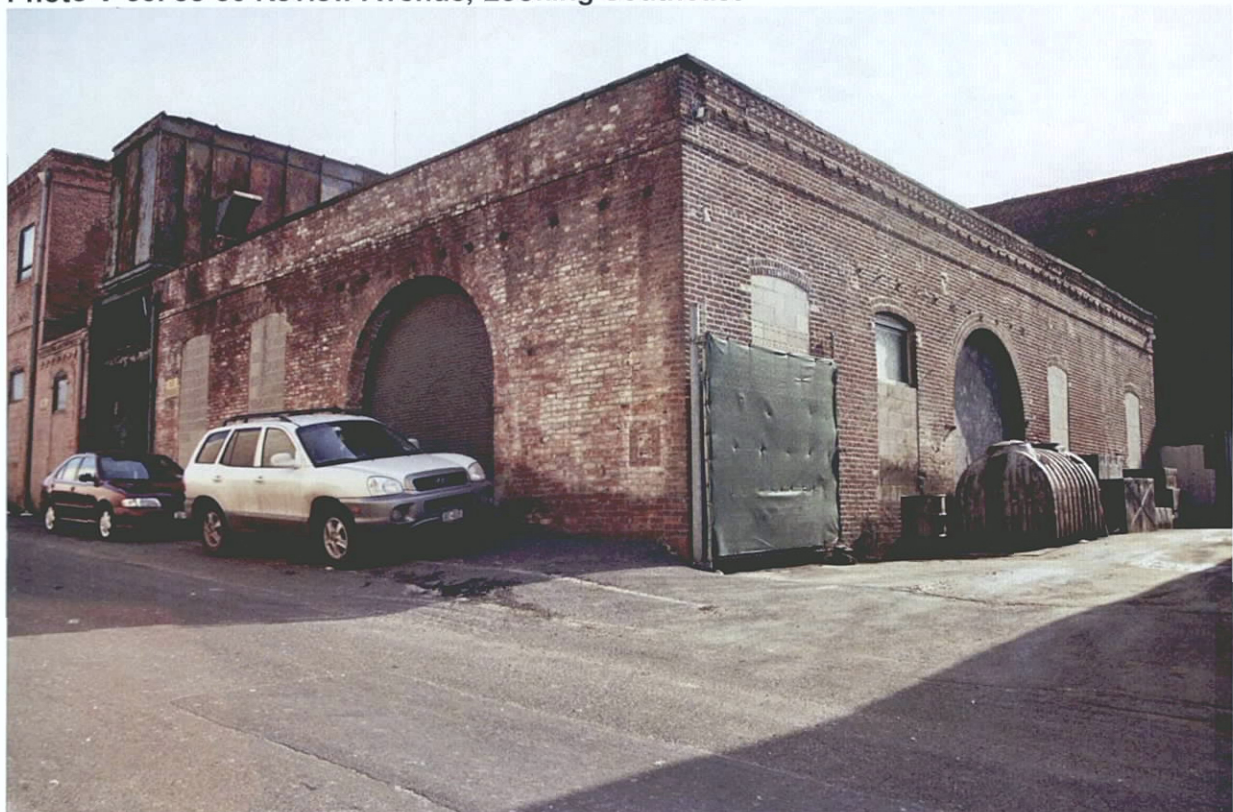


Photo V-84. 38-52 Review Avenue, Looking Northeast



Photo V-85. 38-58 Rear Review Avenue, Looking Northeast



Photo V-86. 38-78 Review Avenue, Looking Southeast



Photo V-87. 39-14 Review Avenue, Looking Northwest



Photo V-88. 38-42 Review Avenue, Looking Southeast



Photo V-89. 55-16, 55-18 43rd Street, Looking Northwest



Photo V-90. 55-01 and 55-05 43rd Street, Looking Southeast



Photo V-91. 54-59 43rd Street, Looking Southeast



Photo V-92. 54-30, 54-38, 54-42 43rd Street, Looking Northwest



Photo V-93. 54-09, 54-11, 54-13, and 54-17 43rd Street, Looking Southeast



Photo V-94. 54-01 43rd Street, Looking East



Photo V-95. 54-08, 54-14 and 54-18 43rd Street, Looking Southwest



Photo V-96. 53-17 43rd Street, Looking North



Photo V-97. 42-21 54th Drive, Looking West

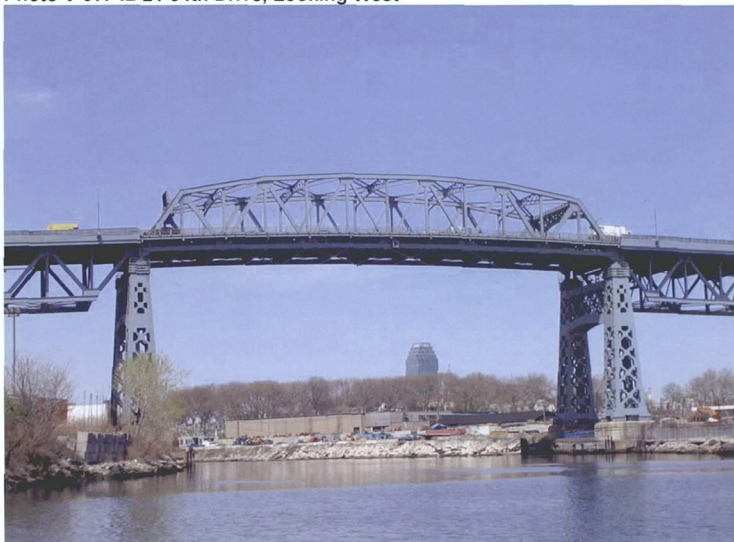


Photo V-98. Kosciuszko Bridge, Looking Northwest

VI. Appendices

APPENDIX A. REFERENCES AND INTERVIEWS

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APPENDIX B. DETAILED LAND USE HISTORY

The following discussion details the development of the Brooklyn and Queens portions of the APE over time. Additional topics are also addressed, including usage of Newtown Creek and the development of the Long Island Railroad. Resources utilized included a combination of historic and modern maps and aerial photographs, historic newspaper articles, and previous studies of the area. This discussion is arranged according to the same time periods used in Chapter IV.

B.1. Land Use in the Brooklyn APE

B.1.a. Colonial New Amsterdam (1626-1664)

No settlement was depicted along Newtown Creek on a map of New Amsterdam dated 1639 (Vinckeboons 1639). The closest plantation to the project area in 1639 was that of Claus Norman, south of Norman's Kill, more than a mile southwest of the Kosciuszko Bridge in present-day Williamsburg (Number 39 on Vinckeboons 1639; Figure B-1).

The Brooklyn APE was part of the land patented by Abraham Rycken in 1640, and later owned by Herry (Henry) Satley (Armbruster 1942). Satley reportedly patented land in Flushing, Queens, in 1645 and afterwards lived for many years in Newtown, Queens (Stipak 2001). It does not appear that Rycken or Satley built a home within the project area.

B.1.b. Colonial New York (1664-1783) and Early American New York (1783-1820)

The Brooklyn project area was divided into four farms during the colonial and early American New York periods (Figure B-2). Their early owners included:

- **Farm One:** Humphrey Clay;
- **Farm Two:** Polhemus family;
- **Farm Three:** Devoe family; and
- **Farm Four:** Van Cott family.

Farm One. The earliest settler in the Brooklyn project area may have been Humphrey Clay, who purchased land along Newtown Creek on both sides of present-day Meeker Avenue in 1667 (Armbruster Collection 1920). Clay was from Connecticut and reportedly built his house near Newtown Creek in 1667. Clay operated a ferry across the creek to the Queens side (*Brooklyn Daily Eagle* 1946; Armbruster Collection 1920). The house stood for over two centuries, located north of the project area and south of Meeker Avenue. It was demolished in 1921. The house was described in 1888 as:

about forty feet square and the walls are of solid masonry, smoothly hewn. It is only one story high, with an attic. The roof is of the hollow type, covered with shingles...The doors are of heavy oak cut in sections...Inside the halls and rooms are large and airy and on all sides are evidences of first class workmanship...
(*Brooklyn Eagle* 1888a)

Humphrey Clay may have moved to Greenpoint from another portion of modern-day Brooklyn, the Maspeth Hills area of the Town of Gravesend. Clay operated an inn at Maspeth Hills and was fined for selling liquor without a license sometime around 1650 (*Brooklyn Eagle* 1900).

Humphrey Clay's son sold Farm One after his father's death to Alexander Baird of Hempstead (*Brooklyn Eagle* 1888b). Baird bequeathed the farm to his wife, Magdaloun (Armbruster Collection 1920). Josiah Paterson acquired the property by 1749, when he sold the land to Joost Duryea (also spelled Dorre, Dore, or Duryee). Joost Duryea retained the property until his death circa 1793 (Armbruster Collection 1920). A later occupant of the house, John Dobbins, stated that the Duryea family had consisted of the parents, two sons, a daughter, and a grandmother (*Brooklyn Eagle* 1888a).

Another long-time local resident who was born in 1808, a Mr. Blake, recalled his father telling of General George Washington using the Duryea house as his headquarters during the Revolutionary War when his troops were in the vicinity (*Brooklyn Eagle* 1888a). Mr. Blake stated that the creek was so wide then that the soldiers built pontoons to cross the creek.

Joost Duryea bequeathed his land in Bushwick and Newtown to his sons, George and Peter, in 1793. Two years later, George conveyed his interest in the property to his brother, Peter (Armbruster Collection 1920). It appears that Peter Duryea made the house his home. Peter was residing in Bushwick Township in 1810, as the head of a household including three children under age 16, three people aged 16 to 26, one male aged 26 to 45, and one male and female over age 45. The household also included three slaves and two other persons (perhaps free black servants) (Schmidt 1998).

Farm Two. Farm Two bordered Newtown Creek, north of Farm One. The property overlaps the archaeology APE only slightly, near the present-day Meeker Avenue/Kingsland Avenue intersection. However, portions of the architecture APE in the western half of the Brooklyn project area were once part of Farm Two.

The southwestern edge of the farm bordered the Wood Point Road, and the southern boundary was adjacent to the Newtown Road that led to Newtown Creek. Much of the northern edge of the farm was marshland along a small creek. An early owner of the property has been reported to be either Theodorus Polhemus of Flatbush or Abraham Polhemus of Brooklyn. One of the Polhemus men reportedly built a home known as the Manor House on the farm after 1749 (*Brooklyn Daily Eagle* 1946). Theodorus Polhemus died in 1781, and his children sold the property and Manor House to Peter Wyckoff around 1797 (*Brooklyn Daily Eagle* 1946; *Brooklyn Genealogy Towns* n.d.; *Brooklyn Genealogy Streets* n.d.a). Peter Wyckoff still owned Farm Two by 1828 (Robinson 1889a).

Other sources document two houses standing on the property, the Polhemus-Wyckoff Manor House and the Debevoise farmhouse, that were constructed many years before the American Revolution (*Brooklyn Daily Eagle* 1946). The Polhemus-Wyckoff Manor House was situated near the Wood Point Road, near the intersection of present-day Meeker Avenue and Kingsland Avenue. The manor house was described as:

On what is now the roadway of Monitor St. near Engert Ave, close to the junction of Meeker Av. It stood back from the roadway in a big clump of trees; facing south east, its rear toward the creek. It was an unusually large frame house of Dutch architecture with half doors, four good rooms on the ground floor & a large hall running through the centre & wide piazzas along the front and rear. It was known as the Menius Manor House. (*Brooklyn Genealogy Streets* n.d.a)

The Debevoise house was located diagonally across from the Manor House, on the southern side of present-day Meeker Avenue, within the future location of Kingsland Avenue. The barn of the Debevoise house was reportedly the quarters of Hessian soldiers during the American Revolution (*Brooklyn Genealogy Towns* n.d.).



Figure B-1
Dutch Settlement in New York Harbor Area in 1639

Source: Vinckeboons 1639



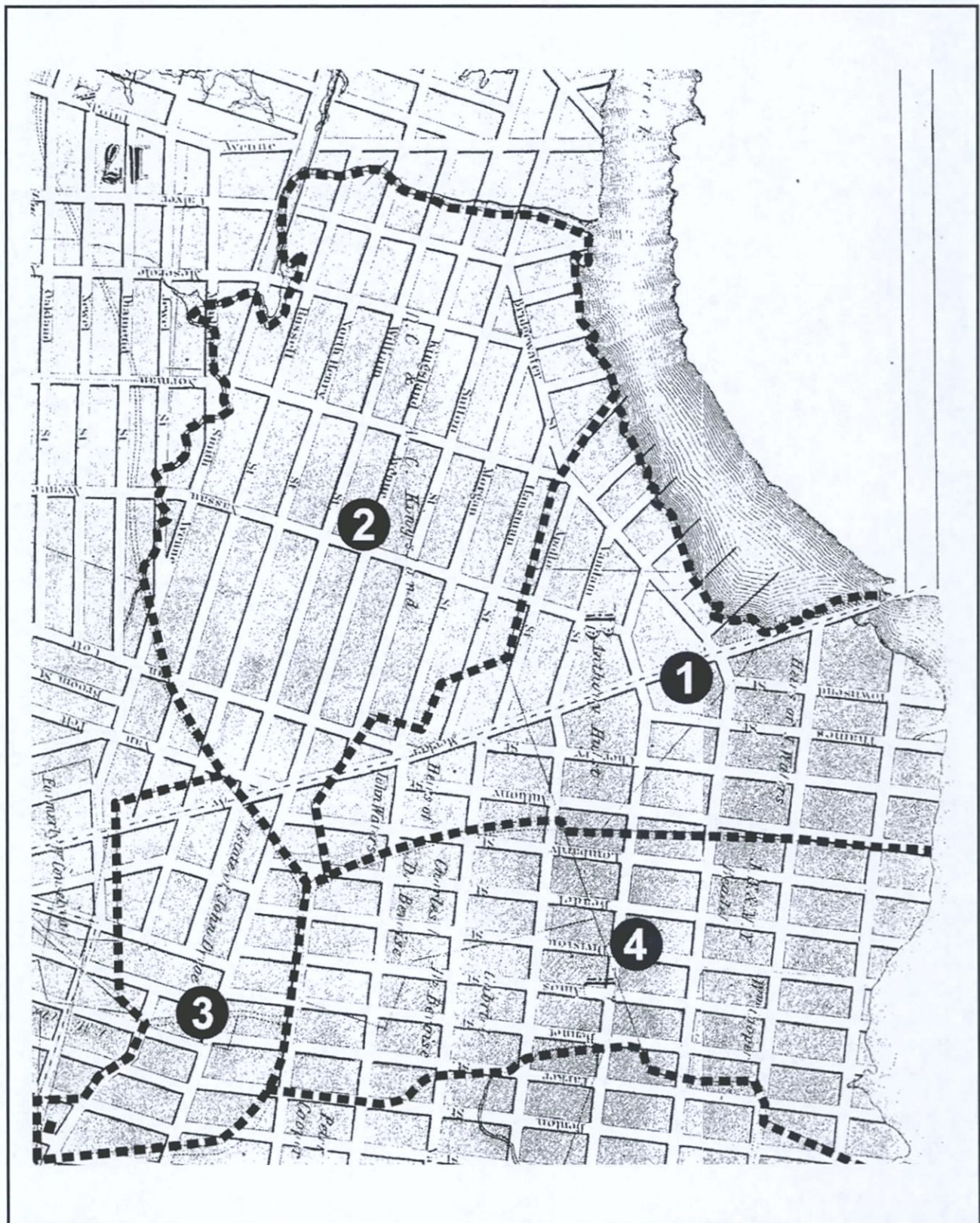


Figure B-2
Four Early Farms in Brooklyn

Source: Colton 1855



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Peter Wyckoff lived in Bushwick Township (presumably in the Manor House) in 1810, with a wife, four children, two slaves, and three other persons (Schmidt 1998). Four Debevoise households are listed in the 1810 census of Bushwick Township. Two of them, Thoert and Isaac Debevoise, are listed between the owners of Farms Three and Four and very near the listings for Farms One and Two, suggesting they all lived in close proximity to one another.

Farm Three. Farm Three was inland, on the west side of the Wood Point Road, southwest of Farms Two and Four. None of Farm Three overlaps the archaeological APE; however, portions of two blocks along Meeker Avenue at the western end of the architectural APE are within Farm Three.

Farm Three was included in the land that was set off for the Village of Bushwick in 1660. This portion of Farm Three is roughly one-quarter mile south of Meeker Avenue and the APE. A number of French settlers were the original owners of the village. The Devoe family occupied at least two houses in the village. Both houses were east of the village burying ground on a road that led to the Wood Point Road. The Devoe homes, one of which was a small stone building, were near the intersection of present-day Debevoise and Parker Streets (*Brooklyn Daily Eagle* 1946).

A John Devoe resided in Bushwick Township in 1810 in a household of nine family members and five slaves (Schmidt 1998). At some undetermined date, the village and additional lands to the north became the property of the Devoe family. John Devoe set off one acre of his farm as a burial ground (*Brooklyn Eagle* 1880a). The former cemetery was located at the intersection of present-day Kingsland Avenue and Parker Street (*Brooklyn Daily Eagle* 1946).

Farm Four. Farm Four was situated along Newtown Creek, south of Farm One. This farm is not within the archaeological APE, and only its northern edge lies within the architectural APE.

Farm Four may have been the southernmost portion of Abraham Rycken's patent land on Newtown Creek, composed of 150 acres roughly bounded by present-day Anthony Street on the north, present-day Metropolitan Avenue on the south, and present-day Humboldt Street on the west (*Brooklyn Eagle* 1888b).

Farm Four was owned by Peter Prau Van Cott (also spelled Van Catt) by the 1820s (Robinson 1889a). In 1810, Peter P. Van Cott's household in Bushwick Township numbered seven family members and one slave (Schmidt 1998). Jacob Van Cott may have lived on the farm in a second household, as he is listed next to Peter's name in the 1810 Federal Population Census. Jacob's household was composed of nine family members, three slaves, and two other persons (Schmidt 1998).

B.1.c. Greenpoint and the Town of Bushwick (1810-1854)

The project area in Brooklyn remained as rural farmland throughout most of this period, being too far from the population centers of Greenpoint or Williamsburg for spillover development. A map from 1844 depicts the rural nature of the project area but does not include the Penny Bridge (Figure B-3).

Farm One. Peter Duryea died by January 1828, when his farm was surveyed (Figure B-4). The plat shows that the 96-acre farm was divided into three numbered lots plus a small, unnumbered lot at the foot of a bridge. Buildings are not shown on this plat, which clearly shows a bridge across Newtown Creek and a pier west of the bridge. However, the pier on the 1828 plat appears to be situated near the present-day foot of Meeker Avenue, where the Penny Bridge was located by 1855 (Figure B-2). The bridge on the 1828 plat appears to be situated roughly where present-day Scott Avenue meets Newtown Creek. Perhaps the toll bridge built circa 1836 upon stone piers was built in a location slightly downstream of the earlier bridge so that the old bridge could remain open during construction. The serpentine road leading to the bridge is not named on the plat, but is the North Road to Newtown. The 1828 plat also depicts the dividing line between the "meadow" along the creek near the bridge and the upland.

Anthony Hulst received most of Farm One from the Duryea heirs in 1828. The remainder of the farm, including the house, was transferred to John Reis (Armbruster Collection 1920). Because the Hulst and Duryea families were related, it is uncertain whether Anthony Hulst inherited or purchased the farm since. No Hulsts appear on the 1698 population census of Kings County (Christensen 1999). An Anthony "Hulsts" lived in the Town of Brooklyn in 1800 as the head of a family with one white male aged 45 and up (U.S. Census 1800). However, this is probably an ancestor of Farm One's Anthony Hulst, because it is known that an Anthony Hulst died February 6, 1817 at age 90 and was buried in the New Lotts Burying Ground in the Village of Jamaica in Queens. His wife, Altia, preceded him in death at the age of 78 in 1808 (Brooklyn Genealogy Cemeteries n.d.). No Hulsts were listed in the 1810 census of Bushwick Township (Schmidt 1998).

It is likely that a male in the Hulst family married into the Duryea family of Farm One, because a George Hulst was born in the Duryea (also spelled Duryee) homestead at Penny Bridge in 1811, and he, in turn, named his son George Duryee Hulst in 1846 (*Brooklyn Eagle* 1902). The ancestors of George Hulst reportedly emigrated to America from Holland in 1624, and changed their surname from Von Der Hulst to Hulst (*Brooklyn Eagle* 1902).

Farm One's Anthony Hulst was a farmer residing in Bushwick near the Penny Bridge by the 1840s. His wife, Sarah, was born in 1785 and died in Bushwick in 1862, leaving Anthony a widower (*Brooklyn Eagle* 1862). Anthony died sometime between 1862 and 1888, as the obituary of his daughter, Sarah M. Hulst, describes him as "the late Anthony Hulst" in 1888 (*Brooklyn Eagle* 1888d).

Anthony Hulst's farm in Bushwick contained a commercial building by 1843, when the following advertisement appeared in the *Brooklyn Eagle*:

TO LET – To let from the 1st of May next, a house and shed with garden attached, near the Penny Bridge, on the road leading from Williamsburgh to Flushing, near Newtown Creek, in Bushwick. The premises have been occupied as a grocery store, and would be a first rate stand for a shoe maker, as there are none within a mile of it. For further particulars enquire of **ANTHONY HULST** near the premises. (*Brooklyn Eagle* 1843b:1)

Hulst apparently had trouble renting the house, shed, and garden; the advertisement appeared regularly from April through October of 1843.

A dock along Newtown Creek was near a small house on Hulst's farm by 1849. An advertisement in the *Brooklyn Eagle* stated:

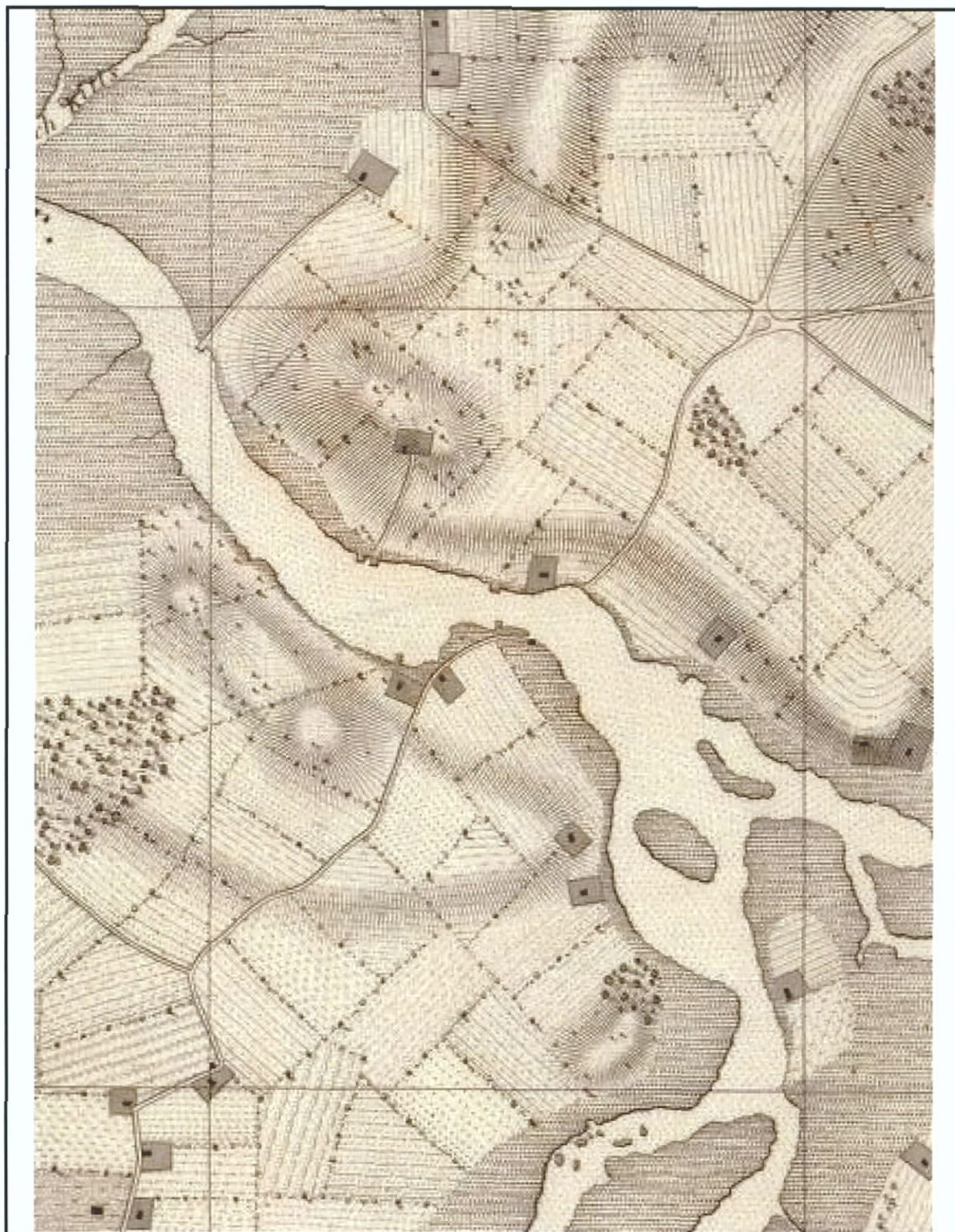


Figure B-3
Project Area Circa 1844

Source: U.S. Coast Survey
1844



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TO LET OR LEASE – A large dock of one hundred and thirty feet long, lying on Newtown Creek, in Bushwick, with a small house attached to it. A first rate place for a Stone, Brick or Lumber Yard. For particulars inquire of ANTHONY HULST, Bushwick. (*Brooklyn Eagle* 1849:3)

Although John Reis is said to have acquired the Clay-Duryea house in 1828 (Armbruster Collection 1920), other sources state that Josiah Blackwell was the next owner of the house after the Duryea family (Brooklyn Genealogy Streets n.d.b; Felter n.d.). Two barns on the property of Josiah Blackwell, "Waterville, Bushwick, near the Penny Bridge" were destroyed by fire with all of their contents in September 1843. Also burned to the ground was a small dwelling house occupied by the gardener. Arson was suspected in the fire, which caused about \$1,100 in damage (*Brooklyn Eagle* 1843a).

A map of the area dated circa 1844 depicts three houses and two piers along Newtown Creek within the boundaries of Farm One (Figure B-3). The Clay-Duryea house was likely the house closest to the shoreline of Newtown Creek, at the eastern end of the serpentine road named the North Road that led to the creek. The house and yard on the southeastern side of the curve in the North Road may be the "house and shed with garden attached" that formerly served as a store, according to the 1843 advertisement. The house and yard shown on the northwestern side of the curve in the North Road has a pier on the 1844 map, and may be the small house attached to the large dock mentioned in the 1849 advertisement.

Farm Two. No houses were shown on Farm Two on a map dated 1844 (Figure B-3), but two houses, the Polhemus-Wyckoff Manor House and the Debevoise farmhouse, are known to have been standing near the intersection of present-day Meeker and Kingsland Avenues (*Brooklyn Daily Eagle* 1946). The land on Farm Two on the 1844 map is depicted as swampland, woods, or divided into farm fields and/or pastures. Roughly one-fourth of the farm was wooded, according to the 1844 plat.

Lambert Wyckoff acquired Farm Two by 1844, probably through inheritance of Peter Wyckoff's land (*Brooklyn Eagle* 1845a). The New York Supreme Court ordered Lambert Wyckoff's interest in the property, as of July 20, 1844, be sold at public auction. This order was probably made to satisfy debts owed by Lambert. The Wyckoff farm contained 140 acres in 1845. The public auction was scheduled for March 10, 1845, and was postponed twice, to April 15th and April 25th. The postponement of the auction could indicate that there were no bids placed upon the land, or that the bids were lower than acceptable (*Brooklyn Eagle* 1845a).

Daniel C. and Ambrose Cornelius Kingsland, Sr. acquired Farm Two by 1852. Perhaps they purchased the farm at the sheriff's sale of Lambert Wyckoff's property in 1845. The Kingslands were a locally prominent family, and the property was undoubtedly purchased as an investment and not for the Kingslands to farm or reside upon. Little information was found on Daniel Kingsland, but he was probably the father or brother of Ambrose Cornelius Kingsland, Sr. (1804-1878), a successful shipping magnate who began his career by opening a dry goods store with his brother in 1820. The business became an international enterprise under the name D & A Kingsland & Company, and also acquired and operated whaling vessels (Kingsland 2002). Ambrose Kingsland served as Mayor of New York City from 1851 to 1853 as a member of the Whig Party (*Brooklyn Eagle* 1850). After his term of office, he returned to his business, which was then named A.C. Kingsland and Sons.

The southern tip of the farm, bordered by the Old Wood Point Road on the west and the Bushwick and Newtown Turnpike (now Meeker Avenue) on the north, was surveyed and platted in May 1852 (Robinson 1889b). Curiously, the 1852 plat depicts the property as divided into two blocks south of

the turnpike, with a road perpendicular to the turnpike named Clifford Street separating the blocks. Clifford Street does not appear on later maps of the area (Colton 1855, Ferris and Higginson 1855, and US Coast Survey 1866), and apparently was never built. The Kingslands likely intended to sell lots for development in this portion of the farm beginning in 1852, or as soon as the turnpike was constructed.

Farm Three. No buildings are depicted within the project area on Farm Three in 1844 (Figure B-3). In fact, no buildings are shown in 1844 in the entire northern half of the farm. John Devoe died circa 1845 while a resident of the Township of Bushwick (*Brooklyn Eagle* 1845b). William Devoe inherited Farm Three and owned most of it at the time of his death, circa 1854. The southernmost portion of Farm Three was not part of the late William Devoe's property when the farm was surveyed in 1855 (Robinson 1889c). The Devoe houses were still standing east of the Bushwick village cemetery, on land that was still owned by William's estate on the 1855 survey plat (Robinson 1889c). A third house appears on the 1855 plat, one block north of the Devoe houses (on present-day Bennett Street). No other houses are depicted on the 1855 plat, which identifies the Wood Point Road as the "Old Wood Point Road" and depicts the grid of streets, blocks, and lots which would later occupy Farm Three.

The property of the late William Devoe was involved in a case in the Supreme Court of Kings County in 1854 or 1855 (*Brooklyn Eagle* 1855). Elisha S. Parker and Catherine H. Parker, his wife, sued John Devoe and 14 other persons. The suit was probably brought to divide the decedent's property among his heirs. A survey of a small portion of the late William Devoe's "homestead farm" was performed in 1854, including the land containing the three houses northeast of the village burial ground (*Brooklyn Eagle* 1855). The property passed to William's heir, another John Devoe (*Brooklyn Eagle* 1880a).

Farm Four. Two houses are depicted on Farm Four on a map dated 1844 (Figure B-3). Both are near Newtown Creek, well south of the northern edge of the farm and therefore not near the APE for archaeology or architecture. The remainder of the farm appears to be undeveloped in 1844, although this map has been shown to contain inaccuracies such as omitting the Penny Bridge (as discussed Chapter III of this appendix).

By the mid-1850s, the northern portion of Farm Four was divided into two farms, with the dividing line in the block between present-day Varick and Porter avenues. The easternmost of the two farms, on Newtown Creek, was owned by Joseph W. and M.Y. Bedell (also spelled Beadel). The westernmost farm was the property of Charles I. (or J.) Debevoise.

No Bedells were found on the 1800 census of Kings County (Schmidt 1998). There was a sea captain named Joseph Bedell in the Brooklyn area in the 1850s who may have been the owner of the northeastern portion of Farm Four (*Brooklyn Eagle* 1859 and 1895a). Bedell ran the ship *Eliza R.* from Long Island to Manhattan in a weekly or semiweekly packet shipping line. A Joseph Bedell died in Queens County around January 1870 (*Brooklyn Eagle* 1870). Two Bedell sisters married two Cooper brothers in Bushwick Township in the nineteenth century (Brooklyn Genealogy Towns n.d.). A William Cooper owned the portion of Farm Four to the south of the Bedells, according to maps from the mid-1850s (Colton 1855 and Ferris and Higginson 1855). The two farmhouses from the 1844 map appear to be on William Cooper's property (US Coast Survey 1844). William Cooper reportedly built the residence on his farm, and a smaller house next to it for his niece's use. The road that ran in front of the houses came to be known as Coopers Lane (Brooklyn Genealogy Towns n.d.).

The Debevoise family was mentioned in connection with the Debevoise farmhouse on Farm Two, near the former intersection of Kingsland and Meeker avenues. The family is descended from a French Huguenot named Carel Debevoise, who was the first school teacher and clerk in the town of

Brooklyn in the 1730s (*Brooklyn Daily Eagle* 1946). Charles I. Debevoise was the son of Isaac Debevoise and served as Supervisor of the Town of Bushwick. Charles was "retired from business" and age 84 in 1880 (U.S. Census 1880). By the 1880s, Charles had moved into "the large mansion adjoining the old house" where he was born (*Brooklyn Daily Eagle* 1946:16).

B.1.d. Greenpoint and the City of Brooklyn (1854-1898)

The Bushwick and Newtown Turnpike (or the North Road, now Meeker Avenue) was constructed through the project area in the 1850s or early 1860s. The road was much straighter than its predecessor, the North Road to Newtown, which meandered along farm lines between the former village of Bushwick and the Penny Bridge.

Streetcars traveled Meeker Avenue to Penny Bridge by 1880. The Grand Street & Newtown railway depot and stables were south of Meeker Avenue between North Henry and Monitor streets (Bromley & Robinson 1880, Plate 25).

By the late 1880s, development was clustered along both sides of Meeker Avenue, with a mixture of residential, commercial, and industrial buildings. Industrial enterprises were located between Gardner and Scott avenues, the largest of which was the American Carbon Works factory. A 575-foot long dock connected the southeast corner of the factory with Newtown Creek. Tallow factories were situated to the north and south of the carbon works. Two cemetery memorial companies were situated along Meeker Avenue, just southeast of Penny Bridge. These "marble works" were located conveniently across the river from Calvary Cemetery, just north of the project area.

The New York State legislature passed the Small Parks Act in 1887, and funds were provided to cities to acquire land for new small parks in crowded neighborhoods (NYC Department of Parks & Recreation 2003a). Lots in the 17th Ward (north of Meeker Avenue) on Van Pelt (now Engert), Van Cott (now Driggs Avenue), Nassau, and Norman avenues, and Humboldt, Russell, North Henry, and Monitor streets were advertised for sale in September 1888. The lots were described as "Undoubtedly the choicest neighborhood in Greenpoint," with streets and avenues "graded, paved and lighted with electric light. City water mains laid. The sidewalks bordered with trees and the blocks fenced" (*Brooklyn Eagle* 1888c: 3). The city purchased property on the former Kingsland farm in 1888 to create a city park named Winthrop Park (now Monsignor McGolrick Park). The four blocks were bounded by Nassau and Van Cott (now Driggs) avenues and Monitor and Russell streets. The creation of the park spurred the sale of other vacant land in the vicinity for development, which increased in value due to the park (*Brooklyn Eagle* 1889b). By 1893, the park was still being developed but was surrounded on all sides by new houses (*Brooklyn Eagle* 1893).

By the mid-nineteenth century, the Brooklyn APE's four early farms had been divided into nine farms, designated Farms A through I. The owners of the later farms in the project area and their boundaries are noted on a map of Brooklyn from 1855 (Figure B-5). Roads and blocks are shown on the 1855 map, although some were not yet constructed. Table B-1 indicates how the original four farms were subdivided into Farms A through I, and which present-day blocks were a part of each farm.

TABLE B-1: OWNERS OF LATER FARMS IN BLOCKS WITHIN BROOKLYN APE

Early Farm	Later Farm and Owner(s)	Block Numbers
Farm One	Farm A - Anthony Hulst	2800, 2805 , 2806, 2811, 2812, 2820
	Farm B - Edward Waters	2797, 2801
	Farm C - John Waters	2797, 2798 , 2799 , 2800, 2801, 2802 , 2803 , 2806, 2807 , 2808 , 2809 , 2813, 2814 , 2815, 2816 , 2820, 2821, 2822
	Farm F - John Waters	2690, 2691, 2692, 2693, 2707, 2810 , 2811, 2817, 2818 , 2819, 2820, 2834, 2835
	Farm G - Edward Bridge	2664 , 2692, 2693, 2694
Farm Two	Farm H - Daniel C. & Ambrose C. Kingsland	2689 , 2690, 2691, 2692, 2704 , 2705 , 2706 , 2707, 2729, 2817, 2829, 2834
Farm Three	Farm I - John Devoe	2729, 2829
Farm Four	Farm D - Joseph W. & M.Y. Bedell	2815, 2820, 2821, 2822
	Farm E - Charles J. Debevoise	2819, 2820, 2834, 2835

Note: Bold indicates that the whole block is within this later farm.

Farm A. The farm of Anthony Hulst, Farm A, was situated south of present-day Meeker Avenue, northwest of the former Newtown Turnpike (or roughly west of present-day Stewart Avenue) and roughly east of present-day Porter Avenue. It is one of five later farms in the project area to have been formed from parts of Farm One. Farm A is the southern third of Parcel Number Two in the 1828 plat of the land of the late Peter Duryea (Figure B-4). Portions of the APE for archaeology and architecture are within Farm A.

Anthony Hulst appears to have retained this portion of Farm One longer than some of the other portions. A map of Brooklyn from 1855 depicts boundaries of former farms and their owners' names. By 1855, Meeker Avenue appears to have been constructed, and the road formed the boundary between Farms A and G (Ferris and Higginson 1855).

By 1866, at least five buildings were standing on Farm A (Figure B-6). None of the five buildings are depicted on the 1844 map, suggesting they were constructed after 1844. However, the absence of the Penny Bridge and at least two known houses on Farm Two on the 1844 map calls into question the date and/or accuracy of this map.

Four houses with outbuildings or additions and one store were scattered along the south side of Meeker Avenue on Farm A by the late 1880s. The buildings were clustered near both ends of the farm, near Stewart Avenue and Van Dam Street (Sanborn 1887-1888). The extreme southern end of Farm A was still bordered by a fenced lane in 1888, a remnant of the old North Road to Newtown.

Farm B. Farm B was created from surrounding Farm C around 1858 (Robinson 1889d). The APE for architecture includes only the southern third of Farm B, roughly from Townsend Street southward, and does not include the former house location. The APE for archaeology does not include any of Farm B.

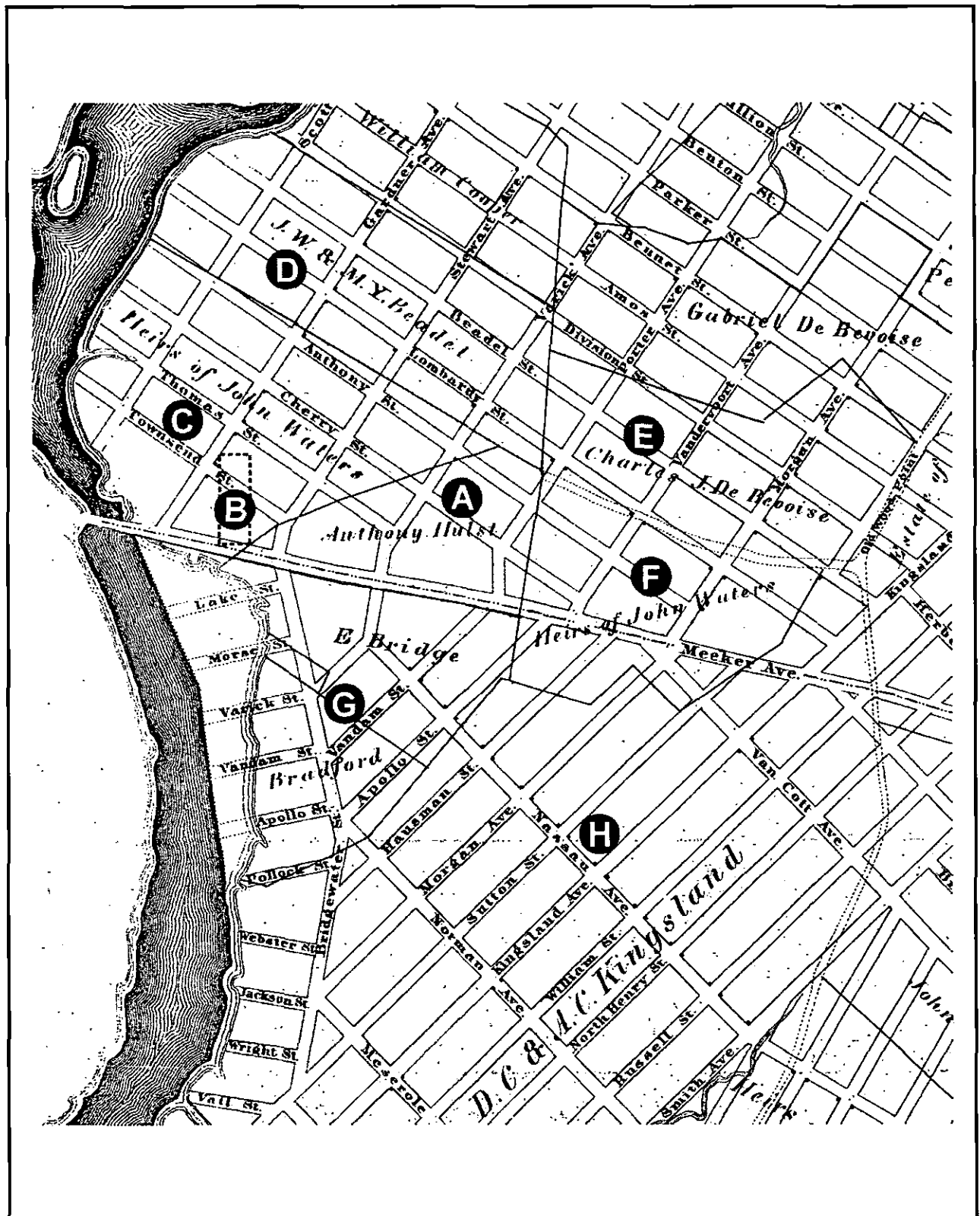


Figure B-5
Later Farms in Brooklyn

Source: Ferris and Higginson 1855



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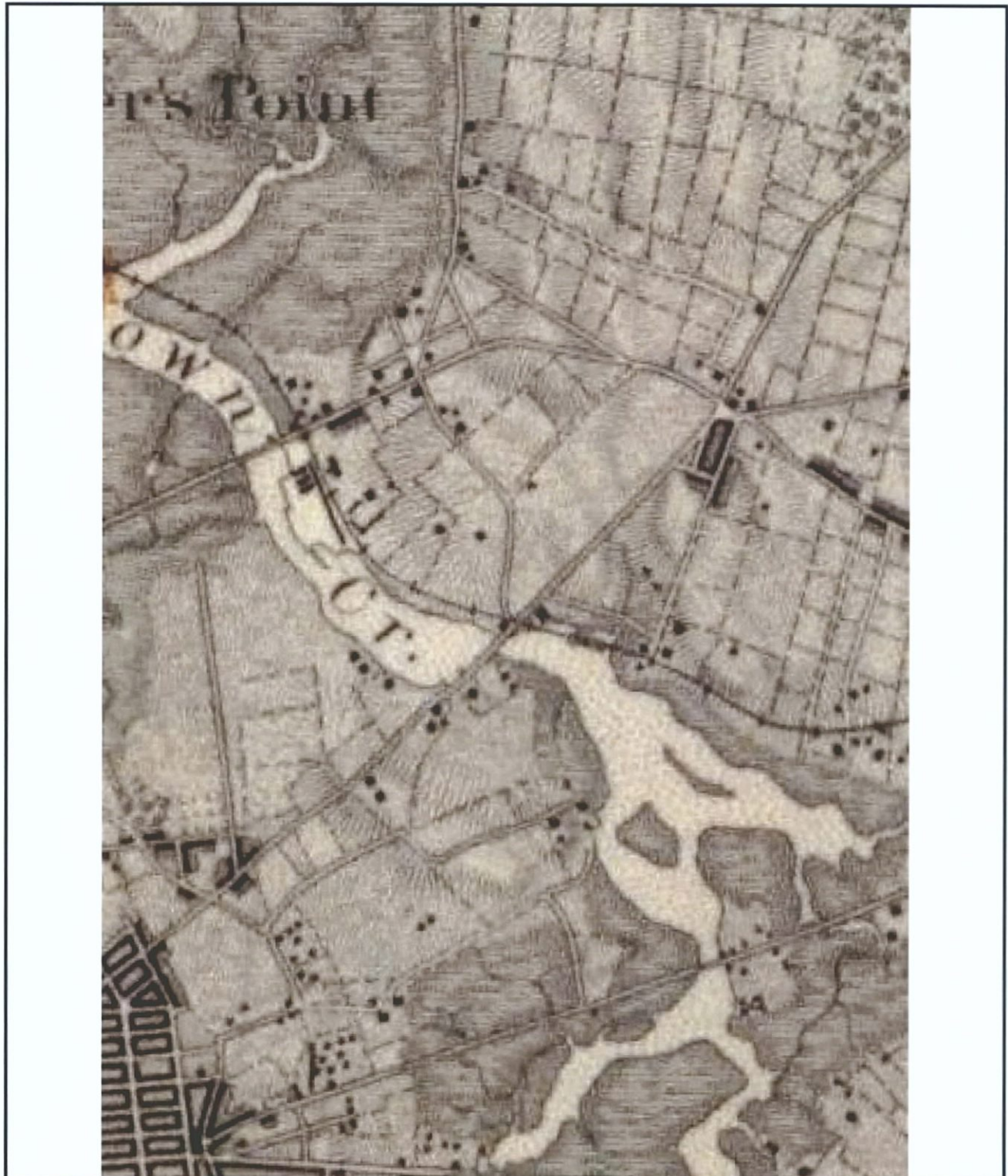


Figure B-6
Project Area in 1866

Source: U.S. Coast Survey 1866



Farm B was once part of Farm One and was carved out of Parcel Number One in the 1828 plat of Peter Duryea's estate (Figure B-4a). The term "farm" is used loosely for Farm B, as the property was formed after the heyday of farming in the area, and was essentially a rectangular house and yard lot south of Newtown Creek. The house on the property was south of Meeker Avenue. The house and yard appear to be present on an 1844 map, south of the curve in the former road to Newtown Creek (Figure B-3).

The house with garden attached that Farm One owner Anthony Hulst was trying to rent out in 1843 was probably on what became Farm B (see the Farm One land use discussion; *Brooklyn Eagle* 1843b). A dock extending from the future Farm B into Newtown Creek, north of Meeker Avenue, is visible on the 1855 Colton map. This dock does not appear on the 1844 map (U.S. Coast Survey 1844), so it may post-date 1844. The future Farm B dock may be the one that Anthony Hulst advertised for lease in 1849 (see the discussion of Farm One in Section A of this chapter; *Brooklyn Eagle* 1849:3). In a survey of the late John Waters land in 1858, Farm B appears as a separate parcel labeled "Land of Edward Waters" (Robinson 1889d). The plat depicts Meeker Avenue and Townsend Street passing through Farm B.

By the late 1880s, the house was still standing near the center of Farm B (on Block 2797), with one outbuilding to the southeast of the house, along the eastern lot line. A stable occupied the lot's southeast corner, in Block 2801 (Sanborn 1887-1888). Neither block is within the APE for archaeology, and the APE for architecture is just south of the former house location. No development had taken place along Meeker Avenue on Farm B, so the property appears to have remained residential in nature, with commercial development (a "Marble Yard") just beyond its eastern border on Meeker Avenue.

Farm C. Farm C bordered Newtown Creek and included the foot of the Penny Bridge (Figure B-5). Farm C is Parcel Number One in the 1828 plat of the land of the late Peter Duryea, minus the rectangular lot carved out for Farm B near Parcel One's northwest corner (Figure B-4). Portions of the APE for archaeology and architecture are within Farm C. The Clay-Duryea house near the Penny Bridge was within Farm C. The former location of this house is north of the APE for architecture and is not near the APE for archaeology.

Farm C was owned by the heirs of John Waters by 1855 (Figure B-2). The Clay-Duryea house may have been occupied by a Samuel Bessey in the 1850s. Josiah Blackwell reportedly sold the Clay-Duryea house and the surrounding land to William Blesser (also spelled Blossom) about 1860. Perhaps Blackwell was one of the Waters heirs. The Blesser family rented the house out for many years, and William Blesser's heirs owned the property until 1924 (Armbruster Collection 1920). Therefore, they still owned the house when it was demolished in 1921.

When Meeker Avenue was graded, the ground in front of the Clay-Duryea house was said to have been filled in to a depth of 7 feet (Brooklyn Genealogy Streets n.d.b).

John Dobbins, a local dairyman, occupied the Clay-Duryea house in the 1880s with his wife and several children (Brooklyn Genealogy Streets n.d.b). Dobbins was accused in 1882 by the Board of Health of having fed his 56 cows in his stables near the Penny Bridge with distillery swill (*Brooklyn Eagle* 1882a, 1882b). In 1884 Dobbins was charged with having a diseased cow with pleuro pneumonia, and the stables were quarantined (*Brooklyn Eagle* 1884). Dobbins was interviewed in conjunction with a newspaper article about the Clay-Duryea house in which he was residing in 1888 (*Brooklyn Eagle* 1888a).

The bridgekeeper of the Penny Bridge in the 1880s was a Mr. Blake, who had performed this task for decades, ever since he was a child. Blake also was interviewed for the 1888 newspaper article, when he was age 80 (*Brooklyn Eagle* 1888a). Mr. Blake may have been Anthony Blake, a 72-year-

old Irish native living in Kings County in 1880. Blake was a widowed, white man and the head of a household in 1880 (U.S. Census 1880).

The Duryea family cemetery, measuring 16 feet square, was located in the rear of the Clay-Duryea house. The remains were reportedly removed in 1890 and transferred to a public cemetery (Brooklyn Genealogy Streets n.d.b).

The occupant of the Clay-Duryea house, John Dobbins, mentioned in the 1888 newspaper interview that the house had served as a "round house for the benefit of all of the other settlers' for miles around" when "the Indians were on the warpath" (*Brooklyn Eagle* 1888a:6). A number of Native Americans had been shot and killed by firing guns through the built-in port holes in the stone foundation of the cellar, and the settlers reportedly buried them "at the foot of the hill in the rear of the house along the banks of the creek" (*Brooklyn Eagle* 1888a:6). The newspaper reporter stated in 1888 that:

...the large number of bones recently dug up at the foot of the hill were those of the many Indians killed by the Duryeas and the other settlers during the sieges. That the remains were those of Indians there is no doubt, as a number of flint battle axes were also unearthed. Bridgekeeper Blake gave it as his opinion that there were many more skeletons in that vicinity which will be exhumed in the future. (*Brooklyn Eagle* 1888a:6)

Commercial and industrial development of portions of Farm C were in place by the 1880s. Two monument shops ("Marble Works") were present on the south side of Meeker Avenue on Farm C, one just east of Farm B's lot (Block 2797) and one at the foot of Penny Bridge (Block 2798). A tallow factory was on Block 2802 east of Scott Avenue, in a small, rectangular building. The block to the south, Block 2808, was dominated by the American Carbon Works complex, which was not in operation in 1888 (Sanborn 1887-1888). A second tallow factory was in the block to the south of the carbon works, Block 2815, with a shed in between the blocks (on what is now Cherry Street).

Farms C and F, both owned by the heirs of John Waters, were involved in a lawsuit in the early 1890s. William E. Stokum sued Maria L. Matthews and others in the Blackwell, Tisdale, Lemcke, Wiley, Waters, and Blakely families in the City Court of Brooklyn (*Brooklyn Eagle* 1890). A judgment of partition and sale was made in April 1891, and a public auction was scheduled for May 26th. The auction involved six land parcels and two parcels under the waters of Newtown Creek. The water parcels adjoined two of the land parcels on Farm C (*Brooklyn Eagle* 1891a). Land to be auctioned on Farm C included parts of modern-day Blocks 2799, 2798, 2802, 2814, and 2822. The portion of Block 2798 to be auctioned was roughly the western half, excluding property along Meeker Avenue. The western half of Block 2798 probably contained the Clay-Duryea house.

Farm D. Joseph W. and M.Y. Bedell (also spelled Beadel) owned Farm D by 1855 (Figure B-5). Farm D was formerly the northeastern portion of Farm Four. Only the northern edge of Farm D lies within the APE for architecture. None of the APE for archaeology is within Farm D.

Two farmhouses were shown on Farm Four on the 1844 U.S. Coast Survey map, neither of which appear to be within Farm D (Figure B-3). The two farmhouses were on land that was, or became, the property of William Cooper by 1855 (Ferris and Higginson 1855). The Cooper farm was south of the Bedell family's Farm D and is not within the APE.

One lone dwelling and a stable were standing in the northern portion of Farm D in the 1880s, but these buildings were south of present-day Lombardy Street and south of the APE for architecture (Sanborn 1887-1888).

Farm E. Charles I. (or J.) Debevoise owned Farm E by 1855 (Figure B-5). Farm E was formerly the northwestern portion of Farm Four. Only the northern edge of Farm E lies within the APE for architecture. None of the APE for archaeology is within Farm E.

Two farmhouses were shown on Farm Four on the 1844 U.S. Coast Survey map (Figure B-3). Neither of the two farmhouses was within Farm E. They appear to be on the land that was, or became, the property of William Cooper by 1855 (Ferris and Higginson 1855). The Cooper farm was south of the Bedell family's Farm D and is not within the APE.

No major buildings were standing in the 1880s along the north edge of Farm E. A cluster of houses was beyond the APE, just east of the old Wood Point Road and south of the old North Road (near present-day Division Place between Morgan and Debevoise avenues). The North Road was a fenced lane in the 1880s (Sanborn 1887-1888).

Farm F. Farm F was owned by the heirs of John Waters by 1855. One of the two farms of John Waters in the project area (along with Farm C), Farm F was situated on both sides of present-day Meeker Avenue, on the north side of the old North Road to Newtown (Figure B-5). It is one of five later farms in the project area to have been formed from parts of Farm One. Farm F is Parcel Number Three containing 24 acres on the 1828 plat of the land of the late Peter Duryea (Figure B-4). Portions of the APE for archaeology and architecture are within Farm F.

By the 1880s, no development had occurred on Farm F to the north of Meeker Avenue, or south of Meeker Avenue and east of Morgan Avenue. However, five buildings lined the southern side of Meeker Avenue west of Morgan Avenue (in Block 2817). To the rear of these buildings, and stretching southeast to the farm lane (old North Road) at the southern end of Farm F, was a cluster of development on Blocks 2817 and 2834 (Sanborn 1887-1888).

As previously mentioned, William E. Stokum sued Maria L. Matthews and others in the City Court of Brooklyn in 1891. A judgment of partition and sale of portions of Farms C and F was made in April 1891, and a public auction was scheduled for May 26th. The auction involved six land parcels and two parcels under the waters of Newtown Creek (*Brooklyn Eagle* 1891a). Land to be auctioned in Farm F included parts of modern-day Blocks 2692, 2707, 2817, and 2834.

Four more pieces of Farm F were ordered sold at public auction in 1894. Emeriti B. Blossom sued Josiah B. Blossom *et al.* in Kings County Supreme Court. The auction was scheduled for May 10th but was postponed twice, to May 24th and to June 7th (*Brooklyn Eagle* 1894c). The four parcels involved in this auction were Blocks 2810 and 2818, and parts of Blocks 2690 and 2691. Blocks 2810 and 2818 were described as "vacant blocks" in May 1894.

Farm G. Anthony Hulst owned this portion of Farm One, before it became the property of Edward Bridge (*Brooklyn Eagle* 1891a). Edward Bridge owned the tract by 1853 (*Brooklyn Eagle* 1853). Farm G was on the north side of Meeker Avenue and west of the former shoreline of Newtown Creek (Figure B-6). The middle third of Parcel Two on the 1828 Peter Duryea plat became Farm G (Figure B-4a). Portions of the APE for architecture north of Meeker Avenue between Varick Avenue and Apollo Street are within Farm G. None of the APE for archaeology is within Farm G.

A house and dock are depicted on Farm G in 1844 and may be one of the houses mentioned in newspaper advertisements in 1843 and 1849 by Anthony Hulst (see Farm B above). The house in 1844 was southwest of Newtown Creek and set back from the curve in the North Road to Newtown (Figure B-3).

Edward Bridge applied for a grant of the land under water adjacent to his tract in 1853. Bridge wished to acquire the land under water between the high and low water marks of Newtown Creek

(Brooklyn Eagle 1853). His neighbors to the north along the creek, J.T. Duff and James R. Rapelyea, applied for the same rights to the land under water adjacent to their parcels. Duff owned the small parcel on the shoreline immediately north of Bridge, and Rapelyea owned the parcel north of Bridge and Duff. All three parcels were part of Parcel Two from the 1828 Peter Duryea plat, but only Bridge's parcel overlaps the APE. The former shoreline of Newtown Creek along Bridge's parcel was northeast of modern-day Bridgewater Street near Meeker Avenue (Figure B-2). The former shoreline is north of the APE for architecture.

By 1866, Meeker Avenue had replaced the old North Road to Newtown, and Meeker Avenue formed the southern border of Farm G (Figure B-6). The lone house on Farm G in 1844, set back from the curve in the North Road, does not appear on the 1866 map. The house may have been moved or demolished to make room for Meeker Avenue, or may have been omitted from this map. The house along Newtown Creek north of Meeker Avenue on the 1866 map appears to be on the Duff tract and not on Farm G. The two houses to the north of the Duff house in 1866 would be on the Rapelyea farm.

Only two buildings were standing on the north side of Meeker Avenue in Farm G in the late 1880s, one south of Bridgewater Street (on Block 2664) and one west of Van Dam Street (on Block 2693). The latter building is the only building in the APE on Farm G in the late 1880s (Sanborn 1887-1888). The Locust Hill Oil Refinery buildings, on both sides of Bridgewater Street near Varick Street, had mainly been constructed on made land extending into Newtown Creek northeast of Bridgewater Street. Although the refinery buildings extended across Bridgewater Street into Block 2664, they were well north of the APE. The refinery was not in operation any more by 1888, and the buildings and tanks were slated to be removed (Sanborn 1887-1888).

Farm H. The property previously called Farm Two will be referred to as "Farm H" for the remainder of this discussion (Figure B-5). Parts of the APE for archaeology and the APE for architecture overlap Farm H.

It is not clear why the Polhemus-Wyckoff Manor House and the Debevoise farmhouse near the intersection of Meeker and Kingsland avenues are once again absent from a map made in 1866 (U.S. Coast Survey 1866). Perhaps the 1866 map (and the 1844 map also by the U.S. Coast Survey) was focused more on the accuracy of waterways and coastlines than on the land features. Photographs showing the Debevoise farmhouse taken in 1899 are reproduced in a pamphlet published by the local newspaper on the history of Bushwick in 1946 (*Brooklyn Daily Eagle* 1946:14, 15).

Major changes were made to Farm H during the Kingsland ownership. The wooded area of Farm H was much smaller in size by 1866, compared to 1844 (U.S. Coast Survey 1866, 1844). Two new streets, Meeker Avenue and Van Cott Avenue (now Driggs Avenue), connected the farm to the densely developed fringes of Williamsburg to the west by 1866 (U.S. Coast Survey 1866). By 1866, Kingsland Avenue had been constructed through most of the tract, beginning at Meeker Avenue and leading northward to the swampland near the north edge of the property (U.S. Coast Survey 1866). Van Cott Avenue (now Driggs Avenue) also was present by 1866, ending at Kingsland Avenue within Farm H. Two new streets, Russell Street (the westernmost of the two) and North Henry Street, headed south from Van Cott to the Old Wood Point Road within the farm. The 1866 map shows what appears to be dense row housing along all of the new streets, from Van Cott Avenue to Meeker Avenue, and along the southwest side of the Old Wood Point Road. However, the dense housing was apparently planned and not actual conditions in 1866, as will be detailed below.

Daniel C. Kingsland died by 1874, but Farm H was still owned by Ambrose C. Kingsland at the time of his death in 1878 (*Brooklyn Eagle* 1895b). Farm H was inherited by Ambrose C. Kingsland, Jr.,

and Cornelius F. Kingsland. George L., Ambrose C., Jr., and Cornelius F. Kingsland served as executors of the estate. The executors petitioned the Supreme Court of Kings County in 1882, claiming that the Board of Assessors had illegally and unlawfully increased the valuation of the property (*Brooklyn Eagle* 1882c). The tract had been valued for taxation purposes at \$185,405 in 1881 but jumped in assessed value to \$389,580. The Kingslands' attorney, Mr. Jesse Johnson, argued that the assessed value of property should be based upon what a buyer would be willing to pay and the owner would be willing to accept. According to Mr. Johnson, the land's speculative value was unknown, the property was unfit for building purposes, and would not bring \$100 an acre as agricultural land (*Brooklyn Eagle* 1883a). The petition describing the property and its development was paraphrased in a newspaper article:

There are nearly 100 lots in all, comprising [sic] the greater portion of what was formerly a farm lying on the extreme border of Brooklyn, toward Queens County, and which bordered upon Newtown Creek. While a large portion of them are claimed to be swamp lots some are considerably above grade and about half of them are on grade. Fourteen of the lots are improved by the erection of small frame houses, which are old, and do not rent for an aggregate of over \$900. Only a portion of the streets on the property are made, and apart from the fourteen lots alluded to, the partial building of streets, and, in some few cases, the digging down or filling up of lots, the property is entirely unimproved. All the lots that are of any value for farming purposes are leased to a farmer for \$400 per year, and the entire income from the property does not exceed \$1,300 per annum. The petitioners claim that no appreciable change has taken place in the value of the property in the past year, and they claim that this year the property has been overvalued. It is claimed that in 1881 the lots were valued at fifty per cent of what they could be sold for in single lots or small parcels. (*Brooklyn Eagle* 1882c:4)

Most of the Kingsland estate within the APE was sold in 1889 to Paul C. Grening and Dr. Cornelius N. Hoagland (*Brooklyn Eagle* 1889a). The nearly 100-acre tract included 1,050 vacant lots located between Meeker and Meserole avenues and Monitor and Bridgewater streets. The parcel adjoined Winthrop Park (now Monsignor McGoolrick Park) which had just been purchased by the Park Commission for the city. The lots were "to be improved at once" (*Brooklyn Eagle* 1889a:6). Hoagland later sued Grening and others for debts owed, and parts of the former Kingsland estate was ordered sold at public auction. Twenty-seven lots on the west side of Hausman Street and the west side of Apollo Street (both between Meeker and Nassau avenues) were sold to the highest bidder, the Kingsland Land Company, on May 30, 1894 (*Brooklyn Eagle* 1894a). Another auction was scheduled for October 30, 1894 (*Brooklyn Eagle* 1894b).

The Polhemus-Wyckoff Manor House had become dilapidated and damaged by the harsh winters of the 1840s. The house was repaired and became a roadhouse or inn, popular with local sportsmen. The inn became the headquarters of the Eckford Base Ball Club and a wing was added for them on the left side of the house. The club disbanded in 1862, and the inn soon closed. Bob Clarkson acquired the inn next and used it as a private residence until 1867, when it reopened as an inn. Later a Mr. Rugher served as innkeeper. Ball games were played on nearby grounds called Clarkson's Grounds on Kingsland and Norman avenues. The inn was unoccupied after 1883, and the building was demolished in 1892 to make way for laying out Monitor Street (*Brooklyn Eagle* 1885; *Brooklyn Genealogy Streets* n.d.a).

A row of eight buildings was constructed along the north side of Meeker Avenue in Farm H by 1887 (Sanborn 1887). The buildings were in Block 2706, along with a small building near the center of that block (between Sutton Street and Kingsland Avenue). The Debevoise farmhouse and outbuildings occupied the western end of Block 2817 and extended into present-day Kingsland Avenue. Diagonally across the street from the farmhouse was a lone building on the north side of

Meeker Avenue, east of Kingsland Avenue (in Block 2705). This appears to be the Polhemus-Wyckoff Manor House. An addition on the north side of the Manor House faced Kingsland Avenue, with a detached outbuilding in the rear yard of the addition (Sanborn 1887). Perhaps this is the addition built onto the Manor House mentioned above.

Farm I. Farm I is the northern two-thirds of Farm Three, on the west side of the old Wood Point Road (Figure B-5). A portion of the APE for architecture is found within this farm. None of the APE for archaeology overlaps Farm I.

Farm I passed from the estate of William Devoe to his heir, John Devoe, circa 1855 (*Brooklyn Eagle* 1880a). Farm I appeared as rural land on an 1866 map (Figure B-6). There were no houses depicted within the northern third of Farm I. The APE for architecture is near the extreme northeast corner of Farm I, near the intersection of the old Wood Point Road and Meeker Avenue. Development or planned development in Williamsburg had expanded along Meeker Avenue up to the northwestern corner of Farm I by 1866, near Meeker Avenue.

The old Wood Point Road ended at its intersection with the old North Road by the late 1880s (Sanborn 1888). The northern edge of the former farm (including portions of the architectural APE) was subdivided and developed by 1887. Development along Meeker Avenue and Van Pelt (now Engert) Street on the former farm (in Block 2729) included a number of stores, dwellings, and a blacksmith and wheelwright shop. A line of stores and houses faced Monitor Street south of Meeker Avenue, with a pottery works in the center of the block (Block 2829) (Sanborn 1888).

B.1.e. Greenpoint and the Borough of Brooklyn (1898-1955)

Housing developed rapidly in the project area in the first decades of the twentieth century, especially in the blocks north of Driggs Avenue and west of Apollo Street, where rowhouses were built. Barely an undeveloped lot was to be found on these blocks by 1916 (Sanborn 1916). Blocks north of Meeker Avenue and west of Apollo Street were less densely developed, with residential buildings generally west of Varick Avenue. Industrial developments mixed with sparse residential development characterized the area north of Meeker Avenue, between Varick Avenue and Newtown Creek. The Long Island Soap Works and Acme Cement Works were two of the industries in operation in 1916, although both were situated beyond the APE for architecture (Sanborn 1916).

An economic boom followed World War I, and population growth in New York City was accompanied by the establishment of a number of new parks in the 1920s (NYC Department of Parks & Recreation 2003b). Robert Moses, as New York City Parks Commissioner from 1934 to 1960, created or expanded numerous parks in the city (NYC Department of Parks & Recreation 2003c). Among the new parks in Brooklyn was one in the project area, at the intersection of Vandervoort Avenue, Cherry Street, and Anthony Street, established in 1924 and added onto in 1935 and 1939. The park was named Sgt. William Dougherty Playground in 1948 to honor a local man who used the playground during his youth. William T. Dougherty was a soldier in the 27th Infantry Division, 155th Infantry Regiment, during World War II (NYC Department of Parks & Recreation 2001). Sergeant Dougherty died during fierce combat against Japanese forces on the island of Saipan on July 10, 1944. Dougherty was awarded the Bronze Star and the Purple Heart posthumously and is buried in the American Battle Monuments Commission Cemetery in Honolulu, Hawaii (Find A Grave n.d.).

Sgt. William Dougherty Playground was the only public park in the APE. Many of the blocks in the APE south of Meeker Avenue and west of Vandervoort Avenue contained a combination of rowhouses and industrial operations by the early 1930s (Sanborn 1933). Most of these rowhouses contained stores or apartments. Industries operating on these blocks in 1933 included the Knickerbocker Ice Company, Max Trunz Pork Packing, an iron works, and manufacturers of

caskets, paint and varnish, and steel doors. By 1942, industries on the northern side of Meeker Avenue east of Varick Street included a pickle works and fur dying and dressing operations (Sanborn 1942).

B.2. Land Use in the Queens APE

B.2.a. Colonial New Amsterdam (1626-1664)

The area of Long Island that later became Laurel Hill was sparsely inhabited in the early seventeenth century. The Native American inhabitants were local groups of Munsees, Eastern Algonquian-speaking coastal villagers of the Lenape or Delaware cultural group (Grumet 1995:218). The Native American groups on Long Island in the Queens vicinity were the Matinecock, the Canarsee, and the Rockaway. A large Indian village was located above Newtown Creek at the head of Mespeth Creek (now known as Maspeth Creek), and the local inhabitants were known as the Mespeth Indians. The location of this village may be NYSM site #9447, described as a Woodland or Contact Period village with shell middens (John Milner Associates 2002:10). This site has not been relocated or systematically tested; its location was based on a 1920 description, which may have been itself secondhand. Local residents of Mespeth Creek, however, are known to have collected Native American artifacts in the area (Riker 1852:73).

The first recorded European settlements in the area consisted of a 1642 Dutch land grant awarded by Director-General William Kieft to Reverend Francis Doughty, an English clergyman leading a group of settlers from the Plymouth Colony. The grant, called the Mispeth Patent, was for over 6,000 (Dutch) acres, and went from Flushing Kill to Newtown Creek, and east to the Jamaica border. The western boundary may be in the APE, although there is no indication that Doughty or any of his people settled in this area. In 1643, an uprising of the local Indians, incited by displaced Indians from the north, burned most of the European settlements on Long Island, and Doughty and his followers were forced to take refuge in the Dutch fort on Manhattan Island. They resided there for two years before returning to Long Island. Doughty and the new Dutch governor, Peter Stuyvesant, had a falling out, and the patent was rescinded in 1647 (*Brooklyn Eagle* 1891c).

Meanwhile, Richard Brutnel (also spelled Brutnell, Britnell, and Bruntall) established a farm west of Doughty's patent on the east side of Dutch Kills by 1642 (Seyfried 1982). He received a patent for 100 acres of this property in 1643, which extended into the western half of what would eventually be Calvary Cemetery. Brutnell continued to farm this area for about ten years, when he sold the western half to the Debevoise family, and the eastern half to William Herrick of Flushing. Herrick died and his property was inherited by his widow Audry. Audry eventually married Thomas Wandell, by about 1660. Wandell increased the size of the farm by acquiring additional lands east of the original tract, and probably all of the area near the project.

B.2.b. Colonial New York (1664-1783)

The area in the vicinity of the project during this time consisted of scattered rural farms and had a low population density. Most of the families in the area were related through intermarriage. The more prosperous farmers gradually acquired property as it became available and created large farms.

All of the property near the APE was owned by Thomas Wandell. In 1665, Wandell, who had no children of his own, brought over from England a cousin or nephew, Richard Alsop, who was about four or five years old. Raised as Wandell's son, Alsop inherited a portion of Wandell's holdings at his death in 1689 (Will of Thomas Wandell 1689). Wandell's widow remained on the land, but Alsop began running the estate about 1691 (*Brooklyn Eagle* 1880c). Alsop acquired additional

lands on his own (or was helped by Wandell), and raised a large family (eight children) in Newtown. His sons John and Richard (2) inherited portions of their father's property along Newtown Creek, but Richard (2) eventually moved to Connecticut (Will of Richard Alsop 1718). John Alsop eventually moved out of the area to become a prosperous merchant, but continued to own the farm. His son Richard (3) (b. 1730, d. 1790) inherited the property and worked the farm, right through the British occupation of Long Island during the American Revolution. The Alsop farmhouse was briefly occupied by Lord Cornwallis in September 1776 (*Brooklyn Eagle* 1880e). The property suffered extensive damage during the occupation despite the fact that Richard's wife was supposedly an ardent Tory (*Brooklyn Eagle* 1880d, 1880e). Richard, a patriot (his brother John served in the Continental Congress) kept an account of the damage caused by the British occupation, which included losses from property damage and structures, as well as losses stemming from supplying provisions to the troops, and missing items of hardware, furniture, and clothing that may simply have been stolen (*Brooklyn Eagle* 1880e). This account indicated Alsop grew hay, wheat, rye, corn, and vegetables, and raised cattle, dairy cows, poultry, sheep, pigs, horses, and honey bees, among other things on his farm (*Brooklyn Eagle* 1880e). One of the Alsops also successfully cultivated tobacco (Greater Astoria Historical Society 2004).

A ferry across Newtown Creek at about the location of the Meeker Street (later Penny) Bridge was operated by Humphrey Clay, husband of Thomas Wandell's sister-in-law Sarah, by about 1670 (Eastern District of Brooklyn 2005; Will of Thomas Wandell 1689). During the Revolution, a pontoon bridge crossed the creek, facilitating British troop movements in the area. Western Long Island was occupied by the British Army throughout the American Revolution and was not evacuated by the troops until 1783.

B.2.c. Early American New York (1783-1820)

The Laurel Hill area throughout this period consisted mostly of family farms that were gradually split into smaller landholdings with each successive generation. Rebuilding following the British occupation during the war required significant effort (Seyfried 1982). Some of the land had not been cultivated for several years, and fences, barns, houses, furniture, treelots, and orchards had been burned for firewood. However, this area was ideally located to serve the produce needs of the growing population of Manhattan, and the area's farms prospered.

The third Richard Alsop continued to own the farm along Newtown Creek. Following his death in 1790, the property was divided between his sons John and Thomas, John receiving the eastern section (all of the APE), and Thomas the western portion (in the area of Blissville). The Alsops at this point were well-to-do, and had married into the highest social circles in America, including many descendents of the early Dutch and English farmers in Queens. Richard's sons were well-educated and were not farmers, but the land remained in the family through this period.

B.2.d. Laurel Hill and Queens County (1810-1898)

The farming legacy of the area continued through the first half of this time period. The 1852 Riker survey shows a row of farmhouses roughly paralleling the creek. Starting at the Bushwick-Newtown Turnpike and moving upstream to Maspeth Creek, the farms or farmers shown are the "old" Alsop place, Edward Waters, Jacob Van Alst, Joseph DeBevoise, Charles DeBevoise, and Richard Spragg, respectively (Riker 1852). Only the Alsop and Waters farms are within blocks that could be impacted by this project. Hardworking and civic-minded, these landowners turned their agricultural prosperity and interest in local affairs into political and economic power. The Alsops, for example, had resided in the area from the 1690's, and members of the family served in the Continental Congress, the U.S. Senate, the state legislature, and as governor of New York (*Brooklyn Eagle* 1880e). By the 1850s, though, the heirs of this family were no longer farmers, and were among the first to sell their landholdings for non-farming uses such as Calvary Cemetery.

Upon John Alsop's death in 1837, his widow sold the farm to a corporation that founded Calvary Cemetery in the early 1840s. The Alsop family cemetery was included in this parcel, but the family farmhouse near the tollgate of the turnpike at the Newtown Creek bridge was not part of the sale. It eventually was sold to the cemetery corporation in 1880 and was demolished (*Brooklyn Eagle* 1880b, 1880c, 1880d, 1880e).

The eastern portion of the Alsop farm, except for the section containing the old family farmhouse just east of the Bushwick Newtown Turnpike, was sold to Edward Waters in 1810. This 100-acre parcel, from the Shell Road in the north to the creek in the south, extended eastwards to what became 46th Street (Clifton Avenue) (CNYTB 1935). By 1852, Waters's parcel in this area was 122 acres (Dripps 1852).

The area between the Bushwick-Newtown Turnpike and Maspeth Creek is reputed to have been named Laurel Hill by Jacob or Augustus Rapelye, descendants of early Dutch settlers (*Brooklyn Eagle* 1896). Rapelye bought the parcel formerly owned by Edward Waters in 1853 and named it Laurel Hill. He built a large house on the property, probably the one shown on the 1873 Beers map just north of the railroad tracks on the east side of 43rd Street (Washington Avenue). A second house shown on the 1873 Beers map, possibly belonging to J. Rapelye, Augustus' father, may be the house on Block 2550, where Rapelye Place, a former street where the original 55th Drive would have crossed 44th Street (Montgomery Avenue) and 46th Street (Clifton Avenue), was located. A house labeled J. Rapelye was in this general area (Baker and Baker 1859). The foundation of a large 2.5-story house is shown on the 1903 Hyde map on an angle across this lot (Block 2550). The original street plan in this area included two parallel diagonal streets running southeast, cutting across the roughly north-south streets. The house on Block 2550 is roughly aligned with these diagonal streets and may have been associated with the Rapelyes or the earlier landowner, Edward Waters, who had a house somewhere in the general vicinity (Riker 1852). Sometime after Rapelye acquired the property, the street grid was regularized, and most of the diagonal streets were vacated by 1902 or 1903 (Hyde 1903; Sanborn 1902).

Rapelye must have subdivided the property and sold it off bit by bit. Gradually throughout this period, the farmland gave way to factories and industrial uses. Laurel Hill was mapped as having numerous streets, blocks, and lots, although it seems that some of the streets were never completed, most were unpaved, and many of the lots were vacant. By 1873, a few houses were present in the lots along 43rd Street and near the intersection of the Shell Road and the Bushwick Newtown Turnpike (Beers 1873).

The last remaining piece of Alsop property, which contained the old farmhouse, was sold by William Alsop to the Calvary Cemetery Corporation in 1880. The Alsop farmhouse was torn down in 1880, after standing on the banks of Newtown Creek for over two centuries (*Brooklyn Eagle* 1880b, 1880c, 1880d, 1880e).

In 1885, Augustus Rapelye is reputed to have donated a stone church in Laurel Hill to honor his mother. St. Mary's Episcopal Church (Block 2519) was established in 1885 and was closed in 1952; the Episcopal diocese has no record of burials ever taking place inside or on the grounds of this church (Fran Monaco, Archivist, Diocese of Long Island, personal communication to Ruth Troccoli, 6 April, 2005).

This period marked a building boom for cemeteries in Queens, as a statute prohibiting taking of land in Manhattan for new cemeteries was passed in 1847 (Seyfried 1982). As a result, churches and synagogues purchased huge tracts of land outside Manhattan to serve the needs of their parishioners. There was a dramatic increase of Irish and German Catholic immigrants to New York at this time, many of whom lived in squalid conditions in tenements and slums, and suffered from high infant mortality. Calvary Cemetery, established in the 1840s, served the diocese of New York

and was affiliated with St. Patrick's Cathedral in Manhattan. By 1852, 50 interments were taking place each day (Seyfried 1982:117). Ferry service directly from Manhattan to the cemetery was provided. The cemetery was established in sections; the first section to be developed was Calvary West, or Old Calvary Cemetery, located just west of the Bushwick-Newtown Turnpike on the approach to the Penny Bridge. This property was purchased from the widow of John Alsop in 1837 and was operational by 1848. Needing room for expansion, the cemetery corporation purchased additional land from William Alsop, the nephew of John Alsop, around 1880. This parcel was located between the Bushwick and Newtown Turnpike and what later became Laurel Hill Boulevard. Because the Bushwick-Newtown Turnpike bisected the two cemetery parcels, Laurel Hill Boulevard was established to allow traffic heading to and from the Penny Bridge to bypass the cemetery, and the turnpike segment inside the cemetery grounds was closed (Seyfried 1982:117).

The increase in population in the Laurel Hill area, with its high proportion of working class inhabitants, made it an ideal location for recreational pursuits such as pubs, taverns, gambling houses, pool halls, boxing rings, and cockfighting and dog fighting pits. Accounts of these activities were frequently mentioned in the newspaper. Some of the houses in Laurel Hill in the late nineteenth century were taverns or tap rooms, and may have been unlicensed.

Rail lines were first established in the area in the 1850s. The Flushing Railroad paralleled Newtown Creek running from Long Island City through Laurel Hill and then curved northeast just west of Maspeth Creek towards Winfield (Baker and Baker 1859). There was a stop at Penny Bridge which opened in 1854 to serve visitors to Calvary Cemetery. Sometime between 1859 and 1873, a spur running southeast towards Maspeth was added; eventually this new line became what is now the LIRR, and the old line was abandoned (Beers 1873).

The waterfront along the creek became increasingly important for commerce, and docks, piers, and bulkheads were constructed as necessary. Large numbers of men were employed in constructing docks and piers along the creek (*Brooklyn Eagle* 1878).

Prior to 1812, a primitive bridge crossed Newtown Creek in the area of Meeker Avenue. The Newtown and Bushwick Road Company, incorporated in 1814, built a wooden bridge on piles (Seyfried 1982). The Newtown Bridge and Turnpike Company, incorporated in 1836, built a toll bridge on stone piers that became known as the Penny Bridge and also developed the turnpike running from Bushwick to Newtown (Eastern District of Brooklyn 2005). The presence of the bridge spurred commerce and development in the Laurel Hill area. Many of the workers in the factories on the Queens side of Newtown Creek lived in Brooklyn due to the lack of suitable workers' housing in Queens and commuted across the Penny Bridge on foot. In 1894, a crowd of workers crossing the bridge caused the structure to collapse; it was later rebuilt).

The creek itself was a recreational asset during most of this time period. It was used for fishing and was the site of several boating clubs along its length. Rowing (crew) races were held along the creek as late as 1876. With factories and businesses located along the creek, all types of boat traffic increased. The bridges became draw-spans that allowed boat traffic to pass. By the end of this period of development, 331 boats a day, or about 121,000 vessels a year, passed through the drawbridge at Blissville and moved upstream towards Laurel Hill (*Brooklyn Eagle* 1899b). As manufacturing along the creek increased, the water quality decreased. Most factories at this time discarded their waste products into Newtown Creek wherever it was convenient. The prevalence of refineries and fertilizer plants created waste and byproducts that were particularly noxious (Hurley 1994). The complaints of residents about the smell and poor water quality are documented in the local newspapers of this period (e.g., *Brooklyn Eagle* 1881, 1886a, 1886b, 1894d, and 1899c).

All current land south of the LIRR tracks and the steel bulkhead between the old Penny/Meeker Avenue Bridge and Maspeth Creek were created from landfill on water grant lots on the marsh and

in the creek bottom. Examination of historic maps indicates that filling began in the mid-nineteenth century. The Haberman iron and tinware factory, just upstream of the Nichols/Phelps-Dodge refinery site, received a similar grant for land under water in 1899 to fill a 410-foot stretch of the bank, out 240 feet from the high water line of Newtown and Maspeth creeks (*Brooklyn Eagle* 1899a). Water grant lots were a traditional practice for creating taxable new land along the New York waterfront dating back to the 1686 Dongan Charter, and the subsequent 1730 Montgomerie Charter (Friedlander 1987; Rockman *et al.* 1983). Grantees, usually adjacent landowners, were required to build their own bulkheads or fill stabilization structures, and to make new land by filling in the structures with soil. In the nineteenth century, water grants were awarded by the State Board of Land Commissioners in Albany. At this time, grantees were required to fill to the high water line of the creek. Various sources of fill material were used, including dredging spoil from the creek bottom, trash, and manufacturing byproducts.

The 1937 pre-build map for Kosciuszko Bridge at the point where the bridge would meet the bank on the Queens side shows an existing timber crib structure that is not quite perpendicular to the creek bank and railroad track (about 70 degrees). This crib is the northern edge of the Nichols/Phelps Dodge property and the limits of the made-land they created from their grant for lots under water. Much of the fill dirt employed by Nichols/Phelps Dodge consisted of slag from the copper smelters; in the 1890s, 130 tons of slag per day were deposited in its landfill. In 1901, the factory completed construction of a 367-foot tall chimney to dissipate waste gasses (*Brooklyn Daily Eagle* 1901). Weighing approximately 22,000 tons, the structure required excavating through the landfill to solid ground, reputed to be over 25 feet below the current ground surface, with support pilings driven even deeper.

The availability of undeveloped land close to Manhattan with easily accessible rail and water transport made Laurel Hill an ideal location for manufacturing and heavy industry. One of the first factories to locate in the area was the Laurel Hill Chemical Works in 1866, which changed its name to Nichols Company in 1870. In 1876, the company, with 40 to 50 employees, began an era of invention and expansion that resulted in the manufacture of refined copper and sulfuric acid simultaneously. By 1880 there were 60 employees. In 1890, copper smelting began, and in 1891 the company was split into two parts: G.H. Nichols and Company refined copper, and Nichols Chemical Company concentrated on the production of sulfuric acid and other chemicals. Copper refining was extremely lucrative partially because the manufacturing byproducts contained gold and silver. In 1895, Phelps Dodge and G.H. Nichols formed a partnership that insured a steady stream of copper ore for the smelters at Laurel Hill.

Throughout this period, the Laurel Hill neighborhood grew and expanded along the waterfront of Newtown Creek and astride the railroad tracks running through the area. The company filled the marshy shoreline of the creek and expanded operations into this new land, as well as expanding further north. The core factory buildings from the pre-1896 period were demolished and replaced.

B.2.e. Laurel Hill and the Borough of Queens (1898-1955)

Laurel Hill underwent a building boom during this period, spurred by growth of existing factories and establishment of new ones. Demand for worker housing was fueled by the growth in manufacturing in Laurel Hill and throughout Queens in general (Willis 1920:143). Zoning laws were enacted in Queens in 1916 to regulate growth and development and were aimed at separating factories and industrial areas from residential neighborhoods.

The consolidation of the smaller, local passenger rail road lines into the LIRR and the electrification of the system also contributed to growth in the Laurel Hill area. Various lines owned and operated by the railroad stopped at the Penny Bridge Station and the Haberman Factory. Consolidation provided speedy service to Manhattan and Grand Central Station with payment of a single fare,

rather than payment of a separate fare for each leg of the trip. In 1901 the LIRR, originally incorporated in 1834, was acquired by the Pennsylvania Railroad, which eliminated many grade crossings and improved the tracks and rolling stock (Willis 1920:52). Electrification of the system (conversion from coal-burning steam-powered locomotives) began in 1904. By 1920, 85 percent of the LIRR lines in Queens were electrified. The opening of the Queensboro Bridge in 1909 also contributed to the growth in manufacturing and commerce in Queens.

The LIRR ran through the factory district in Laurel Hill, Berlin, and Maspeth. Originally, there were no grade crossings through this stretch, or even roads connecting the villages, so workers traveling to the factories along the creek used the railroad tracks as a path. Workers were also forced to cross the tracks on foot, or were faced with a long walk to the crossing near the Meeker Avenue Bridge. The tracks passed through a cut and had two shallow curves in the area, resulting in a blind spot for pedestrians. Prior to installation of additional road crossings in 1901 or later, a worker was killed on the tracks nearly every month by oncoming trains in the area dubbed "bloody gorge" (*Brooklyn Eagle* 1901b).

In 1901, the factories of Queens County employed 11,121 people, including 1,490 in Laurel Hill and Berlin Village (*Brooklyn Eagle* 1901a). In 1917, more than 517,000 tons of copper ore and copper manufactures were transported on Newtown Creek (Willis 1920). Oil refineries along the creek shipped over 250 million gallons of petroleum in 1917. The federal government started dredging operations on the creek around 1920 to provide for a channel from 125 to 250 feet wide and 18 to 20 feet deep at mean low water (Willis 1920). Most of the freight carriers were steamer schooners and unrigged vessels. Dozens of new industries moved to Queens from 1918 to 1920, the majority of which were located in Long Island City. The American Radiator Company was one of the only new industries to move to Laurel Hill in this time period (Willis 1920).

The Laurel Hill neighborhood was part of the Second Ward of Queens. The ward was described in 1920 as "sparsely settled," containing "thousands of acres yet untouched, but admirably adapted for the erection of homes" (Willis 1920:124). In a discussion of housing trends in the ward, Laurel Hill, as well as Maspeth and Blissville, were said to be in need of "moderate priced homes to house the employees" of the neighborhood's many large manufacturing establishments (Willis 1920:125).

A count of the buildings constructed in Queens by neighborhood was compiled by the LIRR. Between 1909 and 1914, 45 buildings were constructed in Laurel Hill. Only six were built in 1915, nine in 1916, and twelve in 1917. No new buildings were constructed in Laurel Hill in 1918 or 1919. The total number of buildings constructed in Laurel Hill from 1909 to 1919 was only 72. In the same time period, over 3,700 buildings were erected in Long Island City (Willis 1920:134).

Rapid transit connected Queens to Manhattan and the Bronx in the 1890s, when electric trolleys replaced horse-drawn streetcars. Rapid transit, which was present in other parts of Queens beginning in 1917, was never present in Laurel Hill. The LIRR had two stops in the Laurel Hill area, the Penny Bridge Station west of the old Meeker Avenue bridge, and the Haberman Station, just east in Berlin. Commuter trains no longer serve the area; the Penny Bridge Station was closed in 1998.

Newtown Creek has been dredged regularly to deepen and widen the channel for the passage of ships, boats, and barges. The irregular shoreline has been straightened out and prevented from slumping into the channel by bulkheads. The area on the Queens side where the current Kosciuszko Bridge structure crosses the bank was deeply indented with a marshy lagoon where a small stream emptied into the creek at the base of Laurel Hill. The original seventeenth century creek shoreline from this area upstream was just below the current alignment of the LIRR tracks, now 300 to 500 feet inland in areas, and has been gradually filled in from at least the mid-nineteenth century. Test borings into the fill just upstream from the APE at about 46th Street (on the

Phelps Dodge property) revealed 20 feet of fill above the creek bottom in that location (AKRF 1991).

Steel bulkheading was eventually added to the creek banks to keep them from slumping into the shipping channel. Uniform bulkheads were not present in the nineteenth century. At least until 1896, bulkheads were constructed on an *ad hoc* basis by landowners at their own expense, primarily by businesses that needed shipping facilities (*Brooklyn Eagle* March 12, 1896). An 1891 article in the *Brooklyn Eagle* notes that the bulkhead line was modified in 1890 by the Harbor Commission (*Brooklyn Eagle* 1891a); however, even though this bulkhead line was approved, it was not yet present until individual landowners constructed it. The 1911 pier and bulkhead lines were superseded by the Secretary of War in 1916. The bulkhead line from 1890 onward also served as the pierhead line, since the U.S. Army Corps of Engineers (USACE) aimed at restricting obstructions to navigation in the creek. (USACE 1911).

APPENDIX C. ARCHAEOLOGICAL POTENTIAL BY BLOCK

The following sections describe the archaeological potential of individual blocks within the APE. The blocks are identified in Figures C-1 and C-2.

C.1 Brooklyn APE

Block 2799 (formerly Block 701). Block 2799 was originally part of Newtown Creek (Figure: C-3). The block appears to be land created by filling in the creek from the original shoreline eastward circa 1890. The fill also surrounded and possibly buried a small island named Mud Island. The area filled was between the eastern shoreline of Farm One (owned by Humphrey Clay and later by the Duryea family) and a bulkhead line. The bulkhead line was established by commissioners appointed pursuant to Chapter 523 of a law enacted in 1869. This bulkhead line was modified in 1890 by the Harbor Commission (*Brooklyn Eagle* 1891a). The U.S. Army Corps of Engineers proposed modifications to the bulkhead line in 1911, but the design was superseded in 1916 (USACE 1911). The 1916 bulkhead line in this block was farther west than the 1890 bulkhead line, resulting in a wider Newtown Creek (NYCDPS 1937: Sheet C). The bulkhead line from 1890 onward also served as the pierhead line, since the Army Corps of Engineers aimed at restricting obstructions to navigation in the creek.

The streets adjoining the block, Townsend Street and Scott Avenue, were present on maps dated as early as 1855 but were not constructed until much later, circa 1891, probably soon after the fill was deposited (*Brooklyn Eagle* 1891a). By 1880, Block 2799 was subdivided on paper into nine undeveloped lots (Bromley and Robinson 1880). The lots have remained undeveloped (Hyde 1898; USACE 1911; Sanborn 1933; Army Map Service 1947; Sanborn 2002a). The elevation of the southwestern corner of the block was approximately 9 feet (above sea level [asl]) in 1898 (Hyde 1898: Plate 35). This may indicate that roughly 9 feet of fill were deposited to form this portion of the block.

The shoreline in Block 2799 was never extended out as far as the bulkhead line (Figure C-4). Townsend Street south of this block was not open in 1933 and remains closed (Sanborn 1933). The paved lot covering Block 2799 is currently part of a waste transfer station (Sanborn 2002a).

The extreme southeastern corner of the block (at the end of Townsend Street) is within the APE for archaeology. It is possible that buried archaeological deposits are present below the twentieth-century fill in the APE in the former creek bed. The former Mud Island, which would have higher potential for archaeological sites than the surrounding creek bed, is not within the APE. The potential of prehistoric archaeological deposits on the creek bottom is low but could include features such as fish weirs, although such sites would be buried under 9 feet of fill. There is no potential for prehistoric archaeological deposits within the fill itself. The potential for historic archaeological deposits in the APE is low because historic maps show no evidence of domestic or industrial buildings on the block. Domestic deposits are unlikely because no houses were near this location. There is also low potential for landfill stabilization structures and cribbing present within the fill itself.

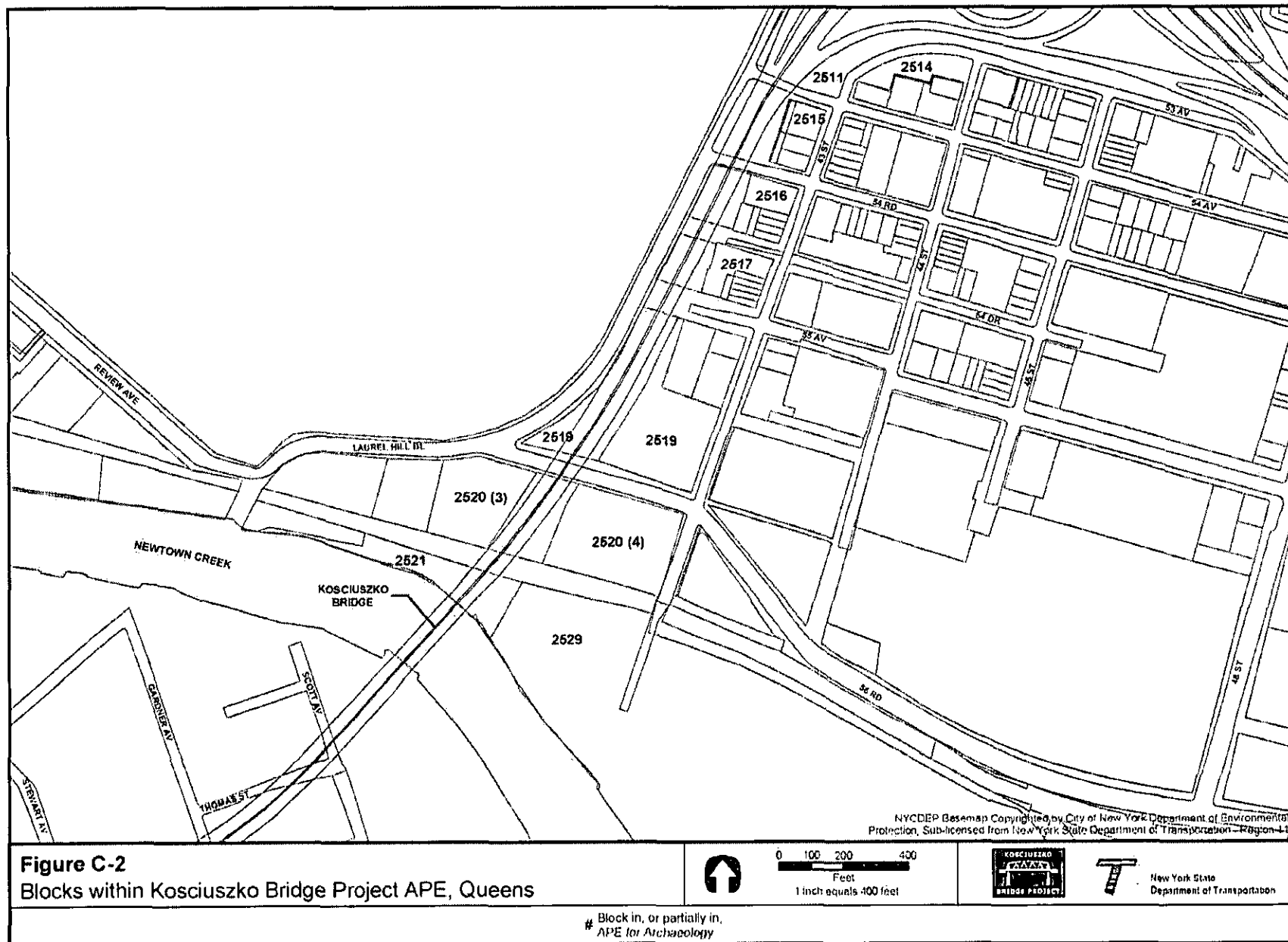


Figure C-2
Blocks within Kosciuszko Bridge Project APE, Queens

Block in, or partially in,
APE for Archaeology

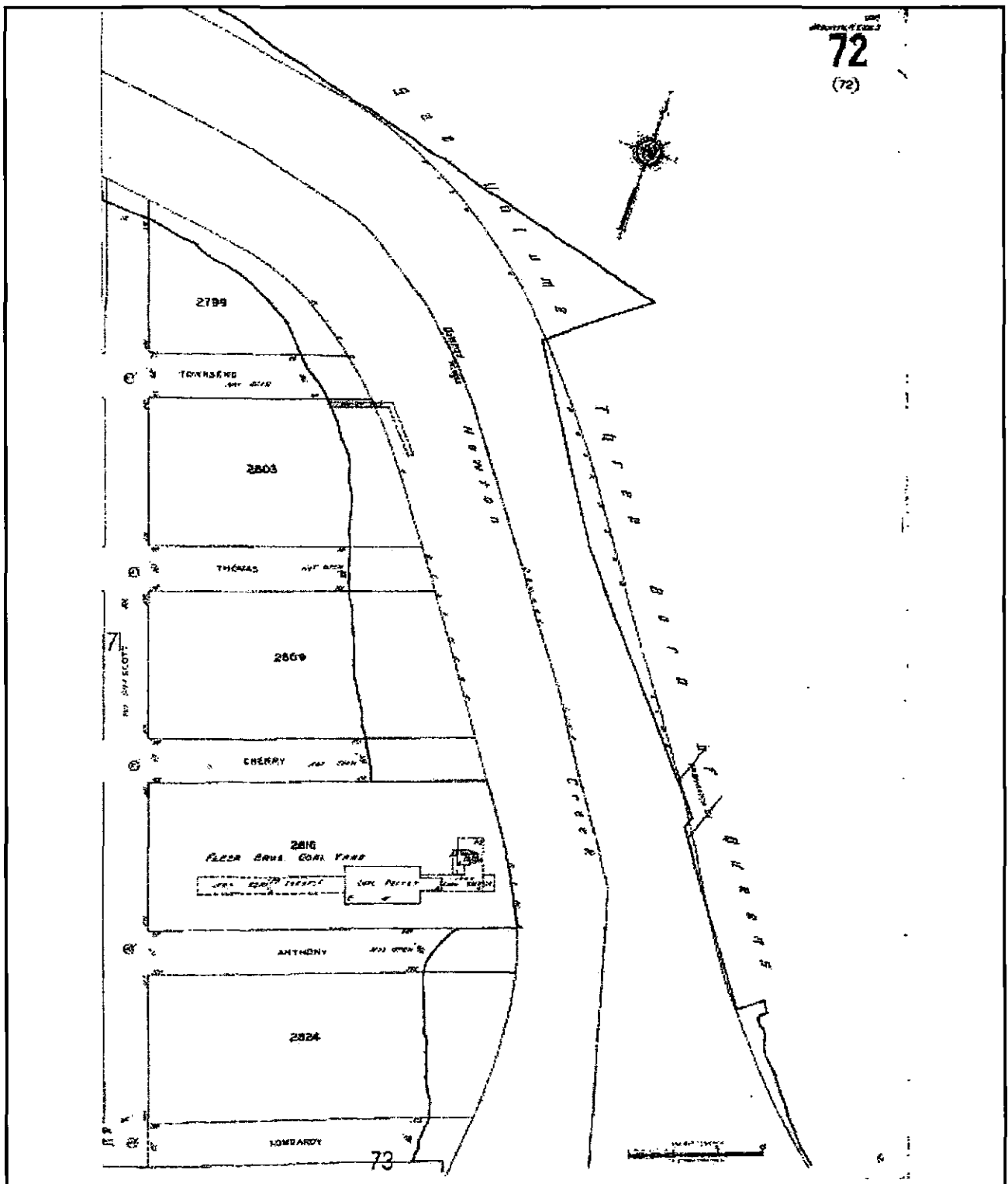


Figure C-4
Newtown Creek Shoreline in 1933

Source: Sanborn 1933



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Block 2802 (formerly Block 709). Block 2802 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). This block was within Lot Number One on the 1828 plat of the land of Peter Duryea's estate (Figure B-4). The north edge of Block 2802, along Townsend Street, was approximately 300 to 400 feet south of the Clay/Duryea house and the "pre-Penny" Bridge (the bridge as shown on the 1828 plat, probably the predecessor of the Penny Bridge built on wooden piers). Most of Block 2802 was situated in the lowlands along Newtown Creek called a "meadow" in 1828. The original shoreline was just east of this block, in the future Scott Avenue (Figure C-3). The line between the upland bluff and lowland meadow, as shown on the 1828 plat, probably passed through the western quarter of Block 2802, roughly parallel to Gardner Avenue.

No buildings appear to be located on this portion of the farm on the 1844 and 1866 U.S. Coast Survey maps (Figure B-3 ; Figure B-6). The coastline of the creek, including Block 2802, was depicted as marshland or wetlands in 1844 and 1866. Block 2802 became part of Farm C by 1855 (owned by the heirs of John Waters). John Dobbins operated a dairy farm on Farm C in the 1880s, but the property was owned by the heirs of John Waters.

Block 2802 was subdivided on paper into 32 lots by 1880 (Bromley and Robinson 1880). The block appears to be undeveloped in 1886 (Robinson), but a tallow factory was constructed on the block by 1888 (Sanborn 1888: Sheet 235). The small, rectangular building was not constructed in alignment with any of the 32 lots and appears to be parallel to Meeker Avenue. The building was situated near the block's northeast corner near Scott Avenue (Figure C-5). The factory building was still the only building on the block in 1898 (Hyde). By 1907, the building was gone but had been replaced by a new tallow factory in the northeast quadrant of Block 2802 (Sanborn 1907: Sheet 71). The Joseph Rosenberg Tallow Factory (60-64 Townsend Street) had two outbuildings to the rear in 1907: a stable with attached hide house and a small, unnamed building (possibly a shed or privy). No other buildings were located on the block in 1907. A third building was constructed on the block by 1911, to the east of the tallow factory (at approximately 68 Townsend Street) (USACE 1911).

Townsend and Thomas streets were not open adjacent to Block 2802 in 1933, but several additional businesses had been constructed on the block. The stable to the rear of the tallow factory had been replaced by a furniture warehouse, and an auto repair building was added near the block's southeast corner. This one-story, brick garage was taken in the late 1930s for construction of the approach to the Kosciuszko Bridge (NYCDPS 1937: Sheet C and NYCDPW 1938: Sheet 2). The entire block, except the western quarter and the portion under the bridge approach, has been redeveloped as one large building. The building is currently a waste transfer station (Sanborn 2002a).

Portions of the southeast corner of Block 2802 are within the APE. This part of the block was originally in the lowland meadow bordering Newtown Creek, and the former meadow was buried with fill by the 1890s. The potential for prehistoric archaeological resources beneath the fill is low since the fill covered a wetland that would not have been conducive to prehistoric occupation. There is no potential for prehistoric archaeological resources within the fill itself. In addition to the late nineteenth century fill, Block 2802 has been heavily disturbed. In the late 1930s, prior to construction of the bridge approach, a circa 1920s garage building under the proposed approach was demolished. Portions of the APE were disturbed again for construction of the garbage recycling building. The potential for historic archaeological resources is low because secondary refuse deposits associated with the late nineteenth century tallow factory building (gone by 1907) north of the APE could be present. Historic domestic deposits are not likely due to the distance from the APE to the Clay/Duryea farmhouse.

Block 2803 (formerly Block 702). Block 2803 was originally part of Newtown Creek (Figure C-3). The block appears to be land created by filling in the creek from the original shoreline eastward circa 1890. The area filled was between the eastern shoreline of Farm One (owned by Humphrey Clay and later by the Duryea family) and a bulkhead line. The discussion of bulkhead lines along Newtown Creek for Block 2799 above also applies to Block 2803.

The streets adjoining Block 2803, Townsend and Thomas streets and Scott Avenue, were present on maps dated as early as 1855 but were not constructed until much later, circa 1891, probably soon after the fill was deposited (*Brooklyn Eagle* 1891a). By 1880, Block 2803 was subdivided on paper into 19 undeveloped lots (Bromley and Robinson 1880). The lots remained undeveloped until the late 1930s (Hyde 1898; Sanborn 1933; USACE 1911). The western end of the lot ranged from an elevation of roughly 12 feet (asl) at its southwestern corner to 9 feet in the northwestern corner (Hyde 1898: Plate 35). These figures may approximate the depth of fill placed on the block, as the western edge (Scott Avenue) was near the original shoreline (USACE 1911).

The shoreline in Block 2803 was never extended out as far as the bulkhead line (Figure C-4). However, a pier was built into Newtown Creek from the north edge of Block 2803 by 1933. The pier extended beyond the bulkhead line and then turned southeastward, paralleling the bulkhead line. The timber dock was valued at \$1,000 in 1937 and no buildings were standing on the block (NYCDPS 1937: Sheet C). Thomas Street south of this block and Townsend Street north of the block were not open in 1933 (Sanborn 1933). The approach to the Kosciuszko Bridge was constructed diagonally across Block 2803 in 1938 through 1939, and the timber dock was presumably removed at the same time. The block was probably graded in the late 1930s before construction of the concrete piers supporting the bridge approach. No major buildings were present on the block in 1947 (Army Map Service 1947). A non-combustible, steel-frame building was constructed in the southwest corner of the block (109 Thomas Street) in 1975, below the approach to the bridge (Sanborn 2002a). The block is currently paved and is part of a waste transfer station.

Portions of Block 2803 are within the APE. This block was originally within Newtown Creek, and filled by the 1890s. The potential for prehistoric archaeological resources beneath the fill is low, but could include features such as fish weirs. Such sites would be deeply buried. There is no potential for prehistoric archaeological resources within the fill itself. The potential for historic archaeological resources is low because historic maps show no evidence of domestic or industrial buildings on the block until 1975. Domestic deposits are unlikely because no houses were near this location. There is also low potential for landfill stabilization structures and cribbing present within the fill itself.

Block 2804 (formerly Block 770; no longer present). Block 2804 is no longer present but was bordered by Meeker Avenue on the north, Porter Avenue on the east, Cherry Street on the south, and Vandervoort Avenue on the west. Block 2804 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). Block 2804 was on the border between two lots in the 1828 plat of the Peter Duryea estate (Figure B-4). The eastern third of Block 2804 was in Lot Two and the remainder was in Lot Three.

Block 2804 was undeveloped farmland in 1844 (Figure B-3) and 1866 (Figure B-6). Block 2804 became part of two separate farms by the mid-nineteenth century: Farm A in the eastern third and Farm F in the remainder of the block. Farm A was part of the land purchased by Anthony Hulst from Peter Duryea's estate circa 1828. Hulst also owned Farm G (later separated from Farm A by Meeker Avenue). Hulst and his family resided on the combined farm properties (see Section A of this chapter). No farmhouses are depicted on Farm A on an 1844 map (Figure B-3), but a building and pier are shown on Farm G (northwest of the curve in the North Road to Newtown/southwest of Newtown Creek). The farmhouse occupied by the Hulst family was probably this house, on land that later became Farm G. The probable Hulst farmhouse in Farm G was probably in Block 2664,

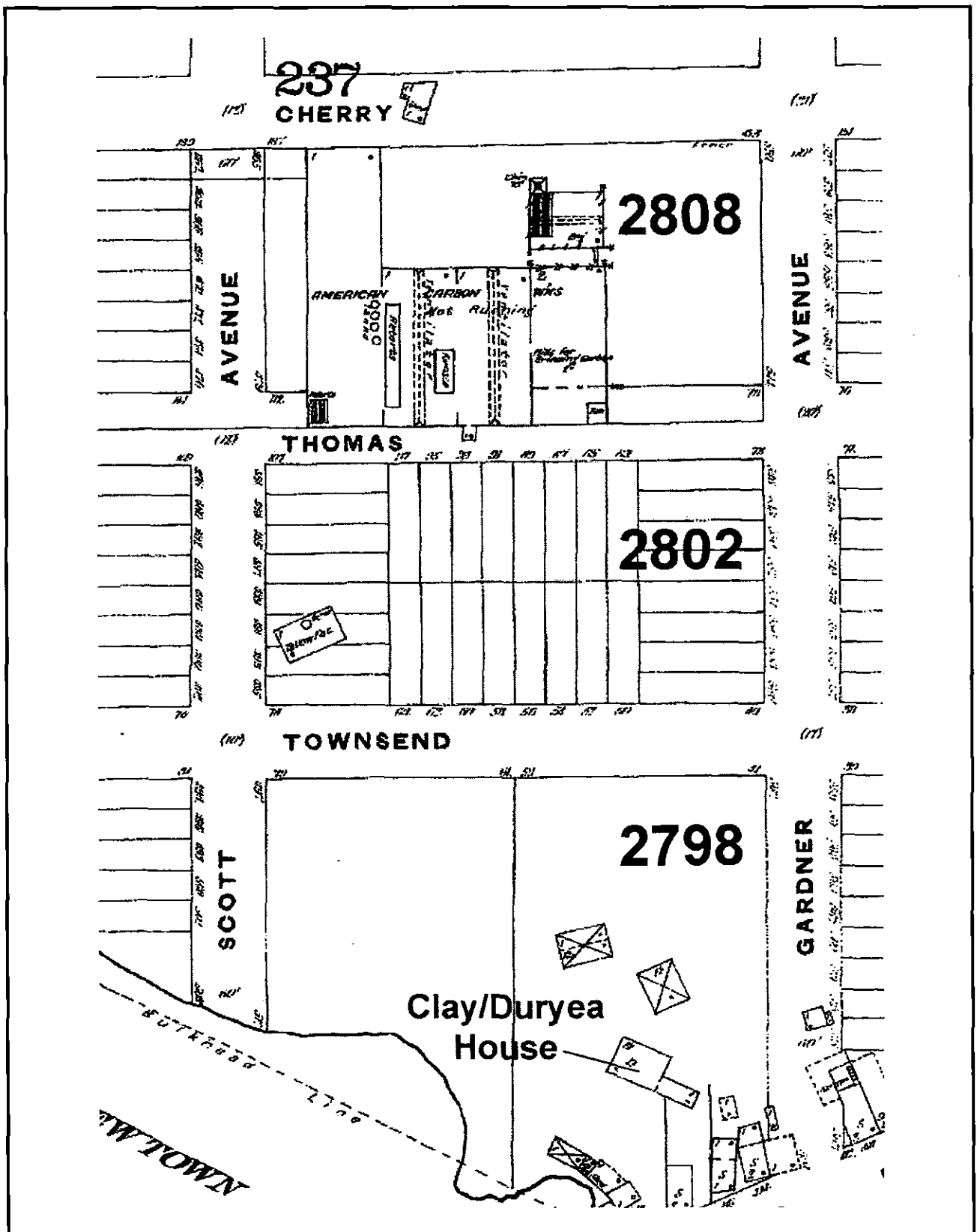


Figure C-5
Blocks 2802 and 2808 in 1888

Source: Sanborn 1888



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north of present-day Meeker Avenue, beyond the APE. Block 2804 was approximately 950 feet to 1,050 feet southwest of the probable Hulst farmhouse.

Farm F was owned by the heirs of John Waters by the mid-nineteenth century. Farm F did not have a farmhouse, based on examination of the 1844 and 1866 maps (U.S. Coast Survey 1844, 1866). Because John Waters also owned Farm C containing the Clay/Duryea house, Farm F probably was used as farmland for raising crops or grazing livestock instead of domestic purposes.

The portion of Block 2804 within former Farm F was divided into six lots by 1880; the eastern third of the block, in former Farm A, was a seventh lot (Bromley & Robinson 1880). The block remained undeveloped through 1907 (Robinson 1886; Sanborn 1888, 1907). By 1933, a gasoline filling station was standing near the eastern end of the block, set back from Meeker and Porter avenues (Sanborn 1933). The gas station property occupied the former seventh lot, on former Farm A. The one-story building was constructed on concrete blocks. The remaining six lots, on former Farm F, contained a garage with a 55-car capacity and a concrete floor.

The gas station was apparently no longer in operation in 1937 since it was depicted as "remains of Gas Sta." on a property acquisition map for construction of the approach to the Kosciuszko Bridge (NYCDPS 1937). The one-story, brick garage was taken in 1937 for the bridge approach (NYCDPW 1938). In 1971, the eastbound and westbound ramps of the bridge approach were demolished and reconstructed from Kingsland Avenue to beyond Varick Avenue (NYCDOH 1971). The area of ground disturbance from demolition and reconstruction included the southern edge of Block 2804, along Cherry Street. A temporary ramp was constructed to the south of the eastbound ramp in 1971, but was situated within Cherry Street to the south of this block. All of Block 2804 is beneath the current approach to the Kosciuszko Bridge.

Most of former Block 2804 except for the extreme northeast corner (corner of Meeker and Porter avenues) is within the APE. Construction of the subsurface storage tanks for the gas station would have destroyed some of the subsurface archaeological resources on the eastern portion of the lot, and the construction of the garage would have disturbed subsurface archaeological resources on the western portion of the lot. There is no potential for prehistoric or historic archaeological resources in Block 2804 because of the high level of disturbance caused by construction activities for the Kosciuszko Bridge in the 1930s and reconstruction of the approach in the 1970s.

Block 2805 (formerly Block 761). Block 2805 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). Block 2805 was in Lot Two on the 1828 plat of the Peter Duryea estate (Figure B-4).

Block 2805 became part of Farm A by the mid-nineteenth century. As discussed under Block 2804, Farm A was part of the land purchased by Anthony Hulst from Peter Duryea's estate circa 1828. Hulst also owned Farm G (later separated from Farm A by Meeker Avenue) and resided on the combined farm properties. No farmhouses are depicted on Farm A on an 1844 map (Figure B-3). Block 2805 was approximately 400 feet to 500 feet southwest of the probable Hulst farmhouse in Farm G (in Block 2664).

Block 2805 was undeveloped farmland in 1844, northwest of the North Road (Figure B-3). By 1866, Meeker Avenue had been constructed, dividing Farm A (south of Meeker Avenue) from Farm G (north of Meeker Avenue) (Figure B-6). Meeker Avenue was the main thoroughfare leading to the Penny Bridge, and new development in the former Farm A was clustered along Meeker Avenue by 1866. Two buildings appear to be located in Block 2805 by 1866, with one south of Meeker Avenue and the other to the rear. Only one building is shown in the block by 1880, a frame building on the western end of the block, set back from the corner of Meeker and Porter avenues (Bromley & Robinson 1880). The lot with the building had 75 feet of Meeker Avenue frontage, 175 feet along

Porter Avenue, and 84 feet on Cherry Street. The remainder of the block was one undeveloped lot in 1880.

Both lots on Block 2805 were undeveloped on a map dating to 1886 (Robinson 1886). However, the western lot of the block had a dwelling house with a stable to the rear of the lot by 1888 (Sanborn 1888). The dwelling house was near the center of the lot, and the stable was near the southwest corner of the lot, extending into Cherry Street. A third building was standing on the remainder of the block in 1888, just beyond the lot line and adjacent to the backyard of the house lot. The third building, a probable shed, was one-story. The rest of the block was undeveloped in 1888. Although the 1886 map (Robinson 1886) shows no development on the block, the buildings on the 1866 (U.S. Coast Survey 1866) and 1888 (Sanborn 1888) maps appear to be in similar locations. Therefore, it is possible that the 1886 map is in error and the dwelling was constructed by 1866 and was still standing in 1888.

The domestic complex of buildings was gone by 1907, and Block 2805 was undeveloped (Sanborn 1907). A parking garage and a manufacturing building were constructed on the western lot of the block by 1933 (Sanborn 1933). The garage, at the corner of Meeker and Porter avenues (258-278 Meeker Avenue/546-554 Porter Avenue), had a capacity for 60 cars and a concrete floor. To the rear of the parking garage was a building that housed a metal door manufacturer and a skein dyeing operation (538-544 Porter Avenue/35-43 Cherry Street). The building was one to two stories tall and had a concrete floor. The manufacturing offices were situated on Porter Avenue, and a boiler house with brick bearing walls and a concrete floor was at 41 Cherry Street. The rest of Block 2805 was undeveloped in 1933.

The southern half of Block 2805 was taken in the late 1930s for construction of the approach to the Kosciuszko Bridge (NYCDPS 1937). The portion taken extended from Cherry Street roughly 145 feet along Porter Avenue. The entire manufacturing building was taken, consisting of the two-story brick offices, six one-story brick, frame, or metal wings, and an L-shaped concrete retaining wall on the east side of one wing. Only a triangular-shaped portion of the parking garage was taken, with approximately 66 feet of frontage on Porter Avenue. The northern portion of the parking garage, along Meeker Avenue and the corner of Meeker and Porter avenues, was not taken (NYCDPW 1938). The truncated garage building, north of the westbound ramp from the bridge approach, appears to be the only building standing on the block in 1947 (Army Map Service 1947).

In 1971, the eastbound and westbound ramps of the bridge approach were demolished, and the approach was reconstructed from Kingsland Avenue to beyond Varick Avenue (NYCDOH 1971). The area of ground disturbance from demolition and reconstruction included the southern half of the block. A temporary ramp was constructed to the south of the eastbound ramp in 1971, situated within Cherry Street to the south of this block.

Eight buildings were standing on the northern half of the block by 2002 (Sanborn 2002a). A circa 1947 Conch Umbrella building at the west end of the block (810-822 Meeker Avenue) occupies the truncated footprint of the circa 1933 parking garage. To the northeast (824 Meeker Avenue) is a building constructed circa 1950 that houses a scrap metal business. The remainder of the northern half of Block 2805 is a building supply yard with storage buildings and an office constructed in 1965 or later. The southern half of Block 2805 is beneath the current approach to the Kosciuszko Bridge.

The southern half of Block 2805, under the current approach to the bridge, and the area north of the westbound ramp are within the APE for archaeology. There is no potential for prehistoric archaeological resources in the southern portion of Block 2805 because of the high level of disturbance caused by construction activities for the Kosciuszko Bridge in the 1930s and reconstruction of the bridge approach in the 1970s. However, there is moderate archaeological potential for historic archaeological resources in the rear yard of the circa 1866 to 1888 dwelling at

the former southwest corner of the block (corner of Cherry Street and Porter Avenue). The rear yard could contain deep deposits such as privies and wells (Figure C-6). Deep archaeological deposits that would have survived the repeated ground disturbances are not expected in the remainder of the block.

Block 2806 (formerly Block 759). Block 2806 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). The block was on the border between two lots on the 1828 plat of the Peter Duryea estate (Figure B-4). The northwestern half of the block in Lot Two was separated from Lot One in the southeastern half of the block by a road. This former road was known as the North Road to Newtown in the eighteenth and early nineteenth centuries and led to the Penny Bridge. By the mid-nineteenth century, the road was no longer in use and had essentially been replaced as an access route to the bridge by a new road, Meeker Avenue. Block 2806 was undeveloped farmland traversed by the North Road in 1844 (Figure B-3). By 1866, the block still appeared to be undeveloped farmland, but the former road appears to have become merely a fenced border between farms (Figure B-6).

Block 2806 became part of two separate farms by the mid-nineteenth century: Farm A to the northwest of the road and Farm C to the southeast of the road. As discussed under Block 2804, Farm A's farmhouse (home of Anthony Hulst) was apparently north of the APE for this project. The Hulst farmhouse was probably in Farm G, the Farm north of Farm A (both were owned by Hulst). The probable Hulst farmhouse was approximately 450 to 550 feet north of the northern edge (Thomas Street) of Block 2806.

Farm C was owned by the heirs of John Waters by 1855 and included the Clay/Duryea house. John Dobbins operated a dairy farm on Farm C in the 1880s, but the property was still owned by the heirs of John Waters. The Clay/Duryea house was situated approximately 800 to 900 feet northeast of Block 2806.

Development in Farms A and C was clustered along Meeker Avenue by 1866 (Figure B-6). No development is shown in the area of Block 2806 in 1866 (US Coast Survey 1866). By 1880, only the southeastern portion of Block 2806 (formerly Farm C) was subdivided into lots, although no buildings were standing at that date (Bromley & Robinson 1880). The block remained undeveloped through 1907 (Hyde 1898; Robinson 1886; Sanborn 1888, 1907).

Sometime between 1907 and 1933, two buildings were constructed on the block's southeastern quadrant (Sanborn 1933). A small, one-story building used as an office was at 105 Cherry Street, and a second small, one-story building was at the rear lot line. A one-story truck shed addition to the rear building extended westward to 99 Cherry Street. Thomas Street, to the north of Block 2806, was closed to vehicular traffic in 1933. By 1937, both one-story metal buildings and frame shed were slated to be demolished for construction of the approach to the Kosciuszko Bridge (NYCDPS 1937). A third building (101 Cherry Street), a one-story metal and concrete building, was constructed near the others between 1933 and 1937 and was slated for demolition (NYCDPS 1937). In 1938, the buildings and shed were being used as "tool houses, etc." for a Fertilizer Yard (NYCDPW 1938).

The northern quarter of Block 2806 was not within the footprint of the bridge approach and was not taken in the late 1930s. However, some of the alternatives for the current project would take the northern quarter. No buildings were present in the northern quarter of the block in 1947; the rest of the block contained the bridge approach (Army Map Service 1947). In 1971, the eastbound and westbound ramps of the bridge approach were demolished, and the approach was reconstructed from Kingsland Avenue to beyond Varick Avenue (NYCDOH 1971). The area of ground disturbance from demolition and reconstruction included the southern half of the block's western third. A temporary ramp was constructed to the south of the eastbound ramp in 1971 but was situated within Cherry Street to the south of this block. No buildings appear on the northern quarter by 2002 (Sanborn 2002a), and the lots are currently vacant (NYC Government 2004) but fenced off from the adjacent streets (Varick and Stewart avenues and Thomas Street). The entire block is used by two construction and demolition transfer firms, and the area under the bridge is used by one of the firms to store vehicles.

All or most of Block 2806 is within the APE. The archaeological potential for prehistoric 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 prehistoric 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. The archaeological potential for historic sites is low in the undeveloped area north of the bridge approach. No evidence of historic development was found in this portion of the block except for a former historic road, the North Road to Newtown, which may have followed a former Native American path. There is low potential for archaeological evidence of the former road, reportedly paved with shells, or the fence lines that once lined the road and marked farm fields. There is no historic archaeological potential in the remainder of the block due to prior ground disturbance. The two metal buildings and a frame shed addition built circa 1907 to 1933 and the metal and concrete building constructed 1933 to 1937 were not substantial buildings (only one story tall) and would not have deep foundations. These buildings were demolished in the late 1930s, and the ground surface was disturbed during construction of the piers supporting the bridge approach.

Block 2807 (formerly Block 713). Block 2807 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). This block was within Lot Number One on the 1828 plat of the land of Peter Duryea's estate (Figure B-4). The north edge of Block 2807, along Thomas Street, was approximately 600 to 700 feet southwest of the Clay/Duryea house and the "pre-Penny" Bridge. Block 2807 was situated in the uplands, roughly west of the bluff edge.

No buildings appear to be located on this portion of the farm on the 1844 and 1866 U.S. Coast Survey maps (Figure B-3 ; Figure B-6). Block 2807 became part of Farm C by 1855 (owned by the heirs of John Waters). John Dobbins operated a dairy farm on Farm C in the 1880s, but the property was owned by the heirs of John Waters.

Block 2807 was subdivided on paper into 32 lots by 1880 (Bromley and Robinson 1880). The block remained undeveloped through 1907 (Hyde 1898; Robinson 1886; Sanborn 1888, 1907). Between 1907 and 1933, a number of commercial establishments were constructed on Block 2807 (Sanborn 1933). A fat rendering operation was situated in the southeast corner of the block, consisting of three brick buildings: two factories and a warehouse. Seven commercial buildings were present in the block's southwest corner and were constructed of either brick, concrete, brick and concrete, or metal (NYCDPW 1938). Two of the seven buildings were factories and the rest were warehouses. All of the buildings in the southern half of the block (including the fat rendering and other businesses) were demolished in the late 1930s for construction of the approach to the Kosciuszko Bridge (NYCDPS 1937). Undeveloped portions of lots in the southern third of the

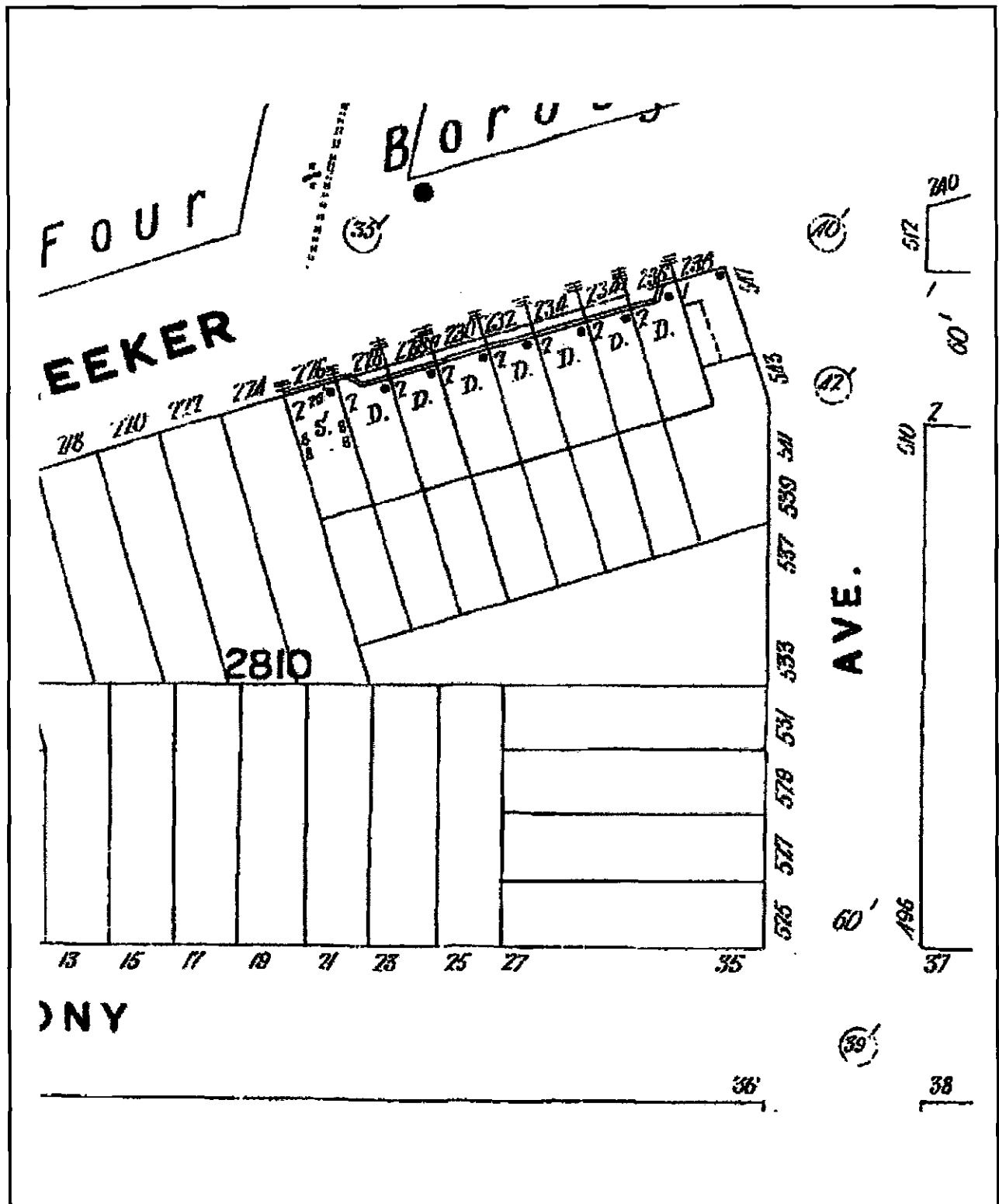


Figure C-6
Eastern Portion of Block 2810 in
1907

Source: Sanborn
1907



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block's north half also were taken for the bridge approach. One building not taken for the bridge approach was present in the northwest quadrant of Block 2807 by 1933. No buildings were standing on the block by 1947 (Army Map Service 1947).

A building originally designed for manufacturing was constructed in the northwest corner of Block 2807 in 1953 and was still standing in 2005 (Sanborn 2002a). This building, at 538 Stewart Avenue, currently is used by a construction and demolition firm. It is a one-story brick warehouse on a concrete foundation plus a metal-framed addition with metal siding. This building would be taken under some of the alternatives being considered for this project.

The remainder of the block north of the bridge approach is occupied by the Clean Harbors environmental remediation facility, formerly an iron smelting building constructed in 1966 with a scrap yard and scale to its east. These structures would also be taken under some of the alternatives being considered for this project. The small portion of the lot south of the bridge approach is vacant land. Thomas Street, along the northern edge of Block 2807, is closed to vehicular traffic.

All or part of Block 2807 is included in the APE. The land was primarily farmland and undeveloped land until construction of commercial buildings sometime between 1907 and 1933. Those buildings were demolished in the late 1930s, and the approach to the Kosciuszko Bridge was constructed through the block. Standing buildings constructed after 1952 occupy most of the rest of the northern half of the block and may be demolished under some of the alternatives being considered. Overall, there is no archaeological potential for the portion of the block that is under the current Kosciuszko Bridge approach because of the high level of disturbance caused by construction activities. The potential for prehistoric archaeological resources in the northern portion of the block is moderate to low, because one story buildings were present on only a portion of the area. Prehistoric archaeological sites that might be present at this bluff-top location west of Newtown Creek include temporary or permanent campsites and special use and resource processing areas. The potential for historic archaeological resources is low to none; in the northwest corner there is no probability for historic sites because of the two buildings that stood there, the first by 1933, and a second in 1953. In the north central and northeast section of the block, historic archaeological potential is low for secondary refuse deposits related to the structures to the west, and to the bone rendering factory on the south half of the block. Domestic deposits are unlikely because no houses occurred near this location.

Block 2808 (formerly Block 708). Block 2808 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). This block was within Lot Number One on the 1828 plat of the land of Peter Duryea's estate (Figure B-4). Most of Block 2808 was situated in the lowland tidal marsh along Newtown Creek called a "meadow" in 1828, about 550 feet to 650 feet south of the Clay/Duryea house. The western edge of the block was situated on the bluff above the marsh, straddling the "line between the upland and the meadow" (Robinson 1889a). The original shoreline of the creek was approximately the eastern edge of this block, just west of the future Scott Avenue (Figure C-3). No buildings appear to be located on this portion of the farm in 1844 and 1866 (U.S. Coast Survey 1844, 1866). Block 2808 became part of Farm C by 1855 (owned by the heirs of John Waters). John Dobbins operated a dairy farm on Farm C in the 1880s, but the property was owned by the heirs of John Waters.

Block 2808 was subdivided on paper into 32 lots by 1880 (Bromley and Robinson 1880). Most of Block 2808 appears to be land created by filling in the tidal marsh along Newtown Creek by 1888 (Sanborn 1888). The elevation of the intersection of Scott and Thomas avenues was approximately 12 feet above sea level in 1888 (Sanborn 1888), suggesting that roughly 12 feet of fill had been placed in this portion of the block.

No actual development seems to have been present until the American Carbon Works factory was constructed, in late 1882 or early 1883. The company was granted building permits for five one-story frame buildings and two one- and two-story brick factories in November 1882 (*Brooklyn Eagle* 1882d). The factory manufactured bone black, which was used in refining sugar (*Brooklyn Eagle* 1883b). By 1888, the main building of the factory was one or two stories containing retorts, ventilators, a furnace, and mills for grinding carbon (Figure C-5). A second building to the southwest housed the factory's main engine with a 75-foot-tall chimney abutting its southeast corner. A one-story frame shed in Cherry Street to the south of the main factory building appears to have been associated with a tallow factory in the block to the south (see Block 2815).

A dock was constructed from the southeast corner of the main factory building along the southern edge of Block 2808 by 1888, immediately north of the future location of Cherry Street. The dock was 575 feet long and extended westward along the southern edge of Block 2808 to a point in Newtown Creek beyond the circa 1869 bulkhead line (Sanborn 1888: Plate 235). The factory was not running in 1888 and may have been ordered closed temporarily due to nuisance complaints of local residents regarding odors and pollution of the creek (*Brooklyn Eagle* 1883c). The company reported capital of \$100,000 in Brooklyn with liabilities of over \$111,000 in 1891 (*Brooklyn Eagle* 1891b). The company pleaded guilty to polluting Newtown Creek in 1897 but received a suspended sentence because the pollution had ceased (*Brooklyn Eagle* 1897). The factory complex was still standing in 1898 (Hyde 1898).

Portions of the American Carbon Works factory were demolished between 1898 and 1907 (Sanborn 1907). The westernmost wing of the main factory building (92-96 Thomas Street), a two-story building, was standing in 1907 but vacant. The second building in the former carbon works, a one- to two-story building with the attached chimney, also was standing to the south of the remaining building but was vacant. The only other development on the block in 1907 was the pier from the former carbon works, extending from the southeast corner of the block across Scott Avenue and Block 2809 eastward to Newtown Creek. Development on the block in 1911 (USACE 1911) was similar to that in 1907 (Sanborn 1907).

By 1933, Scott and Thomas avenues to the east and north of Block 2808, respectively, were closed (Sanborn 1933). Between 1911 and 1933, the westernmost wing of the former American Carbon Works complex (92-96 Thomas Street) was demolished (Sanborn 1933). The remaining building from the former carbon works, with the chimney abutting its southeast corner, was still standing in 1933. Three additions had been added to the original building by 1933, and the complex was vacant (Sanborn 1933). A fish rendering operation was housed in a one-story building constructed in the southeast corner of the block sometime after 1911 and by 1933, with a shed to the north; both buildings extended slightly into Scott Avenue to the east.

The northwestern half, approximately, of Block 2808 was taken in the late 1930s for construction of the approach to the Kosciuszko Bridge (NYCDPS 1937). Only the northwest corner of the former American Carbon Works building with the chimney was to be taken, as well as a low, brick wall that abutted the building's northwest corner. The building was a one-story, brick warehouse in 1938, and the brick wall extended 17 feet to the east of the building's corner before turning northward for roughly 12 feet (NYCDPW 1938). By 1947, the only building(s) depicted on the block appear to be in the southwest corner of the block, on the north side of Cherry Street (Army Map Service 1947). The 1947 building(s) appear to extend almost to Gardner Avenue, and seem to be south of the footprint of the former carbon works building with attached chimney. Therefore, the former carbon works building with the chimney was probably demolished between 1938 and 1947. The 1947 building(s) may include the southernmost addition to the demolished building just mentioned, fronting on Cherry Street, or was built over the footprint of the southernmost addition.

The northwest corner of Block 2808, abutting the approach to the bridge, is currently vacant (Sanborn 2002a). A narrow strip of undeveloped land abuts the southern edge of the bridge approach. A cinderblock building constructed in 1975 occupies the block's southwest corner (153-169 Cherry Street) with a parking area in the block's southeast corner. A second cinderblock building constructed in 1975 is on Scott Avenue north of the parking lot.

Portions of Block 2808 are within the APE. The current bridge approach for the Kosciuszko Bridge runs diagonally through the center of this lot, but does not affect the northwest corner or the southeast half of the lot. Most of Block 2808 appears to be land created by filling in the tidal marsh along Newtown Creek by 1888. The potential for prehistoric archaeological resources beneath the fill is low because the fill covered a wetland that would not have been conducive to prehistoric occupation. There is no potential for prehistoric archaeological resources within the fill itself. However, there is low potential for prehistoric archaeological resources on the former bluff area along the southwestern edge of the block because most of that section of the property is dominated by a one- to two-story building constructed in 1975. Prehistoric archaeological sites that might be present on the bluff overlooking Newtown Creek include temporary or permanent campsites and special use and resource processing areas. The potential for historic archaeological resources is low to moderate because the foundations and primary and secondary refuse deposits associated with the late nineteenth century carbon works building or the circa 1933 fish rendering operation could be present, especially beneath the current parking area. Historic domestic deposits beneath the late nineteenth-century fill are not likely because no dwellings were located on this property, and the distance from this block to the Clay/Duryea farmhouse is considerable.

Block 2809 (formerly Block 703). Block 2809 was originally part of Newtown Creek. The block appears to be land created by filling in tidal marsh and wetlands between the eastern shoreline of Farm One (owned by Humphrey Clay and later by the Duryea family) and a bulkhead line circa 1890 (USACE 1911; U.S. Coast Survey 1844, 1866) (Figure C-3). The discussion of bulkhead lines along Newtown Creek for Block 2799 above also applies to Block 2809.

The streets adjoining Block 2809, Thomas and Cherry streets and Scott Avenue, were present on maps dated as early as 1855 but were not constructed until much later, circa 1891, probably soon after the fill was deposited (*Brooklyn Eagle* 1891a). By 1880, Block 2809 was subdivided on paper into 22 undeveloped lots (Bromley and Robinson 1880). A dock was constructed along the southern edge of the future block by 1888, immediately north of the future location of Cherry Street. The dock was 575 feet long and connected the American Carbon Works factory (in Block 2808 to the west) to a point in Newtown Creek beyond the circa 1869 bulkhead line (Sanborn 1888: Plate 235). As discussed under Block 2808, the factory was not running in 1888.

The factory dock was removed and the land creating Block 2809 was deposited before 1898, and probably soon after the bulkhead line was established in 1890. A small, brick building was built on Lot 7 of this block between 1888 and 1898, on Scott Avenue, one lot to the north of Cherry Street (Hyde 1898). The western end of the block appears to have been roughly 12 feet above sea level in 1898 (Hyde 1898: Plate 35). The brick building was not standing by 1907, and the block was undeveloped (Sanborn 1907). Cherry Street south of this block and Thomas Street to the north were not open in 1933 (Sanborn 1933). The shoreline did not yet reach the bulkhead line by 1933 (Figure C-4).

Block 2809 remained undeveloped in 1947 (Army Map Service 1947). The block was extended eastward to the bulkhead line by additional filling after 1947 (Sanborn 2002a; Army Map Service 1947). A large, non-combustible building was constructed along Scott Avenue in 1968, and an oxygen tank formerly stood on the north side of Cherry Street, near Newtown Creek (Sanborn 2002a). The large building still stands upon the block, and the rest of the block is paved parking.

The extreme northwest corner of Block 2809 is within the APE. The block is made-land within the original Newtown Creek. One structure was present on the block, a small brick building built circa 1888 to 1898 and no longer standing by 1907. Otherwise, the block remained vacant until 1968, except for the pier and dock. There is no potential for prehistoric archaeological resources within the fill itself. The potential of prehistoric archaeological deposits on the creek bottom is low but could include features such as fish weirs, although such sites would be deeply buried under the fill. The potential for historic archaeological resources is low. Resources associated with the small brick structure would be disturbed by the building constructed in 1968. Secondary refuse deposits associated with the late nineteenth century carbon works building in the adjacent lot may be present, as well as the remains of piers, docks, and landfill stabilization structures. Historic domestic deposits are not likely present because no dwellings were located on this property, and the distance from this block to the Clay/Duryea farmhouse is considerable.

Block 2810 (formerly Block 771). Block 2810 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). Block 2810 was in Lot Three on the 1828 plat of the Peter Duryea estate (Figure B-4). Block 2810 was undeveloped farmland in 1844 (Figure B-3) and 1866 (Figure B-6). Block 2810 became part of Farm F, owned by the heirs of John Waters by the mid-nineteenth century. As discussed under Block 2804, Farm F probably did not have a farmhouse and was used as farmland for raising crops or grazing livestock instead of domestic purposes.

Many of the blocks in the project area began as perfect rectangles measuring 400 feet by 200 feet. Block 2810 was originally five-sided, not rectangular. The northern edge was Meeker Avenue, which runs diagonally across the street grid. The eastern edge was two-sided due to Vandervoort Avenue shifting to the northwest. The resulting length of the block along Vandervoort Avenue was 206 feet up to the shift, and 59 feet diagonally north of the shift (Bromley & Robinson 1880). Block 2810 was subdivided into 33 lots by 1880.

The lots remained undeveloped through 1888 (Robinson 1886; Sanborn 1888). Sometime between 1888 and 1907, the northeastern half of the Meeker Avenue block was developed (Figure C-6). The eight connected buildings housed a store (226 Meeker Avenue) and seven dwellings (228, 228A, 230, 232, 234, 234A, and 236-238 Meeker Avenue). In 1907, the dwelling on the corner of Meeker and Vandervoort avenues was a two-story building with a one-story addition. The other dwellings and the store were two-story buildings.

By 1933, the remainder of Block 2810 was developed with a mixture of industrial and commercial buildings and structures (Figure C-7). A gasoline filling station occupied the lot at the block's northeast corner (558 Morgan Avenue/208 Meeker Avenue). A store (214 Meeker Avenue) was situated on the same lot, with a stable to the rear. A casket manufacturing operation occupied the rest of the western half of the block, with office and storage buildings on Anthony Street and a casket shed and manufacturing building extending from Anthony Street to Meeker Avenue. This two-story, stuccoed brick building, currently used as a warehouse and showroom, was still present in 2005.

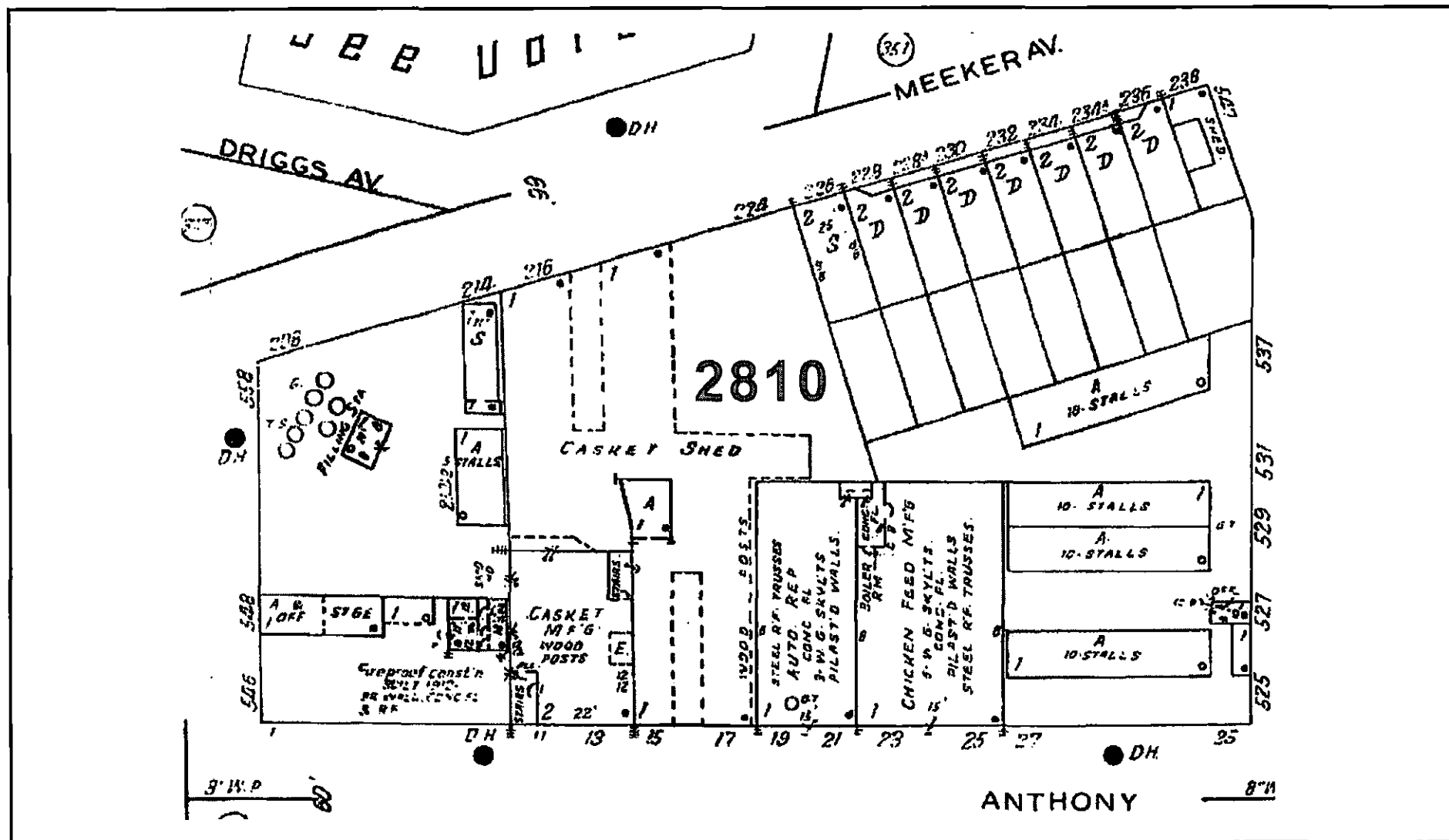


Figure C-7
Block 2810 in 1933

Source: Sanborn 1933



An auto repair shop (19-21 Anthony Street) and chicken feed manufactory (23-25 Anthony Street) were constructed on Block 2810 to the east of the casket shed by 1933 (Figure C-7). These buildings were still standing in 2004. Currently used as a warehouse, the one-story brick buildings feature internal connections through the party walls and are attached to two modern buildings and a loading dock (built in 1965 and 1977, respectively). The southeastern corner of Block 2810 featured a small office building (527 Vandervoort Avenue) with an addition to the south, and four stables, each containing ten stalls (Figure C-7). Perhaps the office and stalls were associated with the commercial and industrial buildings in the block.

The northern half of Block 2810 was taken in the late 1930s for construction of the approach to the Kosciuszko Bridge and the reconstruction of Meeker Avenue to the north and south of the bridge approach. The row of seven dwellings and one store building (226 to 236-238 Meeker Avenue) were demolished, and the rear yards of these lots (approximately the same size as the buildings) were taken as well (Figure C-8). The casket shed (216-224 Meeker Avenue/15-17 Anthony Street), or the northern (Meeker Avenue) half of the casket shed, was demolished. The store (214 Meeker Avenue) with a stable to the rear and the gasoline filling station (558 Morgan Avenue/208 Meeker Avenue) were taken. The office and storage buildings in the block's southwestern corner were probably demolished in the late 1930s, as they were along the rear lot line and would now be under Meeker Avenue.

Development may have covered the entire truncated Block 2810, south of the relocated Meeker Avenue, by 1947 (Army Map Service 1947). In 1971, the eastbound and westbound ramps of the bridge approach were demolished and reconstructed from Kingsland Avenue to beyond Varick Avenue (NYCDOH 1971). A temporary ramp was constructed to the south of the eastbound ramp. The area of ground disturbance from demolition, temporary construction, and reconstruction included the former northern half of the block that was taken in the late 1930s, immediately to the north of the current (truncated) block.

Block 2810 currently contains three pre-1933 buildings: the former casket manufacturing building (11-13 Anthony Street), the former auto repair building (19-21 Anthony Street), and the former chicken feed manufacturing building (23-25 Anthony Street). Modern infill in the rest of the block includes a filling station and car wash in the southwest corner (1 Anthony Street/546 Morgan Avenue), and the loading dock and warehouses built in 1965 and 1977 at the eastern end of the block (Sanborn 2002a).

The APE includes the far northern edge (street frontage) of the current (modern outline of) Block 2810, just south of the current alignment of Meeker Avenue. This narrow area has no prehistoric or historic archaeological potential because it is probably disturbed by storm drains, driveways, sidewalks, and other utilities. Portions of this block with standing structures have no or low potential for prehistoric or historic archaeological because of the disturbance associated with building construction. Prehistoric archaeological potential is low to none, although this area is situated on the bluff back from Newtown Creek; subsequent disturbance has likely destroyed subsurface remains of the temporary or permanent campsites and special use and resource processing areas that might be present in this area.

Block 2811 (formerly Block 769). Block 2811 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). Block 2811 was on the border between two lots on the 1828 plat of the Peter Duryea estate (Figure B-4). The northeastern corner of Block 2811 was in Lot Two and the remainder was in Lot Three.

Block 2811 was undeveloped farmland in 1844 (Figure B-3) and 1866 (Figure B-6). Block 2811 became part of two separate farms by the mid-nineteenth century: Farm A in the northeast corner and Farm F in the remainder of the block. As discussed under Block 2804, Farm A's farmhouse (home of Anthony Hulst) was apparently north of the APEs for this project. The Hulst farmhouse was probably in Farm G, the farm north of Farm A (both were owned by Hulst). The Hulst farmhouse was probably located approximately 950 to 1,050 feet northeast of Block 2811.

Farm F, owned by the heirs of John Waters by the mid-nineteenth century, did not have a farmhouse, based on examination of the 1844 and 1866 maps (U.S. Coast Survey). Because John Waters also owned Farm C containing the Clay/Duryea house, Farm F probably was used as farmland for raising crops or grazing livestock instead of domestic purposes.

Many of the blocks in the project area began as perfect rectangles measuring 400 feet by 200 feet. However, Block 2811 was not a perfect rectangle because the extreme northeastern tip was missing due to Porter Avenue shifting to the northwest. The resulting length of the block along Porter Avenue was 170 feet up to the shift, and 35 feet diagonally north of the shift (Bromley & Robinson 1880).

Block 2811 was subdivided into 27 house lots on the former Farm F property by 1880. However, the northeastern corner of the block (former Farm A) remained undivided (Bromley & Robinson 1880). No development was noted upon the block in 1880 (Bromley & Robinson 1880), 1886 (Robinson 1886), or 1888 (Sanborn 1888). Two buildings or structures were standing near the block's northeast corner in 1907 (on former Farm A): a rock pocket and a stone crusher (Sanborn 1907). The stone crusher was southeast of the rock pocket and both buildings were oriented diagonally to the block but parallel to the old farm division line. The stone crusher extended into Porter Avenue. Perhaps these structures were being used to prepare road gravel. No buildings were standing on the remainder of the block in 1907.

A city park was established in the western half of Block 2811, at the intersection of Vandervoort Avenue, Cherry Street, and Anthony Street (NYC Department of Parks & Recreation 2001). The park was established in 1924 and added onto in 1935 and 1939. The park was named Sgt. William Dougherty Playground in 1948. The western half of the block was undeveloped in 1933, so the additional lands acquired in 1935 and 1939 were apparently vacant land (Sanborn 1933).

The entire eastern half of the block was developed between 1907 and 1933 (Sanborn 1907, 1933). The two buildings or structures from 1907 were gone, and a furniture manufacturing and storage facility was constructed. Portions of the building (513 Porter Avenue) are still standing, and the building is slated to be taken under the build alternatives.

Although no buildings were taken on Block 2811 in the late 1930s for construction of the approach to the Kosciuszko Bridge, the northwestern corner (part of the park) was taken sometime between 1933 (Sanborn 1933) and 1937 (NYCDPS 1937) for the straightening of the jog in Vandervoort Avenue as it crossed Meeker Avenue.

One map was found which shows a building or structure on the eastern half of the block, within the park. In 1947, a building was standing on Anthony Street, centered along the southern edge of the park (Army Air Service 1947). The small, square building may have been a park pavilion or shelter and is no longer standing (Figure C-8). Sgt. William Dougherty Playground is currently entirely paved except for areas immediately adjacent to the trunks of the many trees, and a raised bed containing fill dirt along the northern portion of the warehouse wall (field visit September 2004).

The APE includes the northern edge of Block 2811. There is no archaeological potential under the sidewalks along Cherry Street due to disturbance for construction of the sidewalks, the Cherry

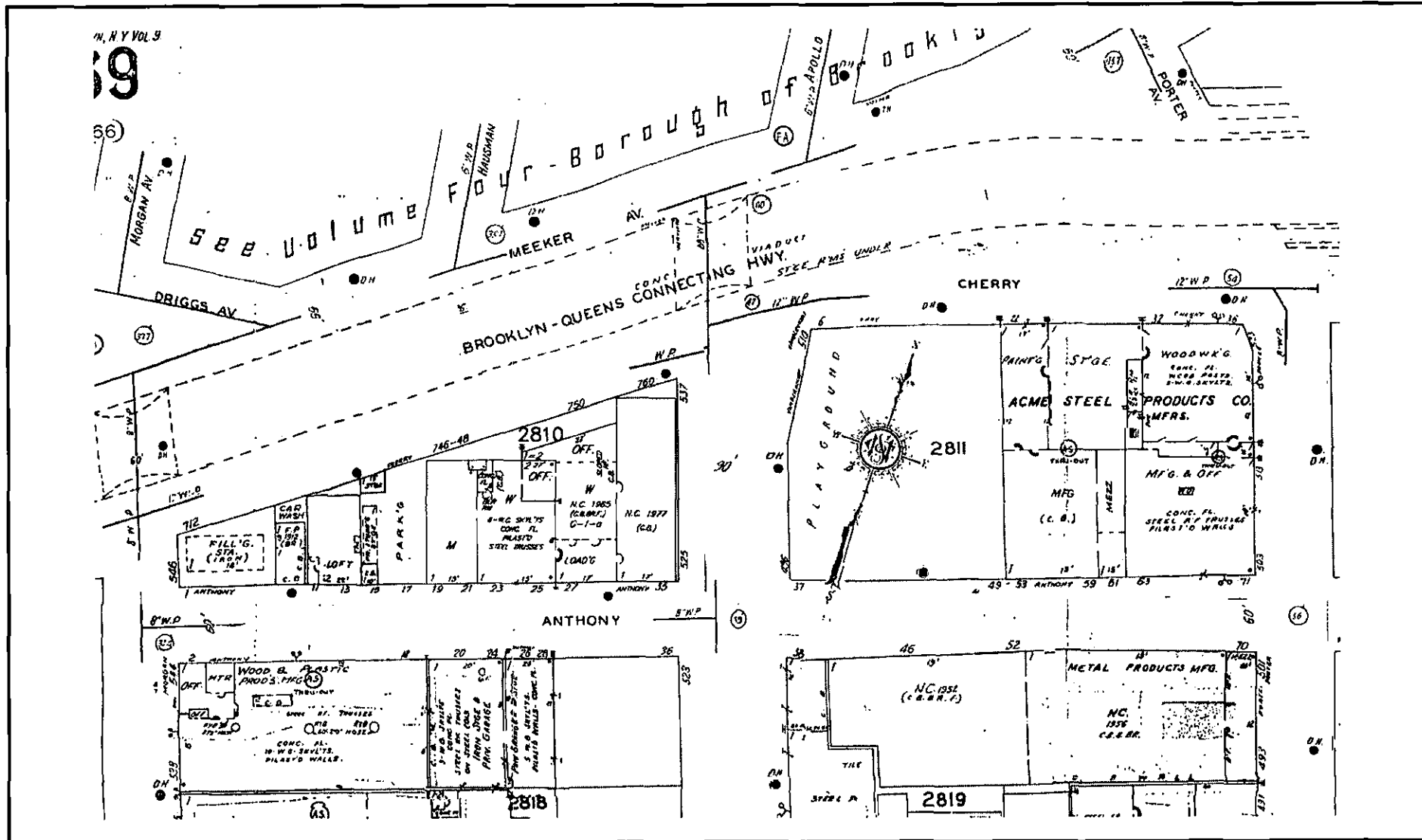


Figure C-8
Block 2810 and 2811 in 2002

Source: Sanborn 2002a



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Street curb, and underground utilities. There is no prehistoric or historic archaeological potential in this block's eastern half (the warehouse constructed circa 1907 to 1933), due to construction activities. Prehistoric archaeological potential in the block's western half (the park established in the 1920s) is low due to ground disturbance from grading, paving, tree planting, and mature tree roots. Historic archaeological potential is low in the block's western half due to a lack of historic buildings and the distance from the property's farmhouses. The former locations of historic structures present in 1907 (the rock pocket and stone crusher) have been redeveloped and are not within the APE.

Block 2812 (formerly Block 762). Block 2812 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). The eastern third of Block 2812 (and portions of nearby Blocks 2813 and 2820) occupies the highest ground in the APE for archaeology on the Brooklyn side of the creek. Although only approximately 50 to 55 feet above sea level (Army Air Service 1947), this high spot overlooked wetlands to the north and east (Newtown Creek and former marshes/meadows) and would be favored for habitation by Native Americans.

Block 2812 was undeveloped farmland traversed by the North Road in 1844 (Figure B-3). By 1866, the block still appeared to be undeveloped farmland, but the former road appears to have become merely a fenced border between farms (Figure B-6). Block 2812 became part of two separate farms by the mid-nineteenth century: Farm A to the northwest of the road and Farm C to the southeast of the road. As discussed under Blocks 2804 and 2806, Farm A and Farm C's farmhouses were north of the APE for this project. The Hulst farmhouse was probably in the Farm adjacent to Farm A to its north, Farm G (also owned by Anthony Hulst). The Hulst farmhouse was probably located approximately 750 to 850 feet north of Block 2812. The Clay/Duryea farmhouse in Farm C stood until 1921, roughly 1,300 to 1,400 feet northeast of Block 2812.

No development (except for the North Road to Newtown) is depicted on Block 2812 on maps dating to 1844 (U.S. Coast Survey 1844) and 1866 (U.S. Coast Survey 1866). The block remained undivided and undeveloped through 1907 (Bromley & Robinson 1880; Robinson 1886; Sanborn 1888, 1907). The block was being used for storage by contractors in 1933 (Sanborn 1933), and a total of eight one-story storage buildings or sheds lined the street edges of the western third of the block (along Anthony, Porter, and Cherry streets). A one-story, vacant building (111 Anthony Street/521 Varick Avenue) occupied the extreme southeast corner of the block in 1933 (Sanborn 1933).

Block 2812 was not directly impacted by construction of the approach to the Kosciuszko Bridge and is separated from the eastbound on-ramp by Cherry Street. Therefore, it is likely that no grading took place in the late 1930s in conjunction with construction of the bridge approach. The only buildings depicted on the block in 1947 extended along the block's northern edge (Cherry Street). The narrow row of buildings began at the Porter Avenue corner and extended more than halfway to the Varick Avenue corner (Army Air Service 1947).

All of the buildings standing on the block in 1947 have been demolished (Sanborn 2002a). An auto repair building (68-70 Cherry Street) was built in 1951 near the block's northwestern corner. This building is slated to be taken under all of the build alternatives. The remainder of the block is paved and vacant, except for two modern buildings in the block's northwest quadrant on the same lot (Sanborn 2002a and field visit 2004). A private garage and office occupies the block's northwest corner and a one-story warehouse with rear additions is situated near the center of the block on Cherry Street, with parking between the building clusters (Sanborn 2002a and field visit 2004). These modern buildings also are slated to be taken under all of the build alternatives.

Portions of the northern half of Block 2812 are within the APE. Archaeological potential is moderate for prehistoric archaeological resources, in portions of the APE outside of the footprints of current

buildings and the row of former (circa 1947) buildings (all on Cherry Street), due to the block's location on high ground overlooking wetlands. However, the extent of grading to prepare the area between the buildings for paving is unknown. Archaeological potential is low for historic archaeological resources. No evidence of historic development was found in the APE until a series of sheds were erected for contractor's storage between 1907 and 1933. These buildings would not be expected to leave an archaeological footprint, as they probably had shallow foundations or no foundations. By 1947, more substantial buildings appear to be standing in the APE (on Cherry Street), but these buildings have been demolished and current evidence on them is limited. Archaeological evidence of the circa 1947 buildings (including foundations) may still be present in between the three standing buildings on Cherry Street. The eighteenth- and nineteenth-century former road is not within the APE for this block.

Block 2813 (formerly Block 758). Block 2813 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). The western third of Block 2813 (and eastern portions of nearby Blocks 2812 and 2820) occupies the highest ground in the APE for archaeology on the Brooklyn side of the creek. Although only approximately 50 to 55 feet above sea level (Army Air Service 1947), this high spot overlooked wetlands to the north and east (Newtown Creek and former marshes/meadows) and would be favored for habitation by Native Americans.

Like the block to the north, Block 2806, this block was on the border between two lots in the 1828 plat of the Peter Duryea estate (Figure B-4). The extreme northwestern corner of Block 2813 in Lot Two was separated from Lot One in the remainder of the block by a road. This former road, known as the North Road to Newtown in the eighteenth and early nineteenth centuries, was discussed above under Block 2806.

Block 2813 was undeveloped farmland traversed by the North Road in 1844 (Figure B-3). By 1866, the block still appeared to be undeveloped farmland, but the former road appears to have become merely a fenced border between farms (Figure B-6). Block 2813 became part of two separate farms by the mid-nineteenth century: Farm A to the northwest of the road and Farm C to the southeast of the road. As discussed under Blocks 2804 and 2806, Farm A and Farm C's farmhouses were north of the APE for this project. The Hulst farmhouse was probably in the Farm adjacent to Farm A to its north, Farm G (also owned by Anthony Hulst). The Hulst farmhouse was probably located approximately 750 to 850 feet north of Block 2813. The Clay/Duryea farmhouse in Farm C stood until 1921, roughly 950 to 1,050 feet northeast 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.

In summary, portions of the northern half of Block 2813 are within the APE. Archaeological potential is moderate for prehistoric archaeological resources due to the block's location on high ground overlooking wetlands and the apparent lack of historic development. However, the extent of grading to prepare the block before it was paved is unknown. No evidence of historic development was found in the APE except for a former historic road, the North Road to Newtown, which may

have followed a former Native American path. Archaeological evidence of the former road, reportedly paved with shells, or the fence lines which once lined the road and marked farm fields, could be present. The historic archaeological potential is low.

Block 2814 (formerly Block 714). Block 2814 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). This block was within Lot Number One on the 1828 plat of the land of Peter Duryea's estate (Figure B-4). The north edge of Block 2814, along Cherry Street, was approximately 850 to 950 feet southwest of the Clay/Duryea house and the "pre-Penny" bridge. Block 2814 was situated in the uplands, west of the bluff edge (near present-day Gardner Avenue).

No buildings appear to be located on this portion of the farm on the 1844 and 1866 U.S. Coast Survey maps (Figure B-3; Figure B-6). Block 2814 became part of Farm C by 1855 (owned by the heirs of John Waters). John Dobbins operated a dairy farm on Farm C in the 1880s, but the property was owned by the heirs of John Waters.

Block 2814 was subdivided on paper into 32 lots by 1880 (Bromley and Robinson 1880). The block remained undeveloped through 1898 (Robinson 1886; Sanborn 1888; Hyde 1898). A commercial manufacturing complex, L.F. Rand and Company Insulating Compounds, was constructed between 1898 and 1907 on Block 2814 (Sanborn 1907). The company's buildings were mainly in the southwest quarter of the block on Anthony Street and included a corrugated iron building housing melting kettles and several buildings used as sheds and offices. A fence in front of the complex (159 to 167 Anthony Street) extended into Anthony Street. A two-story stable at 128 Cherry Street was the only building on the north half of the block in 1907. Because the rear lot line behind the stable was adjacent to the company's offices, it is likely that the stable was part of L.F. Rand and Company.

The entire L.F. Rand and Company complex was no longer standing in Block 2814 by 1933 and was replaced with undeveloped lots. The only lot with a standing building in 1933 was at the block's northwest corner (corner of Cherry Street and Stewart Avenue). No buildings on Block 2814 were taken for construction of the bridge approach in the late 1930s, as the footprint of the approach did not include this block (NYCDPS 1937; NYCDPW 1938). The building at the block's northwest corner remained standing by 1947 (Army Map Service 1947).

Block 2814 has been redeveloped and currently includes several buildings constructed since 1953. A motor freight station building (515-521 Gardner Avenue) constructed in 1954 is within the block's southeast quadrant.

Most of the central third of Block 2814 is covered by a massive building built in 1964, which housed Curtis Electro N.Y. Inc. Light Fixture Manufacturing (126 to 140 Cherry Street; Sanborn 2002a). A garbage transfer station building, built in 1989, is within the block's western third, at 120 Cherry Street. A putty manufacturing building that appears to have been constructed circa 1960 (Sanborn 2002a; field visit 2004) is at the northwest corner of the block (520 to 526 Stewart Avenue/116 to 118 Cherry Street). The putty manufacturing building appears to have replaced the former building on the lot, the circa 1907 to 1933 Bottle Works. Stewart Avenue along the western edge of the block is closed to vehicular traffic.

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 Works 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 APE 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 was 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).

Block 2815 (formerly Block 707). Block 2815 was part of Farm One (owned by Humphrey Clay and later by the Duryea family). This block was within Lot Number One on the 1828 plat of the land of Peter Duryea's estate (Figure B-4). The western half of Block 2815 was situated in the lowland tidal marsh along Newtown Creek called a "meadow" in 1828, about 800 feet to 900 feet south of the Clay/Duryea house. The far western edge of the block, adjacent to Gardner Avenue, was situated on the bluff above the marsh, straddling the "line between the upland and the meadow" (Robinson 1889a). The original shoreline of Newtown Creek was approximately in the central third of this block (Figure C-3). Therefore, the eastern half of the block was created by filling in the former creek.

No buildings appear to be located on this portion of the farm in 1844 and 1866 (U.S. Coast Survey 1844, 1866). Block 2815 became part of Farm C by 1855 (owned by the heirs of John Waters). John Dobbins operated a dairy farm on Farm C in the 1880s, but the property was owned by the heirs of John Waters. Block 2815 was subdivided on paper into 32 lots by 1880 (Bromley and Robinson 1880). Between 1880 and 1888, a tallow factory was constructed in the northeastern quadrant of the block (Sanborn 1888). The one-story building was not aligned with the lot lines and straddled two lots (172-174 Cherry Street). A one-story shed on Cherry Street approximately 50 feet to the north of the tallow factory appears to have been an associated outbuilding. The shed was approximately 10 feet north of the lots at 174-176 Cherry Street. The elevation of the intersection of Scott Avenue and Cherry Street was approximately 12 feet above sea level in 1888 (Sanborn 1888), suggesting that roughly 12 feet of fill had been placed in this portion of the block. The tallow factory and shed were removed sometime between 1898 (Hyde 1898) and 1907 (Sanborn 1907). No buildings were standing on the block in 1907 (Sanborn 1907).

Most of Block 2815 became part of the Fleer Brothers Coal Yard by 1933. The coal yard extended southward into present-day Anthony Street (to the southern end of former Farm C) and eastward into Block 2816 (Sanborn 1933). The main building in the coal yard was in Block 2816; this block is not within the APE for archaeology. Block 2816 is the only block north of Anthony Street and south of the Meeker Avenue bridge that had been filled up to the bulkhead line by 1933 (Sanborn 1933).

The lot in the northwest corner of Block 2815 may not have been part of Fleer Brothers Coal Yard in 1933. The main building on the lot was set back roughly 15 feet from both Cherry Street and Gardner Avenue (Sanborn 1933). Three outbuildings were located on the same lot, to the east and south of the main building. This block was not taken as part of the construction of the approach to the Kosciuszko Bridge in the late 1930s. The buildings on the lot in the northwest corner of the block do not appear on a map from 1947 (Army Map Service 1947). An auto repair/motor freight station building was constructed near the center of the block in 1968 (186 Cherry Street/514 Gardner Avenue/463 Scott Avenue). A two-story warehouse was constructed in 1987 on the lot in the northwest corner of the block (152-156 Cherry Street/518 Gardner Avenue). The warehouse building extends up to the adjoining streets (Cherry and Gardner) and does not match the footprint of the circa 1933 building in the block's northwest corner (which was set back from the streets).

The extreme northwest corner of Block 2815 is within the APE for archaeology. The western half of Block 2815 appears to be land created by filling in the tidal marsh along Newtown Creek. The potential for prehistoric archaeological resources beneath the fill is low because the fill covered a

wetland that would not have been conducive to prehistoric occupation. There is no potential for prehistoric archaeological resources within the fill itself.

However, there is low potential for prehistoric resources on the former bluff area along the western edge of the block because most of that section of the property is dominated by a two-story building constructed in 1987. Prehistoric sites that might be present on the bluff overlooking Newtown Creek include temporary or permanent campsites and special use and resource processing areas.

The eastern half of Block 2815 appears to be land created by filling in Newtown Creek. The potential for prehistoric deposits on the creek bottom is low but could include features such as fish weirs, although such sites would be buried under 12 feet of fill. There is no potential for prehistoric deposits within the fill itself.

The potential for historic archaeological resources is low because the foundations and primary and secondary refuse deposits associated with the late nineteenth-century tallow factory or the circa 1933 coal yard have been disturbed by twentieth century building construction and the building of Cherry Street. The potential for historic domestic deposits beneath the late nineteenth-century fill are not likely because no dwellings were located on this property, and the distance from this block to the Clay/Duryea farmhouse is considerable. The potential for historic domestic deposits on the former bluff edge is low due to disturbance by at least two twentieth-century construction episodes.

Block 2817 (formerly Block 775). Block 2817 was part of two early farms. The eastern three-quarters of the block, roughly, was part of Farm One (owned by Humphrey Clay and later by the Duryea family). The western quarter of the block was part of Farm Two (owned by the Polhemus family and then by the Wyckoff family).

The eastern three-quarters of the block (Farm One) was in Lot Three on the 1828 plat of the Peter Duryea estate (Figure B-4). The eastern three-quarters of Block 2817 became part of Farm F, owned by the heirs of John Waters by the mid-nineteenth century. As discussed under Block 2804, Farm F probably did not have a farmhouse, and was used as farmland for raising crops or grazing livestock instead of domestic purposes.

The western quarter of the block (Farm Two) was owned by the Polhemus family until 1797. The Polhemus family reportedly built a home known as the Manor House on the farm after 1749. Peter Wyckoff purchased the property from Polhemus heirs in 1797. The Manor House was situated on what is now the roadway of Monitor Street near Engert Avenue, close to the junction of Meeker Avenue. The house was reportedly demolished in 1892 to make way for the construction of Monitor Street. This former location of the Manor House is approximately 300 feet northwest of Block 2817 and is not in the APE for archaeology.

Farm Two contained a second pre-Revolutionary War house, the Debevoise farmhouse. The Debevoise farmhouse was located diagonally across from the Manor House, on the southern side of the original location of Meeker Avenue, within the future location of Kingsland Avenue (Figure C-9). The barn of the Debevoise house was reportedly the quarters of Hessian soldiers during the American Revolution. The Debevoise farmhouse was still standing in 1899, when it was photographed. The farmhouse was approximately 400 feet from the former northwest corner of Block 2817 along Meeker Avenue's southern edge (Sanborn 1888). The house lot containing the Debevoise dwelling included outbuildings that were within the future location of Kingsland Avenue and the future locations of several lots along Kingsland Avenue in Block 2817.

Block 2817 was undeveloped farmland, 100 feet to 300 feet north of the North Road, in 1844 (Figure B-3). By 1866, Block 2817 remained undeveloped farmland but was now situated adjacent to Meeker Avenue, the new approach to the Penny Bridge (Figure B-6). The 1844 and 1866 maps

(U.S. Coast Survey 1844, 1866) do not depict the Manor House or the Debevoise farmhouse on Farm Two even though both were extant at those times. Daniel C. and Ambrose C. Kingsland acquired Farm Two sometime between 1845 and 1852. The southern tip of the farm, bordered by the Old Wood Point Road on the west and the Bushwick and Newtown Turnpike (now Meeker Avenue) on the north, was surveyed and platted in May 1852. The Kingslands likely intended to sell lots for development in this portion of the farm (which included the western quarter of Block 2817). By 1866, Kingsland Avenue had been constructed through most of Farm Two (also known as Farm H) north of Meeker Avenue (US Coast Survey 1866). Kingsland Avenue had not yet been extended south of Meeker Avenue by 1866, adjacent to the future Block 2817, perhaps because the Debevoise farmhouse was within the future street. Kingsland Avenue was shown on an 1871 survey of the Kingsland property as a 70-foot-wide street north and south of Meeker Avenue (Robinson 1889e). However, the house lot of the Debevoise farmhouse is depicted in 1871 as roughly 92 feet by 55 feet, within Kingsland Avenue and extending into Blocks 2817 and 2829 (in the southeast and northwest corners of the house lot, respectively). The intrusions of the house lot into the blocks are not included as lots within those blocks. This suggests that the owner of the house lot may have retained title to the lot, or perhaps that the Kingslands owned the house lot but had an arrangement to leave the house lot intact during the tenant's occupancy.

Because the APE includes only the northern half of the original block, the rest of the discussion will focus on the northern half. Block 2817 remained undeveloped in 1880 (except for the Debevoise farmhouse lot in and near Kingsland Avenue), and was divided into 64 lots (Bromley & Robinson 1880). The Kingsland heirs sold the property in 1883, and development occurred soon thereafter. By 1886, 22 lots in Block 2817 were developed with frame buildings (Robinson 1886). The new buildings were in the eastern third of the block, along Morgan Avenue and along Lombardy Street and Meeker Avenue near Morgan Avenue. Five of the new buildings, four dwellings (198-1/2, 198, 194, and 192 Meeker Avenue) and one store (190-1/2 Meeker Avenue), fronted on Meeker Avenue (Sanborn 1888). One dwelling (194 Meeker Avenue) and the store had an outbuilding in their backyard in 1888. A staggered row of houses were standing on Morgan Avenue lots in the northern half of the block in 1888. The houses (539 to 547 Morgan Avenue) were near the rear lot lines and were two-story except for the one-story house at 545 Morgan Avenue. No outbuildings were depicted in the rear yards of the Morgan Avenue houses in 1888.

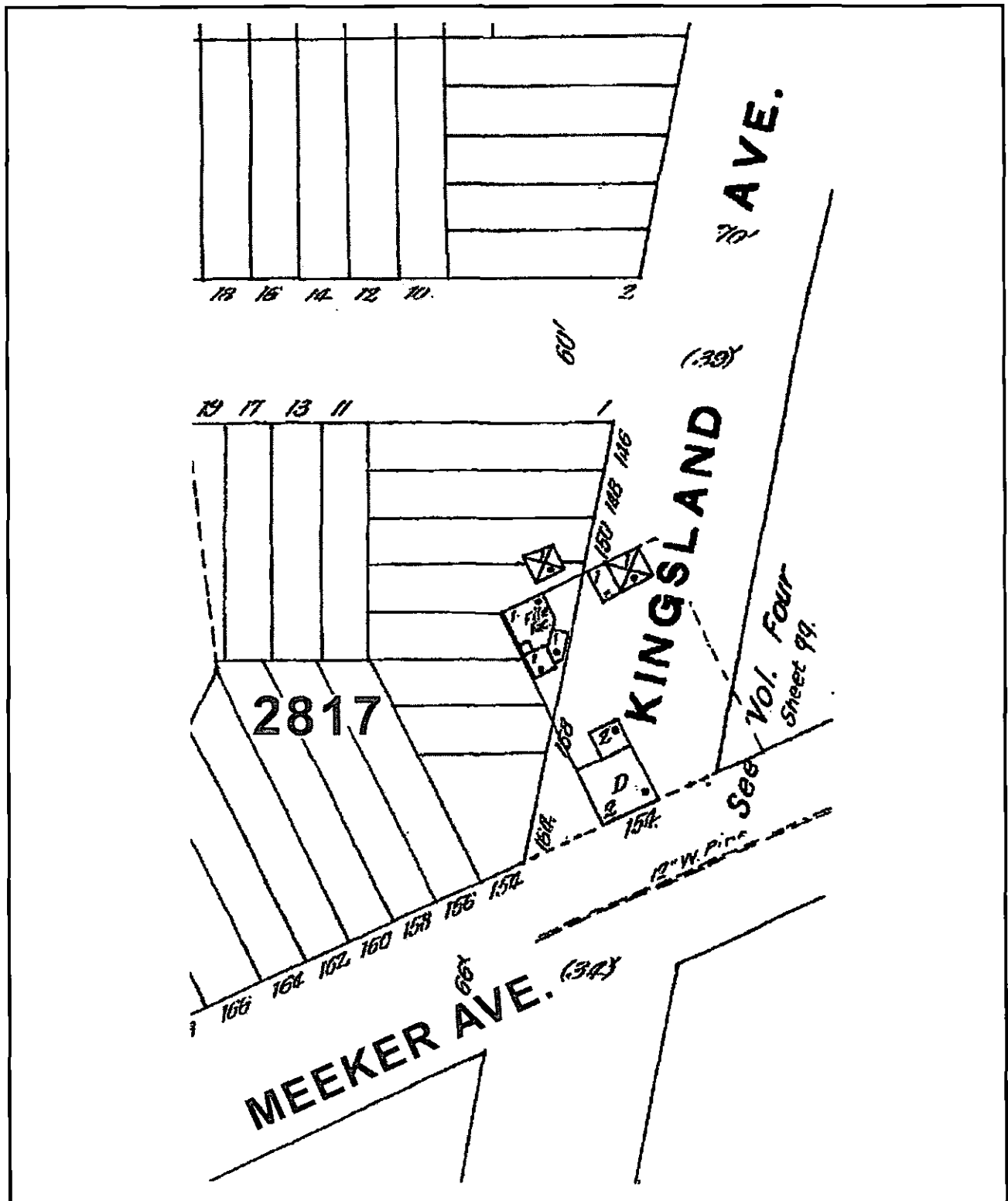


Figure C-9
Debevoise Farmhouse near Block 2817 in
1888

Source:
Sanborn 1888



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By 1907, nearly every lot in Block 2817 was developed (Figure C-10). A stable with sheds attached was located to the rear of the northwest corner lot (164 Kingsland Street/154 Meeker Avenue) in 1907. A row of 11 three-story dwellings and stores (162 to 182 Meeker Avenue) bordered Meeker Avenue from near Kingsland Avenue to opposite Sutton Street. The store at 180 Meeker Avenue, a bakery, had a bake house and a stable in the backyard in 1907. A two-story store at 184 Meeker Avenue had a one-story wagon house and stable as rear wings. The lots at 186, 188, and 190 Meeker Avenue were undeveloped in 1907. The five dwellings and the store between 190-1/2 and 198-1/2 Meeker Avenue described above in 1888 were still standing in 1907. A new dwelling was added in the gap between dwellings, 196 Meeker Avenue, sometime after 1888 and by 1907. The rest of Meeker Avenue up to Morgan Avenue (200, 202, and 204-206 Meeker Avenue) remained undeveloped in 1907. The staggered row of six houses on Morgan Avenue (539 to 547 Morgan Avenue) appear to be little changed between the 1888 and 1907 Sanborn maps.

The following changes were noted in the northern half of Block 2817 in comparing the 1933 and 1907 Sanborn maps. In 1933:

- The stable with attached sheds on the corner lot (164 Kingsland/154 Meeker Avenue) was gone and the lot was undeveloped.
- The Max Trunz Pork Packing facility, which covered much of the southern half of the block by 1933, expanded into the rear yards of the three-story dwellings (apartment houses) by building a soaking room and smoke house.
- The rear yard of the bakery (180 Meeker Avenue) still contained the bake house, but a rear addition with a brick oven replaced the former stables, and the bake house also had a front addition. The bake house and additions were one story.
- A one-story apartment building and rear wing (188 Meeker Avenue) and a one-story fireproof door manufacturing facility (190 Meeker Avenue) were standing on previously undeveloped lots.
- The store at 190A Meeker Avenue had a small, rear addition plus a one-story outbuilding in the backyard.
- The three-story former dwelling at 196 Meeker Avenue was a flat (apartments).
- The previously vacant lots in the northwest corner of the block (549 to 555 Morgan/200 to 206 Meeker avenues) were re-divided and developed. A one-story building at 200-204 Meeker Avenue was vacant. A three-story store occupied the corner (206 Meeker/555 Morgan avenues). A one-story bottling works (551 Morgan Avenue) and one-story oil storage building (549A-549B Morgan Avenue) were south of the new store. The staggered row of six houses (539 to 547 Morgan Avenue) was unchanged except for a two-story addition to the rear of 543 Morgan Avenue. However, one-story automobile garages were added at the front lot lines of two of these houses: 543 and 543-1/2 Morgan Avenue.

All of the block's buildings standing in 1933 have been demolished. The northern half of the block was taken in the late 1930s for construction of the approach to the Kosciuszko Bridge and the relocation of eastbound Meeker Avenue south of the bridge approach. The same area was disturbed again in 1971 for reconstruction of the bridge approach (NYSDOH 1971).

Any buildings standing on the truncated Block 2817 after the rest of the block was taken for construction in the late 1930s have since been demolished. The block is now occupied by a McDonald's Restaurant and paved parking lot (western two-thirds of the block) and a Hostess Cake/Wonder Bread distribution facility and a paved parking lot dating to 1986 (eastern third of the block) (Sanborn 2002a and field visit 2004).

The northern edge of Block 2817 was truncated in the late 1930s for construction of the bridge approach and the relocation of eastbound Meeker Avenue to the south of the approach. Therefore, present-day Meeker Avenue north of the block was originally part of Block 2817 and will be considered within the APE for Block 2817. The proposed ramp would begin to veer off of the current viaduct near the center of the Kingsland Avenue underpass, immediately west of Block 2817. This eastern half of Kingsland Avenue is the western end of the APE and also will be part of the APE for Block 2817.

The same area of the block taken in the 1930s was disturbed again in the 1970s for reconstruction of the bridge approach. There is no prehistoric archaeological potential within the APE due to the high degree of disturbance from repeated construction episodes in the nineteenth and twentieth centuries.

There is no potential for archaeological remains of the foundations of the houses and stores built by 1888, 1907, or 1933 along the block's original northern edge (156 to 206 Meeker Avenue), as these buildings' locations are now under the bridge approach and eastbound Meeker Avenue, and both roadways have been constructed twice. However, there is low to moderate archaeological potential for historic archaeological resources at the locations of the rear yards of some of these buildings, especially where the APE extends southward into the current block. Deep deposits in the rear yards such as privies and wells may have survived the repeated construction of Meeker Avenue. Deep and even shallow deposits may have survived under the paved parking of the current block's northern edge, depending on the extent of grading during demolition and construction.

Portions of the rear yards of all of the former Meeker Avenue buildings (built circa 1888 to 1933) are within the APE, except for the former store near Kingsland Avenue at 156 Meeker Avenue (the APE crosses the rear foundation of this store but does not enter the yard). The portions of the rear yards in the APE under present-day eastbound Meeker Avenue are likely to be more disturbed than the portions of the rear yards that are under the current paved parking lots in the block. Specific archaeological resources that may be found in the APE are related to the following structures, beginning at the western end of the block (Kingsland Avenue):

- The eighteenth-century Debevoise farmhouse was demolished sometime between 1899 and 1907. The former location of the farmhouse, straddling the center of Kingsland Avenue along the southern edge of former Meeker Avenue (Figure C-9), would be near the center of the current Kingsland Avenue underpass under the BQE, below the centerline of the BQE viaduct. The APE for archaeology essentially begins at the 12-inch water line in the center of Kingsland Avenue. Construction of this water line would have disturbed the north and west walls of the main part of the farmhouse. However, deep deposits such as wells or privies could be in the APE in the rear yard of the farmhouse, within Kingsland Avenue and under the BQE bridge approach. The outbuildings depicted in the rear yard of the farmhouse lot and just beyond the rear yard (Sanborn 1888) are not within the APE. The corner lot of Block 2817 adjacent to the former farmhouse (164 Kingsland/154 Meeker avenues) has seen little historic development based on maps examined and is likely to have contained historic domestic deposits. However, unless a deep deposit such as a well or privy was located on the lot, the likelihood of surviving repeated disturbances during construction of the bridge approach and eastbound Meeker Avenue is low.

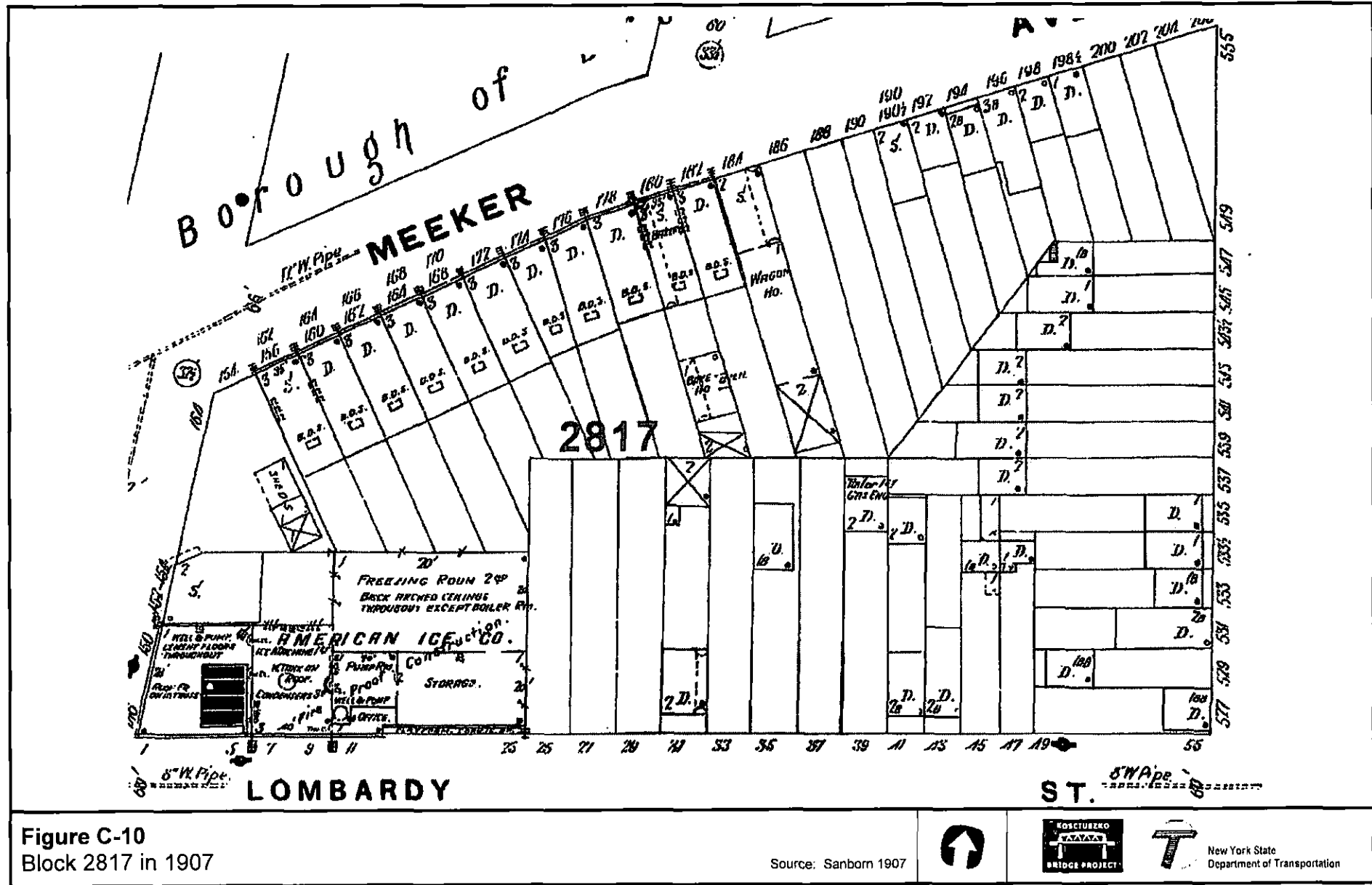


Figure C-10
Block 2817 in 1907

Source: Sanborn 1907



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- The APE appears to include the northern wall of the former bake house (circa 1907) in the rear yard of the bakery (180 Meeker Avenue) and the northern addition to the bake house (circa 1933). Portions of the bake house foundations or associated deposits may be intact under the paved parking lot, although they were only one story and may have been obliterated by construction of the curbing and utilities along present-day Meeker Avenue.
- The former location of the one-story wagon house attached to the rear of the store at 184 Meeker Avenue is within the APE. Foundations probably were destroyed by construction of Meeker Avenue, but associated deposits may be intact under the southern portion of the APE, under the current parking lots.
- The foundations of the former door manufacturing facility (190 Meeker Avenue) may be present in the APE, especially in the portion of the lot within the current block's parking lot. The building was only one story tall with a wooden floor and would not need deep foundations. Associated deposits may be found in the APE under the one-story shed wing to the west of the main building's south end.
- The foundations of the one-story outbuilding in the rear yard of the store at 190A Meeker Avenue may be present in the APE, although repeated construction of Meeker Avenue makes this unlikely.
- The APE appears to cross the foundation of the former two-story dwelling at 547 Morgan Avenue and a portion of the front yard. However, both are close to the current Meeker Avenue/Block 2817 boundary and are likely disturbed.
- Portions of the former bottling works (551 Morgan Avenue) and oil storage facility (549A-549B Morgan Avenue) buildings are within the APE. However, both were one-story with no yards and are now under Meeker Avenue, so likelihood of intact foundations is low.

C.2 Queens APE

All of the blocks in the Queens segment of the project area were originally part of the Richard Brutnel farm, patented in 1643. The lands were purchased from Brutnel by William Herrick in about 1653, whose widow married Thomas Wandell in 1660. The blocks were part of the Richard Alsop (1) (b. 1660, d. 1718) property, either inherited from Wandell after 1689, or acquired by purchase. Alsop's son John (1) (b. 1697, d. 1761) inherited the property, and he in turn passed it on to his son Richard (2) (b. 1730, d. 1790), a successful farmer and patriot. Richard's (2) son Thomas (1) inherited the property and passed it on to his own sons, John (2) (b. 1753, d. 1837) and Thomas (2). John inherited the eastern half of the property (including the project area), and Thomas the western half. John Alsop (2) did not live on the farm, and gradually sold off the property, including a 100-acre parcel to Edward Waters in 1810 (CNYTB 1935). The widow of John Alsop (2) sold 115 acres to St. Patrick's Cathedral that became the original portion of Calvary Cemetery in 1845. The last remaining section of the Alsop landholding was sold to the cemetery in 1880. The property east of the cemetery belonging to Edward Waters was eventually purchased by Augustus Rapelye in 1853, who named the area "Laurel Hill" (*Brooklyn Eagle* 1896).

None of the land within Calvary Cemetery, west of the BQE, is within the archaeology APE for any of the alternatives.

Streets and blocks were platted in the Laurel Hill area on paper, appearing on maps as early as 1859, but many never actually existed. Even in the twentieth century, some streets in this area were never paved. Current street plans do not correspond to the early street plans, and consequently it is difficult to determine on which contemporary lot or block some historic resources were located.

The Queens portion of the APE slopes upwards from Newtown Creek to the north. It appears that fill was used to build up the blocks in the lower portions of the Queens APE during the creation of the Kosciuszko Bridge approach, in Blocks 2529, 2520, and the southern end of 2518 (now Block 2519, Lot 150) (NYCDPSNYCDPS 1938: contract 5, drawing no. 2). The southern end of the Queens bank was still low-lying during the planning stage of bridge construction in 1937 and 1938, so the large concrete bridge-support piers between 56th Road (formerly 55th Drive) and the LIRR right-of-way, in Block 2520, required well points to keep the construction trenches for the pier footings from flooding (NYCDPS 1938: Contract 5, supplementary drawing S-2). The construction plans for the bridge required removal of soil in blocks between current 55th Avenue and 54th Road. To build the bridge support piers at Blocks 2516 and 2517, 25 vertical feet of soil was slated for removal (NYCDPS 1938: contract 4, drawing no. 2; contract 5, drawing no. 3). Consequently, the soil that would contain archaeological deposits within the current bridge footprint has been removed in the northern section of the project area, and several feet of fill was added from at least the southern half of Block 2518 to the creek. From Blocks 2511 north, a concrete bridge approach ramp connected the bridge approach to the interchange with the Long Island Expressway (LIE). It appears that less soil was removed to construct this ramp than was removed for construction of the bridge piers in the blocks to the south.

Block 2511 (formerly Block 34). This block was owned by Edward Waters in 1810, and later by Augustus Rapelye (*Brooklyn Eagle* 1896; CNYTB 1935). Two structures were located in or near this block in 1859 (Baker and Baker 1859), but no houses were present in 1873 (Figure C-11). The pace of settlement of the area increased, and one structure was present in 1885 (Colton 1885). By 1902 there were numerous structures present: five stores including a bakery (four with) stables, six dwellings, and two stand-alone shed/outbuildings (Hyde 1903; Sanborn 1902) (Figure C-12). The lot lines remained the same through 1914 and contained four stores (three with stables), seven dwellings, and one stable (Sanborn 1914). These same structures were still present in 1929 (Hyde 1929).

Construction of the Kosciuszko Bridge caused dramatic changes in this block. In 1936, the west half of the block was taken for the bridge right-of-way, and only six lots remained, all fronting Hobson Street (formerly Washington Street and currently 43rd Street). Structures present included two stores, three dwellings, and one woodworking shop with storage sheds and a garage (Sanborn 1936). The same structures were present in 1941 and 1955 (Hyde 1941, 1955). Construction of a new on-ramp for the bridge, completed by 1971, required demolition of all the structures on this block, and only the southeast corner was not covered by the new on-ramp (Hyde 1979; Sanborn 2002b) (Figure C-13).

The ground-disturbing activities related to the construction of the bridge approach and on-ramps leveled this area, which was high ground; therefore, there is no potential for intact historic or prehistoric archaeological resources in the west half and northeast quadrant of the block. The structures which were present on the southeast corner of the block in 1902 and still present in 1955 included two stores with stables/garages, and one dwelling. This area is steeply graded up to the bridge ramp and may have been covered with fill after the structures were demolished. Consequently, there is low potential, despite the construction disturbance, that deeply buried, truncated archaeological deposits related to the historic structures may be present in the southeast corner of this block, such as cisterns, privies, wells, and cellars. There is no potential for prehistoric archaeological resources in the southeast quadrant because of the historic occupations in this area and the subsequent construction disturbance.



Figure C-11
Laurel Hill and Vicinity, 1873

Source: Beers 1873



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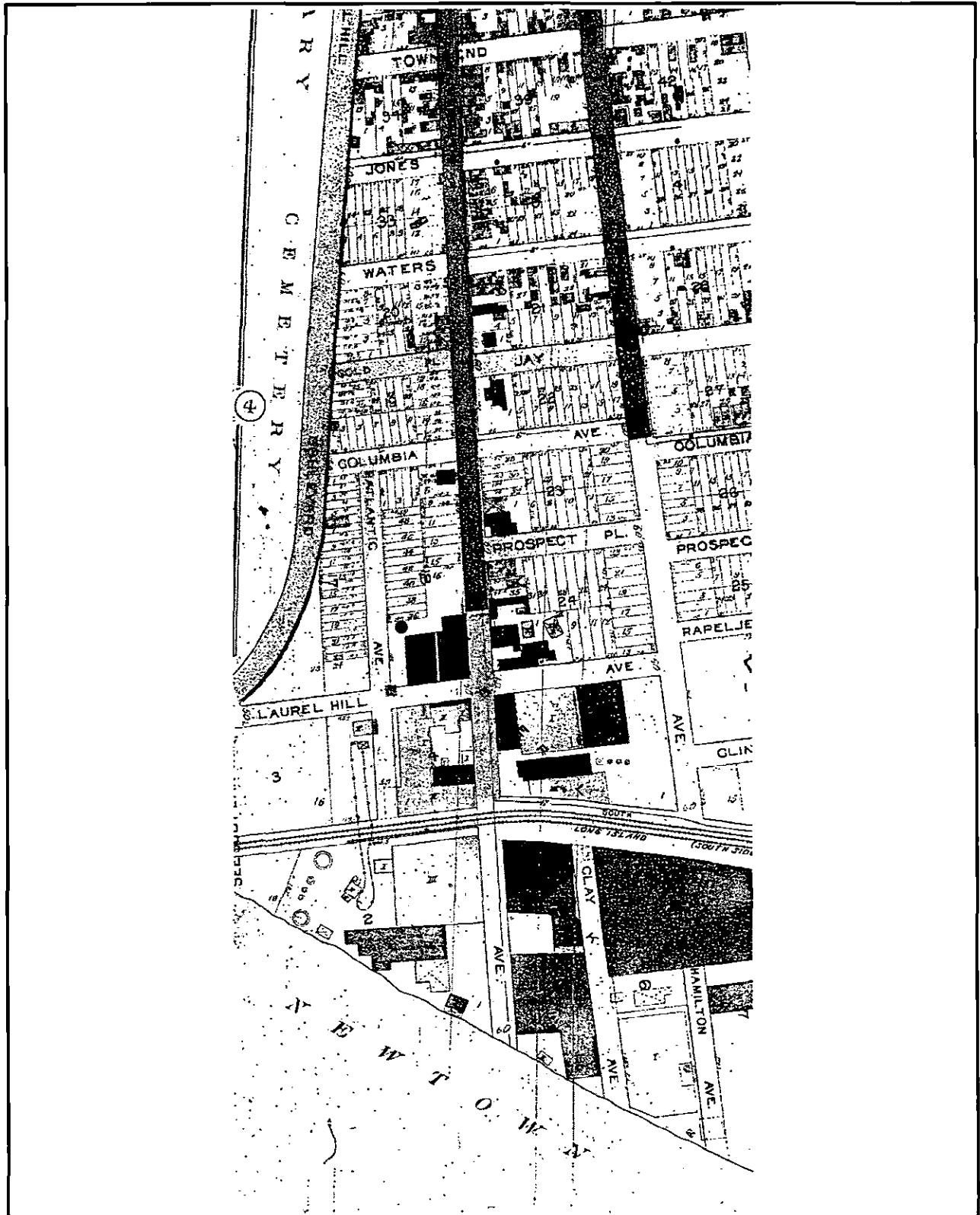


Figure C-12
Blocks 2511 to 2519 and Eastern
Portions of Blocks 2520 and 2529 in
1903

Source: Hyde 1903



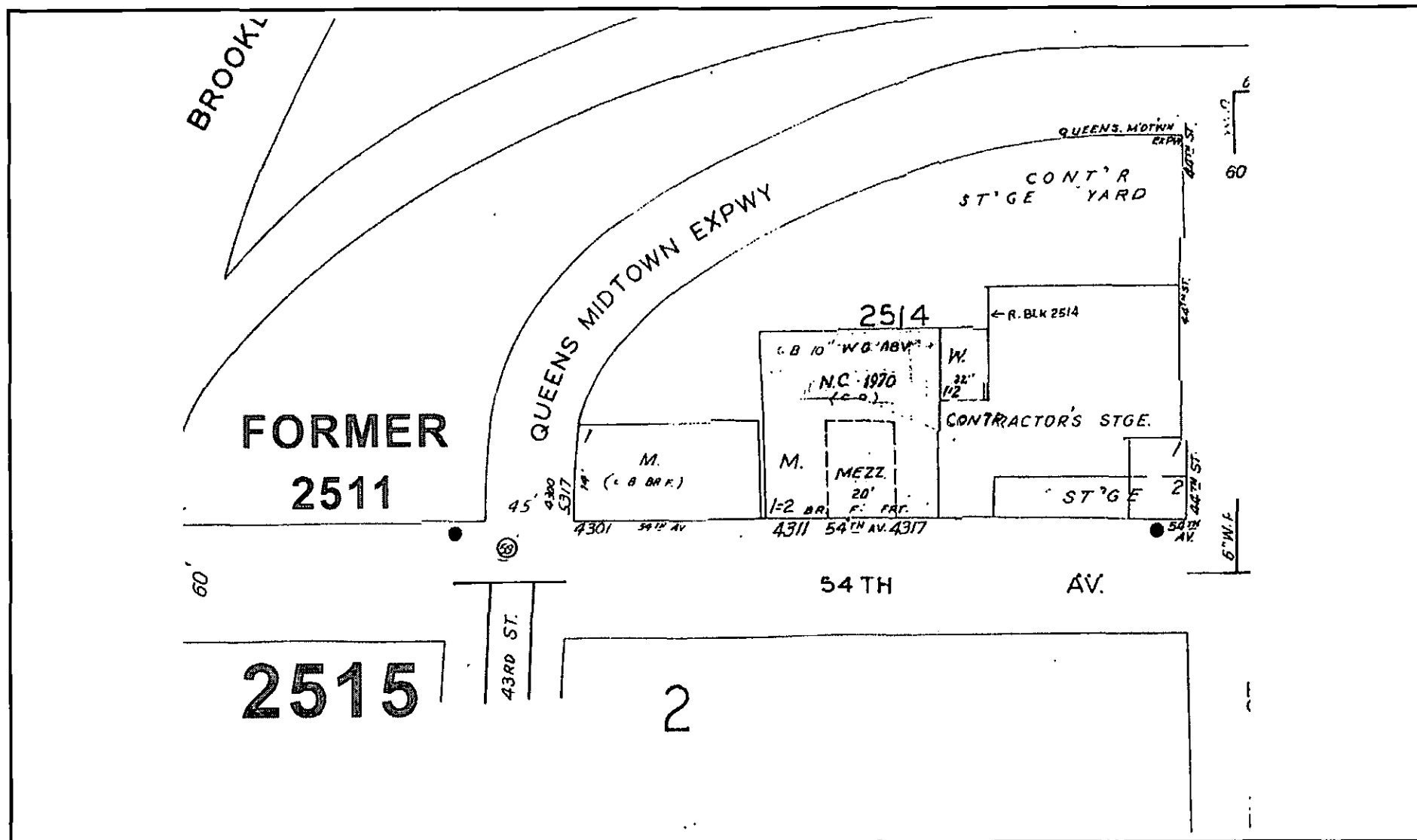
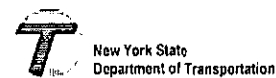


Figure C-13
Blocks 2511 and 2514 in 2002

Source: Sanborn 2002b



Block 2514 (formerly Block 39). This block was owned by Edward Waters in 1810 and later by Augustus Rapelye (*Brooklyn Eagle* 1896; CNYTB 1935). One structure was located in or near this block in 1859 (Baker and Baker 1859), and one building was present in 1873, described as a "hall" (Beers 1873) (Figure C-11). Only one structure was present in 1885, function unspecified (Colton 1885), but by 1902 the pace of settlement increased, and there were 18 main structures present on 17 lots, including 2 stores (one with a hall), 2 stables, and 14 dwellings, plus some outbuildings (Hyde 1903; Sanborn 1902) (Figure C-12). The mixed use of the block continued in 1914 with 17 structures on 16 lots. All but one of the same lots were occupied (Lot 19 was vacant), two stables had been converted to dwellings, and one new dwelling was constructed (Sanborn 1914). By 1929, three of the dwellings fronting 43rd Street were categorized as apartments, and three other dwellings on the block were gone. One lot had been subdivided, and a dwelling had been added to the new lot (Hyde 1929). The block changed little by 1936, with one dwelling added, and one removed. Portions of two lots fronting 44th Street were used for contractor storage and had two buildings present. At the two dwellings, the detached sheds and/or stables were converted into garages (Sanborn 1936).

By 1941, following completion of the Kosciuszko Bridge, the construction storage areas were combined into one lot housing the business of A.J. McNulty & Company, which includes the former storefront and hall; all of the other structures were still present on the block (Hyde 1941). Alteration of the LIE interchange and bridge on-ramp removed the north half of the block, and the smaller residential lots were combined into four larger, commercial properties. Five buildings were present, but only two remained from earlier periods, both on the premises of A.J. McNulty on the southeastern corner. Two large factory structures occupied two large lots fronting Jones Avenue (54th Avenue), including one built in 1970 (Hyde 1979). All of these structures were present in 2005 (Google 2005); areas not occupied by structures in the north and east portions of the block were used for contractor storage (Sanborn 2002b) (Figure C-13).

The northwest portion of Block 2514 is located within the APE. The bridge on-ramp now occupies the northern and western portion of the block. Construction activities for the ramp likely destroyed any subsurface archaeological remains, so this area has no potential for intact prehistoric and historic archaeological remains.

However, the eastern half of the block has experienced fewer alterations. The buildings that were on the McNulty property in 1979 and 2002 occupy the same footprint, are the same size, and have the same number of stories as those shown on the 1902 Sanborn map (Figure C-12; Figure C-13). This is also the building labeled as "hall" in 1902, and may be the same structure as (or a later version of) the 1873 hall shown on the Beers map. Consequently, there is moderate potential for intact subsurface historic archaeological remains in the eastern half of this block, and low potential for prehistoric archaeological resources. Historic site types that might be present include privies, wells, cisterns, trash deposits, and activity areas; prehistoric site types that might be present include middens, camp sites, and activity areas. In addition, backyards and areas between structures were never developed on several lots facing 44th Street. These areas have low to moderate potential for intact prehistoric archaeological remains, and low potential for historic archaeological remains associated with activities on the adjacent lots, such as secondary refuse scatters. Prehistoric site types that might be present include middens, camp sites, and activity areas.

Block 2515 (formerly Block 33). This block was owned by Edward Waters in 1810, and later by Augustus Rapelye (*Brooklyn Eagle* 1896; CNYTB 1935). Three structures were possibly located in this block in 1859 (Baker and Baker 1859), but the location of the westernmost one is likely under the Kosciuszko Bridge. One building was present on the block in 1885, fronting the west side of 43rd Street (Colton 1885). By 1902, only one structure was present on the block, a wagon shed that was not oriented to the street grid (Hyde 1903; Sanborn 1902) (Figure C-12). The 1914 Sanborn map shows the same wagon shed, although the orientation is not as skewed as on the earlier

maps. One new dwelling fronting 43rd Street was present at this time, and a new shed appeared on a lot adjacent to the wagon shed (Sanborn 1914). By 1929, there were four new dwellings facing 43rd Street, bringing the total to five. A dwelling replaced the wagon shed; no other structures were present on the block (Hyde 1929).

By 1936, the block changed drastically; the west half of the block was taken for construction of the Kosciuszko Bridge approach, and three new warehouses for lumber and asbestos storage fronted 43rd Street, replacing all but one of the dwellings (Sanborn 1936). Only three of these buildings were still present in 1941, including the dwelling and the two lumber storage buildings for the Wilkins Lumber Company (Hyde 1941). By 1979, another slice of the western half of the lot had been taken by the new on-ramp for the bridge, and the dwelling was no longer present. Three buildings then occupied the block: one new commercial structure, and two buildings occupied by the N.Y. Syrup Corporation that had replaced the lumber storage structures (Hyde 1979). These three structures were still present in 2002 and 2005 (Google 2005; Sanborn 2002b) (Figure C-14).

The western half of the block has no potential for intact prehistoric and historic archaeological remains because of the ground-disturbing activities related to the construction of the Kosciuszko Bridge and on-ramps. However, the eastern half of the block has experienced fewer alterations, and areas having potential for intact archaeological resources are present. One narrow lot facing 54th Road has never been developed, and areas in several backyards and between structures also were never developed (several lots facing 43rd Street and 54th Avenue). The undeveloped lot has high potential for intact prehistoric archaeological remains, and low potential for historic archaeological remains associated with activities on the adjacent lots, such as secondary refuse scatters. Prehistoric site types that might be present include middens, camp sites, and activity areas. The undeveloped backyards have low to moderate potential for intact prehistoric archaeological remains, depending on the actual level of disturbance at each location. The undeveloped backyards have moderate potential for intact subsurface historic archaeological remains such as privies, wells, cisterns, and activity areas. Prehistoric site types that might be present include middens, camp sites, and activity areas. One lot within this block had a shed present by 1914 that was gone by 1936, which was adjacent to the wagon shed that is outside the APE. This lot has moderate potential for intact subsurface historic archaeological remains such as privies, wells, cisterns, and activity areas, and low to moderate potential for intact prehistoric archaeological remains, depending on the actual level of disturbance at each location. Prehistoric site types that might be present include middens, camp sites, and activity areas. The remaining areas in the eastern half of the lot have no archaeological potential because of the presence of large warehouse structures that likely destroyed subsurface historic and prehistoric archaeological remains.

Block 2516 (formerly Block 20). This block was owned by Edward Waters in 1810, and later by Augustus Rapelye (*Brooklyn Eagle* 1896; CNYTB 1935). Two structures were probably located on this block in 1859, but the location of the westernmost one is likely under the Kosciuszko Bridge (Baker and Baker 1859). Two buildings were present in 1885 fronting the west side of 43rd Street (Colton 1885). From 1902 to 1914, five dwellings were present, four on contiguous lots facing 43rd Street, and one on Gold Place (54th Drive) (Figure C-12). Evidently, Gold Place was impassable because by 1936, the dwelling there had a garage, still present in 2005, that jutted out into the street. One of the dwellings on 43rd Street (at the corner of Gold Place) was gone by 1936, and the west half of the block was taken for construction of the Kosciuszko Bridge (Sanborn 1936). The same dwellings were present in 1941 (Hyde 1941). These four dwellings were still present in 1979; however, a large warehouse, constructed in 1963, was present on the north half of the block (Hyde 1979). Only three of the dwellings and the warehouse were present in 2002 and 2005 (Google 2005; Sanborn 2002b) (Figure C-14).

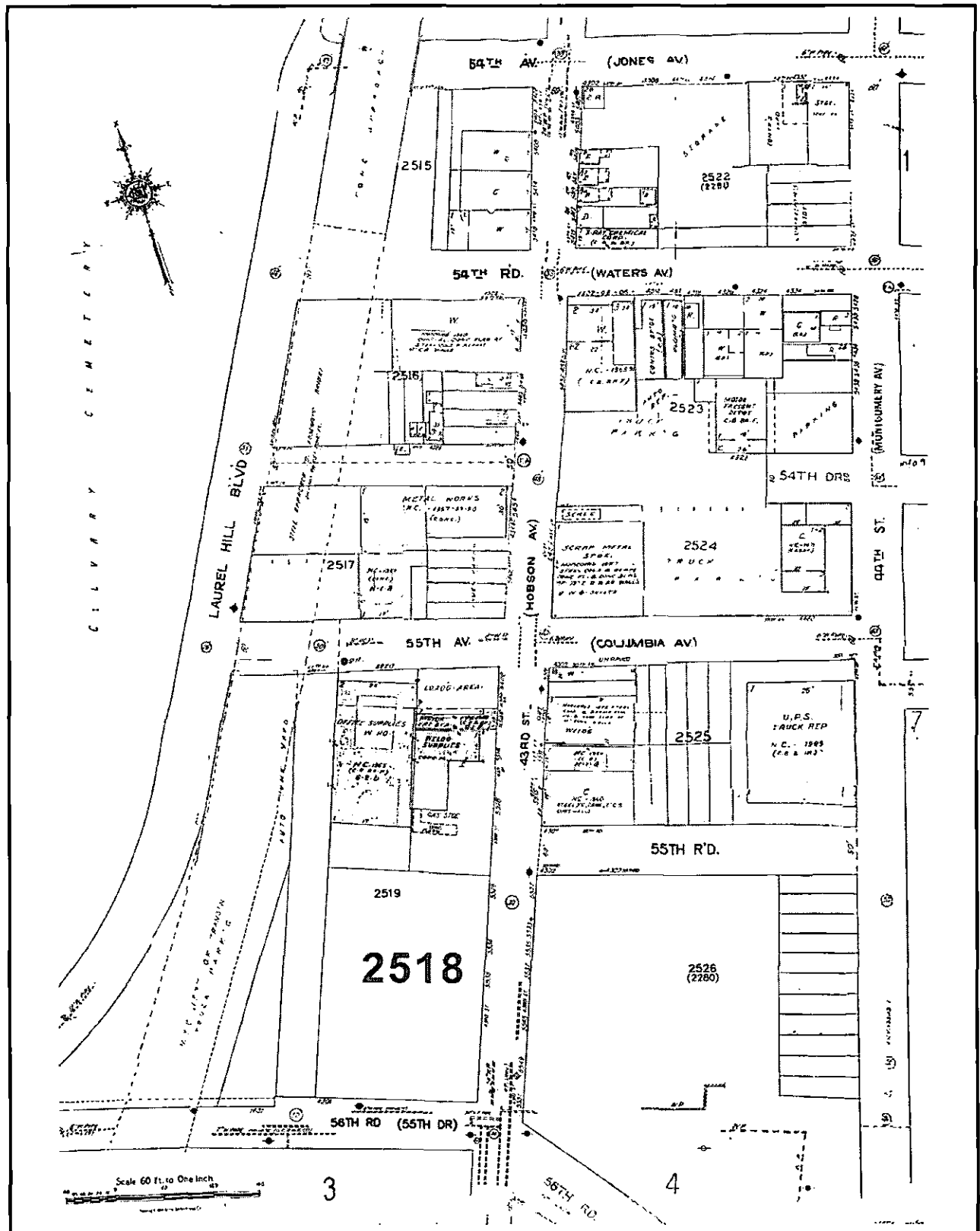


Figure C-14
 Blocks 2515 to 2519 in 2002

Source: Sanborn 2002b



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 and on-ramps. The northeastern quadrant of the block also has no potential for historic and prehistoric archaeological remains because of construction disturbances from a large warehouse, constructed in 1963. The lots in the southeast quadrant each have areas in backyards and between structures that were never developed. These areas have moderate potential for intact subsurface historic archaeological remains such as privies, wells, cisterns, and activity areas, and low to moderate potential for intact prehistoric archaeological remains, depending on the actual level of disturbance at each location. Prehistoric site types that might be present include middens, camp sites, and activity areas.

Block 2517 (formerly Block 19). This block was owned by Edward Waters in 1810, and later by Augustus Rapelye (*Brooklyn Eagle* 1896; CNYTB 1935). This parcel may have remained undeveloped until the late nineteenth century (Figure C-11). In 1902 to 1903, only one dwelling was present, facing Laurel Hill Boulevard (Hyde 1903; Sanborn 1902) (Figure C-12). That house was still present in 1914, but a mansard-roofed building housing two stores fronted Hobson Avenue (now 43rd Street) (Sanborn 1914). The dwelling was no longer present by 1929, and the only other structure on the block was the building housing the stores, which had a stable added on the adjoining lot (Hyde 1929). By 1936, the only building remaining on the block was the structure housing the two stores; the western half of the block was taken by the construction of the Kosciuszko Bridge (Sanborn 1936). The stable shown in 1929 was not shown on the 1936 map, but a shed or outbuilding in the same location with the same footprint was shown in 1941 (Hyde 1941; Sanborn 1936); otherwise, the structure with the two stores was the only building on the block in 1941. This structure and the outbuilding were removed by 1979, and a large L-shaped building, occupied by Karp Associates, Inc. was present. The long side of the structure, facing 54th Drive, was built in 1957, and the short arm of the ell was built in 1964. This structure was occupied by Karp Associates, a metal works business, in 2002, and the adjoining lot on the southeast corner of the block was a truck parking lot (Sanborn 2002b) (Figure C-14). These structures were still present in 2005 (Google 2005).

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. Three narrow lots have never been developed (two facing 43rd Street and one facing 55th Avenue), but were eventually paved over for a parking lot by 2002. These lots have moderate to high potential for intact prehistoric archaeological remains, depending on the depth of grading for the parking lot; site types that might be present include middens, camp sites, and activity areas. These lots have low potential for historic archaeological remains associated with activities on the adjacent lots, such as secondary refuse scatters. Three additional lots facing 43rd Street have areas in yards and between structures that were never developed, but are also under a parking lot. These areas have moderate potential for intact subsurface historic archaeological remains such as privies, wells, cisterns, and activity areas, and low to moderate potential for intact prehistoric archaeological remains. Prehistoric site types that might be present include middens, camp sites, and activity areas. The structure currently occupying this block, a large L-shaped building, was constructed in 1957 with a 1964 addition. This area has no potential for intact historic and prehistoric archaeological remains because of the ground-disturbing activities related to the construction of the building.

Block 2518 (formerly Block 17; now Block 2519, Lot 150). This block was owned by Edward Waters in 1810, and later by Augustus Rapelye (*Brooklyn Eagle* 1896; CNYTB 1935). This parcel may have remained undeveloped until the late nineteenth century, probably because a stream or creek was located just to the west of the area, possibly under what is now Laurel Hill Boulevard (Figure C-11). In 1902 to 1903, only one dwelling was present, facing Laurel Hill Boulevard; it was

built on posts at the time, possibly because the lot was low-lying (Hyde 1903; Sanborn 1902) (Figure C-12). A dwelling in this location was present through 1914, but the lot is now beneath the Kosciuszko Bridge approach (Sanborn 1914, 1936). Only two small strips of this block are not beneath the current bridge approach, and are located to the east and west of the bridge at the south end of the block. Former Cologne Avenue, which was later called 42nd Street and no longer exists, once formed the eastern boundary between this and Block 2519; there were no buildings facing this street on either Block 2518 or 2519 until 1929, when the Nichols Copper Company's manufacturing plant occupied the south end of Block 2519. By 1929, this plant, which manufactured blue vitriol, expanded across Cologne Avenue onto the south end of Block 2518. Two large structures housing a tank room and storage area straddled the street (Sanborn 1936). The construction of these buildings preceded construction of the Kosciuszko Bridge, and the northwest corner of the southern building was truncated parallel to the boundary of the bridge property line (NYCDPW 1937; Hyde 1941; Sanborn 1936). By 1941, the blue vitriol plant was owned by Phelps Dodge Refining Company, but the same buildings were present and had the same functions through 1979 (Hyde 1941; Sanborn 1979). No structures were present on this block west of the BQE following bridge construction (Hyde 1941; Sanborn 1979, 2002). In 2000, all of the buildings formerly owned by Phelps Dodge were demolished (Cravens 2000). The area under the elevated section of the bridge approach was being used by the New York City Department of Transportation for a truck parking lot, and as an impound lot (Sanborn 2002b) (Figure C-14).

This block was a transition zone between areas filled to create a higher grade in the southern section of the Queens APE, and the area to the north that needed large amounts of soil removed to achieve grade during bridge construction. Between the south and north ends of this block, the grade along Cologne Street rose from 11.5 feet to 31 feet. At the intersection of Block 2518 with current 56th Road, 4 feet of fill was slated to be added during bridge construction, and soil was graded from the north end (NYCDPS 1938: contract 5, drawing no. 3). The bridge approach was raised on four pilings across this block, so the ground surface beneath the bridge approach was heavily disturbed by their construction and has no potential for intact historic and prehistoric archaeological remains. However, the small area to the west of the bridge approach at the curve of Laurel Hill Boulevard was probably buried with fill, and because it was never developed, there is moderate potential for intact prehistoric archaeological remains such as camp sites and activity areas overlooking the creek. This portion of the block also has moderate potential for historic archaeological remains related to the industrial activities to the east, and for mid-nineteenth century domestic activities from possible dwellings located in the vicinity. The southeastern section of this block has moderate potential for historic archaeological remains related to Phelps Dodge activities, sealed beneath the concrete and gravel cap that was present following the demolition of the structures. The portions of the block that were eventually owned by Phelps Dodge are situated within a Superfund hazardous material site.

Block 2519 (formerly Block 18). This block was owned by Edward Waters in 1810, and later by Augustus Rapelye (*Brooklyn Eagle* 1896; CNYTB 1935). The Edward Waters house appears to have been located on this block (Riker 1852). One house possibly in this block, at the north end, was present in 1860 (Walling 1860). Two structures were probably present by 1873 (Beers 1873) (Figure C-11), but Colton (1885) shows only one structure in this area, located at the south end of the block.

St. Mary's Episcopal Church was established in 1885 at the northeast corner of this block. It is possible that this is the "stone church at Laurel Hill" that Augustus Rapelye gave the diocese as a memorial to his mother in 1887 (*Brooklyn Eagle*, May 25 1887). The church did not have a cemetery and was decommissioned/deconsecrated in 1952 (Fran Monaco, Episcopalian Diocese of Long Island, personal communication, 6 April 2005).

In 1902 to 1903, the only structures on the block were the church at the north end, and a pumphouse and storage buildings for the Nichols Chemical Company at the south end (Hyde 1903; Sanborn 1902) (Figure C-12). By 1914, the same Nichols Chemical Company buildings were present, although the functions had changed from storage to blue vitriol manufacturing, and three crude oil tanks and a building were added to the complex. In addition, a small office building was added in the street, at the intersection of Cologne and Halle avenues (Sanborn 1914). The church remained the only structure in the northern part of the block in 1929, while the Nichols Copper Company complex at the south became larger, with several new structures just to the north of the existing buildings (Hyde 1929). The office was no longer present in the street. By 1936, the blue vitriol plant was run by the Phelps Dodge Refining Company, and three new buildings were added, two of which extended west across 42nd Street (formerly Cologne Avenue; no longer exists) onto Block 2518 (Sanborn 1936). The church and the blue vitriol complex were still present with the same footprint in 1941, but by 1979 the church was no longer standing, having closed in 1952 (Hyde 1941, 1979). Three buildings were present at the north end of the block in 1979, with a loading dock covering the former location of the church. One building, a motor freight depot, was built in 1959, and a warehouse was built in 1965; these structures remained in 2002 and 2005 (Google 2005; Sanborn 2002b) (Figure C-14). In 2000, all of the buildings formerly owned by Phelps Dodge were demolished (Cravens 2000), including the blue vitriol plant, leaving the south end of the block vacant.

All of the lots in this block were developed at one time or another, but strips of land cutting across the lots at the north end of the block, and also just north of the Phelps Dodge property line, were never developed and have low to moderate potential for intact historic and prehistoric archaeological resources. Prehistoric site types that might be present include middens, camp sites, and activity areas; historic site types that might be present include remains associated with domestic and farm activities from the early- to mid-nineteenth century houses in the vicinity, and activity areas associated with the adjacent church. The lot where the church once stood appears to have been minimally developed subsequent to the church's closing. If grading has not removed significant amounts of soil, there is a low to moderate potential that intact archaeological sites are present beneath the paved loading dock, including historic archaeological resources related to the church, and prehistoric archaeological resources such as camps, middens, and activity areas. Construction of the two-story building in the northwest corner of the block probably disturbed any archaeological remains in that location, so there is no potential there for intact historic or prehistoric remains. There is no to low potential for intact historic and prehistoric archaeological remains beneath the one-story building south of the church lot, due to construction activities in that location. There is moderate potential for historic archaeological resources related to Phelps Dodge in the southern half of the block, possibly sealed beneath the concrete cap. There is no potential for prehistoric archaeological resources on the Phelps Dodge property because of the high level of disturbance in the area from construction and demolition of the industrial structures. The portions of the block that were eventually owned by the Phelps Dodge are situated within a Superfund hazardous material site.

Block 2520 (formerly Blocks 3 and 4). Block 2520, divided into east and west sections by the Kosciuszko Bridge, is comprised of two blocks identified on earlier maps as Blocks 3 and 4, (e.g., Hyde 1903). For this discussion, the sections on each side of the bridge are discussed separately.

- **Block 3, West of the BQE.** This portion of Block 2520 is located west of the BQE and south of Laurel Hill Boulevard. The westernmost section, near the turnpike and former Penny Bridge, was owned by the Alsop family throughout the eighteenth century. The boundary between this parcel and that of Edward Waters's farm is probably within this block (CNYTB 1935). The area that is now south of the LIRR tracks is within Block 2529. Portions of this block may be on made-land where a stream or small creek emptied into Newtown Creek, shown on some early maps (e.g., Colton 1885; U.S. Coast Survey 1866; Walling 1860) (Figure B-6). The landfill may have occurred when the LIRR and its

predecessor's tracks were laid. Construction plans for the Kosciuszko Bridge show that bridge-support piers in this area required well points, indicating this area remained poorly drained (NYCDPS 1938: Contract 5, Supplementary drawing S-2). Baker and Baker (1859) show two houses in the vicinity of Block 3; one may be the Alsop house, which is also shown on the Riker survey (1852). Two houses were present in this area in 1860 (Walling 1860). The Alsop house, demolished in 1880, is actually outside the APE, located in what is now Calvary Cemetery, adjacent to this block to the north (Brooklyn Eagle 1880b, 1880c, 1880d, 1880e). Adjacent to the old Penny Bridge spanning Newtown Creek between Queens and Brooklyn, the westernmost portion of this block is not within the APE for this project. A railroad spur crosses this block from end to end, at the south edge, parallel to the LIRR tracks (Figure C-15; Figure C-16). Present by 1937, this spur was still visible in 2002 and presumably served the adjacent industries (NYCDPS 1937: Sheet B; Sanborn 2002b). Development in this block was closely tied to the presence of the bridge, the cemetery, and the railroad.

Only the west end of this portion of the block (Block 3, west of the BQE) was occupied from 1902 through 1914 (Figure C-15). Offices for Calvary Cemetery were present, as well as stonecutting sheds (for monument and tombstone manufacture) and greenhouses (Hyde 1903; Sanborn 1902, 1914). Once Calvary Cemetery was filled to capacity, offices in this location were no longer needed. Consequently, by 1929, this section of the block was occupied by two buildings of J.C. Orr and Company, and none of the earlier structures were present (Hyde 1929). By 1936, the Orr Company buildings were gone, replaced by the Diamond Chemical Company factory complex, with seven buildings, including manufacturing and bottling plants, a storage building, and chlorine tanks (Sanborn 1936). To the east, a large building for storage of fire brick tiles was present by 1936, as well as a lumber yard with two storage buildings and an office. A large coal yard occupied by the Falconer Fuel Company was present just to the west of the BQE, which consisted of a coal pocket, coal bins, and an office. The Diamond Chemical complex and the fire brick storage building, now occupied by the General Refractories Company, were both present in 1941 and 1979 (Hyde 1941, 1979). By 1941, the coal yard and lumber yard were combined into one property occupied by the Gotham Builders Supply Corporation, and all but one of the earlier structures was still present. By 2002, the brick tile storage building was part of the former Diamond Chemical complex, which had added additional structures (Figure C-16). The lumber yard was replaced by the American Compress Gases/Dry Ice Corporation, which occupied a large building constructed in 1983 (Sanborn 2002b). All of these structures were still present in 2005 (Google 2005). The LIRR right-of-way is present at the south edge of this block. A large amount of filling and grading were required to construct the trackbed, so the area is considered highly disturbed. Portions of the LIRR are built on landfill, but portions are also located on the natural bluff overlooking the creek and would be highly sensitive for prehistoric sites. The railroad bed itself is historical but has been altered and modified through time.

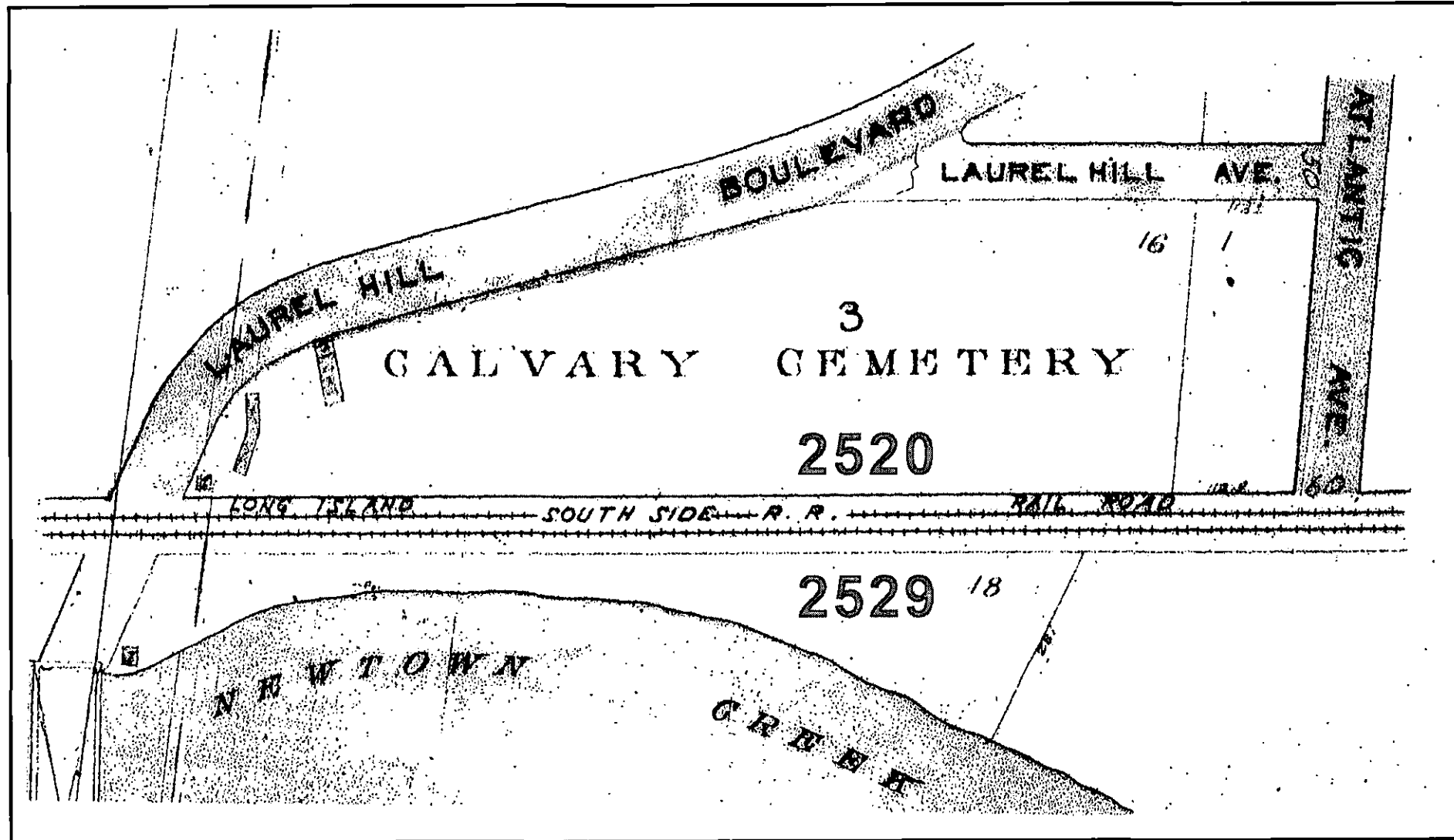


Figure C-15
Western Portions of Blocks 2520 and 2529 in 1903

Source: Hyde 1903



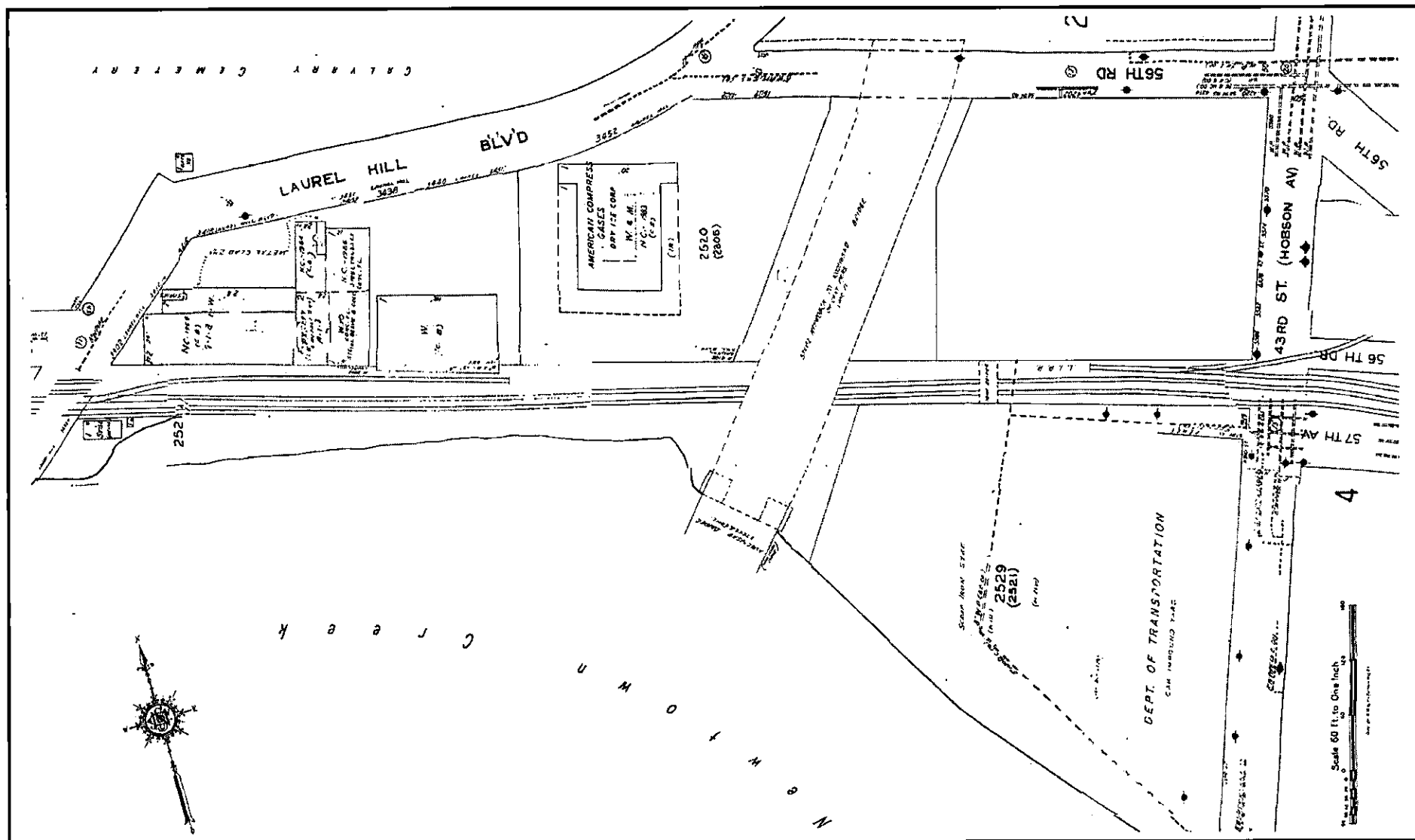


Figure C-16
Blocks 2520 and 2529 in 2002

Source: Sanborn 2002b



New York State
Department of Transportation

Areas of this portion of Block 2520 that are on landfill, the boundaries of which are not currently known, have no potential for intact prehistoric archaeological resources; however, beneath the landfill, which is up to 20 feet deep, there is low potential for intact prehistoric archaeological remains, such as fish weirs and shell middens, or Paleoindian and Early Archaic terrestrial sites that were submerged by rising sea level. Within the landfill itself, there is low potential for historic archaeological resources related to the creation of the landfill, such as stabilization and cribbing structures. Two sections of the block were not heavily impacted by development, the area to the north of the building tile storage structure, and the former coal yard, parallel to the bridge approach. These areas, probably paved over at one time, may contain intact subsurface prehistoric and historic archaeological resources with a low to moderate potential. Site types that might be present in these locations include historic archaeological remains associated with domestic and farm activities from the early- to mid-nineteenth century houses in the vicinity, and to the later craft and industrial businesses that were on these and adjacent lots. The rest of this portion of Block 2520 has low to no potential for historic and prehistoric archaeological sites due to the high level of subsurface disturbance in the block. Construction of the railroad spur and factory buildings in 1929 and 1983 disturbed earlier activity areas associated with the houses and the later cemetery facilities; however, there is low potential for historic archaeological remains of the later industries, such as the lumber and coal yards, the refractory, and the chemical complex.

The LIRR right-of-way is considered to have low to no potential for intact prehistoric archaeological resources. Portions built on landfill have no prehistoric archaeological potential, but portions that are located on the natural bluff have low prehistoric archaeological potential. The LIRR right-of-way has low potential for historic archaeological resources because of the high level of ground disturbance. Prehistoric site types that might be present include shell middens, camp sites and activity areas; historic site types that might be present include railroad-related features.

- **Block 4, East of the BQE.** Only the section of Block 4 west of Atlantic Avenue is within the APE for this project. The portion of the block located primarily east of the BQE and south of 56th Road was formerly owned by John Alsop from 1790, Edward Waters from 1810, and Augustus Rapelye by 1853 (*Brooklyn Eagle* 1896; CNYTB 1935). Baker and Baker (1859) show two structures that are probably in this block, while Walling (1860) shows three structures, one of which is likely under what is now the Kosciuszko Bridge. The Colton map (1885) shows that two houses were present along what is presumably the west side of Washington Street/43rd Street, south of what is now 56th Road.

By 1902 to 1903, this block was dominated by the General Chemical Company, a subsidiary of the Nichols Copper Company (Figure C-12). Insurance surveyors were sometimes not given access to the plant, so map information may not be accurate for the stated year (Sanborn 1914). By 1902, the area west of Atlantic Avenue 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) (Hyde 1903; Sanborn 1902). An office building was also located in this area, which jutted out into Atlantic Avenue. A building foundation was also in Atlantic Avenue at the south end of this block. The block between Atlantic and Washington avenues was occupied by several large structures, including buildings for marble dust storage, ore storage, acid carboy storage, ore kilns, a melting pot, numerous tanks, and building for the manufacture of bisulfite of soda.

The elevated railway and office were still present in 1914, and the building foundation in Atlantic Avenue was occupied by a purifying plant at that time (Sanborn 1914). Details on the rest of the structures are lacking because the insurance surveyors were prevented from entering the complex, but it seems that expansion of the bisulfite plant occurred. By 1929,

the ore railway was no longer present, although the office and building in Atlantic Avenue were both present (Hyde 1929).

By 1936, all previous buildings on the block were replaced (Sanborn 1936). A large building (experimental plant) occupied the area where the ore railway was once located, and the office and purifying plant in the street were no longer present. East of Atlantic Avenue, four new buildings were present, including an office that once again extended into Atlantic Avenue, a large laboratory and experimental plant, and a vacant structure. These same structures were present in 1941, with the addition of a few outbuildings east of Atlantic Avenue; however, by this time they were occupied by the General Chemical Division of the Allied Chemical and Die Corporation (Hyde 1941). The area west of Atlantic Avenue had not changed by 1979, and all but four structures were still present east of Atlantic Avenue, but the name of the company had changed again, to 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 (Cravens 2000; Google 2005). A railroad spur crosses this portion of the block at the south edge, parallel to the LIRR tracks. Present by 1937, this spur was still visible in 2002 and presumably served the adjacent industries (NYCDPS 1937: Sheet B; Sanborn 2002b) (Figure C-16). The LIRR right-of-way is present at the south edge of this block. A large amount of filling and grading were required to construct the trackbed, so the area is considered highly disturbed. The LIRR's location, on a natural bluff overlooking the creek, is highly sensitive for prehistoric sites. The railroad bed itself is historical but has been altered and modified through time.

The areas at the northwest corner and the southwest corners have been minimally developed, so there is low to moderate potential for intact prehistoric and historic subsurface archaeological resources at each location. Site types that might be present in these locations include historic archaeological remains associated with domestic and farm activities from the early- to mid-nineteenth century houses in the vicinity, and to the later industrial activities that took place within these and adjacent lots. There is moderate potential for historic archaeological resources related to Phelps Dodge on the remainder of the block, although the same area has no potential for intact prehistoric subsurface archaeological resources due to the high level of disturbance. The LIRR right-of-way is considered to have low potential for intact prehistoric and historic archaeological resources because of the high level of subsurface disturbance. Prehistoric site types that might be present include shell middens, camp sites and activity areas; historic site types that might be present include railroad-related features. The portions of the block that were eventually owned by Phelps Dodge are situated within a Superfund hazardous material site.

Block 2529 (formerly Block 2). This block extends along Newtown Creek on both sides of the Kosciuszko Bridge (Figure C-12; Figure C-15). It consists entirely of made-land. The section east of the BQE is landfill constructed by the Nichols Company and its successors using slag and byproducts of copper refining (Craven 2000). A small portion of this block is west of the BQE, south of the LIRR right-of-way, and south of the western half of Block 2920. All of the area south of the LIRR on both sides of the BQE was once a marsh along the banks of Newtown Creek (Baker & Baker 1859; Colton 1885; Walling 1860), and has been buried by up to 20 to 25 feet of fill (AKRF 1991). Landfilling probably began in the late eighteenth or early nineteenth centuries by the owners of the adjacent mainland property. Commercial enterprise increased the value of creek-front land, so by 1873, the landfilling had already changed the contours of the shoreline in this area, and they were similar to those found here today (Beers 1873) (Figure C-11). No structures were depicted on the small portion of the block west of the BQE on any of the historical maps consulted for this project. The western boundary of the Phelps Dodge parcel is the cribbing structure at the creek

bank almost under the Kosciuszko Bridge span, seen on the maps as a not-quite-perpendicular line from the bank (about 70 degrees) (Figure C-16). This cribbing was the limit of made-land created by Phelps Dodge and its predecessors. The brick chimney built in 1901 for ore smelting and refining is located in this block, west of Atlantic Avenue and close to the creek. Over 350 feet tall, the excavation for its foundations had to go through the landfill and below the original creek bottom to obtain firm footing (*Brooklyn Daily Eagle* 1901). The portions of this block east of Atlantic Avenue are not in the APE for this project.

This block was entirely occupied by the Nichols Chemical Manufacturing Company and its subsidiaries and successors. By 1902, in the area west of Atlantic Avenue, an elevated electric railway moved copper ore to the ore crusher, and crossed the LIRR railroad tracks to the north over an iron suspension bridge. Also present were five acid tanks, ore kilns and chimney, a landing hoist at the creek-side pier, and various storage buildings (Hyde 1903; Sanborn 1902) (Figure C-12). In 1914, Nichols Chemical did not allow insurance surveyors access to the property (Sanborn 1914). By 1929, the ore-handling railway and its associated features were gone, as were the acid storage tanks. The area west of Atlantic Avenue was occupied by seven contiguous buildings, function unspecified, and it seems the ore kilns and chimney were still present (Hyde 1929). In 1936, the insurance surveyors were again refused entrance to the plant, but it seems that information was available for the section along the creek, where numerous storage buildings and structures for ore smelting and refining were located (Sanborn 1936). In 1941, the plant was occupied by General Chemical Company, but the same large storage structures and ore smelting features were still present near the creek, with some expansion of the buildings to the east. At the north end of the block, it seems the large buildings were removed, replaced by two small buildings (Hyde 1941). The block remained the same through 1979 (Hyde 1979). In 2000, all of the buildings on this block were demolished (Cravens 2000). Portions of this block were used for scrap iron storage, and by the Department of Transportation for a car impound yard in 2002 (Figure C-16). The block remained vacant in 2005 (Google 2005).

There is no potential for intact subsurface prehistoric archaeological resources in this block, because it is entirely composed of landfill. However, beneath the landfill, which is up to 20 to 25 feet deep in places, there is low potential for intact prehistoric remains. Site types that might be present include resources associated with exploitation of estuarine resources such as fish weirs and shell middens, or Paleoindian and Early Archaic terrestrial sites that were submerged by rising sea level. Within the landfill itself, there is low potential for historic archaeological resources related to the creation of the landfill, such as stabilization and cribbing structures. The portion of the block east of the BQE has moderate potential for historic archaeological resources including features related to the activities of Phelps Dodge, but none for earlier historic resources because the block is made-land. The small portion of the block west of the BQE has low potential for historic archaeological resources because no structures were shown there on any maps; however, deposits related to the crafts, industries, and businesses in adjacent blocks, such as stonecutting, and the Penny Bridge, may be present. The portion of this block east of the bridge span, ultimately owned by Phelps Dodge, is a Superfund hazardous material site, and the landfill itself is contaminated with a variety of substances including heavy metals (Craven 2000).

APPENDIX D. TEST PIT DATA/ARTIFACT CATALOG

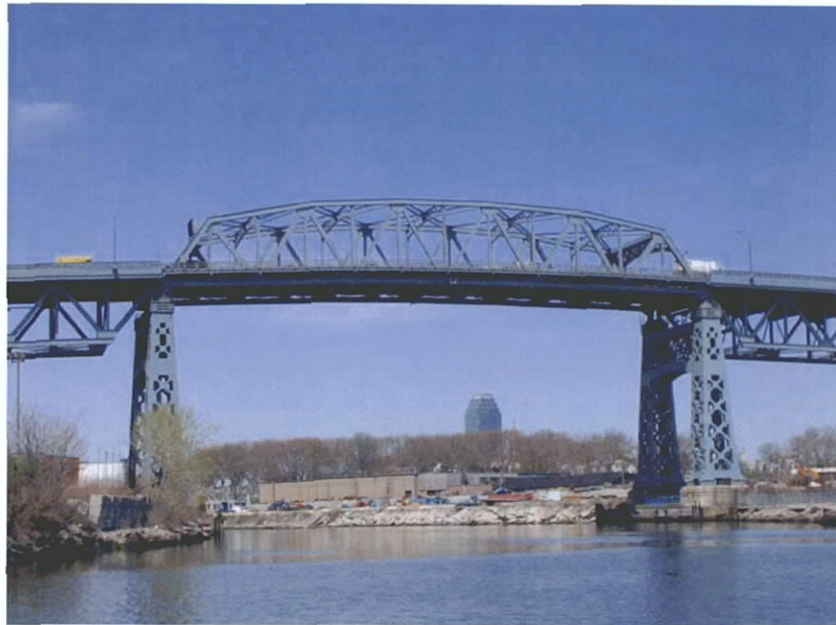
[To be inserted as necessary following SHPO consultation.]

APPENDIX E. FINAL DETERMINATION OF ELIGIBILITY: THE KOSCIUSZKO BRIDGE

FINAL DETERMINATION OF ELIGIBILITY:

THE KOSCIUSZKO BRIDGE

(BIN 1075699)



**KINGS AND
QUEENS COUNTIES
NEW YORK, NEW YORK**

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September 29, 2006

ABSTRACT

The New York State Department of Transportation proposes to make various alterations to the Kosciuszko Bridge (BIN 1075699) in the boroughs of Brooklyn and Queens, New York. In accordance with the National Environmental Policy Act, Parsons, Inc is preparing the necessary documentation. The project is under the jurisdiction of New York State Department of Transportation (NYSDOT) Region 11, and requires the regulatory oversight of the New York State Historic Preservation Office (SHPO). The potentially historic bridge extends northeast over Newtown Creek from approximately Varick Street and Meeker Avenue in Greenpoint, Brooklyn to Laurel Hill Boulevard and 54th Street in Maspeth, Queens. The area around the potentially historic bridge contains predominately commercial buildings, including industrial plants and manufacturing warehouses. EHT Tracerics, Inc. conducted the on-site survey in May 2006 as a part of the proposed improvements. The methodology employed for this study was based on the Secretary of the Interior's Standards for Survey and Planning as recorded in National Register of Bulletin: *Guidelines for Local Surveys: A Basis for Preservation Planning* (1985 edition), and in accordance with New York State Department of Transportation's *Guidelines for Evaluating Historic Bridges* (September 2002). Prior to field investigation, background research was performed to provide a basis for understanding the Bridge, its history, and the built environment. Using the background research gathered, a historic narrative was prepared for the Kosciuszko Bridge, including such topics as: history of the Kosciuszko Bridge; biography of the designer and builder; commemorative aspects of the bridge; and general associations with the surrounding communities. The Kosciuszko Bridge was documented and evaluated in its entirety regarding its historic context – area(s) of significance, period(s) of significance, architectural description and integrity. Additionally, a comparative analysis of Warren truss bridges throughout the State and within the City of New York was conducted. Information for this comparison largely came from the *Evaluation of National Register Eligibility: Task C3 of the Historic Bridge Inventory and Management Plan prepared by Mead & Hunt with Allee King Rosen & Fleming, Inc.* (2002) and the accompanying NYSDOT Historic Bridge Inventory (updated 2006). This report inventoried and evaluated pre-1961 bridges that are currently located on public roads and for which the NYSDOT has management responsibility. The comparative analysis, which included other eligible and non-eligible bridges, served as a basis for understanding the integrity and context of the Kosciuszko Bridge in relation to other bridges from the same time period. After evaluating the information within the historic narrative and comparative analysis, a determination of eligibility and integrity analysis were prepared. Lastly, a New York State Historic Resources Inventory Form was completed for the Kosciuszko Bridge. Information within the Inventory Form includes the bridge's date of construction, building materials, architectural style, alterations, and use.

Applying the methodology of the *Evaluation of National Register Eligibility: Task C3 of the Historic Bridge Inventory and Management Plan prepared by Mead & Hunt with Allee King Rosen & Fleming, Inc.* (2002), it has been determined that BIN 1075699, or the Kosciuszko Bridge, is **eligible** under National Register Criterion C more specifically, NYSDOT Criterion C-6. Built in 1939, this fixed, multiple span, Warren combination (deck and through) truss bridge with overhead bracing represents a significant and unusual variation of the Warren truss type. Whereas most eligible bridges have one feature of individuality considered to be a significant variation within the post-standardization Warren truss type, the Kosciuszko Bridge possesses several including its multiple spans, Warren combination (deck and through) trusses, and

polygonal top chords with overhead bracing. According to the 2006 Historic Bridge Inventory, there are only three examples of bridges with a combination (deck and through) truss in the entire database. The *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan* found that Warren truss bridges built after 1925 were strongly influenced by standardization and do not represent significant examples of their type. They are recommended as non-eligible unless they possess historical significance, a significant variation or other unique feature or association. Significant variations or features of individuality within the post-standardization Warren truss type include: deck truss, multiple span, double-intersection truss, unusual subtruss, and unusual curved top and bottom chords.¹ Structural elements of the Kosciuszko Bridge include multiple spans, Warren combination (deck and through) truss, and overhead bracing, all categorized as “significant variations or features of individuality.” The Kosciuszko Bridge therefore, embodies distinctive characteristics of multiple span bridges, as well as Warren deck and thru truss types with overhead bracing. Built in 1939, the Kosciuszko Bridge reflects its period and methods of its construction. Thus, the Kosciuszko Bridge is considered eligible only under National Register Criterion C and more specifically, NYSDOT Criterion C-6. The Kosciuszko Bridge is determined not eligible for listing under National Register Criteria A, B, or D. The determination for eligibility under Criterion C-6 is supported by the following justification.

The Kosciuszko Bridge exhibits significant variation from common or standardized Warren truss types for many reasons. One of the most characteristic elements of the Kosciuszko Bridge is that it contains 22 spans. Bridges that have one or more piers in addition to the abutments are called multiple span bridges. Long bridges such as the Kosciuszko Bridge are generally multiple span bridges. The multiple spans of the Kosciuszko Bridge are considered a characteristic or defining element of the bridge. The span over the Newtown Creek measures 300 feet, while the approach spans vary from 120-230 feet. The total bridge length is 6,021 feet. There are 10 deck truss spans at the Brooklyn side, 11 deck truss spans at the Queens side, and one through truss span over the Newtown Creek.

Another significant variation of the standardized Warren truss type is a combination (deck and through) truss. In a deck configuration, traffic travels on top of the main structure while the deck slab is supported by crossbeams, stringers, floor beams and trusses. In a combination (deck and through) truss bridge, the truss system supports the bridge deck above and below the structure. The approaches of the Kosciuszko Bridge measure approximately 5,771 feet and are supported by Warren deck trusses. While the approach spans at the Brooklyn and Queens sides are supported by Warren deck trusses, the Newtown Creek span is supported by a Warren thru truss with overhead bracing. Polygonal top chords support the overhead bracing, giving it an appearance similar to that of a camelback truss.

The form of the Kosciuszko Bridge follows its function. The design for the Kosciuszko Bridge, although not attributed to a particular designer or engineer, is one that accommodates ships as well as cars. The 125 foot height of the bridge allowed ships to travel beneath it on Newtown Creek, at one time considered one of the busiest ship channels, while the 6,021 foot length provided a straighter and more direct roadway for the expressway of which it would become a part. Constructed in 1939, the Kosciuszko Bridge reflects Depression-Era Bridge Construction.

¹ Mead & Hunt and Allee King Rosen & Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, prepared for the New York State Department of Transportation, Albany, New York and the Federal Highway Administration, Albany, New York, January 2002, pg. 4-50.

Bridges built during this period met the increasing demands of the traveling public.² Built as the first element of the future Brooklyn-Queens Expressway, the Kosciuszko Bridge played a critical part in connecting motorists to Brooklyn and Queens. The Brooklyn-Queens Expressway, a segment of I-278, was vital to the roadway improvement effort initiated in the mid-twentieth century. The purpose of this project was to alleviate congestion and improve traffic flow in and around New York. The engineering difficulties associated with the Kosciuszko Bridge accommodating both cars and boats resulted in the plan of a roadway with a longer approach than that of any previous bridge at this location. The bridge connects Brooklyn and Queens, thereby greatly aiding the transportation network and commerce between the boroughs. The connection also allowed motorists to access the Triborough Bridge, and ultimately, the 1939-1940 World's Fair in Flushing Meadows, Queens.

Of the 260 Warren truss bridges included in the Historic Bridge Inventory (updated 2006), 107 have been determined eligible for listing in the National Register of Historic Places. Of the 260 Warren truss bridges, 153 have been determined not eligible for listing in the National Register of Historic Places. Of the 107 bridges determined eligible, three are located in the New York City Region. A site visit to the three eligible Warren truss bridges (all owned by New York City Department of Transportation) in the New York City Region occurred on May 25, 2006. This visit provided an opportunity to compare the Kosciuszko Bridge with the three eligible Warren truss bridges in the New York City Region. The three eligible bridges in the New York City Region were all built during the early-standardization (pre-1925) period. All three of the eligible bridges within the New York City Region are also Warren through truss types. None of the eligible bridges however, have polygonal top chords with overhead bracing, similar in appearance to a camelback truss. The Kosciuszko Bridge was also compared with eligible bridges built post-standardization (post-1925) included in the Historic Bridge Inventory (updated 2006). The comparison of the Kosciuszko Bridge with other post-standardization bridges emphasized the significance of the fixed, multiple span, combination (deck and through) Warren truss form of the Kosciuszko Bridge because another example of this unusual configuration and combination of structural elements was not found in the State.

Although the construction of the Kosciuszko Bridge as the first element of the Brooklyn-Queens Expressway (BQE) is considered an important event, it is not one of national significance, nor is it more important than the construction of the Expressway itself or the other BQE bridges. The Kosciuszko Bridge is therefore considered not eligible for listing under Criterion A. Although the Kosciuszko Bridge honors Thaddeus Kosciuszko, it does not illustrate his important achievements; rather, it *commemorates* them. Therefore, the Kosciuszko Bridge is not eligible for listing under Criterion B. Additionally, there are other examples of Thaddeus Kosciuszko commemorations in the New York City Region. The Kosciuszko Bridge is not likely to yield information important in prehistory or history and is thus not eligible for listing under Criterion D.

² Mead & Hunt, *Contextual Study of New York State's Pre-1961 Bridges*, Prepared for the New York Department of Transportation, November 1999, pg. 61.

TABLE 1: COMPARATIVE ANALYSIS OF WARREN TRUSS BRIDGES

PERIOD	BRIDGE TYPES										FRYE BRIDGE	BRIDGE NO. 2255530
	WARREN TRUSS BRIDGES		WARREN THROUGH TRUSS				WARREN DECK TRUSS BRIDGES		WARREN COMBINATION TRUSS (DECK & THROUGH)			
	IN NEW YORK STATE	IN NEW YORK CITY	NO OVERHEAD BRACING		WITH OVERHEAD BRACING		IN NEW YORK STATE	IN NEW YORK CITY	IN NEW YORK STATE	IN NEW YORK CITY		
ELIGIBLE												
PRE-STANDARDIZATION PERIOD (PRE-1908)	29	1 ³	27	1 ⁴	2	0	0	0	0	0	N/A	N/A
EARLY-STANDARDIZATION PERIOD (1909-1925)	31	2 ⁵	26	1 ⁶	3	0	1	0	1	0	N/A	N/A
POST-STANDARDIZATION PERIOD (1926-1955)	47	0	20	0	18	0	9	0	0	0	N/A	N/A
SAME PERIOD AS KOSCIUSZKO BRIDGE (1938-1943)	8 ⁷	0	5 ⁸	0	2 ⁹	0	0	0	0	0	1	1
TOTAL ELIGIBLE	107	3	73	2	23	0	10	0	1	0	1	1
NOT ELIGIBLE												
PRE-STANDARDIZATION PERIOD (PRE-1909)	8	0	7	0	1	0	0	0	0	0	N/A	N/A
EARLY- AND POST-STANDARDIZATION PERIOD (1909-1925)	3	0	3	0	0	0	0	0	0	0	N/A	N/A
POST-STANDARDIZATION PERIOD (1926-1955)	137	0	86	0	49	0	2	0	0	0	N/A	N/A
SAME PERIOD AS KOSCIUSZKO BRIDGE (1938-1943)	25	0	15	0	1	0	0	0	0	0	N/A	N/A
TOTAL NOT ELIGIBLE	153¹⁰	0	96	0	50	0	2	0	0	0	N/A	N/A
TOTAL	260	3	169	2	73	0	12	0	1	0	1	1

³ BIN No. 2241259 (204th Street Footbridge) is eligible under Criterion C-5.

⁴ BIN No. 2241259 (204th Street Footbridge) is eligible under Criterion C-5.

⁵ BIN No. 2241590 (Concourse Village Avenue) is eligible under Criterion C-5 and BIN No. 2240507 (Roosevelt Avenue) is eligible under Criteria C-5 and C-6.

⁶ BIN No. 2240507 (Roosevelt Avenue) is eligible under Criteria C-5 and C-6.

⁷ Two bridges are eligible under Criterion A-1; five are eligible under Criterion C-6; and for one bridge, the criterion is not explained.

⁸ Two bridges are eligible under Criterion A-1; two are eligible under Criterion C-6; and for one bridge, the criterion is not explained.

⁹ Both bridges are eligible under Criterion C-6.

¹⁰ Five of the 153 bridges are categorized other than Through Truss, Deck Truss or Combination (Deck & Through) Truss.

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INTRODUCTION

The New York Department of Transportation is in the process of studying various solutions for the rehabilitation or replacement of the Kosciuszko Bridge (BIN 1075699) in the boroughs of Brooklyn and Queens, New York. The project is under the jurisdiction of New York State Department of Transportation (NYSDOT) Region, and requires the regulatory oversight of the New York State Historic Preservation Office (SHPO). Parsons Transportation Group subcontracted EHT Tracerics, Inc. to perform an architectural and historical study that assesses the significance of the Kosciuszko Bridge and to make a determination of eligibility regarding the bridge's potential for listing in the National Register of Historic Places. The architectural inventory included documentation of the Bridge structure and its importance to the surrounding communities in the boroughs of Brooklyn and Queens. This document provides a context for the history of the Kosciuszko Bridge and its neighboring communities, the results and findings of a contextual study of similar bridges, and a determination of eligibility for the bridge. The document will be used not only as a planning tool, but it will also provide information needed to evaluate the resource for its significance and eligibility.

SCOPE OF WORK

The Kosciuszko Bridge was documented and photographed using the New York State Historic Resources Inventory Form. Information within the Inventory Form includes the bridge's date of construction, building materials, architectural style, alterations, and use. The bridge was then assessed to determine its contribution to the historic context of both Greenpoint and Maspeth in the boroughs of Brooklyn and Queens. The Kosciuszko Bridge was documented and evaluated in its entirety regarding its historic context – area(s) of significance, period(s) of significance, architectural description and integrity. Additionally, a comparative analysis of Warren truss bridges throughout the State and within the City of New York was conducted. This comparison, which included other eligible and non-eligible bridges, served as a basis for understanding the integrity and context of the Kosciuszko Bridge in relation to other bridges from the same time period.

PROJECT TEAM

The architectural inventory and significance evaluation for the Kosciuszko Bridge was undertaken in May 2006 by a team of architectural historians from EHT Tracerics. Architectural Historian/Project Manager Janet Emery Flynn and Architectural Historian Laura FitzGerald conducted the archival research, on-site surveys, documentation, and assessments for the project, under the direction of Laura H. Hughes (Project Supervisor). The final significance evaluations were supervised by Laura V. Trieschmann (Senior Architectural Historian) and Laura H. Hughes.

RESEARCH DESIGN

ARCHIVAL RESEARCH METHODS

The methodology employed for this study was based on the Secretary of the Interior's Standards for Survey and Planning as recorded in National Register Bulletin: *Guidelines for Local Surveys: A Basis for Preservation Planning* (1985 edition), and in accordance with New York State Department of Transportation's *Guidelines for Evaluating Historic Bridges* (September 2002).

Prior to field investigation, background research was performed to provide a basis for understanding the Bridge, its history, and the built environment. Information on historic settlement in the project area was compiled from a number of sources. Resources consulted include historic photographs and both published and unpublished books and records. The results of the archival research were used to develop a general context for the historic development of the project area. The following archival repositories served as the basis for the research:

Archives and collections consulted include:

- Library of Congress, Geography and Map Division, Washington D.C.
- Municipal Archives, NY, NY
- New York Historical Society, NY, NY
- Queens Borough Public Library, Jamaica, NY
- The Brooklyn Public Library, Brooklyn, NY
- The New York Public Library, NY, NY

Agencies and organizations consulted by telephone and internet include:

- NYC Department of Records, NY, NY
- Pratt Institute Library, Brooklyn, NY
- The Brooklyn Historical Society, Brooklyn, NY
- The Kosciuszko Foundation, Inc., NY, NY
- The Queens Historical Society, Flushing, NY

ARCHITECTURAL SURVEY METHODS

The architectural inventory and significance evaluation for the Kosciuszko Bridge project began with an on-site windshield survey. Additionally, a reconnaissance-level field survey was performed to assess the physical integrity of the Bridge as well as its setting along Newtown Creek as a whole, documenting the approximate age, condition/integrity, function/use both historic and current, construction materials, architectural details, architectural style, alterations, and additions. Color prints (35mm, 4" x 6") were used to document the bridge for the New York State Historic Resources Inventory Form. The views include full on and side views, lateral views, main span(s), architectural details, and when appropriate, streetscapes.

RECORDATION

The New York State Historic Resource Inventory Form was prepared following the on-site reconnaissance-level survey and archival research. The historic and architectural context was utilized as necessary in the completion of these documents. All on-site survey and archival findings were reviewed and analyzed by the Senior Architectural Historians at EHT Tracerics, Inc. prior to the preparation of the determinations of eligibility and assessments of integrity.

ARCHITECTURAL DESCRIPTION: KOSCIUSZKO BRIDGE

The Kosciuszko Bridge is a fixed, multiple span, combination (deck and through) Warren truss bridge with overhead bracing. Part of the six-lane, Brooklyn-Queens Expressway (I-278) in Queens and Kings Counties, New York, the bridge spans Newtown Creek and the truss spans extends northeast from Meeker Avenue and Varick Street in Greenpoint, Brooklyn, to Laurel Hill Boulevard and 54th Street in Maspeth, Queens. Originally constructed as the Meeker Avenue Bridge in 1939, the bridge was renamed the Kosciuszko Bridge in 1940 to commemorate the Polish Revolutionary War hero, Thaddeus Kosciuszko. In 1960, with the completion of the Brooklyn-Queens Expressway (Interstate I-278), the Kosciuszko Bridge was officially linked to the completed highway system.

The bridge has a vertical clearance of 125 feet over Newtown Creek, and rises 175 feet in height at its highest point and 6,021.3 feet in length with a total of 22 spans that rest on 21 cast-in-place, segmental arched, reinforced concrete piers. The span over the Newtown Creek measures 300 feet, while the approach spans vary from 120 to 230 feet. There are 10 deck truss spans at the Brooklyn side, 11 deck truss spans at the Queens side, and one through truss span over the Newtown Creek.

Bridge piers rest on concrete foundations. Constructed of reinforced concrete, shafts for the piers were cast in sections according to the height of the piers—taller piers are made up of four sections, for example. The tallest piers are those supporting the main span. These piers are double cross braced, riveted steel towers on concrete bases. The pattern of the cross bracing on the main span piers has a lattice-like pattern.

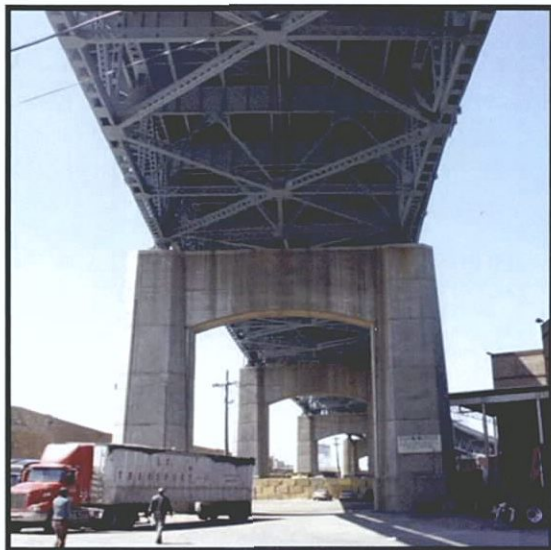


Image 1: Detail of bridge piers
Image Courtesy of EHT Tracerics, May 2006

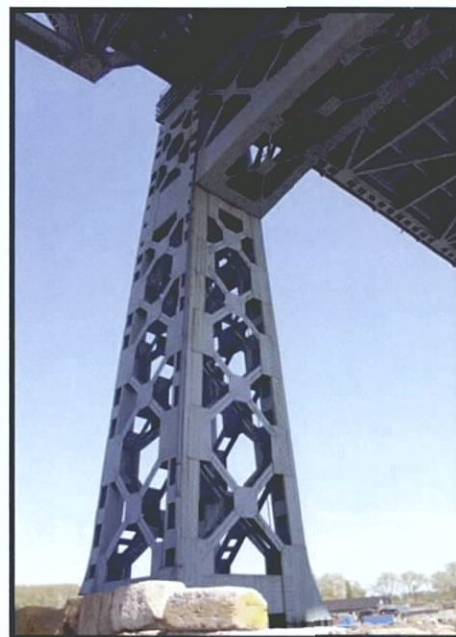


Image 2: Detail of main span piers
Image courtesy of EHT Tracerics, May 2006

The truss spans connect to abutments located at Meeker Avenue and Varick Street in Greenpoint, Brooklyn, and at Laurel Hill Boulevard and 54th Street in Maspeth, Queens. These abutments

lead to low level reinforced concrete approaches which are clad in brick in a stretcher bond pattern. The approaches are further decorated with interspersed panels approximately five feet wide that feature sawtooth detailing. A roll-up metal garage bay and a single-leaf metal door are located at the east elevation of the Brooklyn side of the bridge, providing access to the storage areas located within the abutments. Windows for the storage spaces are located beneath the roadway and remain at both the Brooklyn and Queens sides of the bridge. Window openings are enclosed by metal grills and rest on concrete sills. The Brooklyn viaduct has concrete rigid frames that provide vehicular access to the areas perpendicular to the bridge's approaches at Morgan Avenue, Vandervoort Avenue, Varick Avenue and Stewart Avenues.



Image 3: Detail of bridge abutments and storage spaces, *Image courtesy of EHT Tracerics, May 2006*

The main superstructure element of the bridge is of the Warren deck truss type. The riveted steel deck truss extends from the abutments to the main bridge spans at each side of the bridge. The bridge's roadway is supported by concrete filled steel grating and topped by asphalt to create the road surface. The roadway is cantilevered over the trusses, supported by cross bracing beneath the I-beam-supported roadway. The roadway is lined by concrete curbs with a metal railing and three foot steel panels or splash guards. The roadway of the main span is lined with open metal railings. Light for the bridge is provided by light posts spaced evenly at the sides of the bridge.



Image 4: Detail of Warren deck truss and I-beam grating, *Image courtesy of EHT Tracerics, May 2006*

The Warren through truss main span of the bridge features a superstructure made of polygonal top riveted steel chords and overhead cross bracing. Centrally located on the overhead bracing at the Brooklyn side and the Queens side are commemorative plaques. Installed when the bridge was renamed in 1940, the plaques bear the crests of the United States and Poland in addition to the “new” name of the bridge, the Thaddeus Kosciuszko Bridge. J. Frank Johnson is also recognized on the plaque as the Chief Engineer.

MAINTENANCE HISTORY

The repaving of the existing asphalt-on-concrete deck occurred in 1958. The second repaving project was initiated in 1967, at a cost of \$6 million dollars. The largest improvement to date on the bridge was a 1966 replacement of the concrete deck and the elimination of the two, eight foot wide pedestrian sidewalks to accommodate wider traffic lanes. Subsequent work included the replacement of the barriers, railings, lampposts, crossbeams, and drainage system, with the intention of alleviating bridge traffic. Other rehabilitation work included a three-year repair project initiated in 1996 that reinforced the concrete piers; the general cleaning, painting, and maintenance of the structural system in 2000, and the resurfacing of the deck including general bridge and ramp repairs in 2005.¹¹

PHYSICAL INTEGRITY

Overall, the bridge is in fair condition. The steel members of the bridge, particularly the superstructure, substructure and main span piers appear to be in good condition, despite rusting in some areas. However, the bridge steel that supports the roadway develops cracks in numerous locations and frequent maintenance is required. Additionally, the roadway deck also needs frequent repair to maintain a safe riding surface. Although abutment storage areas were not accessible at the time of this survey effort, it appears as though some of the storage space openings have been sealed or in filled with brick. Despite these modifications and alterations, the original form and structure of the bridge are intact.

¹¹ Parsons, *Kosciuszko Bridge Project*, “Chapter II: Project Identification, Evolution, Conditions and Needs and Objectives,” July 1, 2005, pg. II.B-2.

HISTORIC CONTEXTS

BRIDGE CONTEXT

PENNY BRIDGE

Prior to 1815, two of the earliest crossings of Newtown Creek in the area of Meeker Avenue were primitive wooden bridges. The Newtown Bridge and Turnpike Company erected a toll bridge on stone piers after 1836 that became known as Penny Bridge. Penny Bridge connected Brooklyn to Queens and was a small swing bridge over Newtown Creek. The bridge had a vertical clearance over Newtown Creek of approximately fifteen feet and an overall length of 250 feet. Penny Bridge was the earliest bridge to span Newtown Creek. Other early Newtown Creek bridges include the Greenpoint Avenue and Grand Street Bridges. Primarily a small vehicular and pedestrian footbridge connecting the Greenpoint and Laurel Hill communities, the Penny Bridge also served as a gateway to passing vessels.

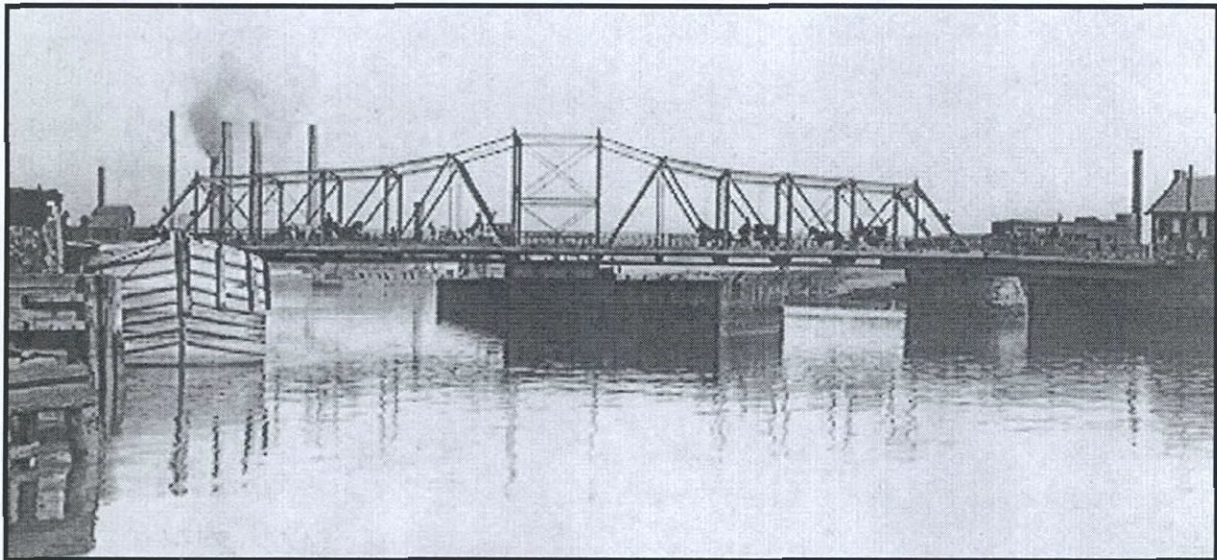


Image 5: View of Penny Bridge over Newtown Creek, 1914

Record 23906

Image Courtesy of Queens Public Library, Long Island Division

In the 1900s, Newtown Creek became crowded with larger ships, and the volume of vehicular traffic increased across Penny Bridge. These shortcomings prompted city planners to consider repairing the outdated overpass and building a new structure that reflected improvements in technology and had the structural capacity to accommodate increasing traffic demands.

The men responsible for the planning of the new bridge, located 800 feet to the east of the Penny Bridge location included Mayor Fiorello LaGuardia, John J. Halleran, the Acting Borough President of Queens, Raymond V. Ingersoll, the Borough President of Brooklyn, and Frederick J.H. Kracke, the Commissioner of Plant and Structures. Shortly before its closing, some 11,145

automobiles reportedly crossed Newtown Creek daily over the Penny Bridge, half the volume the new bridge would carry.¹²

MEEKER AVENUE /KOSCIUSZKO BRIDGE

Construction of the new steel and concrete Meeker Avenue Bridge began on May 25, 1928 at Meeker Avenue and was built simultaneously with the super highway improvements of the 1930s. Additionally, the construction of the bridge was planned with other park and road improvements to accommodate the increased traffic and number of visitors anticipated for the upcoming World's Fair in 1939-1940. This new bridge across Newtown Creek was not completed until 1939 but would become an important part of the Brooklyn-Queens Expressway, connecting Greenpoint in Brooklyn to Laurel Hill in Queens. Mayor LaGuardia predicted that Queens would "enjoy an industrial boom and a greater era of development through the opening of the new Meeker Ave. Bridge."¹³

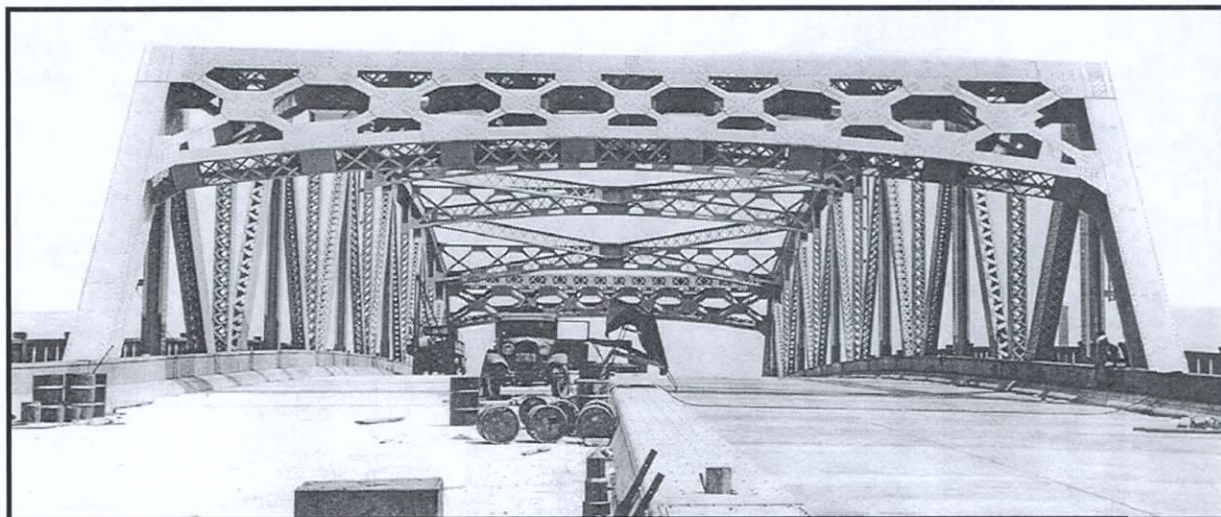


Image 6: Meeker Avenue Bridge Under Construction

Undated

BRID 0186

Image Courtesy of the Brooklyn Public Library, Brooklyn Collection

Projected costs of the Meeker Avenue Bridge were set at \$2,000,000 by the Department of Public Works in 1938, just prior to the ground breaking.¹⁴ From start to finish, each stage of construction was contracted out to different parties, leaving no single architect or engineer responsible for the design.¹⁵

¹² "Count Reveals Rapid Increase in Use of Span," Kosciuszko Bridge Vertical File, Long Island Division, Queens Public Library, Sept. 14, 1939.

¹³ "3,000 Attend Dedication at Laurel Hill," Kosciuszko Bridge Vertical File, Long Island Division, Queens Public Library.

¹⁴ *New York Times*, "15 New Bridges Planned by City," *New York Times*, September 11, 1938, pg. 19.

¹⁵ *Queens borough*, "Progress on the Meeker Avenue Bridge," *Queens borough*, Feb. 1939, pg. 30.

The engineering difficulties of accommodating both cars and boats resulted in the plan of a straighter roadway with a longer approach and a higher central span than that of any previous bridge at this location. Once completed, this bridge would serve as the first component of the major interstate roadway known as the Brooklyn-Queens Expressway, linking both communities to the future interstate.¹⁶

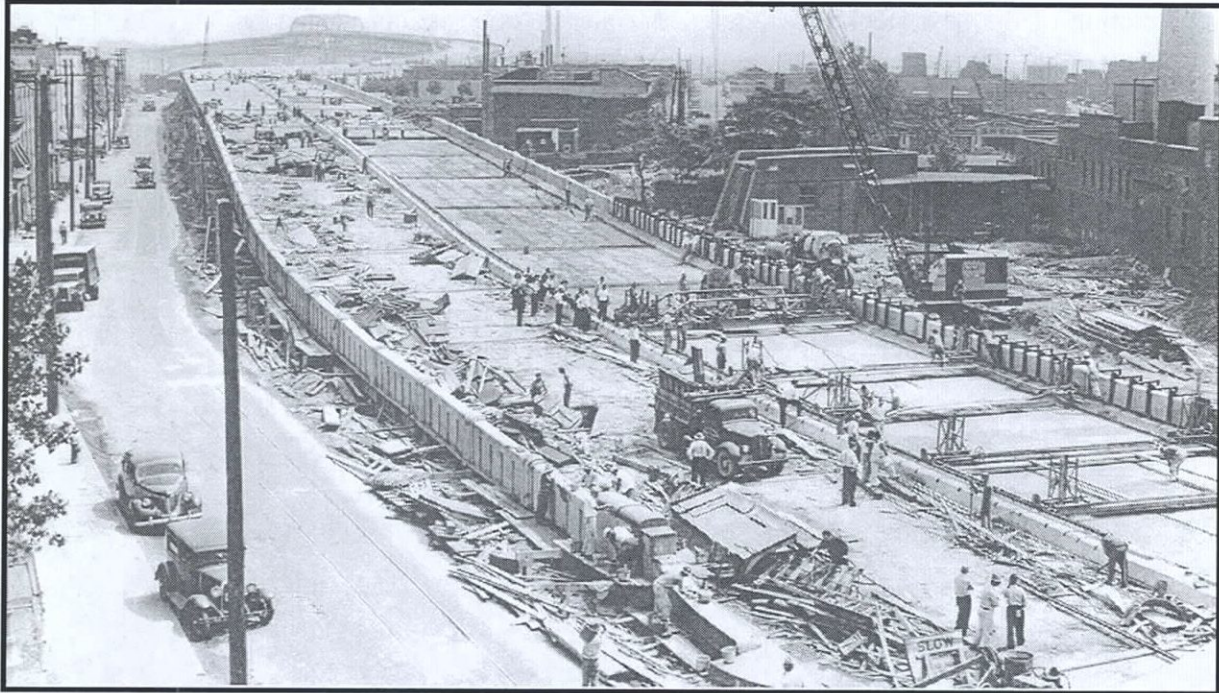


Image 7: Meeker Avenue Bridge Under Construction

Undated

BRID 0188

Image Courtesy of the Brooklyn Public Library, Brooklyn Collection

The Meeker Avenue Bridge was considered distinct because the plan for its high-level fixed span form was one of the last to be built by the City.¹⁷ It was also unique in overcoming several design and engineering obstacles, not excluding its large size. Proving especially difficult were hazardous chemicals found in the creek bed along with acidic soil, requiring planners to engineer oversized foundations and create special non-corroding coatings for subsurface elements.¹⁸ These unexpected challenges delayed the projects' date of completion and additionally concerned city officials who had planned on the bridge to support increased traffic patterns for the soon to open World's Fair. The anticipation of the large event pressed project leaders to speed up the building process, with the intention of reaching a newly projected April 30th deadline.¹⁹

¹⁶ *Brooklyn Eagle*, "Boon to Industry: Meeker Ave. Bridge Will Open up Newtown Creek to Boat Traffic, Carry Crosstown Highway to Queens," Aug. 4, 1939, pg. 13.

¹⁷ Sharon Reier, *Bridges of New York*, New York: Quadrant Press, 1977.

¹⁸ *Brooklyn Eagle*, "Boon to Industry: Meeker Ave. Bridge Will Open up Newtown Creek to Boat Traffic, Carry Crosstown Highway to Queens," pg. 13.

¹⁹ "Newtown Creek Bridge Nears Completion," Kosciuszko Bridge Vertical File, Long Island Division, Queens Public Library.

The delays in construction and sudden push toward completion resulted in criticism principally directed at Mayor LaGuardia. The Mayor, however, firmly believed that this bridge was a symbolic connection to the city's parkway system as well as possessing a physical union between the boroughs of Manhattan, Brooklyn, Queens and the Bronx.²⁰

The completed Meeker Avenue Bridge was a steel and concrete structure measuring 6,021.3 feet in length from abutment to abutment with five blocks of fireproof warehouse storage beneath its ramps.²¹ The total length of the bridge made it longer in length than the Brooklyn Bridge, which measures 5.3 feet shy of the Meeker Avenue Bridge.²² The Bridge carried the Brooklyn-Queens Expressway (I-278), with three lanes of traffic in each direction, 125 feet above Newtown Creek, with 8 foot wide pedestrian sidewalks on either side.²³ By projects' end, the costs reached \$6,000,000.00.²⁴ The completed bridge was officially dedicated to the public and opened to traffic on August 23, 1939.

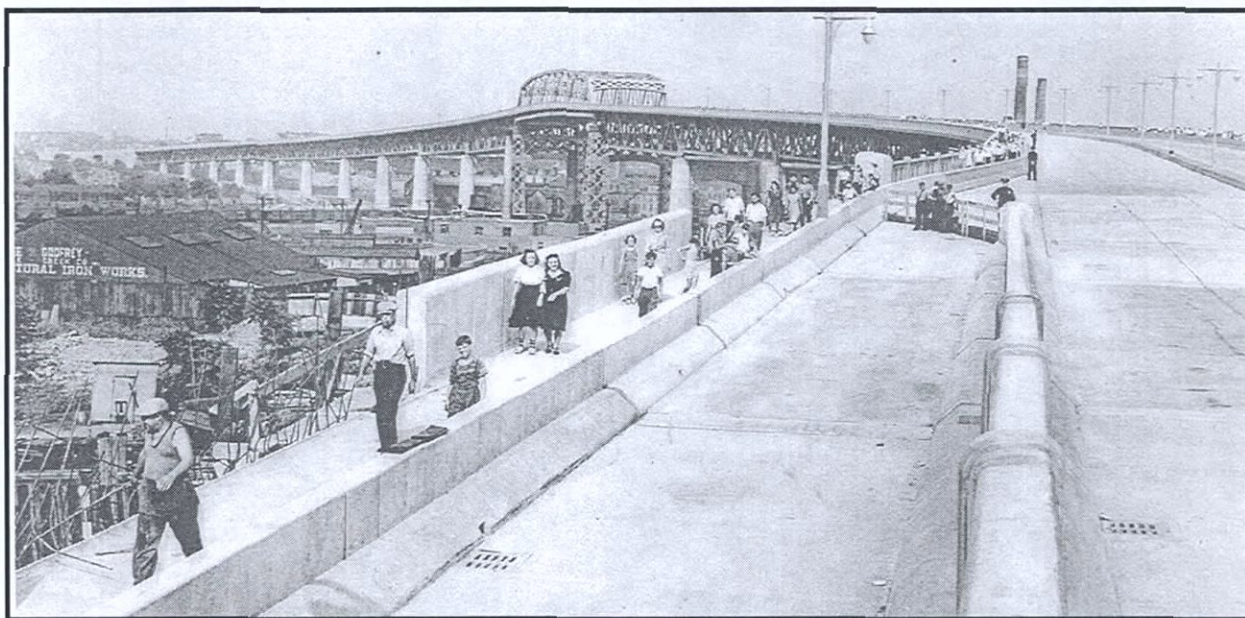


Image 8: First Pedestrians Crossing Meeker Avenue Bridge

August 24, 1939

BRID 0184

Image Courtesy of the Brooklyn Public Library, Brooklyn Collection

²⁰ "3,000 Attend Dedication at Laurel Hill," Kosciuszko Bridge Vertical File, Long Island Division, Queens Public Library.

²¹ *Daily News*, "Bridge Ramp 'Mined' for Storage Space," *Daily News*, April 27, 1941.

²² *Brooklyn Eagle*, "Boon to Industry: Meeker Ave. Bridge Will Open up Newtown Creek to Boat Traffic, Carry Crosstown Highway to Queens," pg. 13.

²³ *Queens borough*, "Progress on the Meeker Avenue Bridge," pg. 30.

²⁴ "15,000 Dedicate Bridge in Honor of Kosciuszko," Kosciuszko Bridge Vertical File, Long Island Division, Queens Public Library, Sept. 23, 1940.

On July 10, 1940, city and community leaders agreed to rename the Meeker Avenue Bridge in honor of Thaddeus Kosciuszko (1746-1817), a Polish Revolutionary War hero.²⁵ Thousands of people attended the dedication ceremony of the Kosciuszko Bridge on September 23, 1940. Many of those in attendance were of Polish descent, and lived in Brooklyn's predominantly Polish community of Greenpoint. During the ceremony, Kosciuszko was praised for his spirit and for his contribution to the cause of American liberty. According to Attorney General John J. Bennett, "Thaddeus Kosciuszko exemplifies the true spirit of America. He was a stranger from another land. He did not speak our language. But he was at home here among lovers of freedom, he hated persecution."²⁶



Image 9: Renaming Ceremony of Kosciuszko Bridge

September 23, 1940

BRID 0184

Image Courtesy of the Brooklyn Public Library, Brooklyn Collection

DESIGNER/ENGINEERS

The design for the Kosciuszko Bridge is not attributed to one particular designer or engineer. Rather, the bridge was built in phases for the City of New York from designs by the Department

²⁵ "Meeker Ave. Bridge Opens," Kosciuszko Bridge Vertical File, Long Island Division, Queens Public Library.

²⁶ "Bridge Dedication Draws Thousands," Kosciuszko Bridge Vertical Files, Long Island Division, Queens Public Library.

of Public Works under the direction of Major Irving V.A. Hule, Commissioner. Original plans for the Kosciuszko Bridge identify the City of New York Department of Plant and Structures/ Department of Public Works as the designers and engineers. Although the dedication plaque on the Kosciuszko Bridge identifies J. Frank Johnson of the Department of Public Works as the Chief Engineer, a Brooklyn Eagle article (3/12/1951) identifies Emil H. Praeger as the Chief Engineer. Other city officials associated with the project include: George H. Hefele, Acting Director, Bureau of Bridges; Samuel Hamburger; Engineer in Charge of Construction; and Nathan Deutschman, Resident Engineer.²⁷ Robert Moses, Park Commissioner for the City of New York, also worked on the project relative to the Brooklyn -Queens Expressway. Emil H. Praeger worked for Robert Moses as Chief Engineer of Consulting Engineers.

ROBERT MOSES (1888-1981)

Like other large cities in the United States, New York City experienced changing social patterns during the twentieth century, spurring new development patterns and a need for improved transportation networks. The notion of these new networks attracted the attention of many city planners and engineers, including master builder Robert Moses.

In 1924, Moses served as the president of the State Parks Council and the Long Island State Park. During his time on the State Parks Council, he became known for his leading role in contemporary design solutions in planning park systems on Long Island including the Jones, Orchard, and Jacob Riis Beaches. His accomplishments did not go unrecognized.²⁸ In 1934, Moses was appointed Park Commissioner of the City's Department of Parks by New York City Mayor LaGuardia to create a vast highway system connecting the five boroughs of New York for the modern automobile.²⁹

As the Park Commissioner of New York, Moses was considered the brain-child for future state and city roadway improvements, influencing the design of low overpass bridges in an effort to deter commercial vehicles, while seeking variety in his designs, and sustaining a harmonious quality with the landscape.³⁰ The Triborough Bridge (1936), the Brooklyn-Battery Tunnel (1950), the Throgs Neck Bridge (1961), the Cross Bay Parkway Bridge (reconstructed 1939), the Bronx-Whitestone Bridge (1939), the Marine Parkway Bridge (1937), the Henry Hudson Bridge (1936), and the Belt Parkway and the Laurelton Parkway (1934-1941), were among his many projects.³¹

Upon his appointment to the City's Planning Commission in 1941, Moses continued to exude his influences on the modern landscape. On the Commission, Moses endorsed the construction of the Verrazano Narrows Bridge, the Cross-Bronx Expressway, the Staten Island Expressway, and the Brooklyn-Queens Expressway, of which the Kosciuszko Bridge was an integral part. He continued to serve as the Park Commissioner until 1960 before withdrawing himself from all park and planning associations. Robert Moses's contributions to the transportation highway

²⁷ "Progress on the Meeker Avenue Bridge," *QueensBorough*, February 1939, pg. 30.

²⁸ Kenneth T Jackson, ed., *The Encyclopedia of New York City*, Yale University: 1995, pg 774.

²⁹ *Washington Post*. "LaGuardia Fills 3 Cabinet Posts." *Washington Post*: Jan 19, 1934, pg. 2.

³⁰ Mead and Hunt, "Contextual Study of New York State's Pre-1961 Bridges," 1999, pg. 57.

³¹ Wikipedia. "Robert Moses." <http://en.wikipedia.org>.

system greatly altered the landscape of the Empire State and helped characterize New York as a modern metropolis.

EMIL H. PRAEGER (1892-1973)

Emil H. Praeger received his license as a Professional Engineer in the State of New York after graduating from the Rensselaer Polytechnic Institute in 1915. He worked for several engineering and architectural firms before taking the position as the Chief Engineer in the Department of Parks under then Park Commissioner Robert Moses in 1934. Under the direction of Moses and Mayor Fiorello LaGuardia, Praeger studied the New York park systems with the intention of planning for future improvements.³²

Praeger was skilled in the engineering profession and was employed as the Chief Engineer for Consulting Engineers to Robert Moses on numerous New York parkway system projects including the Brooklyn-Queens Expressway, the Verrazano Narrows and Throgs Neck Bridges, the Henry Hudson Parkway Authority, the Marine Parkway Authority, the Gowanus Expressway, the Bronx-Whitestone Parkway, the Circumferential Parkway, and the 1939-1940 New York World's Fair Site Improvement project.³³ He also is known for his work in designing the Tappan Zee Bridge over the Hudson River, the Nebraska State Capitol, Shea and Dodger Stadiums,³⁴ numerous institutional buildings, the National Academy of the Sciences located in Washington, D.C., as well as his work as a consulting engineer for the renovation of the White House.³⁵

His services included working for the Public Works Administration, the Works Progress Administration, the Civil Works Administration as a consulting engineer, the Long Island State Park Commission, and the Madison Square Garden Corporation.³⁶ As an esteemed engineer and a member of many professional and technical societies, Praeger was accepted as an expert witness in controversial engineering legal hearings and was named "Engineer of the Year" in 1969.³⁷

J. FRANK JOHNSON (1883-1970)

J. Frank Johnson began his career in New York City in 1903. Prior to becoming Chief Engineer for the Department of Public Works, Bridges Division, Johnson worked as an engineer for the Department of Plants and Structures, working on such projects as the Brooklyn span of the Williamsburg Bridge. In 1938, Johnson was named Chief Engineer of the Division of Bridges in the Department of Public Works. Johnson also served as Chief Engineer of the Department of Public Works and Director of the Division of Bridges, Department of Public Works prior to his

³² *New York Times*, "Engineer is Dead," *New York Times*, Oct. 17, 1973.

³³ E. H. Praeger, Professional Resume, Kosciuszko Bridge Cultural Resources Project files, Parsons, New York.

³⁴ Rensselaer Polytechnic Institute, RPI: Alumni Hall of Fame: Emil H. Praeger.

<http://www.rpi.edu/about/hof/praeger.html>.

³⁵ *Washington Post*, "E.H. Praeger Named to Faculty of R.P.I. Moses Consultant to Head Civil Engineering," *Washington Post*: Feb. 19, 1939, pg. 39.

³⁶ E. H. Praeger, Professional Resume.

³⁷ *The New York Professional Engineer*, "Emil H. Praeger, PE: NYSSPE Engineer of the Year," *The New York Professional Engineer*, May-June 1969, pg. 7.

retirement in 1955.³⁸ During his fifty-two years in the department, Johnson led numerous engineering inspections along Vernon Avenue, the Williamsburg expansion and bridge, the Union Port Bridge, the Bruckner Boulevard expansion and bridge, and the Kosciuszko Bridge.³⁹

INDUSTRIAL CONTEXT

THE INDUSTRY OF NEWTOWN CREEK

Due to its geographic location at the mouth of the East River, Newtown Creek has always been an active waterway. In the early nineteenth century, Manhattan's commercial and industrial districts were densely built up and congested, making industrial expansion difficult and expensive. Because land east of the East River was sparsely developed, places in Brooklyn and Queens offered the space necessary for large-scale plants, worker's housing, and a waterfront location.

An early industry of the Newtown Creek, because of its deepwater and low-lying shoreline, was shipbuilding. The shipbuilding days of the 1800s culminated in 1862 when the U.S.S. Monitor, the Civil War ironclad gunship that changed the history of naval warfare, was constructed at the Continental Iron Works in Greenpoint. Designed by John Ericsson, a Swedish-American inventor, the ship was built in 100 days.⁴⁰ Its design success marked the end of wooden ships and the beginning of the age of armored battleships. The Monitor fought a famous Civil War battle (March 9, 1862) in the waters of Hampton Roads, Virginia, against another ironclad, the Confederate ship C.S.S. Virginia, formerly the U.S.S. Merrimack, before sinking in a gale on December 31, 1862.⁴¹

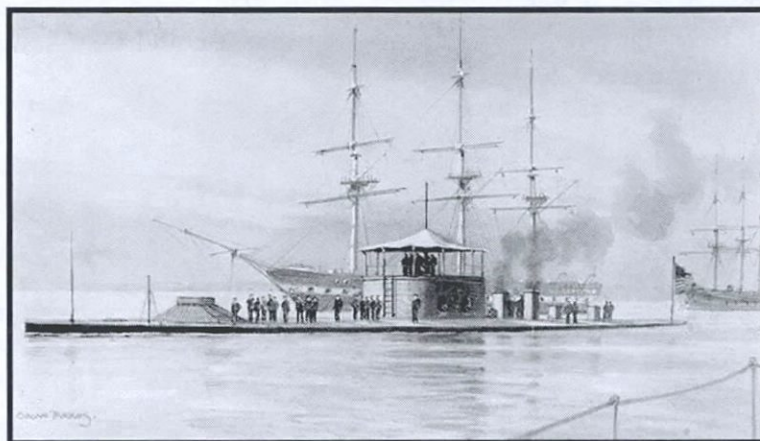


Image 10: U.S.S. Monitor, Watercolor by Oscar Parkes
Image courtesy of the Naval Historical Center

³⁸ *Washington Post*, "J. Frank Johnson, Ex-Head of City's Bridge Division," *Washington Post*: Apr 14, 1970, pg.47.

³⁹ *Washington Post*, "Bridge Expansion sets Record Pace," *Washington Post*: Apr 23, 1949, pg. 15.

⁴⁰ William G. Blair, "Anchor of Civil War Ironclad Recovered Off Cape Hatteras," *New York Times*, August 30, 1983, pg. A1.

⁴¹ Harry Johnson and Frederick S. Lightfoot, *Maritime New York in Nineteenth-Century Photographs*, New York: Dover Publications, 1980, pg. 121.

After the Civil War, the demand by the government for vessels lessened, resulting in the closing of most shipbuilding enterprises by the 1870s. Factories producing porcelain, china, glass, refined sugar, boxes, pencils, machinery and boilers, and oil refineries emerged on the waterfront and helped to cushion the effect. By the mid-nineteenth century, Newtown Creek was an industrial center with all types of factories and refineries located along its banks. The tonnage and dollar value once carried by the creek exceeded that of any waterway in the world.⁴² In 1921, Congress appropriated \$510,000 for improvements to Newtown Creek (from East River to Mussel Island). In addition to straightening, the creek was also widened and deepened to accommodate more traffic. The Merchants' Association commented that, "the improvement should go far toward hastening the development of Newtown Creek as one of the most important manufacturing sections of New York City."⁴³

The creek itself was of decided value in the development of the industrial activity, but was also, to some extent, a detriment to the growth of the borough in other directions. Its stagnant waters, filled with waste matter deposits, became polluted to a degree that was both disagreeable and dangerous to health and life.⁴⁴ As early as 1856, the city dumped raw sewage directly into the water, adding to the toxic sludge already present.⁴⁵ During World War II (1941-1945), Newtown Creek factories produced military equipment for the government. After the war, waste-treatment plants and garbage-transfer operations were set up on the shoreline. Eventually, automobiles, rather than boats, became the most efficient way to transport goods, changing the dynamic and historic character of the Newtown Creek. Due to the volume and types of industry on the waterfront, the area became known by its smell, causing many motorists to drive across the Kosciuszko Bridge to drive with their "windows shut and air vents closed because of the unpleasant odor."⁴⁶

In 1967, the Newtown Creek Water Pollution Control Plant opened to treat sewage in the Newtown Creek. In 1991, the Plant was improved so that it could treat sewage with bacteria before discharging it into the creek.

⁴² Phil Dante, as found in Greenpoint vertical file, Brooklyn Collection, Brooklyn Public Library.

⁴³ "The Maspeth Improvement," *New York Times*, November 26, 1922, pg.125.

⁴⁴ George Van Skal, *Illustrated History of the Borough of Queens*, New York: F.T. Smiley Publishing Company, 1908, pg.32.

⁴⁵ E.E. Lippincott, "Sounding a Death Knell for a Long-Forsaken Waterway," *New York Times*, February 10, 2002, pg. CY8.

⁴⁶ Byrant Mason, "Old Bridge to Take on New Air," *Daily News*, February 8, 1974, pg. KL7:1.



Image 11: Kosciuszko Bridge from the Grand Street Bridge, with a view of the Newtown Creek

EHT Traceries, May 2006

SURROUNDING COMMUNITY CONTEXT

GREENPOINT, BROOKLYN

Named by the Dutch for its grassy stretch of land along the East River, Greenpoint was originally used as farmland for the Dutch and the English in the seventeenth and eighteenth centuries. Bordered today by the Newtown Creek to the north and east, the East River to the west, and the Brooklyn-Queens Expressway to the south, Greenpoint has always been an isolated enclave, geographically separated from other areas by the industry that exists along the waterfront and by its peninsula shape. Greenpoint grew as a working-class quarter and as a bastion for immigrants, largely from Russia, Italy, Ireland, England, and Poland.

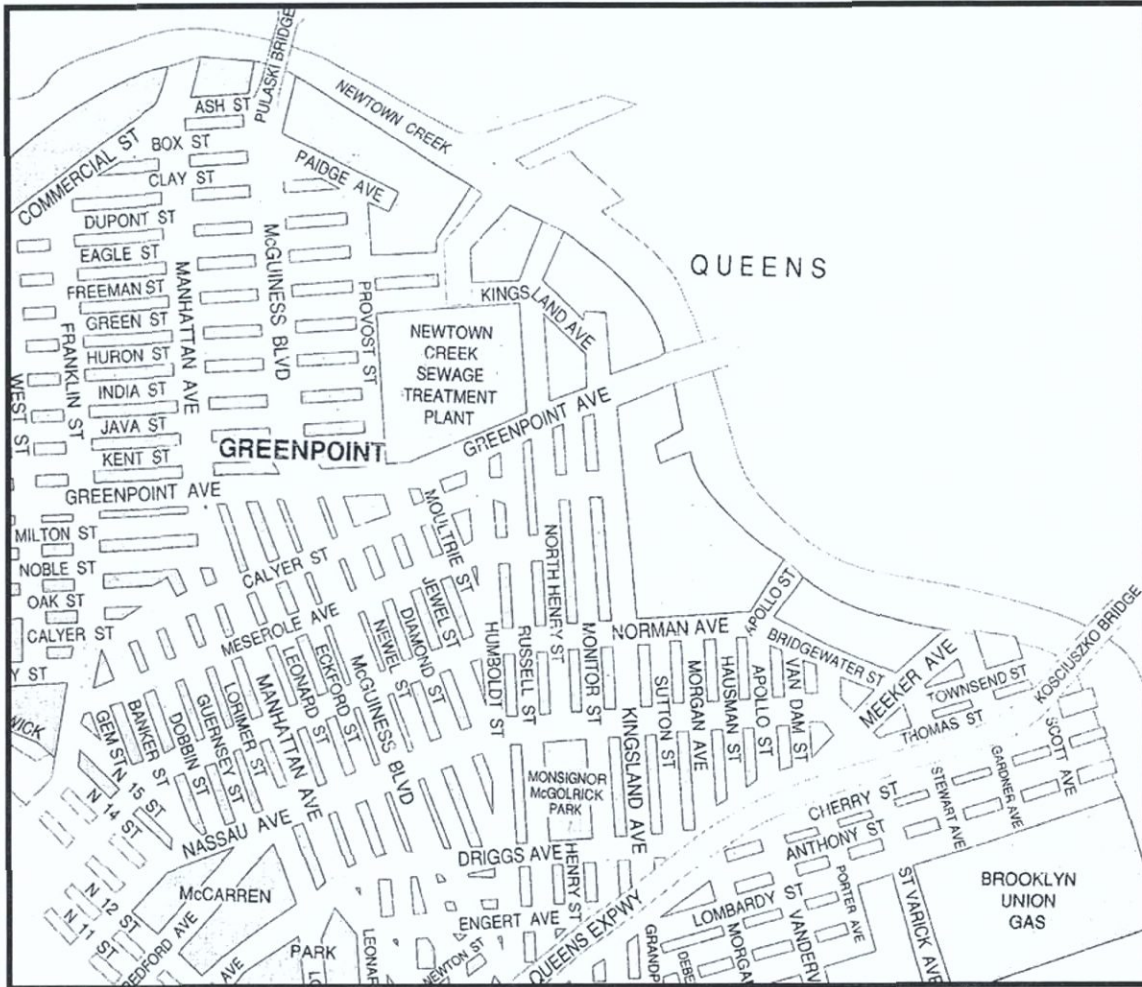


Image 12: Map of Greenpoint, Brooklyn, New York, 1998⁴⁷

Greenpoint was known for its industry related to the five “black arts”: printing, pottery, petroleum and gas refining, glassmaking, and iron making. A sampling of Greenpoint businesses of the late-nineteenth and early-twentieth centuries are presented in Table 2.

⁴⁷ Kenneth T. Jackson, editor, *Neighborhoods of Brooklyn (Neighborhoods of New York)*, New Haven: Yale University Press, 1998.

TABLE 2: 19TH AND 20TH CENTURY BUSINESS DIRECTORY FOR GREENPOINT, BROOKLYN

NAME OF BUSINESS	TYPE OF BUSINESS
Charles Cartlidge and Company	Porcelain china Production
Brooklyn Flint Glass	Glassmaking
Bedi-Rassy Foundry	Iron Making
Continental Iron Works	Iron Making/Shipbuilding
Union Porcelain Works	Porcelain Making
Christian Dorflinger Glass Factory	Glassmaking
Orr, Fowler & Company	Lumber yard
Eberhard Faber	Pencils
Fleishmann's Yeast Plant	Yeast Production
Havemeyer Sugar Refining Company	Sugar Refining
Peter Cooper's Glue Factory	Glue Production
Brooklyn Oil Refinery	Oil Refinery
Standard Oil Company	Oil Refinery
Astral Oil Works	Petroleum Refinery
Rencoa, Inc.	Fat Rendering
Diamond Rendering Company	Fat Rendering

Over time, Greenpoint suffered from a catastrophic underground oil spill which was first discovered in 1950. Decades of oil and gas seepage have resulted in the destruction of groundwater in the area, and results in the need for environmental remediation.

Today, there are no refineries in Greenpoint but its waterfront still has many oil storage tanks, recalling the role the area once played in the development of an important national industry. In recent years, there have been proposals to rezone the unproductive land along the Greenpoint-Williamsburg waterfront for mixed-use and residential projects.



Image 13: Oil storage tanks in Greenpoint, Brooklyn
EHT Traceries, May 2006

MASPETH (LAUREL HILL), QUEENS

Maspeth is located in Queens Borough on the north side of the Newtown Creek. Perhaps ninety percent of the people passing through Queens Borough today know nothing of its history except that it contains “dismal swamps, railroad yards and factories distributing evil smells and ugly to the last degree.”⁴⁸ During the nineteenth century however, much of Maspeth land was used for farming. Crops would reach the markets of New York by way of the Newtown Creek. As the area became more industrial, new factories brought jobs and immigrants, spurred housing and laid the foundation for modern Maspeth. Gradually, Maspeth became a place for immigrants to “move-up,” for it was more suburban-like than Greenpoint.⁴⁹

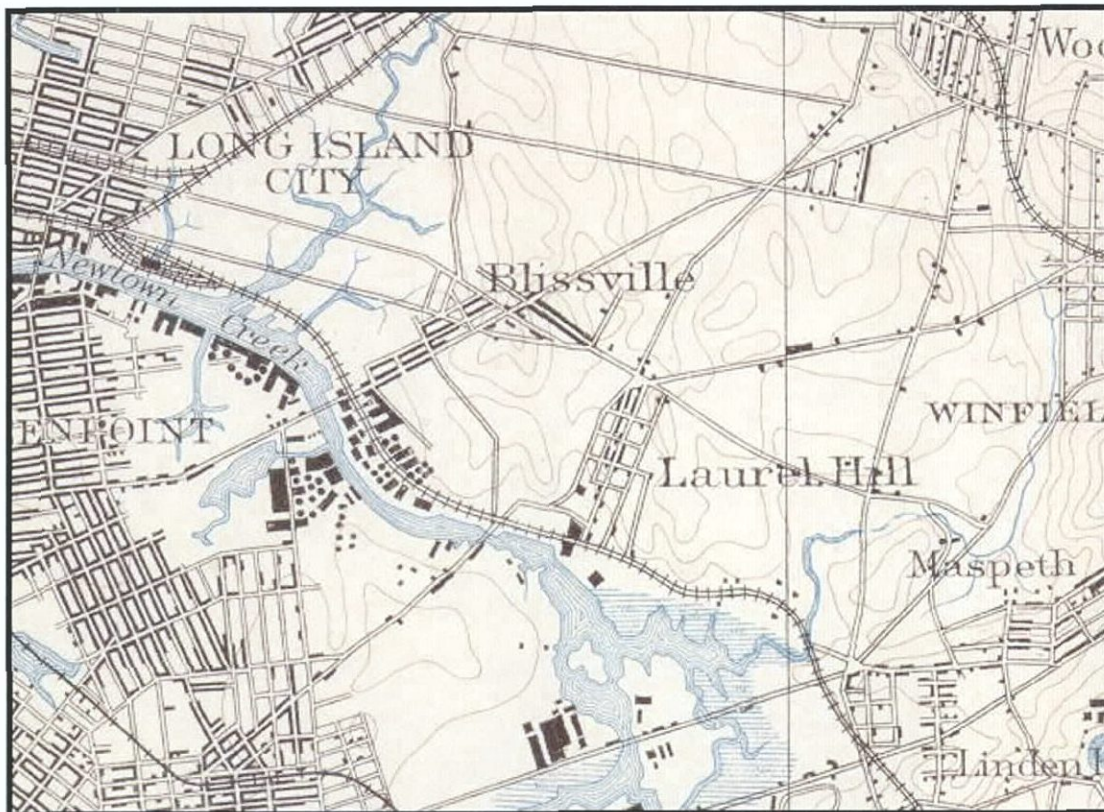


Image 14: Brooklyn, New York, Quadrangle 1891

Map Courtesy of Maptech, <http://www.historical.maptech.com>

West Maspeth, historically known as Laurel Hill, is the oldest part of Maspeth. Unlike East Maspeth with its orderly arrangement of numbered streets, avenues, roads, and residential areas, West Maspeth remains industrial. Originally established in 1866 by C.W. Walter and A. Baumgarten, Laurel Hill Chemical Works became the “largest producer of oil of vitriol in the United States.”⁵⁰ Laurel Hill Chemical Works, called Nichol’s Copper Works by local people, employed several hundred full-time workers. The other large industry employing immigrants was called the National Enameling and Stamping Company (NESC), or Haberman’s Tin Factory.

⁴⁸ Van Skal, *Illustrated History of the Borough of Queens*, pg.32.

⁴⁹ John Rather, “Blue-Collar Enclave, Small-Town Spirit,” *New York Times*, pg. A1.

⁵⁰ Barbara W. Stankowski, *Maspeth...our town*, 1977, pg. 30.

Located near Laurel Hill, NESC employed about 60 workers. Many of these workers found housing in the oldest section of Maspeth, near Maspeth Avenue.⁵¹ From the area of Maspeth known as "Polack Alley," the factories at Laurel Hill were a short walk, and many residents recall the "whistles blowing in the morning and the men rising and walking in what looked like a parade to go to the factories."⁵² Additionally, the Long Island and North Side Railroads lines had two stations located in the center of this industrial area.

CALVARY CEMETERY

Calvary Cemetery is located adjacent to the Kosciuszko Bridge in Laurel Hill, Queens, New York. The cemetery is bound by Borden Avenue to the north, Review Avenue to the south, Laurel Hill Boulevard to the east, and Greenpoint Avenue to the west.

The mid- to late 1800s marked a period of increasing numbers of burial grounds, including the establishment of Laurel Hill's Calvary Cemetery in 1840. In 1847, the state of New York passed a statute that prohibited cemeteries to be created in Manhattan. As a result, lands for cemeteries were settled outside of the city limits in the surrounding boroughs. Calvary Cemetery was established in sections; the first section to be developed was Old Calvary Cemetery, or First Calvary, located just west of the approach to the former Penny Bridge. As the cemetery expanded, more parcels were purchased, resulting in the creation of Second Calvary, Third Calvary, and Fourth Calvary. First Calvary is often called "Old Calvary" by long-time residents of the area, with Second, Third and Fourth all considered part of "New Calvary."

⁵¹ Stankowski, *Maspeth...our town*, pg. 43.

⁵² Barbara W. Stankowski, *Maspeth: Immigrant Conditions at the Turn of the Century*, Thesis for Studies in the History of American Immigration under Professor H. Kraus, May 18, 1976, pg. 31.



Image 15: View of Kosciuszko Bridge from Calvary Cemetery, not dated

Image Courtesy of Bridge and Tunnel Club. "Calvary Cemetery."

<http://www.bridgeandtunnelclub.com>.

BRIDGES OF NEWTOWN CREEK

Several bridges spanned Newtown Creek during the late nineteenth and early twentieth centuries, including the Pulaski Bridge, the Greenpoint Avenue Bridge, and the Grand Street Bridge. These overpasses served primarily as small vehicular and pedestrian bridges linking the Brooklyn community on the east to the Queens community on the west. The bridges also served as gateways to passing vessels along the industrial channel.

PULASKI BRIDGE

The Pulaski Bridge, named after Polish military commander and American Revolution fighter Kazimierz (Casimir) Pułaski (1745-1779), carries six lanes of traffic and a pedestrian sidewalk over Newton Creek and the Long Island Expressway. The bridge is orientated north-south and connects Greenpoint in Brooklyn to Long Island City in Queens by McGuinness Boulevard from the south and Eleventh Street from the north.



Image 16: Pulaski Bridge, Greenpoint, Brooklyn, New York
Image Courtesy of EHT Tracerics, May 2006

Built at a cost of \$11,228,000, the 2,726 foot-long bridge replaced the old Vernon Avenue Bridge. Construction on the double-leaf, trunnion-type bascule bridge began in 1947 and was coordinated by Robert Moses. An eight-foot sidewalk is present at the west side of the bridge, accessible by stairways near Ash Street, Brooklyn, and Fifty-Third Avenue, Queens. The Pulaski Bridge was opened to traffic on September 10, 1954. Public Works Commissioner and Pulaski Bridge designer Frederick H. Zurmuhlen hailed the span as “evidence that New York City is pursuing a program of highway and bridge improvements unmatched by any other city in the country.”⁵³

Beginning in 1976, the first year the New York City Marathon ventured out of Manhattan and into the five boroughs, the race route included the crossing of the Pulaski Bridge to get from Brooklyn to Queens.⁵⁴ In 1994, the bridge was reconstructed at a cost of approximately \$40 million. The project included new approach roadways, new superstructure and approach spans, and upgrade of the bridge's mechanical/electrical systems.⁵⁵

The construction of the bridge accommodated the many Manhattan travelers inconvenienced by the lack of subway service. It was recorded in 2003 that many commuters “walked over the Pulaski Bridge to the Vernon-Jackson station in Queens to catch the No.7 train,” and according to a study published by the Citizens Housing and Planning Council of New York, an estimated 13% of Greenpoint’s residents walked to work.⁵⁶

Similar to the Kosciuszko Bridge, in comparison to the Penny Bridge, the Pulaski Bridge was able to handle more than double the traffic of its predecessor, substantiating that highway improvements were necessary in order to serve the growing communities.

⁵³ *New York Times*, “Bridge Linking Greenpoint Section of Brooklyn and Long Island City is Opened,” *New York Times*, September 11, 1954, pg. 19.

⁵⁴ *New York Times*, “City Marathon, Oct. 24, Will Span 5 Boroughs,” *New York Times*, June 22, 1976, pg. 55.

⁵⁵ Wired New York, <http://www.wirednewyork.com.htm>.

⁵⁶ *New York Times*, Dulcie Leimbach, “An Inviting Area, Once You Get There,” *New York Times*, April 13, 2003.

GRAND STREET BRIDGE

The Grand Street Bridge connects Brooklyn and Queens over the East Branch of Newtown Creek. The bridge was named after the east-west thoroughfare between Brooklyn and Queens, from Gardner Avenue to 47th Street.



Image 17: Grand Street Bridge, Queens, New York
Image Courtesy of EHT Tracerics, May 2006

Plans of these improvements, including the construction of new approaches to the bridge were expected to displace numerous homeowners.⁵⁷ Some 40,000 people were reportedly relocated on the Brooklyn side.⁵⁸

The Grand Street Bridge is a swing type bridge with a Pratt Truss system, measuring 227' across the creek. The bridge appears to be the original structure as when it was opened on February 3, 1903 and continues to accommodate foot traffic between Brooklyn and Queens. The bridge carries two lanes of traffic, each measuring 19'-7", with 6' sidewalks on either side. The total cost of the Grand Street Bridge was \$205,671.72.⁵⁹

GREENPOINT AVENUE BRIDGE

The Greenpoint Avenue Bridge, or the J.J. Byrne Memorial Bridge, extends across Newtown Creek at 49th Street. The bridge was aptly named for its location on Greenpoint Avenue, located between Kingsland Avenue and Review Avenue.

The first drawbridge at this location, the Blissville Bridge, was built in the 1850s, though it was subsequently replaced. In 1928, construction began on a new bridge. During its construction, a temporary bridge located 200' upstream from the previous location carried traffic 24' above the creek's surface. Relocation of the old drawbridge deck was a great achievement for the engineers and architects. The total cost of the new drawbridge, after opening December 3, 1929

⁵⁷ *New York Times*, "Route to a new Bridge," *New York Times*, Jun 15, 1893, pg. 8.

⁵⁸ *Washington Post*, "A Great Eviction: Caused by Destruction of Many Homes on Manhattan Island," *Washington Post*, Jun 27, 1903, pg. 6.

⁵⁹ New York City Department of Transportation, "Grand Street Bridge Facts," <http://www.nyc.gov/html/dot/html>.

was \$1,923,968.23.⁶⁰ The subsequent drawbridge operated for 55 years, traversing the creek by 867 feet, until it too was outmoded and required substitution.⁶¹



Image 18: Greenpoint Avenue Bridge, Greenpoint, Brooklyn, New York
Image Courtesy of EHT Tracerics, 2006

The current Greenpoint Avenue Bridge began construction in 1984, located 60 feet south of the old location.⁶² The Greenpoint Avenue Bridge is a bascule type bridge, spanning 180 feet. The bridge carries four lanes of traffic, measuring 53 feet in each direction, with 8'-2" sidewalks on each side.⁶³

IMMIGRATION/POLISH CONTEXT

THE IMMIGRANT EXPERIENCE

Growth in U.S. industry after the Civil War (1861-1865) created a demand for laborers. Due to the lack of diversified industry in Poland, there was no market for the labor of displaced peasants, and the oppression of Polish culture by Germany and Russia combined to create an attractive setting for emigration.⁶⁴ Consequently, people in Eastern countries, such as Poland, responded to the advertising of the American steamship companies that promised opportunity for employment and a chance to buy land in America. Once in New York, immigrants were approached by labor brokers who channeled them into the factories where workers were needed.⁶⁵

⁶⁰ New York City Department of Transportation, "Greenpoint Avenue Bridge Facts,"

<http://www.nyc.gov/html/dot/html>.

⁶¹ *New York Times*, "The City: State Will Build New City Bridge," *New York Times*, Sep 6, 1984, pg. B6.

⁶² *Ibid.*

⁶³ New York City Department of Transportation, "Greenpoint Avenue Bridge Facts,"

<http://www.nyc.gov/html/dot/html>.

⁶⁴ Stankowski, *Maspeth: Immigrant Conditions at the Turn of the Century*, pg. 26.

⁶⁵ Stankowski, *Maspeth...our town*, pg. 42.

The large factories along the Newtown Creek absorbed large numbers of the newly arrived immigrants. With few choices for employment, immigrants accepted some of the harshest work in the city. In Greenpoint, the “the city’s largest Polonia,” the Poles worked in the refineries and iron foundries, all the while inhaling noxious fumes.⁶⁶ Working in these factories however, enabled immigrants to earn enough money to bring their families to the area. Once the immigrants arrived, they sought a location near their families and other immigrants, and within walking distance of the factories. The need to speak in their native language in order to buy food, make rental agreements, get information and fund their comforts kept the Polish immigrants concentrated in one geographic area.⁶⁷ Maspeth, Queens, and Greenpoint, Brooklyn in particular, became home to a large percentage of Polish immigrants, who settled in the area largely because of the availability of employment and the proximity of other Polish-speaking people. Others reasons included: a Polish Catholic Church nearby, a relative lived nearby, inexpensive rents, and the area greatly resembled the grassy fields of Poland.⁶⁸ It did not matter to the Poles that once the area became more industrial, it came to no longer resemble their homeland. Rather, their beliefs can be traced to a Polish proverb that “a man without land is a man without legs.”⁶⁹ As surmised in a thesis on Maspeth immigrants, “Polish immigrants and their children have at last gotten what they came for; they have acquired property,...which, in their homeland, was denied to them, and for which they have hungered, even if only instinctively, since they embarked for the United States.”⁷⁰

The Polish community has been a distinctive part of this area for generations. A second wave of Polish immigrants came in the 1980s and 1990s. With its established Polish culture where English is a second language, Greenpoint has been a magnet for recent immigrants. The Polish National Hall in Maspeth and the Polish National Hall in Greenpoint remain an important presence in their respective neighborhoods. According to the 1990 census, the ethnic mix of Maspeth today is mainly Italian, Irish, Polish, and German.

THADDEUS KOSCIUSZKO (1746-1817)

Thaddeus Kosciuszko⁷¹ (kosh-'chush-(')ko) is recognized as a hero in both North America and Europe for his military services during the Revolutionary War (1775-1781), but it was his skilled engineering achievements that made him legendary. He is remembered as a creative engineer, as well as a vibrant man who honored the values of freedom. As a prominent militant in the United States and Poland, Kosciuszko was internationally recognized for his contributions to the pursuit of liberty.

Kosciuszko was born in the Polish village of Mereczowiszczynna to a poor family of noble descent on February 12, 1746. In 1765, at the age of nineteen, Kosciuszko was admitted to the

⁶⁶ Mark Leeds, *Passport's Guide to Ethnic New York: a Complete Guide to the Many Faces and Cultures of New York*, Lincolnwood, Illinois: Passport Books, 1995, pp.256-259.

⁶⁷ Stankowski, *Maspeth...our town*, pg. 43.

⁶⁸ Stankowski, *Maspeth: Immigrant Conditions at the Turn of the Century*, pg. 28.

⁶⁹ Leeds, *Passport's Guide to Ethnic New York: A Complete Guide to the Many Faces and Cultures of New York*, pg. 255-256.

⁷⁰ Stankowski, *Maspeth: Immigrant Conditions at the Turn of the Century*, pg. 29.

⁷¹ *The spelling of the name Kosciuszko frequently omits the "z," as the name is commonly anglicized.*

Royal Military School. After graduating in 1769, he received the King's scholarship to study military engineering in Paris, France at the Ecole Militaire. Not long after completing his studies, reports of the war in the United States had reached Europe. Hearing of this news, Kosciuszko applied his military services by aiding General George Washington. Appearing before the Continental Congress on August 30, 1776, Kosciuszko was recognized as the first foreign soldier to volunteer his services.⁷²



On October 18, 1776, Kosciuszko was appointed a Colonel in the Continental Army. During his tenure in the army, he drafted plans for several forts and military camps including the fortification of the banks of the Delaware River. He continued to provide his services to the Army as the Chief Engineer for the Gates of Saratoga (1777) and West Point (1778-1780).⁷³

In 1783, after six years of service, George Washington appointed Kosciuszko to the rank of Brigadier General and awarded him an honorary member of the newly founded Society of Cincinnati. He stayed in the United States for several years after before returning home to Poland to assist in their crusade for independence. In 1797, he returned to the United States, and resided in Philadelphia.

Image 19: "The Hero of Two Worlds" Kosciuszko Monument at West Point, United States Military Academy (1828)⁷⁴

Thaddeus Kosciuszko strongly believed that the right to be free belonged to one and all. Before leaving the United States, he requested in his will that his assets be used in the emancipation of slaves to provide education and property. After returning to Poland in 1798, Kosciuszko upheld his views for the freedom of his ancestors until his death in 1817. Unfortunately, he never lived to bask in the freedom of a liberated Poland.⁷⁵

Thaddeus Kosciuszko is a prominent war figure in both Polish and non-Polish communities across the country, for which many regions, monuments, and organizations are named after him. Kosciuszko, Mississippi, also the birthplace of television-icon Oprah Winfrey, musician Charlie Musselwhite, civil rights advocate James Meredith, and playwright Topher Payne, bears the

⁷² Stephen P. Mizwa, ed., *Tadeusz Kosciuszko (1746-1817), American Revolutionary War Patriot and National Hero of Poland. An Address by Stephen P. Mizwa at the Kosciuszko Members Day Program, October 21, 1967.* (Kosciuszko Foundation, 1967), 4-5.

⁷³ Monica M. Gardner, *Kosciuszko: A Biography* (London: George Allen & Unwin, Ltd., 1992), 30-31.

⁷⁴ Stephen P. Mizwa, ed., *Tadeusz Kosciuszko (1746-1817), American Revolutionary War Patriot and National Hero of Poland. An Address by Stephen P. Mizwa at the Kosciuszko Members Day Program, October 21, 1967.* (Kosciuszko Foundation, 1967), 4-5.

⁷⁵ House, Hearings before the Subcommittee on Natural Parks and Recreation of the Committee on Interior and Insular Affairs, 92nd Congress., 2nd sess., 1972 Serial No. 92-49.

name of Kosciuszko. Recognition of the Polish patriot was also given in Kosciuszko, Indiana, and Kosciuszko, Texas, as well as a bridge in Connecticut, a park in Milwaukee and a highway in Los Angeles named the Thaddeus Kosciuszko Way, all honor the Polish icon.⁷⁶



Image 20: Kosciuszko Memorial, Lafayette Square, Washington D.C. (1910). *Image obtained from: Tadeusz Kosciuszko (1746-1817), American Revolutionary War Patriot and National Hero of Poland: An Address by Stephen P.*

Numerous monuments are placed throughout the United States, commemorating his heroism, including a statue in Detroit, one in Pennsylvania, and another in Lafayette Square in Washington, D.C.⁷⁷ His presence has made it as far as the continent of Australia. Mount Kosciuszko, Australia's highest point is located in Kosciuszko National Park.⁷⁸

Several other tributes dedicated to Kosciuszko in the State of New York include a statue at the West Point Military Academy, one bridge located in Albany, another bridge connecting Brooklyn and Queens, as well as an organization dedicated to the preservation and education of the Polish Culture.⁷⁹

His home in Philadelphia, located at 301 Pine Street, was first listed in the Philadelphia National Register of Historic Places in 1957, and was surveyed by the Historic American Building Survey (PA-1342). The house was officially named the Thaddeus Kosciuszko National Memorial and listed in the National Register of Historic Places on December 18, 1970.⁸⁰

Kosciuszko resided in this modest three-and-half-story brick house during his second visit to the United States from October 1797 to May 1798. Built in 1775 by a Quaker merchant named Joseph Few, Kosciuszko rented a small room on the second floor where he received distinguished friends and visitors like Thomas Jefferson and the Duke of Orleans, who later became King of France.⁸¹

⁷⁶ Wikipedia. "Thaddeus Kosciuszko," <http://en.wikipedia.org>

⁷⁷ *Ibid.*

⁷⁸ Tiscali, Encyclopedia Search, "Kosciuszko, Mount," Tiscali, Encyclopedia Search, 2006, <http://tiscali.co.uk.html>.

⁷⁹ *Ibid.*

⁸⁰ Tiscali, Encyclopedia Search, "Kosciuszko, Mount," Tiscali, Encyclopedia Search, 2006, <http://tiscali.co.uk.html>.

⁸¹ House, Hearings before the Subcommittee on Natural Parks and Recreation of the Committee on Interior and Insular Affairs, 92nd Congress., 2nd sess., 1972 Serial No. 92-49.



Image 21: Thaddeus Kosciuszko National Memorial,
301 Pine Street, Philadelphia⁸²

INTERSTATE CONTEXT

INTERSTATE I-278

Interstate I-278 is an integral highway system stretching 35.62 miles over four viaducts beginning in Elizabeth, New Jersey, and terminating in Bronx, New York. I-278 begins at the Goethals Bridge at the New York-New Jersey border along the Staten Island Expressway. From here, I-278 goes over the Verrazano Bridge into Brooklyn, where it becomes the Brooklyn-Queens Expressway. The other side of the Verrazano-Narrows Bridge is the Gowanus Expressway, a segment of the Brooklyn-Queens Expressway. It passes by the Brooklyn-Battery Tunnel and the Brooklyn, Manhattan, and Williamsburg Bridges, before going over the Kosciuszko Bridge into Queens. From there it intersects the Long Island Expressway (I-495), Queens Boulevard, and Northern Boulevard. It merges into Grand Central Parkway and goes over the Triborough Bridge into the Bronx, where it becomes the Bruckner Expressway. It ends at I-95 near the Whitestone and Throgs Neck Bridges.

BRIDGES OF I-278

Developing a means of passage over New York's numerous channels was necessary in the early 1800s to accommodate the needs of living. Into the nineteenth century, growth in expanded

⁸² The National Park Service Department of Interior www.nps.gov.

territories increased the need for bridges. Continued growth and increasing populations created the need for bridges that could withstand heavier loads of traffic. New processes for making steel met these needs and gave rise to several large bridges like those seen along I-278 on the Long Island peninsula, including the Goethals, Verrazano-Narrows, Kosciuszko, and Triborough Bridges.

The Goethals Bridge opened in 1928, connecting Elizabeth, New Jersey to Howland Hook, Staten Island. The bridge measures 8,600' long, clearing 135' over the Arthur Kill waterway, and accommodates 4 lanes of traffic.⁸³

The Verrazano-Narrows Bridge was completed in 1964, connecting Staten Island and Brooklyn. It is one of the largest suspension bridges in the world. The bridge is 4,260 feet long between towers with a 215' clearance over the Narrows tidal strait, and accommodates 12 lanes of traffic.⁸⁴

The steel and concrete structure of the Kosciuszko Bridge was constructed in 1939, connecting Brooklyn to Queens. The bridge is 6,021' long, with a clearance of 125' above Newtown Creek, and accommodates 6 lanes of traffic.⁸⁵

The Triborough Bridge opened in 1936 and is a system of bridges with three arms connecting Queens, Manhattan, and the Bronx. The East River arm is a suspension bridge, next to the Hell Gate railway bridge.

The East River Bridge is a suspension bridge which measures 2,780' long between the towers, clearing 143' from the Hell Gate tidal channel, and accommodates 8 lanes of traffic.

The Harlem River viaduct is the west arm of the Triborough Bridge and includes a lift bridge measuring 330' long with a 55' clearance from the river in the closed position, and 135' in the open position, and accommodates 6 lanes of traffic. The Harlem River Bridge is the only portion that is not a part of I-278.

The Bronx Kills Crossing, a truss bridge, is the third arm of the Triborough Bridge. It measures 1,699' in length, with a clearance of 55' from the Bronx Kills and accommodates 8 lanes of traffic.⁸⁶

BROOKLYN-QUEENS EXPRESSWAY

The Brooklyn-Queens Expressway, a segment of I-278, was vital to the roadway improvement effort initiated in the mid-twentieth century. The purpose of this project was to alleviate congestion and improve traffic flow in and around New York. The construction of the Brooklyn-Queens Expressway (BQE) was a city-financed, limited access highway designed to link Brooklyn and Queens. When the BQE came off the design boards in 1941, it was considered a "dream highway," giving motorists direct access to Long Island and aiding the transportation of

⁸³ Wikipedia, "Robert Moses," <http://en.wikipedia.org>.

⁸⁴ *Ibid.*

⁸⁵ Sharon Reier, *Bridges of New York*, New York: Quadrant Press, 1977.

⁸⁶ Wikipedia, "Robert Moses," <http://en.wikipedia.org>.

industry and commerce between the boroughs.⁸⁷ The “heart of the project was and is a four mile stretch in Queens consisting of 23 bridges and one pedestrian overpass.” This section was to link the Grand Central Parkway in Astoria with the Queens Midtown Highway in Winfield, establishing a junction for the Brooklyn and Queens regions.⁸⁸

Initially, the Penny Bridge connected Brooklyn and Queens over Newtown Creek, from Greenpoint on the Brooklyn side to Maspeth on the Queens side. This bridge was later replaced by the Kosciuszko (Meeker Avenue) Bridge in 1939. This viaduct allowed motorists to access the Triborough Bridge as well as the 1939-1940 World’s Fair in Flushing Meadows, Queens.

The final part of the highway on the Brooklyn side was opened December 6, 1952,⁸⁹ years before the Queens side started its completion.⁹⁰ After much delay, the last part of the expressway was finally finished in 1960, completing the BQE after nineteen years. The delay in finishing the project was largely the result of diminished state and federal aid under a revised highway bill passed by Governor Thomas Dewey. The bill made the State’s Department of Public Works the sole judge as to what city’s highways were to be considered part of the state’s arterial system. Further implications surrounding its completion were deficient funds during and after World War II, as well as swampy site conditions, and other post-war construction priorities such as schools and sewers.⁹¹

⁸⁷ *Long Island Star-Journal*, “Laurel Hill Boulevard ‘Skyway’ Project Rushed,” *Long Island Star-Journal*, May 8, 1939.

⁸⁸ John San Antonio, “Road to Nowhere,” *Long Island Daily Press*, June 3, 1957.

⁸⁹ *Long Island Press*, “New Link to Queens,” *Long Island Press*, Dec. 7, 1952.

⁹⁰ *Long Island Daily Press*, “New Section will Finish Expressway,” *Long Island Daily Press*, Aug. 14, 1961.

⁹¹ John San Antonio, “Road to Nowhere,” *Long Island Daily Press*, June 3, 1957

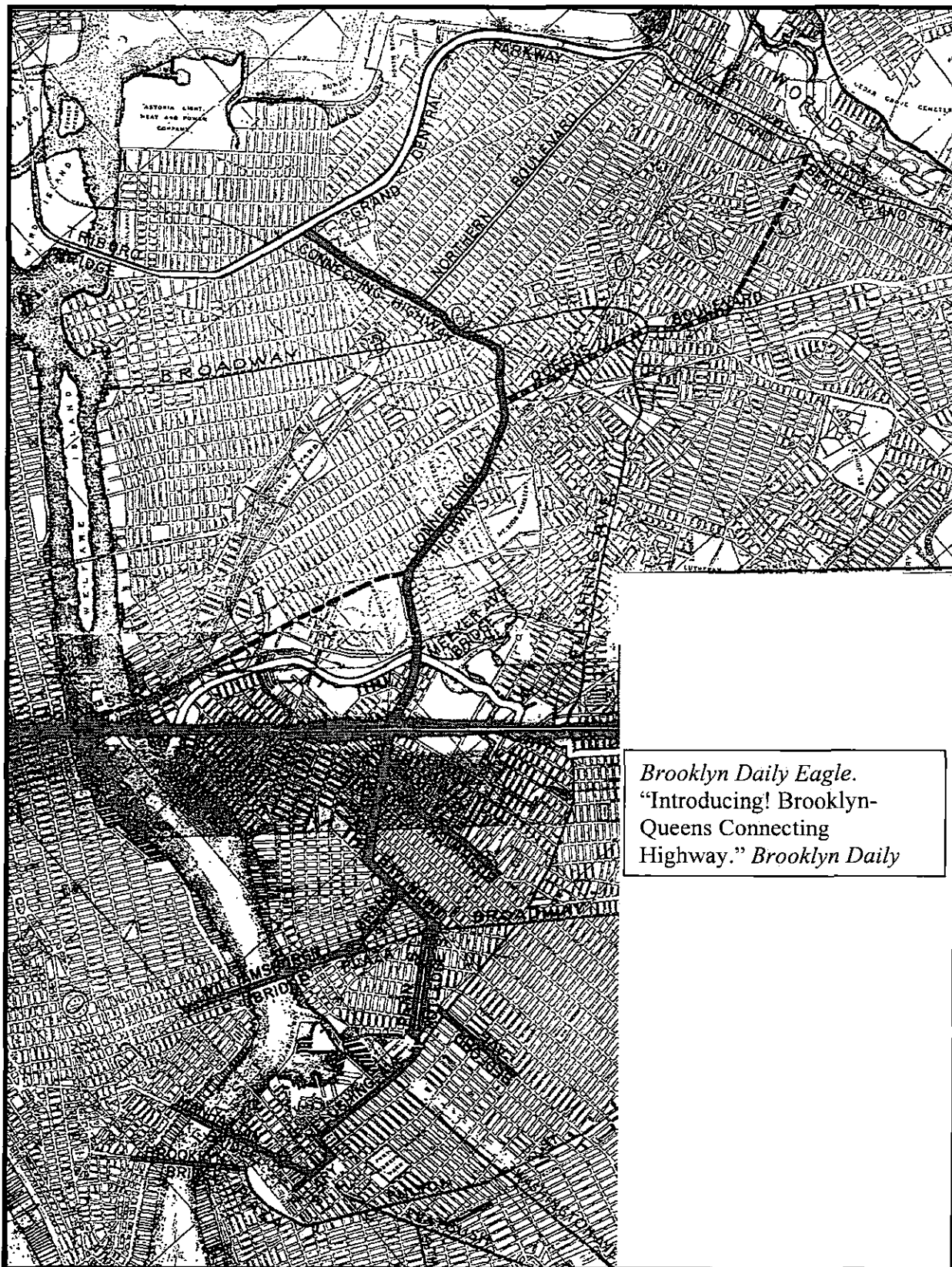


Image 22: Map of Planned Expressway

ARCHITECTURAL CONTEXT

WARREN TRUSS BRIDGES

Patented in 1846 by British engineers James Warren and Willoughby Monzoni, the Warren truss bridge and its variants constitute a commonly built metal truss bridge type of the nineteenth and early twentieth centuries. Initially introduced for railroad bridges in the early 1800s, railroad companies set the pace for bridge building during much of the nineteenth century.⁹² Eventually, different truss configurations were soon applied to carriage, pedestrian, and road bridges.

The original form of the Warren truss consisted of a series of equilateral triangles in which the diagonals carried both compressive and tensile loads. Later, verticals were added to serve as bracing for the entire triangular web system between parallel top and bottom chords. Other common elements of Warren truss bridges include: through or pony truss arrangement, iron or steel construction, and pinned, bolted or riveted construction. Like the Pratt truss, the Warren truss was widely built throughout the United States from the middle of the nineteenth century well into the twentieth century, and spawned many variants, including a double intersection, or lattice, subtype in which two triangular truss systems are superimposed with or without verticals. Warren truss spans with verticals typically span 30 to 150 feet in span length.

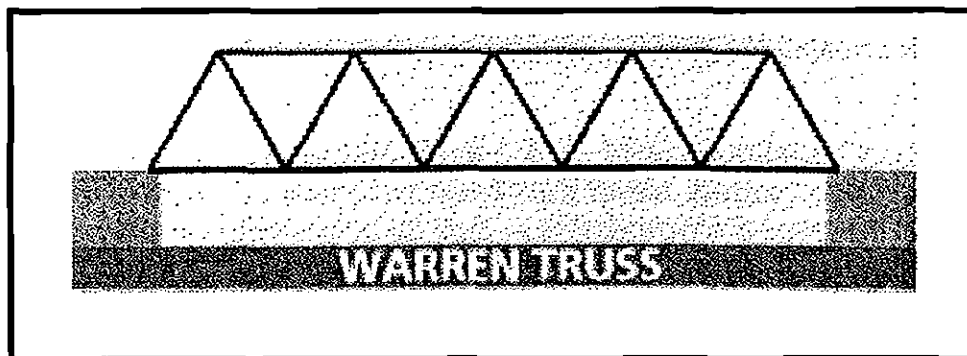


Image 23: Example of Warren truss ⁹³

According to the 2006 Historic Bridge Inventory, there are 107 Warren truss bridges in the State of New York that have been determined eligible for listing in the National Register of Historic Places (See Table 3, a reprint of Table 1 for convenience). There are 153 Warren truss bridges determined not eligible for listing in the National Register of Historic Places. The *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, prepared by Mead & Hunt and Allee King Rosen Fleming, Inc. further separates Warren truss bridges into three time periods: pre-standardization, early-standardization and post-standardization.

⁹² Mead & Hunt and Allee King Rosen & Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*.

⁹³ Bridge Basics, " <http://pghbridges.com/basics.htm>

TABLE 3: COMPARATIVE ANALYSIS OF WARREN TRUSS BRIDGES

PERIOD	BRIDGE TYPES										FRYE BRIDGE	BRIDGE NO. 2255530	
	WARREN TRUSS BRIDGES		WARREN THROUGH TRUSS				WARREN DECK TRUSS BRIDGES		WARREN COMBINATION TRUSS (DECK & THROUGH)				
	IN NEW YORK STATE	IN NEW YORK CITY	NO OVERHEAD BRACING		WITH OVERHEAD BRACING		IN NEW YORK STATE	IN NEW YORK CITY	IN NEW YORK STATE	IN NEW YORK CITY			
ELIGIBLE													
PRE-STANDARDIZATION PERIOD (PRE-1908)	29	1 ⁹⁴	27	1 ⁹⁵	2	0	0	0	0	0	0	N/A	N/A
EARLY-STANDARDIZATION PERIOD (1909-1925)	31	2 ⁹⁶	26	1 ⁹⁷	3	0	1	0	1	0	0	N/A	N/A
POST-STANDARDIZATION PERIOD (1926-1955)	47	0	20	0	18	0	9	0	0	0	0	N/A	N/A
SAME PERIOD AS KOSCIUSZKO BRIDGE (1938-1943)	8 ⁹⁸	0	5 ⁹⁹	0	2 ¹⁰⁰	0	0	0	0	0	0	1	1
TOTAL ELIGIBLE	107	3	73	2	23	0	10	0	1	0	0	1	1
NOT ELIGIBLE													
PRE-STANDARDIZATION PERIOD (PRE-1909)	8	0	7	0	1	0	0	0	0	0	0	N/A	N/A
EARLY- AND POST-STANDARDIZATION PERIOD (1909-1925)	3	0	3	0	0	0	0	0	0	0	0	N/A	N/A
POST-STANDARDIZATION PERIOD (1926-1955)	137	0	86	0	49	0	2	0	0	0	0	N/A	N/A
SAME PERIOD AS KOSCIUSZKO BRIDGE (1938-1943)	25	0	15	0	1	0	0	0	0	0	0	N/A	N/A
TOTAL NOT ELIGIBLE	153¹⁰¹	0	96	0	50	0	2	0	0	0	0	N/A	N/A
TOTAL	260	3	169	2	73	0	12	0	1	0	0	1	1

⁹⁴ BIN No. 2241259 (204th Street Footbridge) is eligible under Criterion C-5.

⁹⁵ BIN No. 2241259 (204th Street Footbridge) is eligible under Criterion C-5.

⁹⁶ BIN No. 2241590 (Concourse Village Avenue) is eligible under Criterion C-5 and BIN No. 2240507 (Roosevelt Avenue) is eligible under Criteria C-5 and C-6.

⁹⁷ BIN No. 2240507 (Roosevelt Avenue) is eligible under Criteria C-5 and C-6.

⁹⁸ Two bridges are eligible under Criterion A-1; five are eligible under Criterion C-6; and for one bridge, the criterion is not explained.

⁹⁹ Two bridges are eligible under Criterion A-1; two are eligible under Criterion C-6; and for one bridge, the criterion is not explained.

¹⁰⁰ Both bridges are eligible under Criterion C-6.

¹⁰¹ Five of the 153 bridges are categorized other than Through Truss, Deck Truss or Combination (Deck & Through) Truss.

ELIGIBLE PRE-STANDARDIZATION WARREN TRUSS BRIDGES

By the late nineteenth century, the Warren and Pratt truss types came to dominate bridge construction.¹⁰² Warren truss bridges built prior to 1909 represent the early period of bridge standardization in New York. These bridges represent a group of structures built as the type was evolving and represent uncommon or innovative examples of the type, as well as good examples of the Warren truss-type as it came to be constructed. Variations of pre-1909 Warren truss bridges includes deck trusses, multiple spans, double-intersection trusses, unusual sub struts or unusual curved top and bottom chords.

TABLE 4: ELIGIBLE PRE-STANDARDIZATION WARREN TRUSS BRIDGES (1885-1908)

DATE BUILT	NUMBER OF BRIDGES
1885-1890	1
1891-1896	1
1897-1902	16
1903-1908	11
DATE N/A	0
PRE-1908 TOTAL	29

According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, all pre-1909 Warren truss bridges are considered to be **NRHP-eligible** unless they have a significant integrity problem. There are 29 pre-standardization bridges that have been evaluated and determined eligible for listing in the National Register of Historic Places (Table 4). Of these 29, one bridge (BIN 2241259) is located within New York City (NYSDOT Region 11). Nine pre-standardization Warren truss bridges in New York State have been determined not eligible for listing in the National Register of Historic Places; none of these bridges are located within New York City (NYSDOT Region 11).

ELIGIBLE EARLY- AND POST-STANDARDIZATION WARREN TRUSS BRIDGES

The early-standardization period for Warren truss bridges is considered to be 1909 to 1925 (Table 5). Warren truss bridges built during this period possess structural elements as they gradually became common to the Warren truss type. According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, Warren trusses from the early-standardization period are considered **NRHP-eligible** unless they have a significant integrity problem. Thirty-one early-standardization Warren truss bridges have been evaluated and determined eligible for listing in the National Register of Historic Places. Of these 31, only two are located within New York City (NYSDOT Region 11). Three early-standardization Warren truss bridges have been determined not eligible for listing in the National Register of Historic Places; none of these bridges are located within New York City (NYSDOT Region 11).

¹⁰² Mead & Hunt, *Contextual Study of New York State's Pre-1961 Bridges*, pg. 31-32.

TABLE 5: ELIGIBLE EARLY-STANDARDIZATION WARREN TRUSS BRIDGES (1909-1925)

DATE BUILT	NUMBER OF BRIDGES
1909-1919	22
1920-1925	9
1909-1925 TOTAL	31

Bridges built after 1925 are categorized in post-standardization period, or 1926 to 1955 (Table 6). Post-standardization bridges were strongly influenced by standardization of design and generally do not represent significant or unique examples of their type. According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, Warren truss bridges built post-standardization are considered **not eligible** for the National Register of Historic Places unless they possess historical significance, or a significant variation or other unique feature or association, due to their reliance on the standardized design. Forty-seven post-standardization Warren truss bridges have been evaluated and determined eligible for listing in the National Register of Historic Places. Of these 47, none are located within New York City (NYSDOT Region 11). One hundred and forty-one post-standardization bridges have been determined not eligible for listing in the National Register of Historic Places; none of these bridges are located within New York City (NYSDOT Region 11).

TABLE 6: ELIGIBLE POST-STANDARDIZATION WARREN TRUSS BRIDGES (1926-1955)

DATE BUILT	NUMBER OF BRIDGES
1926-1931	19
1932-1937	17
1938-1943	8
1944-1949	0
1950-1955	3
POST-1925 TOTAL	47

NON-ELIGIBLE WARREN TRUSS BRIDGES

According to the 2006 NYSDOT Historic Bridge Inventory, there are 153 Warren truss bridges determined not eligible for listing in the National Register of Historic Places in the State of New York. Of these 153, 141 were constructed during the period of post-standardization, from 1926 to 1955. An evaluation of the 141 post-standardization Warren truss bridges determined not eligible for listing in the National Register in New York State was also examined. None of the 141 bridges are located in New York City. The NYSDOT Historic Bridge Inventory database provides limited information on the reasons for ineligibility.

Principally, bridges determined not eligible for listing in the National Register do not possess architectural or historical significance to meet the National Register Criteria for eligibility. Moreover, these structures: are not associated with the events that have made a significant contribution to the broad patterns of our history or prehistory (NRHP Criterion A); are not associated with the lives of persons significant in our past (NRHP Criterion B); do not embody the distinctive characteristics of a type, period, or method of construction, or do not represent the work of a master or possess high artistic values, or do not represent a significant a distinguishable entity whose components lack individual distinction (NRHP Criterion C); or do

not yield, or are not likely to yield, information important to prehistory or history (NRHP Criterion D).

Integrity problems were identified for 24 of the 141 non-eligible bridges (See Table 7). Many of these 24 bridges have been altered and do not possess sufficient integrity to warrant inclusion into the National Register of Historic Places. The most common integrity problem among non-eligible bridges is the replacement of main members. Other examples of alterations that may affect the integrity of bridges includes: raising vertical clearance for overhead trusses; adding non-original main structural main members; replacing or removing main structural members; widening a bridge with new structural members; changing or removing a rail or parapet that is integral to the superstructure; removing the superstructure, or lengthening a superstructure with additional spans.¹⁰³

TABLE 7: INTEGRITY PROBLEMS OF THE NON-ELIGIBLE, POST-1925 WARREN TRUSS BRIDGES IN THE STATE OF NEW YORK

INTEGRITY PROBLEM	NUMBER OF OCCURRENCES
Replacement of main structural members	13
Raised vertical clearance for overhead trusses	1
Added main structural members, unoriginal to the structure	3
Change in rail or parapets that is integral to the superstructure	2
Replacement of main structural members and change in rail or parapets	2
Removed main structural members	1
Widened with additional structural members	2
TOTAL	24

¹⁰³ Mead & Hunt and Allee King Rosen & Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, pg. 3-2.

ARCHITECTURAL SURVEY RESULTS

COMPARATIVE ANALYSIS: WARREN TRUSS BRIDGES IN THE NEW YORK CITY REGION

In an effort to properly understand the historic context of the Kosciuszko Bridge, a comparative analysis of eligible Warren truss bridges was conducted. The comparative analysis, which included other eligible bridges in New York City and the State of New York, served as a basis for understanding the integrity and context of the Kosciuszko Bridge in relation to other bridges from the same time period. A comparison to non-eligible bridges was limited due to the lack of information provided in the inventories.

The majority of this information was obtained from Mead & Hunt and Allee King Rosen & Fleming, Inc.'s *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, prepared for the New York State Department of Transportation, Albany, New York and the Federal Highway Administration (January 2002), and the accompanying NYSDOT Historic Bridge Inventory (updated to 2006). The inventories were created from a list of bridges in which NYSDOT has direct ownership, jurisdiction or funding assistance. The Historic Bridge Inventory includes bridges owned by the following entities: NYSDOT; New York City Department of Transportation; Genesee State Parks and Recreation Commission; Interstate Bridge Commission; Lake Champlain Bridge Commission; Lake George Park Commission; Long Island State Parks and Recreation Commission (except bridges on eligible or listed parkways); Niagara Frontier State Park Commission; Other State Department; Authority or Commission; Capital District State Park Commission; Central New York State Park Commission; City of New York State Park Commission; Finger Lakes Park and Recreation Commission; Bureau of Indian Affairs; U.S. Forest Service; National Park Service; Bureau of Land Management; Bureau of Reclamation; Military Reservation/Corps of Engineers; various other Federal, County, Town, City, and Village bodies; and other entities. It is also important to note that the Historic Bridge Inventory excludes a large number of bridges owned by the following entities: Metropolitan Transit Authority (MTA); Triborough Bridge and Tunnel Authority (TBTA); Monroe County Water Authority; Niagara Falls Bridge Commission; New York State Bridge Authority; New York State Thruway Authority; Ogdensburg Bridge and Port Authority; Palisades Interstate Park Commission; Port of New York Authority; Power Authority; Seaway International Bridge Authority; Taconic State Park Commission; Thousand Islands Bridge Authority; Transit Authority; Tri-State Transportation Commission; Allegany State Park Authority; Nassau County Bridge Authority; Buffalo and Fort Erie Public Bridge Authority; East Hudson Park Authority; New York City Department of Water, Supply, Gas and Electric; Railroad; Long Island Railroad; NS or CSX (formerly Conrail/Penn Central); Private-Industrial; Private-Utility. Additionally, most canal systems and parkways were not addressed because they have previously been evaluated for inclusion in the National Register.¹⁰⁴ The excluded entities, particularly MTA and TBTA, own a number of Warren truss bridges in the New York City Region. As a result, eligibility comparisons with these bridges are beyond the scope of this study.


¹⁰⁴ Mead & Hunt and Allee King Rosen & Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, pg. 1-7.

According to the 2002 *Evaluation*, there are three eligible Warren truss bridges in the New York City Region, the same region as the Kosciuszko Bridge. Each site visited was surveyed to observe its design and function, as well as determine its association to the surrounding communities. This analysis served as a source of comparison when evaluating the eligibility of the Kosciuszko Bridge in comparison to the eligible Warren truss bridges in the New York City Region. A brief description of the three eligible Warren truss bridges in the New York City Region follows. Bridges are separated according to the year they were constructed. This section is followed by the comparative analysis of Warren truss bridges in the State of New York.

ELIGIBLE PRE-STANDARDIZATION WARREN TRUSS BRIDGES

This section provides a comparative analysis and discussion of the presence of the three Warren truss bridges in the New York City Region. One of the bridges was constructed during the pre-standardization (pre-1909) period, and two are from the early-standardization period (1909-1925). There are no examples of Warren truss bridges from the post-standardization period (1926-1955), including the 1938-45 period when the Kosciuszko Bridge was constructed.

TABLE 8: BRIDGE NO. 2241259, BRONX, NEW YORK

<p>Bridge No. 2241259 <u>Location:</u> Kingsbridge <u>County:</u> Bronx <u>Year Built:</u> 1904 <u>Feature Carried:</u> 204th Street Footbridge <u>Engineer/Designer:</u> New York and Harlem Railroad <u>Material:</u> Steel <u>Design type:</u> Thru-truss, no overhead bracing <u>Construction features:</u> Riveted, truss system construction <u>Reason for Historic Determination:</u> Exhibits features common to a particular bridge type</p>	
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Built in 1904 by the New York and Harlem Railroad, Bridge No. 2241259, also known as the 204th Street Footbridge has a thru-truss design with no overhead bracing. Located between Bedford Park and Bronxdale, Bronx, New York, the steel bridge is of riveted, truss system construction. The bridge lies perpendicular to the New York and Harlem Railroad, running east and west along 204th Street. This footbridge was likely part of a five mile Grand Boulevard and Concourse planned for the City of New York in 1902. This plan aimed to connect the great parks of the city, including the Botanical Gardens - formerly part of Bronx Park. At the same time, a system of “driveways” was proposed to be incorporated into the overall plan.¹⁰⁵ Of the


¹⁰⁵ *New York Times*, “New York’s Great New Driveway,” *New York Times*, Aug. 17, 1902, pg. 24.

29 eligible bridges built pre-standardization, the 204th Street Footbridge is the only example in the New York City Region.

ELIGIBLE EARLY- AND POST-STANDARDIZATION WARREN TRUSS BRIDGES


There are 222 Warren truss bridges in New York that date to the early- or post-standardization period. Of these 222 bridges, 78 are considered eligible for the National Register of Historic Places. Two of the 78 eligible bridges are located in the New York City Region (BIN 2241590 and BIN 2240507).

TABLE 9: BRIDGE NO. 2241590, BRONX, NEW YORK

<p>Bridge No. 2241590 <u>Location:</u> Melrose <u>County:</u> Bronx <u>Year Built:</u> 1922 <u>Feature Carried:</u> Concourse Village Avenue <u>Engineer/Designer:</u> Bethlehem Steel Bridge Corporation <u>Material:</u> Steel <u>Design type:</u> Thru-truss, no overhead bracing <u>Construction features:</u> Riveted, truss system construction with bridge plate <u>Special Recognition:</u> Aesthetic treatment of decorative panels <u>Reason for Historic Determination:</u> Dates to period of early standardization</p>	
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Bridge No. 2241590, is located in South Bronx, New York, in the Concourse Village community. The high-skew bridge, running north-south, carries Concourse Village Avenue East over the Conrail railroad tracks. Built in 1922 by the Bethlehem Steel Bridge Corporation, the steel bridge features a riveted, truss system construction with a bridge plate. Decorative panels appear at the concrete deck at either side, and feature squared inlays. Only one of the trusses remains intact. The truss at the west side appears to have been removed. Bridge No. 2241590 was built in 1922, during the period of early-standardization and possesses structural elements common to the Warren truss type.

TABLE 10: BRIDGE NO. 2240507, QUEENS, NEW YORK

<p>Bridge No. 2240507 <u>Location:</u> Over I-678 and Flushing Road <u>County:</u> Queens <u>Year Built:</u> 1924 <u>Feature Carried:</u> Roosevelt Avenue <u>Engineer/Designer:</u> Arthur McMuller <u>Material:</u> Steel <u>Design type:</u> Thru-truss combination (thru and deck) <u>Construction features:</u> Unknown connection, truss system construction <u>Reason for Historic Determination:</u> Dates to period of early standardization and demonstrates individuality or variation of features within a particular bridge type</p>	
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Bridge No. 2240507, also known as the Roosevelt Avenue Bridge, is located in Queens, north of Flushing Meadows and Corona Park near Shea Stadium. The bridge is an extension of Roosevelt Avenue, passing over Interstate I-678 and the Flushing River. At the time of its completion, the Roosevelt Avenue Bridge was described as the largest bascule movable bridge in the world. The total cost of construction reached \$2,600,000.00. The double-deck structure accommodates mass transit above and four lanes of vehicular traffic below the superstructure, with sidewalks on either side. This bridge displays outstanding engineering qualities, including its load bearing capacity and its 152 foot long bascule leafs, each weighting 4,000,000 pounds.¹⁰⁶ Following a 1952 renovation, the bridge was rehabilitated again in 1979 in response to a city-wide effort to repair rundown bridges.¹⁰⁷ Bridge No. 2240507 was built in 1924, during the period of early-standardization and possesses structural elements common to the Warren truss type, and demonstrates individuality or variation of features as a thru-Warren truss-type. Additionally, Bridge No. 2240507 serves as the only eligible example in the State of a combination truss (through and deck).

¹⁰⁶ *New York Times*, "Flushing Extension of Corona Subway Ready to Open," *New York Times*, Jan 8, 1928, pg. 189.

¹⁰⁷ Anna Quindlen, "A Federal Grant to Help Rebuild 126 City Bridges," *New York Times*, Mar 20, 1979, pg. B1.

COMPARATIVE ANALYSIS: WARREN TRUSS BRIDGES IN THE STATE OF NEW YORK

In an effort to properly understand the historic context of the Kosciuszko Bridge, a comparative analysis of eligible Warren truss bridges in the State of New York was conducted. The majority of this information was obtained from Mead & Hunt and Allee King Rosen & Fleming, Inc.'s *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, prepared for the New York State Department of Transportation, Albany, New York and the Federal Highway Administration (January 2002), and the accompanying NYSDOT Historic Bridge Inventory (updated to 2006). There are 107 eligible Warren truss bridges in the State of New York. Relevant bridges were researched to determine their design and function. This analysis served as a statewide-comparison source when evaluating the eligibility of the Kosciuszko Bridge. For this analysis, only those bridges built early- and post-standardization were researched, because they are the same era of construction as the Kosciuszko Bridge.

While Mead & Hunt and Allee King Rosen & Fleming, Inc.'s *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan* and the accompanying NYSDOT Historic Bridge Inventory (updated 2006) provided the basis for our comparative analyses, there were limitations with the information provided. The Kosciuszko Bridge, for example, is not identified in the Historic Bridge Inventory as a Warren truss bridge. Additionally, information that is provided about the Kosciuszko Bridge is largely incomplete or, such as the year of construction and the general type of the main span, were incorrect.

This section provides a comparative analysis of bridges in New York State that have significant variations from common or standardized Warren truss types built during the early- and post-standardization time periods. The analysis includes a comparison of bridges with the following features: multiple spans; deck truss; and overhead bracing.¹⁰⁸

WARREN TRUSS MULTIPLE SPAN BRIDGES

The two preceding sections provided a general analysis of all types of Warren truss bridges within New York State and a comparative analysis of all types of Warren truss bridges in New York City. This section provides an analysis of Warren truss bridges with a variation, the presence of multiple spans.

ELIGIBLE EARLY- AND POST-STANDARDIZATION WARREN TRUSS MULTIPLE SPAN BRIDGES

Bridges are made up of several primary components including piers, spans, abutments and the deck, or the roadway. Piers support the weight of the spans, which, in turn, carry the roadway, while abutments support the ends of the bridge. The distance between two adjacent bridge piers is called the span. Bridges that have one or more piers in addition to the abutments are called multiple span bridges. Most long bridges are multiple span bridges. One of the most

¹⁰⁸ The multiple span feature is a design element that is addressed by Mead & Hunt, Allee King Rosen & Fleming, Inc.'s *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan* rather than the Historic Bridge Inventory (updated 2006).

characteristic elements of the Kosciuszko Bridge is that it contains 22 spans. The span over the Newtown Creek measures 300 feet, while the approach spans vary from 120 to 230 feet. The total bridge length is 6,021 feet.

TABLE 11: ELIGIBLE EARLY- AND POST-STANDARDIZATION WARREN TRUSS MULTIPLE SPAN BRIDGES IN THE STATE OF NEW YORK

YEAR BUILT	NUMBER OF OCCURRENCES
EARLY-STANDARDIZATION (1909-1919)	2
EARLY-STANDARDIZATION (1920-1925)	1
POST-STANDARDIZATION (1926-1931)	9
POST-STANDARDIZATION (1932-1937)	8
POST-STANDARDIZATION (1938-1943)	4
POST-STANDARDIZATION (1944-1949)	0
POST-STANDARDIZATION (1950-1955)	2
TOTAL	26

According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, there are 26 bridges in the State of New York that are considered eligible for listing in the National Register of Historic Places because of their multiple spans, for they are considered to be a significant variation or feature of individuality within the post-standardization Warren truss type (Table 11). None of the bridges determined eligible for their multiple span variation are within the New York City Region.

The majority of these bridges were constructed during the 1930s. Improvements to steel during this time (post-standardization) increased the material's strength and durability. As a result, span lengths were able to increase and new designs were used.¹⁰⁹ Four of the 26 eligible multiple span bridges were constructed in the same time period as the Kosciuszko Bridge, from 1938 to 1943. These bridges have been determined eligible under Criterion C-6, for their demonstration of individuality or variation of features within a particular bridge type.

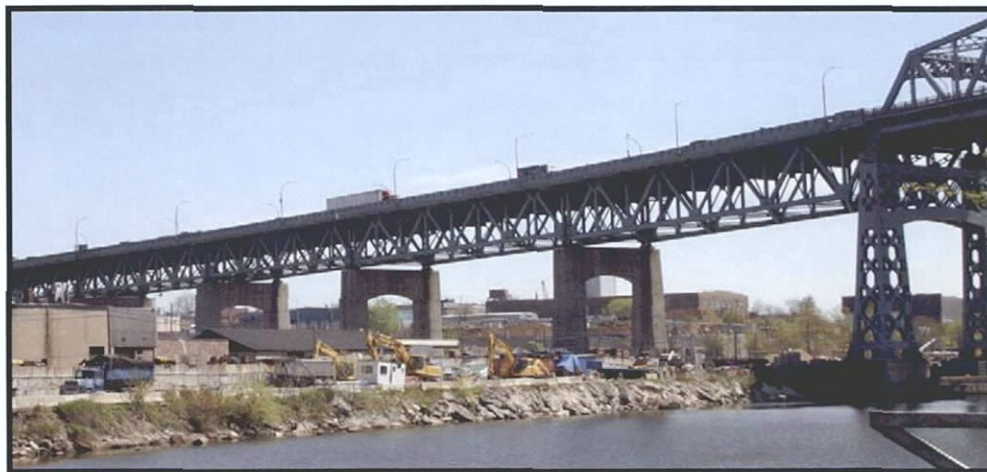


Image 24: Photo showing the multiple spans and deck truss of the Kosciuszko Bridge
EHT Traceries, May 2006

¹⁰⁹ Mead & Hunt, *Contextual Study of New York State's Pre-1961 Bridges*, pg. 30.

Bridge No. 3344680 is located in Orange County, New York, approximately 3.1 miles north of Goshen. Built in 1938, the main span of this Warren truss bridge is an adjacent box type. Construction features include railroad rail truss and girder members, riveted truss details, a polygonal Warren Truss top chord, and a truss leg bedstead.

Bridge No. 1014500 is located in Orange County, New York, at the junction of Route 17 and the wall Wallkill River. Built in 1940, the main span is as a box adjacent design type with railroad rail truss and girder members, riveted truss details, and a polygonal Warren Truss top chord.

Bridge No. 1048230 is located in Warren County, New York, at the junction of Route 418 and the Hudson River. Built in 1941, the main span of this Warren truss bridge is an adjacent box type. Construction features include riveted truss details and a polygonal top chord

Bridge No. 3328360, the Frye Bridge, located near Springville, Erie County is discussed in further detail in a subsequent section of this report due to similarities to the Kosciuszko Bridge that include more than its multiple span variation.

WARREN DECK TRUSS BRIDGES

This section provides an analysis of Warren Truss bridges with deck trusses. This section provides an analysis of Warren Truss bridges with deck trusses. In this configuration, the bridge deck is supported from below by trusses.

ELIGIBLE EARLY- AND POST-STANDARDIZATION WARREN DECK TRUSS BRIDGES

The main component of any bridge is the superstructure, which comprises of a slab, girder, and trusses. In a deck configuration, traffic travels on top of the main structure. In a deck truss bridge, the truss supports the bridge deck. The approaches of the Kosciuszko Bridge are supported by Warren deck trusses.



Image 25: Detail showing Warren deck truss of the Kosciuszko Bridge
EHT Traceries, May 2006

According to the Historic Bridge Inventory, there are 10 Warren deck truss bridges dating to the early- and post-standardization period in the State of New York that are considered eligible for listing in the National Register of Historic Places, for they are considered to be a significant variation or feature of individuality within the post-standardization Warren truss type (Table 12). None of the bridges determined eligible for their Warren deck truss-type are within the New York City Region, nor were any constructed within 1938 to 1943, the same time period of the Kosciuszko Bridge. Two Warren deck truss bridges dating to the early- and post-standardization period were determined not eligible for listing in the National Register of Historic Places. Neither of the non-eligible bridges was built during the same time period as the Kosciuszko Bridge.

TABLE 12: ELIGIBLE EARLY- AND POST-STANDARDIZATION WARREN DECK TRUSS BRIDGES IN THE STATE OF NEW YORK

YEAR BUILT	NUMBER OF OCCURRENCES
EARLY-STANDARDIZATION (1909-1919)	1
EARLY STANDARDIZATION (1920-1925)	0
POST-STANDARDIZATION (1926-1931)	4
POST-STANDARDIZATION (1932-1937)	2
POST-STANDARDIZATION (1938-1943)	1
POST-STANDARDIZATION (1944-1949)	0
POST-STANDARDIZATION (1950-1955)	2
TOTAL	10

One bridge built between 1932 and 1937 was determined eligible based on its Warren deck truss type, Criterion C-6, for its demonstration of individuality or variation of features within a particular bridge type. Bridge No. 1004310 is located in Rensselaer County at Route 7, approximately 0.7 miles southeast of Hoosick. Built in 1932, the main span is aluminum, wrought-iron, or cast-iron box spread with a standard plan design and an unknown truss connection.

ELIGIBLE EARLY- AND POST-STANDARDIZATION MULTIPLE SPAN/ DECK TRUSS BRIDGES

According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, six of the 78 bridges built during the early- and post- standardization period are eligible for the National Register of Historic Places for their multiple span/deck truss variation of the Warren truss-type (Table 13). The Kosciuszko Bridge features both a multiple span and a deck truss design. The approaches to the bridge are supported by Warren deck trusses, while the bridge itself is made up of 22 spans.

**TABLE 13: ELIGIBLE EARLY- AND POST-STANDARDIZATION MULTIPLE SPAN/ DECK TRUSS BRIDGES
IN THE STATE OF NEW YORK**

YEAR BUILT	NUMBER OF OCCURRENCES
EARLY-STANDARDIZATION (1909-1919)	0
EARLY-STANDARDIZATION (1920-1925)	1
POST-STANDARDIZATION (1926-1931)	3
POST-STANDARDIZATION (1932-1937)	1
POST-STANDARDIZATION (1938-1943)	1
POST-STANDARDIZATION (1944-1949)	0
POST-STANDARDIZATION (1950-1955)	0
TOTAL	6

Only one of the six examples is within the New York City Region, the Roosevelt Avenue Bridge (Bridge No. 2240507), in Queens, New York (previously presented in Table 7). Built in 1924, this bridge is eligible because it dates to the period of early-standardization. The Roosevelt Avenue Bridge also exhibits individuality in that it is a double-deck structure that can accommodate mass transit above and four lanes of vehicular traffic through the superstructure, with sidewalks on either side. Bridge No. 2240507 was determined eligible under Criteria C-5 because it dates to the period of early-standardization, and C-6, for its demonstration of individuality or variation of features within a particular bridge type, specifically its multiple span/deck truss type.

While Bridge No. 2240507 is located within New York City, it was not constructed during 1938 to 1943, the same time period as the Kosciuszko Bridge. One of the six eligible multiple span/deck truss examples constructed during the same time period as the Kosciuszko Bridge is Bridge No. 1024720. Located at the junction of Route 40 and the Hoosic River, in St. Lawrence County, New York Bridge No. 1024720's main span is aluminum, wrought-iron, or cast-iron box spread with a standard plan design and an unknown truss connection. Built in 1942, Bridge No. 1024720 was determined eligible under Criterion C-6, for its demonstration of individuality or variation of features within a particular bridge type, specifically its multiple span/deck truss type.

Located in Saratoga County, Bridge No. 1006730 was constructed in 1932, slightly earlier than the Kosciuszko Bridge. Nevertheless, Bridge No. 1006730 could be considered contemporaneous with the construction of the Kosciuszko Bridge. Bridge No. 1006730 is located near the junction of Route 9N and the Hudson River. The main span of the bridge is aluminum, wrought-iron, or cast-iron box spread with a standard plan design and a riveted truss connection. Bridge No. 1006730 was determined eligible under Criterion C-6, for its demonstration of individuality or variation of features within a particular bridge type, specifically its multiple span/deck truss type.

WARREN THROUGH TRUSS BRIDGES WITH OVERHEAD BRACING

This section provides another level of comparative analysis: Warren through truss bridges with overhead bracing.

ELIGIBLE EARLY- AND POST-STANDARDIZATION WARREN THROUGH TRUSS BRIDGES WITH OVERHEAD BRACING

Bridges that feature a through truss configuration enable traffic to travel through the superstructure (usually a truss), which is cross-braced above and below the traffic; in many instances, thru truss bridges feature overhead bracing. The main span of the Kosciuszko Bridge is a Warren through truss with curved overhead bracing, similar to a camelback truss.

Of the 78 eligible Warren truss bridges from the early- and post-standardization period, only 21 bridges feature overhead bracing (Table 14). These bridges are not eligible for their overhead bracing alone or because they are a through truss type. Rather, the overhead bracing is considered an aspect of the design type. None of the 21 evaluated and NRHP-eligible bridges that feature overhead bracing are located in the New York City Region. There are however, two bridges that were built during the same time period as the Kosciuszko Bridge, 1938 to 1943. Forty-nine Warren through truss bridges with overhead bracing were determined not eligible for listing in the National Register of Historic Places. One of the 49 non-eligible bridges was built during the same time period as the Kosciuszko Bridge.



Image 26: Polygonal top chords and overhead bracing of the Kosciuszko Bridge
EHT Tracerics, May 2006

TABLE 14: ELIGIBLE EARLY- AND POST-STANDARDIZATION WARREN THRU TRUSS BRIDGES WITH OVERHEAD BRACING IN THE STATE OF NEW YORK

YEAR BUILT	NUMBER OF OCCURRENCES
EARLY-STANDARDIZATION (1909-1919)	0
EARLY-STANDARDIZATION (1920-1925)	3
POST-STANDARDIZATION (1926-1931)	8
POST-STANDARDIZATION (1932-1937)	7
POST-STANDARDIZATION (1938-1943)	2
POST-STANDARDIZATION (1944-1949)	0
POST-STANDARDIZATION (1950-1955)	1
TOTAL	21

Bridge No. 1048230 is located at the junction of Route 418 and the Hudson River, in Warren County, New York. Built in 1941, the main span is identified in the Historic Bridge Inventory, as a box adjacent design type with jack-arches running perpendicular to the stringers, and camelback trussing. Bridge No. 1048230 was determined eligible under Criterion C-6, for its demonstration of individuality or variation of features within a particular bridge type, specifically its multiple spans.

Bridge No. 1005950 is located in the Watertown Region of New York, approximately 4.6 miles north of the junction of Route 9 and Route 22. Built in 1940 by the American Bridge Company, the main span is a slab, box adjacent design type, with bridge plate, jack-arch runs perpendicular to the stringers, and a Warren truss polygonal top chord. According to the Historic Bridge Inventory (2006), Bridge No. 1005950 was determined eligible; however the database does not list the criterion under which it is eligible.

COMPARISON WITH THE FRYE BRIDGE, NEAR SPRINGVILLE, ERIE COUNTY, NEW YORK

Whereas the above comparisons analyzed bridges with one single variation from standard Warren truss bridges (that are also present in the Kosciuszko Bridge), this section discusses the Frye Bridge (Bridge No. 3328360), located 3.2 miles southwest of Springville, New York in Erie County. The Frye Bridge has several similarities with the Kosciuszko Bridge, and thus serves as an excellent comparison. The similarities include construction occurring in 1939, riveted truss, railroad rail members (truss and girder) and a polygonal top Warren truss chord. According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, the Frye Bridge was determined eligible for listing in the National Register of Historic Places for its demonstration of significant variations or features of the Warren truss-type (Criterion C-6), namely its multiple spans.

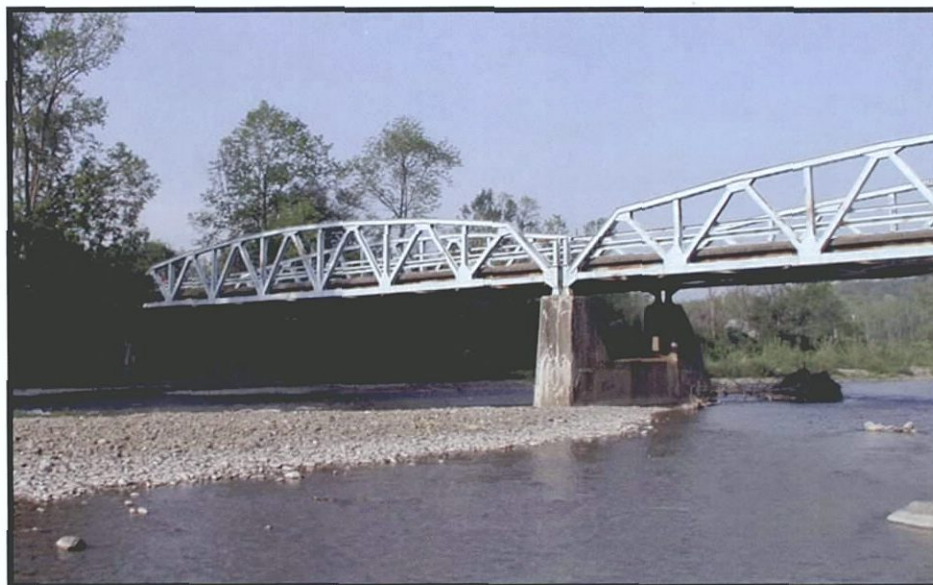


Image 27: Frye Bridge, Parsons, May 2006

Similar to Frye Bridge, the Kosciuszko Bridge is constructed of riveted steel and has multiple spans. The Kosciuszko Bridge however, measures 22 spans in length, while the Frye Bridge has only two spans. Consequently, the Frye Bridge is dramatically shorter than the Kosciuszko Bridge. The Kosciuszko Bridge is also much taller (175') than the Frye Bridge (approximately 25'). The difference in height is largely attributed to the creeks that the bridges cross. The bridge spans the Connoisarauley Creek and carries Hammond Hill Road. Unlike the Connoisarauley Creek, the Newtown Creek was once one of the major world ports, and necessitated a tall structure so that large vessels could traverse the creek beneath the Kosciuszko Bridge. The Connoisarauley Creek appears to be more of recreational water source than an industrial one, such as the Newtown Creek.

Both Frye Bridge and the Kosciuszko Bridge feature polygonal top chords. The *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan* indicates that polygonal top chords are “not considered to be a significant variation among the post-standardization Warren trusses because they were a common feature after 1908.”¹¹⁰ The Kosciuszko Bridge however, has overhead bracing in addition to polygonal top chords, creating an appearance similar to a camelback truss. Unlike the Kosciuszko Bridge, the Frye Bridge features a pair of, or double top chords at each side; the Kosciuszko Bridge contains one set of polygonal top chords. The Frye Bridge roadway is supported by adjacent box-type girders. A box beam or box girder bridge is a fixed bridge consisting of steel girders fabricated by welding steel plates into various box-shaped sections. The box girder has good load-distribution characteristics that are easily adaptable for curved geometric configurations and various span lengths.¹¹¹ The Kosciuszko Bridge roadway is supported by Warren deck trusses.

¹¹⁰ Mead & Hunt and Allee King Rosen & Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, pg. 4-50.

¹¹¹ Mead & Hunt, *Contextual Study of New York State's Pre-1961 Bridges*, pg. 28.

COMPARISON WITH BRIDGE NO. 2255530, HERKIMER COUNTY, NEW YORK

According to the Historic Bridge Inventory (2006), there is one other eligible bridge constructed in 1939, the same year as the Kosciuszko Bridge. Located in the City of Little Falls, Herkimer County, New York, Bridge No. 2255530 carries Hansen Avenue. Bridge No. 2255530 was constructed in 1939, the same year as the Kosciuszko Bridge. The main span of Bridge No. 2255530 is a Warren through truss without overhead bracing. Bridge details include a bridge plate and a polygonal top chord and its decorative rail or parapets. According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, the bridge was determined eligible for its association with Depression-era work relief programs (Criterion A-1).

DETERMINATION OF ELIGIBILITY: DISCUSSION OF CRITERIA

The preceding sections examined the number and types of eligible bridges within the New York State and New York City Regions. This section analyzes whether they Kosciuszko Bridge should be considered eligible to the National Register of Historic Places on its own merits.

NATIONAL REGISTER OF HISTORIC PLACES CRITERIA

The National Park Service has developed four criteria for assessing the historical significance and eligibility of cultural resources to the National Register of Historic Places of cultural resources (See Table 15). At least one criterion of the National Register Criteria of Evaluation must be met for a property to be considered eligible to the National Register of Historic Places (NRHP). Usually, a property should be at least 50 years old to qualify for listing in the National Register. Federal laws and regulations regarding the management and treatment of historic properties (NRHP eligible resources) are invoked by the property's National Register-eligibility as determined in consultation with the appropriate State Historic Preservation Officer. However, it is not necessary that a potentially eligible property actually be listed in the National Register to be subject to special management considerations.

TABLE 15: NATIONAL REGISTER OF HISTORIC PLACES CRITERIA¹¹²

CRITERION	ASSOCIATION	CHARACTERISTIC
A	Event	Properties associated with events that have made a significant contribution to the broad patterns of U.S. history
B	Person	Properties associated with the lives of persons significant in U.S. history
C	Design/Construction	Properties that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
D	Information Potential	Properties that have yielded, or may be likely to yield, information important in prehistory or history

NEW YORK STATE DEPARTMENT OF TRANSPORTATION EVALUATION CRITERIA

The New York State Department of Transportation (NYSDOT) uses the above-mentioned National Register criteria for assessing historic significance of historic bridges. The National Register criteria as applied to NYSDOT's, pre-1961 bridge inventory were developed through consultation among NYSDOT, its consultants, the State Historic Preservation Office and the

¹¹² National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, National Park Service: Washington, D.C., 1997 edition.

Federal Highways Administration.¹¹³ Eligible bridges must meet one or more of the seven eligibility criteria detailed in Table 16.

TABLE 16: NYSDOT ELIGIBILITY CRITERIA FOR BRIDGES¹¹⁴

CRITERION	CHARACTERISTIC
A-1	Associated with historic events or activities
A-2	Associated with historic trends
C-3	Represents the work of a master
C-4	Possesses high artistic value
C-5	Demonstrates pattern of features common to a particular bridge type
C-6	Demonstrates individuality or variation of features within a particular bridge type
C-7	Demonstrates evolution of a particular bridge type

This section analyzes the Kosciuszko Bridge's ability to meet National Register of Historic Places and NYSDOT eligibility criteria (see Tables 15 and 16).

Criterion A: Property is associated with events that have made a significant contribution to the broad patterns of our history.

Newtown Creek has always been an active waterway. In the early nineteenth century, Manhattan's commercial and industrial districts were densely built up and congested, making industrial expansion difficult and expensive. Because land east of the East River was sparsely developed, places in Brooklyn and Queens offered the space necessary for large-scale plants, worker's housing, and a waterfront location. An early industry of the Newtown Creek, because of its deepwater and low-lying shoreline, was shipbuilding. After the Civil War, the demand by the Government for vessels lessened, resulting in the closing of most shipbuilding enterprises by the 1870s. Factories producing porcelain, china, glass, refined sugar, boxes, pencils, machinery and boilers, and oil refineries emerged on the waterfront and helped to cushion the effect. By the mid-nineteenth century, Newtown Creek was an industrial center, considered one of the busiest waterways in the world. During World War II, Newtown Creek factories produced military equipment for the government. After the war, waste-treatment plants and garbage-transfer operations were set up on the shoreline. Eventually, automobiles, rather than boats, became the most efficient way to transport goods, changing the dynamic and historic character of the Newtown Creek.

At the time of the construction of the Kosciuszko Bridge in 1939, the surrounding environment was highly industrial. Factories, foundries and refineries lined the Newtown Creek waterfront, with the Calvary Cemetery located in the distance on the Queens side of the Newtown Creek. Neighborhoods on either side of the bridge were home to mostly Polish immigrants who worked in the nearby industries and used Newtown Creek crossings to get to work. The bridge was

¹¹³ Mead & Hunt and Allee King Rosen & Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, pg 1-14.

¹¹⁴ Mead & Hunt and Allee King Rosen & Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, pg 3-6.

planned and designed for this site for the following reasons: increased traffic (boat and automobile) could be accommodated on the creek; a link would be established between Brooklyn and Flushing (the site of the 1939-1940 World's Fair); and to serve as a piece of the eventual Brooklyn-Queens Expressway. Due to its role as part of the Brooklyn-Queens Expressway, and because its pedestrian lanes were removed, the Kosciuszko Bridge is no longer associated as a pedestrian link between Brooklyn and Queens. Other Newtown Creek bridges such as the Grant Street Bridge, Pulaski Bridge and Greenpoint Avenue Bridges, are smaller in scale and better serve their surrounding communities. All three bridges retain their pedestrian walkways and represent a neighborhood connection rather than an interstate highway.

The Kosciuszko Bridge has a greater association with the Brooklyn-Queens Expressway (BQE or I-278) than it does to the Newtown Creek or the surrounding communities in Brooklyn and Queens. The BQE was vital to the roadway improvement effort initiated in the New York City Region in the mid-twentieth century. The purpose of the project was to alleviate congestion and improve traffic flow in and around New York. The construction of the Brooklyn-Queens Expressway (BQE) was a city-financed, limited access highway designed to link Brooklyn and Queens. Initially, the pedestrian friendly Penny Bridge connected these two areas over the Newtown Creek, from Greenpoint on the Brooklyn side to Maspeth on the Queens side. This bridge was later replaced by the Kosciuszko (Meeker Avenue) Bridge in 1939. This viaduct allowed motorists to efficiently access the Triborough Bridge as well as the 1939-40 World's Fair sites in Flushing Meadows, Queens. After much delay, the last part of the expressway was finally finished in 1960, completing the BQE after nineteen years. Continued growth and increasing populations created the need for bridges that could withstand heavier loads of traffic. New processes for making steel met these needs and gave rise to several large bridges. The Kosciuszko Bridge is one of four bridges, including the Goethals, Verrazano-Narrows, and Triborough Bridges, that serve the route of the Brooklyn-Queens Expressway.

Although the construction of the Kosciuszko Bridge as the first element of the Brooklyn-Queens Expressway is considered an important event, it is not one of national significance, nor is it more important than the construction of the Expressway itself or the other BQE bridges. **The Kosciuszko Bridge is therefore considered not eligible for listing under Criterion A.**

Criterion B: Property is associated with the lives of persons significant in our past.

Although the Kosciuszko Bridge honors Thaddeus Kosciuszko, it does not illustrate his important achievements; rather, it *commemorates* them. **Therefore, the Kosciuszko Bridge is not eligible for listing under Criterion B.** Additionally, there are other examples of Thaddeus Kosciuszko commemorations in the New York City Region and other parts of the country. The American Revolution brought men such as Kosciuszko to the forefront of the American experience. After losing their ancestral rights by the joint action of Prussia, Russia, and Austria in 1795, Polish freedom fighters were ready to fight for freedom and the rights of man in the New World.¹¹⁵ Kosciuszko is remembered as a creative engineer, as well as a prominent militant in the United States and Poland. Internationally recognized for his contributions to the pursuit of liberty, Kosciuszko honored the values of freedom. Americans honored Polish heroes such as Kosciuszko by naming roads, streets, community centers, and even towns after them. The

¹¹⁵ Mark Leeds, *Passport's Guide to Ethnic New York: a Complete Guide to the Many Faces and Cultures of New York*, Lincolnwood, Illinois: Passport Books, 1995, pg. 254.

Pulaski and Kosciuszko Bridges are just two of the numerous examples in New York. Additionally, the presence of these bridges in close proximity to one another reflects the prevalence of Polish citizens in the area, as both heroes were revered by the Polish community. Thaddeus Kosciuszko is a national hero rather than a local New York hero; his actions appeal to the Polish across the nation.

Other bridges or roads in New York that honor Thaddeus Kosciuszko include the Thaddeus Kosciuszko Bridge (locally known as the Twin Bridges) in Halfmoon, New York. The Thaddeus Kosciuszko Bridge consists of a pair of identical steel arch bridges that span the Mohawk River between the Towns of Colonie and Halfmoon, New York. Built in 1959, the bridge is a through arch design, and carries Interstate 87. Other examples include: Kosciuszko Street and the Kosciuszko Street Subway Station in Brooklyn, New York.

Criterion C: Property embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possess high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction.

Applying the methodology of the *Evaluation of National Register Eligibility: Task C3 of the Historic Bridge Inventory and Management Plan* prepared by Mead & Hunt with Allee King Rosen & Fleming, Inc. (2002), BIN 1075699 is eligible under National Register Criterion C and more specifically, NYSDOT Criterion C-6. Built in 1939, this fixed multiple span, Warren combination (deck and through) truss bridge with overhead bracing represents a significant and unusual variation of the Warren truss type. Whereas most eligible bridges have one feature of individuality considered to be a significant variation within the post-standardization Warren truss type, the Kosciuszko Bridge possesses several including its multiple spans, Warren deck and through trusses, and polygonal top chords with overhead bracing. Moreover, the Kosciuszko Bridge demonstrates its individuality from the post-standardization Warren truss type because of its significant combination (deck and through) truss type. According to the Historic Bridge Inventory (updated 2006), there are only three examples of bridges with a combination (deck and through) truss in the entire database. The *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan* found that Warren truss bridges built after 1925 were strongly influenced by standardization and do not represent significant examples of their type. They are recommended as non-eligible unless they possess historical significance, a significant variation or other unique feature or association. Based on an analysis of eligible bridges in the 2002 Mead & Hunt and Allee King Rosen & Fleming report, significant variations or features of individuality within the post-standardization Warren truss type include: deck truss, multiple span, double-intersection truss, unusual substruts, and unusual curved top and bottom chords.¹¹⁶ Structural elements of the Kosciuszko Bridge include multiple spans, Warren combination (deck and through) truss, and overhead bracing, all categorized as “significant variations or features of individuality.” The Kosciuszko Bridge embodies distinctive characteristics of multiple span bridges, as well as combination (deck and through) Warren truss types with overhead bracing. This eligibility determination is supported by the following justification.

¹¹⁶ Mead & Hunt and Allee King Rosen Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, pg. 4-50.

The Kosciuszko Bridge exhibits significant variation from common or standardized Warren truss types for many reasons. One of the most characteristic elements of the Kosciuszko Bridge is that it contains 22 spans. Bridges that have one or more piers in addition to the abutments are called multiple span bridges. Long bridges such as the Kosciuszko Bridge are generally multiple span bridges. The multiple spans of the Kosciuszko Bridge are considered a characteristic or defining element of the bridge. The span over the Newtown Creek measures 300 feet, while the approach spans vary from 120 to 230 feet. The total bridge length is 6,021 feet. There are 10 deck truss spans at the Brooklyn side, 11 deck truss spans at the Queens side, and one through truss span over the Newtown Creek.

Another significant variation of the standardized Warren truss type is a combination (deck and through) truss. In a deck configuration, traffic travels on top of the main structure, while the deck slab is supported by crossbeams, stringers, floor beams and trusses. In a combination (deck and through) truss bridge, the truss system supports the bridge deck above and below the structure. The approaches of the Kosciuszko Bridge are approximately 5,771 feet and are supported by Warren deck trusses. While the approach spans at the Brooklyn and Queens sides are supported by Warren deck trusses, the Newtown Creek span is supported by a Warren thru truss with overhead bracing. Polygonal top chords support the overhead bracing, giving it an appearance similar to that of a camelback truss.

According to the Historic Bridge Inventory (updated 2006), of the 222 early- and post-standardization Warren truss bridges in the State of New York, 78 have been determined eligible for listing in the National Register of Historic Places. Of those 78, three are located in the New York City Region. A site visit to the three eligible Warren truss bridges occurred on May 25, 2006. This visit provided the opportunity to compare the Kosciuszko Bridge with the three eligible Warren truss bridges in the New York City Region. Of the three eligible bridges, one was constructed during the pre-standardization (pre-1909) period, and two are from the early-standardization period (1909-1925). All three of the eligible bridges within the New York City Region are Warren thru truss types. None of the eligible bridges however, have polygonal top chords with overhead bracing, similar in appearance to a camelback truss. The Kosciuszko Bridge was also compared with eligible bridges built post-standardization (post-1925) in the State of New York. The comparison of the Kosciuszko Bridge with other post-standardization bridges in the State emphasized the significance of the fixed, multiple span, combination (deck and through) Warren truss form of the Kosciuszko Bridge because another example with the same unusual configuration of structural elements was not found in the State.

The form of the Kosciuszko Bridge follows its function. The design for the Kosciuszko Bridge is one that accommodates ships as well as cars. The 125 foot vertical clearance of the bridge allowed ships to travel beneath it on the Newtown Creek, at one time considered one of the busiest world ports, while the 6,021 foot length provided a more direct roadway for the Brooklyn-Queens Expressway of which it was a part. Constructed in 1939, the Kosciuszko Bridge reflects Depression-Era Bridge Construction, for bridges built during this period met the increasing demands of the traveling public.¹¹⁷ The engineering difficulties associated with the Kosciuszko Bridge accommodating both cars and marine vessels resulted in the plan of the bridge with a longer approach than that of any previous bridge at this location. The Bridge was built to connect Brooklyn and Queens, thereby greatly aiding the transportation network and

¹¹⁷ Mead & Hunt, *Contextual Study of New York State's Pre-1961 Bridges*, , pg. 61.

commerce between the boroughs. The connection also allowed motorists to access the Triborough Bridge, and ultimately, the 1939-1940 World's Fair in Flushing Meadows, Queens. The design for the Kosciuszko Bridge is not attributed to one particular designer or engineer. Rather, the bridge was built in phases for the City of New York from designs by the Department of Public Works.

Criterion D: Property has yielded, or may be likely to yield, information important in prehistory or history.

The Kosciuszko Bridge is not likely to yield information important in prehistory or history. Built in 1939, the Bridge does not contribute to the understanding of prehistory or human history. **Therefore, the Kosciuszko Bridge is not considered eligible under Criterion D.**

INTEGRITY ASSESSMENT

Although it is recommended that the Kosciuszko Bridge be declared eligible for inclusion in the National Register of Historic Place, an analysis to measure the integrity of the site is also warranted. An assessment and evaluation of integrity were made of the Kosciuszko Bridge following the National Register's four-step methodology.

1) Define the essential physical features that must be present for the structure to represent its significance.

The physical features essential to convey the significance of the bridge are its Warren truss system (deck and thru), multiple spans, overhead bracing, piers, and approaches. These features are directly associated with the original design and construction of the Kosciuszko Bridge in 1939.

2) Determine whether the essential physical features are sufficiently visible to convey its significance.

The essential physical features of the Kosciuszko Bridge are sufficiently intact. Despite the numerous renovations to the bridge including the removal of the pedestrian walkways in 1967, there is a sufficient amount of structural fabric remaining to convey its type and era of construction.

3) Determine whether the structure needs to be compared with similar properties.

Because Warren truss bridges were widely built throughout the United States from the middle of the nineteenth century to well into the twentieth century, the Kosciuszko Bridge must be compared with similar properties to determine if the Kosciuszko Bridge is a significant example of a Warren truss bridge. By comparing the Kosciuszko Bridge with other Warren truss bridges of the same period, it is possible to assess its historic integrity and National Register-eligibility. The Kosciuszko Bridge was compared with eligible bridges in the New York City Region and other post-1925 bridges in the State of New York. According to the Historic Bridge Inventory, there are no post-1925 eligible Warren truss bridges in the New York City Region.

4) Determine, based on significance and essential physical features, which aspects of integrity are particularly vital to the structure under construction and if they are present.

After the review of the bridge's history, physical appearance, and significance, it has been determined that the following aspects of integrity should be considered as critical to the bridge's ability to convey that significance: LOCATION, MATERIALS, SETTING, DESIGN, WORKMANSHIP, FEELING, AND ASSOCIATION.

ASPECTS OF INTEGRITY RELATED TO NATIONAL REGISTER ELIGIBILITY

The National Register defines integrity as "the ability of a property to convey its significance." Using the National Register's four-step methodology, this section examines the seven aspects of

integrity are LOCATION, DESIGN, SETTING, MATERIALS, WORKMANSHIP, FEELING, and ASSOCIATION (Table 17). It is not required that an historic property display all these qualities.

TABLE 17: ASPECTS OF INTEGRITY RELATED TO NATIONAL REGISTER-ELIGIBILITY¹¹⁸

Quality	Description
Location	The place where the historic property was constructed or where the historic event occurred
Design	The combination of elements that create the form, plan, space, structure, and style of a property
Setting	The physical environment of a historic property. This quality refers to the character of the property's location. It involves how the property is situated and its relationship to surrounding features and open space. For districts, setting is important not only within the boundaries of the property, but also between the property and its surroundings
Materials	The physical elements that were combined or deposited during a particular period of time and in particular pattern or configuration to form a historic property. The choice and combination of materials reveal the preferences of the creator(s) and suggest the availability of particular types of materials and technologies. A property must retain the key exterior materials dating from the period of its historic significance. If rehabilitated, those materials must have been preserved
Workmanship	The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. Workmanship is the evidence of artisans' labor and skill in constructing or altering a building, structure, object, or site and may apply to the property as a whole or to individual components
Feeling	A property's expression of the aesthetic or historic sense of a particular period of time. Feeling results from the presence of physical features that, taken together, convey the property's historic character
Association	The direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer

Each aspect of integrity was then evaluated independently and assessed a low, moderate, high, or none level of integrity (explained in Table 18).

¹¹⁸ National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, National Park Service: Washington, D.C., 1997 edition.

TABLE 18: DESCRIPTION OF LEVELS OF INTEGRITY

LEVEL OF INTEGRITY	EXPLANATION
Low	The resource or element(s) of a resource dates to the historic period(s) of significance of the building or is a later, sensitive repair, but does not represent a substantial amount of historic fabric, is not distinctive, nor does it make any measurable contribution to the property's or the resource's historic appearance or system of construction.
Moderate	The resource or element(s) of a resource makes a significant contribution to the property's or the resource's historic appearance or as an integral part of the resource's historic construction, <u>or</u> it has acquired significance in its own right or makes an important contribution to other historic periods or levels of significance identified for the property, <u>or</u> the resource or element(s) of a resource meet the criteria of HIGHEST INTEGRITY but preservation is not feasible.
High	The resource or element(s) of a resource is associated with those qualities for which the property was determined significant and dates from this period of significance, <u>or</u> the resource or element(s) of a resource is highly distinctive architecturally and dates to the property's period of significance, <u>and</u> the level of damage or deterioration is such that it is still feasible to preserve.
None	The resource or element(s) of a resource does not contribute to the historic significance of the property.

EVALUATION OF THE SEVEN ASPECTS OF INTEGRITY

LOCATION- *Defined by the National Register as “the place where the historic property was constructed or the place where the historic event occurred.”*

The Kosciuszko Bridge, originally known as the Meeker Avenue Bridge, was constructed over Newtown Creek to serve as a link between Brooklyn and Queens. Prior to the construction of the Kosciuszko Bridge, the passage from Brooklyn to Queens was provided by Penny Bridge, a small swing bridge over Newtown Creek. One of three bridges spanning the Creek, including the Greenpoint Avenue Bridge and the Grant Street Bridge, Penny Bridge was primarily a small vehicular and pedestrian footbridge connecting the Greenpoint and Laurel Hill (Maspeth) communities. People that worked in nearby communities were able to walk to work at Newtown Creek factories using these bridges.

Historically, this site has had a long association with New York industry. In the 1900s, Newtown Creek became crowded with larger ships, and the volume of vehicular traffic increased across Penny Bridge. These shortcomings prompted city planners to consider repairing the outdated overpass and building a new structure that reflected improvements in technology and had the structural capacity to accommodate increasing traffic demands. Additionally, the Kosciuszko Bridge provided a potential link for Brooklyn to Flushing, the site of the 1939-1940 World's Fair, and a critical element to an arterial road system known as the Brooklyn-Queens Expressway.

The Kosciuszko Bridge has been continuously used as a link between Brooklyn and Queens in this location since its construction in 1939.

Therefore, a high level of integrity of location has been retained.

MATERIALS- *Defined by the National Register as “the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.*

The materials found in the construction of the Kosciuszko Bridge are typical of other bridges from the same time period and of the same method of construction. The Kosciuszko Bridge is constructed of riveted steel with concrete piers. A tar coating was applied to some piers where they were in contact with acidic soil. Steel was a common structural element in the 1930s because improvements increased the material's strength and durability. As a result, span lengths were able to increase and new designs were used.¹¹⁹ Highway bridges in particular, were able to better withstand the heavy loads associated with vehicular traffic because they were made of steel. The roadway was originally a reinforced concrete slab, replaced with a concrete filled steel grid deck. The materials and elements present in the Kosciuszko Bridge are consistent with elements common to Warren truss bridges: diagonals and verticals that withstand tensile and compressive forces, through truss arrangement, steel construction, and riveted construction. The

¹¹⁹ Mead & Hunt, *Contextual Study of New York State's Pre-1961 Bridges*, pg. 30.

Kosciuszko Bridge is unique however, in that it has a combination (deck and through) Warren truss, as well as multiple spans, and overhead bracing.

Overall, the bridge is in fair condition. Repairs to the bridge after its completion include several repaving projects, the first of which was the repaving of the existing asphalt-on-concrete deck in 1958. The second project, initiated in 1967, was a \$6 million repaving project. The largest improvement to date on the bridge was a 1966 replacement of the concrete deck and the elimination of the two 8 foot wide sidewalks to accommodate wider traffic lanes. Additional work included the replacement of barriers, railings, lampposts, crossbeams, and the drainage system. The roadway suffers from pot holes and the structural members of the bridge, which are original, are rusted in some areas. Most Kosciuszko Bridge repairs are attributed to years of damage caused by decades of carrying heavy traffic loads. Gradually, these repairs have lessened the integrity of materials of the Kosciuszko Bridge.

Therefore, a moderate level of integrity of materials has been retained.

SETTING- *Defined by the National Register as “the physical environment of the property.” Unlike LOCATION which refers to the specific place where a resource was built or an event occurred, SETTING refers to the character of the place as a property. SETTING includes both the relationship of the resources with the space within the property’s boundaries, and the relationship of the property as a whole to its surroundings.*

At the time of the construction of the Kosciuszko Bridge in 1939, the surrounding environment was highly industrial. Factories, foundries and refineries lined Newtown Creek waterfront, with the Calvary Cemetery located in the distance on the Queens side of Newtown Creek. The neighborhoods on both sides of the bridge, Greenpoint and Maspeth, were home to many immigrants who worked in the nearby industries. The bridge was planned and designed for this site so that increased traffic could be accommodated on the creek; a link would be provided from Brooklyn to Flushing (the site of the 1939-1940 World’s Fair), and to connect with the Brooklyn-Queens Expressway. Pedestrian walkways were included in the design for the bridge so that the people who worked in the nearby industries could walk to work. The Kosciuszko Bridge no longer serves as a link for pedestrians between Brooklyn and Queens. Although the original configuration of the bridge is largely intact and it remains in its original location, the setting of the surrounding environment has changed. The Newtown Creek is no longer as widely used as it was in 1939. While the waterfront remains in use, it is not the area of burgeoning industry that it was in the early- to mid-twentieth century.

Therefore, a moderate level of integrity of setting exists.

DESIGN- *Defined by the National Register as “the combination of elements that create the form, plan, space, structure, and style of a property.”*

The design of the Kosciuszko Bridge reflects its function of accommodating both cars and boats. With vertical clearance of 125 feet above Newtown Creek, the height of the bridge allowed for marine vessels to travel Newtown Creek beneath the bridge rather than, in the case of the former Penny Bridge, waiting for the bridge to turn. The engineering difficulties of accommodating both cars and boats resulted in the plan of a bridge with a longer approach than that of any

previous bridge at this location. Additionally, hazardous chemicals found in the creek bed, required planners to engineer oversized foundations and create special non-corroding coatings for some subsurface bracing.¹²⁰

The Kosciuszko Bridge is a fixed, multiple span, combination (deck and through) Warren truss bridge with overhead bracing and verticals. Because Warren truss bridges were one of the most common bridge types in the early twentieth century, Kosciuszko Bridge elements including its 22 spans, combination (deck and through) truss with overhead bracing are considered significant and unusual variations of the Warren truss type. The combination truss design in particular, is rare within the State, according to the Historic Bridge Inventory (updated 2006); there are only three examples in the entire database.

The bridge design is not attributed to a specific architect or designer and is instead considered a product of the New York Department of Public Works. Although the Kosciuszko Bridge has suffered from the loss of original elements such as pedestrian walkways, light posts and median at the center of the roadway, its original structural design is largely intact.

The Kosciuszko Bridge retains a moderate level of integrity of design.

WORKMANSHIP- *Defined by the National Register as the “physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.”*

The Kosciuszko Bridge is a product of Depression-Era construction. Built to serve the traveling public, the bridge was designed to accommodate marine vessels and cars. The 125 foot vertical clearance of the bridge enables marine vessels to travel Newtown Creek beneath the bridge, and the length and plan of the bridge provides a streamlined route for more cars than the former Penny Bridge. To achieve this configuration, bridge designers employed a fixed, multiple span, combination (deck and through) Warren truss type with overhead bracing. Steel, concrete and brick were chosen as the main materials for the construction, ensuring the bridge’s durability and adaptability of the design to the site. The combination of structural systems of the Kosciuszko Bridge can perhaps be attributed to its multi-phase construction, a product of the New York Department of Public Works. Although the configuration is unusual for Warren truss bridges from the 1930s, it is compatible with its use. Most post-standardization Warren truss bridges all have the same elements. The Kosciuszko Bridge however, has significant variation from the common post-standardization types, instead reflecting the workmanship of Depression-Era construction.

The integrity of workmanship at the Kosciuszko Bridge is high.

FEELING- *Defined by the National Register as a property’s expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property’s historic character.*

¹²⁰ *Brooklyn Eagle*, “Boon to Industry: Meeker Ave. Bridge Will Open up Newtown Creek to Boat Traffic, Carry Crosstown Highway to Queens,” Aug. 4, 1939, pg. 13.

Structural elements present on the Kosciuszko Bridge including its combination (deck and through) Warren truss, overhead bracing, brick clad approaches with sawtooth details, and multiples spans continue to reflect its original period of construction. When the Kosciuszko Bridge was built in 1939, the Newtown Creek was a major world port, and necessitated a tall bridge so that large vessels could traverse the creek beneath it. Although the Kosciuszko Bridge continues to link the Brooklyn and Queens communities, Newtown Creek no longer necessitates the design of the bridge. The Kosciuszko Bridge no longer serves as a link between Brooklyn and Queens for pedestrians. In 1967, pedestrian walkways present on the bridge were removed to accommodate wider vehicular traffic lanes, thereby prohibiting pedestrians from crossing the bridge on foot. Yet, built as the first element of the Brooklyn-Queens Expressway, the bridge was designed with a 6,021 foot length and 125 foot vertical clearance to accommodate vehicular traffic and the future interstate. The Kosciuszko Bridge continues to faithfully serve the Brooklyn-Queens Expressway as it was intended.

Therefore, the Kosciuszko Bridge retains a moderate level of integrity of feeling.

ASSOCIATION- Defined as "the direct link between an important historic event or person and a historic property." A property retains its association if that is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer.

For the past 67 years, the Kosciuszko Bridge has continuously linked Brooklyn and Queens, New York. Formerly used by Brooklyn and Queens commuters who worked in the Newtown Creek factories, the Kosciuszko Bridge became no longer accessible to pedestrians when its pedestrian walkways were removed in 1967. Built as the first element of the Brooklyn-Queens Expressway in 1939, the Kosciuszko Bridge has served as a BQE bridge for a longer period than it did as a pedestrian bridge. Ironically, the Kosciuszko Bridge is now associated more with the Brooklyn-Queens Expressway than it is with its surrounding communities in large part because of the removal of the pedestrian walkways. The height and length of the bridge aid it furthering the association of the Kosciuszko Bridge with the Brooklyn-Queens Expressway.

The Kosciuszko Bridge retains a moderate to high level of integrity of association.

DETERMINATION OF ELIGIBILITY FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES

Applying the methodology of the Evaluation of National Register Eligibility: Task C3 of the Historic Bridge Inventory and Management Plan prepared by Mead & Hunt with Allee King Rosen & Fleming (2002), it has been determined that BIN 1075699 (Kosciuszko Bridge) is eligible under National Register Criterion C and more specifically, NYSDOT Criterion C-6. Built in 1939, this fixed, multiple span, Warren combination (deck and through) truss bridge with overhead bracing represents a significant and unusual variation of the Warren truss type. Whereas most eligible bridges have one feature of individuality considered to be a significant variation within the Warren truss post-standardization subtype, the Kosciuszko Bridge possesses several including its multiple spans, combination (deck and through) Warren trusses, and overhead bracing. Moreover, the Kosciuszko Bridge demonstrates its individuality from post-standardization Warren truss bridges because of its combination (deck and through) span type. According to the Historic Bridge Inventory, there are only three examples of bridges with a combination (deck and through) truss in the entire database. The Kosciuszko Bridge therefore, embodies distinctive characteristics of multiple span bridges, as well as combination (deck and through) Warren truss types with overhead bracing. Built in 1939, the Kosciuszko Bridge reflects its period and methods of its construction.

While the construction of the Kosciuszko Bridge as the first element of the Brooklyn-Queens Expressway is considered an important event, it is not one of national significance, nor is it more important than the construction of the Expressway itself or the other BQE bridges. The Kosciuszko Bridge is therefore considered not eligible for listing under Criterion A. Although the Kosciuszko Bridge honors Thaddeus Kosciuszko, it does not illustrate his important achievements; rather, it *commemorates* them. Therefore, the Kosciuszko Bridge is not eligible for listing under Criterion B. Additionally, there are other examples of Thaddeus Kosciuszko commemorations in the New York City Region. The Kosciuszko Bridge is not likely to yield information important in prehistory or history and is thus not eligible for listing under Criterion D.

RECOMMENDATIONS FOR FURTHER RESEARCH

Based on the research completed for this Determination of Eligibility, the Kosciuszko Bridge is also associated with broader themes such as the "Transportation and Recreation Network of Robert Moses," or the "Brooklyn-Queens Expressway."

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APPENDIX



HISTORIC RESOURCE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION
& HISTORIC PRESERVATION
P.O. BOX 189, WATERFORD, NY 12188
(518) 237-8643

OFFICE USE ONLY

USN: _____

IDENTIFICATION

Property name(if any) Kosciuszko Bridge

Address or Street Location Brooklyn-Queens Expressway / Interstate I-278

County Kings / Queens Town/City Brooklyn / Queens Village/Hamlet: Greenpoint / Maspeth

Owner NYS DOT Address Hunters Point Plaza, 47-40 21st Street; Long Island City, NY 11101

Original use Pedestrian/Vehicular Bridge Current use State Highway Bridge

Architect/Builder, if known City of New York Department of Plant and Structures / Department of Public Works

Date of construction, if known 1939

DESCRIPTION

Materials -- please check those materials that are visible

Exterior Walls:	<input type="checkbox"/> wood clapboard	<input type="checkbox"/> wood shingle	<input type="checkbox"/> vertical boards	<input type="checkbox"/> plywood
	<input type="checkbox"/> stone	<input checked="" type="checkbox"/> brick	<input checked="" type="checkbox"/> poured concrete	<input type="checkbox"/> concrete block
	<input type="checkbox"/> vinyl siding	<input type="checkbox"/> aluminum siding	<input type="checkbox"/> cement-asbestos	<input checked="" type="checkbox"/> other: <u>Steel</u>
Roof:	<input type="checkbox"/> asphalt, shingle	<input type="checkbox"/> asphalt, roll	<input type="checkbox"/> wood shingle	<input type="checkbox"/> metal <input type="checkbox"/> slate
Foundation:	<input type="checkbox"/> stone	<input type="checkbox"/> brick	<input checked="" type="checkbox"/> poured concrete	<input type="checkbox"/> concrete block

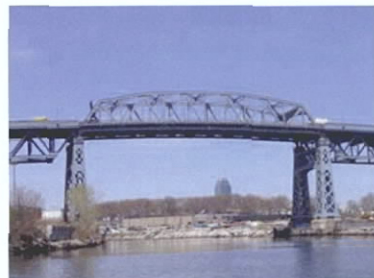
Other materials and their location: _____

Alterations, if known: Repared road surface. Replaced concrete decking and sidewalks removed to provide additional lanes of traffic, approaches to bridge widened on the Brooklyn side. Date: 1958, 1966, 1967, 1971

Condition: excellent good fair deteriorated

Photos

Provide several clear, original photographs of the property proposed for nomination. Submitted views should represent the property as a whole. For buildings or structures, this includes exterior and interior views, general setting, outbuildings and landscape features. Color prints are acceptable for initial submissions. Please staple one photograph providing a complete view of the structure or property to the front of this sheet. Additional views should be submitted in a separate envelope or stapled to a continuation sheet.



Prepared by: EHT Traceries, Inc. address 1121 5th Street, N.W.; Washington, D.C. 20001
 Telephone: (202) 393-1199 email eht@traceries.com Date 6/2/2006

PLEASE PROVIDE THE FOLLOWING INFORMATION

IF YOU ARE PREPARING A NATIONAL REGISTER NOMINATION, PLEASE REFER TO THE ATTACHED INSTRUCTIONS

Narrative Description of Property: Briefly describe the property and its setting. Include a verbal description of the location (e.g., north side of NY 17, west of Jones Road), a general description of the building, structure or feature including such items as architectural style (if known), number of stories, type and shape of roof (flat, gabled, mansard, shed or other), materials and landscape features. Identify and describe any associated buildings, structures or features on the property, such as garages, silos, privies, pools, gravesites. Identify any known exterior and interior alterations such as additions, replacement windows, aluminum or vinyl siding or changes in plan. Include dates of construction and alteration, if known. Attach additional sheets as needed.

The Kosciuszko Bridge is a fixed, multiple span, combination (deck and through) Warren truss bridge with overhead bracing. Part of the six-lane, Brooklyn-Queens Expressway (I-278) in Queens and Kings Counties, New York, the bridge spans Newtown Creek and the truss spans extends northeast from Meeker Avenue and Varick Street in Greenpoint, Brooklyn, to Laurel Hill Boulevard and 54th Street in Maspeth, Queens. Originally constructed as the Meeker Avenue Bridge in 1939, the bridge was renamed the Kosciuszko Bridge in 1940 to commemorate the Polish Revolutionary War hero, Thaddeus Kosciuszko. In 1960, with the completion of the Brooklyn-Queens Expressway (Interstate I-278), the Kosciuszko Bridge was officially linked to the completed highway system.

The bridge has a vertical clearance of 125 feet over Newtown Creek, and rises 175 feet in height at its highest point and 6,021.3 feet in length with a total of 22 spans that rest on 21 cast-in-place, segmental arched, reinforced concrete piers. The span over the Newtown Creek measures 300 feet, while the approach spans vary from 120 to 230 feet. There are 10 deck truss spans at the Brooklyn side, 11 deck truss spans at the Queens side, and one through truss span over the Newtown Creek.

Bridge piers rest on concrete foundations. Constructed of reinforced concrete, shafts for the piers were cast in sections according to the height of the piers—taller piers are made up of four sections, for example. The tallest piers are those supporting the main span. These piers are double cross braced, riveted steel towers on concrete bases. The pattern of the cross bracing on the main span piers has a lattice-like pattern.

The truss spans connect to abutments located at Meeker Avenue and Varick Street in Greenpoint, Brooklyn, and at Laurel Hill Boulevard and 54th Street in Maspeth, Queens. These abutments lead to low level reinforced concrete approaches which are clad in brick in a stretcher bond pattern. The approaches are further decorated with interspersed panels approximately five feet wide that feature sawtooth detailing. A roll-up metal garage bay and a single-leaf metal door are located at the east elevation of the Brooklyn side of the bridge, providing access to the storage areas located within the abutments. Windows for the storage spaces are located beneath the roadway and remain at both the Brooklyn and Queens sides of the bridge. Window openings are enclosed by metal grills and rest on concrete sills. The Brooklyn viaduct has concrete rigid frames that provide vehicular access to the areas perpendicular to the bridge's approaches at Morgan Avenue, Vandervoort Avenue, Varick Avenue and Stewart Avenues.

The main superstructure element of the bridge is of the Warren deck truss type. The riveted steel deck truss extends from the abutments to the main bridge spans at each side of the bridge. The bridge's roadway is supported by concrete filled steel grating and topped by asphalt to create the road surface. The roadway is cantilevered over the trusses, supported by cross bracing beneath the I-beam-supported roadway. The roadway is lined by concrete curbs with a metal railing and three foot steel panels or splash guards. The roadway of the main span is lined with open metal railings. Light for the bridge is provided by light posts spaced evenly at the sides of the bridge.

The Warren through truss main span of the bridge features a superstructure made of polygonal top riveted steel chords and overhead cross bracing. Centrally located on the overhead bracing at the Brooklyn side and the Queens side are commemorative plaques. Installed when the bridge was renamed in 1940, the plaques bear the crests of the United States and Poland in addition to the "new" name of the bridge, the Thaddeus Kosciuszko Bridge. J. Frank Johnson is also recognized on the plaque as the Chief Engineer.

The repaving of the existing asphalt-on-concrete deck occurred in 1958. The second repaving project was initiated in 1967, at a cost of \$6 million dollars. The largest improvement to date on the bridge was a 1966 replacement of the concrete deck and the elimination of the two, eight foot wide pedestrian sidewalks to accommodate wider traffic lanes. Subsequent work included the replacement of the barriers, railings, lampposts, crossbeams, and drainage system, with the intention of alleviating bridge traffic. Other rehabilitation work included a three-year repair project initiated in 1996 that reinforced the concrete piers; the general cleaning, painting, and maintenance of the structural system in 2000, and the resurfacing of the deck including general bridge and ramp repairs in 2005.¹²¹

¹²¹ Parsons, *Kosciuszko Bridge Project*, "Chapter II: Project Identification, Evolution, Conditions and Needs and Objectives," July 1, 2005, pg. II.B-2.

Final Determination of Eligibility: The Kosciuszko Bridge

Overall, the bridge is in fair condition. The steel members of the bridge, particularly the superstructure, substructure and main span piers appear to be in good condition, despite rusting in some areas. However, the bridge steel that supports the roadway develops cracks in numerous locations and frequent maintenance is required. Additionally, the roadway deck also needs frequent repair to maintain a safe riding surface. Although abutment storage areas were not accessible at the time of this survey effort, it appears as though some of the storage space openings have been sealed or in filled with brick. Despite these modifications and alterations, the original form and structure of the bridge are intact.

Narrative Description of Significance: Briefly describe those characteristics by which this property may be considered historically significant. Significance may include, but is not limited to, a structure being an intact representative of an architectural or engineering type or style (e.g., Gothic Revival style cottage, Pratt through-truss bridge); association with historic events or broad patterns of local, state or national history (e.g., a cotton mill from a period of growth in local industry, a seaside cottage representing a locale's history as a resort community, a structure associated with activities of the "underground railroad."); or by association with persons or organizations significant at a local, state or national level. Simply put, why is this property important to you and the community. Attach additional sheets as needed.

Applying the methodology of the 2002 Historic Bridge Inventory, it has been determined that BIN 1075699, or the Kosciuszko Bridge, is **eligible** under National Register Criterion C-6. Built in 1939, this fixed, multiple span, Warren deck and thru truss bridge with overhead bracing represents a significant and unusual variation of the Warren truss type. According to the *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, bridges built after 1925 were strongly influenced by standardization and do not represent significant examples of their type. They are recommended as non-eligible unless they possess historical significance, a significant variation or other unique feature or association. Significant variations or features of individuality within the post-standardization Warren truss type include: deck truss, multiple span, double-intersection truss, unusual subtrusses, and unusual curved top and bottom chords.¹²² Structural elements of the Kosciuszko Bridge include multiple spans, Warren deck and thru trusses, and overhead bracing, all categorized as "significant variations or features of individuality." The Kosciuszko Bridge therefore, embodies distinctive characteristics of multiple span bridges, as well as Warren deck and thru truss types with overhead bracing. Built in 1939, the Kosciuszko Bridge reflects its period and methods of its construction. Thus, the Kosciuszko Bridge is considered eligible under Criterion C-6. This determination is supported by the following justification.

The Kosciuszko Bridge exhibits significant variation from common or standardized Warren truss types for many reasons. One of the most characteristic elements of the Kosciuszko Bridge is that it contains 22 spans. Bridges that have one or more piers in addition to the abutments are called multiple span bridges. Long bridges such as the Kosciuszko Bridge are generally multiple span bridges. The multiple spans of the Kosciuszko Bridge are considered a characteristic or defining element of the bridge. The span over the Newtown Creek measures 250 feet, while the approach spans vary from 200-300 feet. The total bridge length is 6,021 feet. There are 10 spans at the Brooklyn side, 11 spans at the Queens side, and one span over the Newtown Creek.

Another significant variation of the standardized Warren truss type is deck trusses. The main component of any bridge is the decking, which comprises of a slab, girder, and trusses. In a deck configuration, traffic travels on top of the main structure. In a deck truss bridge, the truss supports the bridge deck. The approaches of the Kosciuszko Bridge measure approximately 5,771 feet and are supported by Warren deck trusses. While the approach spans at the Brooklyn and Queens sides are supported by Warren deck trusses, the Newtown Creek span is supported by a Warren thru truss with overhead bracing. Polygonal top chords support the overhead bracing, giving it an appearance similar to that of a camelback truss. The overhead bracing of the Warren thru truss is also considered to be a significant variation of the standardized Warren truss type.

The form of the Kosciuszko Bridge follows its function. The design for the Kosciuszko Bridge, although not attributed to a particular designer or engineer, is one that accommodates ships as well as cars. The 125 foot height of the bridge allowed ships to travel beneath it on the Newtown Creek, at one time considered one of the busiest world ports, while the 6,021 foot length provided a straighter and more direct roadway for the expressway of which it was a part. Constructed in 1939, the Kosciuszko Bridge reflects Depression-Era Bridge Construction. Bridges built during this period met the increasing demands of the traveling public.¹²³ Built as the first element of the future Brooklyn-Queens Expressway, the Kosciuszko Bridge played a critical part in connecting motorist to Brooklyn and Queens. The Brooklyn-Queens Expressway, a segment of I-278, was vital to the roadway improvement effort initiated in the mid-twentieth century. The purpose of this project was to alleviate congestion and improve traffic flow in and around New York. The engineering difficulties associated with the Kosciuszko Bridge accommodating both cars and boats resulted in the plan of a straighter roadway with a longer approach than that of any previous bridge at this location. The segment between Brooklyn and Queens was built to connect the east and west thoroughfares of Long Island, greatly aiding the transportation network and commerce between the boroughs. The connection also allowed motorists to access the Triborough Bridge, and ultimately, the 1939-1940 World's Fair in Flushing Meadows, Queens.

Of the 218 early- and post-standardization Warren truss bridges in the State of New York, 78 in this period have been determined eligible for listing in the National Register of Historic Places. Of those 78, three are located in the New York City Region. A site

¹²² Mead & Hunt and Allee King Rosen Fleming, Inc., *Evaluation of National Register Eligibility, Task C3 of the Historic Bridge Inventory Master Plan*, prepared for the New York State Department of Transportation, Albany, New York and the Federal Highway Administration, Albany, New York, January 2002, pg. 4-50.

¹²³ Mead & Hunt, *Contextual Study of New York State's Pre-1961 Bridges*, Prepared for the New York Department of Transportation, November 1999, pg. 61.

Final Determination of Eligibility: The Kosciuszko Bridge

visit to the three eligible Warren truss bridges occurred on May 25, 2006. This visit provided an opportunity to compare the Kosciuszko Bridge with the three eligible Warren truss bridges (all owned by New York City Department of Transportation) in the New York City Region. The three eligible bridges in the New York City Region were all built during the early-standardization (pre-1925) period. All three of the eligible bridges within the New York City Region are Warren thru truss types. None of the three bridges, however, have polygonal top chords with overhead bracing, similar in appearance to a camelback truss, as found in the Kosciuszko Bridge. The Kosciuszko Bridge was also compared with eligible bridges built post-standardization (post-1925) in the State of New York. The comparison of the Kosciuszko Bridge with other post-standardization bridges in the State emphasized the significance of the fixed, multiple span, Warren deck and thru truss form of the Kosciuszko Bridge because another example of this unusual configuration of structural elements was not found in the State.

Although the construction of the Kosciuszko Bridge as the first element of the Brooklyn-Queens Expressway (BQE) is considered an important event, it is not one of national significance, nor is it more important than the construction of the Expressway itself or the other BQE bridges. The Kosciuszko Bridge is therefore considered not eligible for listing under Criterion A. Although the Kosciuszko Bridge honors Thaddeus Kosciuszko, it does not illustrate his important achievements; rather, it *commemorates* them. Therefore, the Kosciuszko Bridge is not eligible for listing under Criterion B. Additionally, there are other examples of Thaddeus Kosciuszko commemorations in the New York City Region. The Kosciuszko Bridge is not likely to yield information important in prehistory or history and is thus not eligible for listing under Criterion D.

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Mead & Hunt, Contextual Study of New York State's Pre-1961 Bridges. Prepared for the New York Department of Transportation, Albany, New York: November 1999.

Archives and collection consulted include:

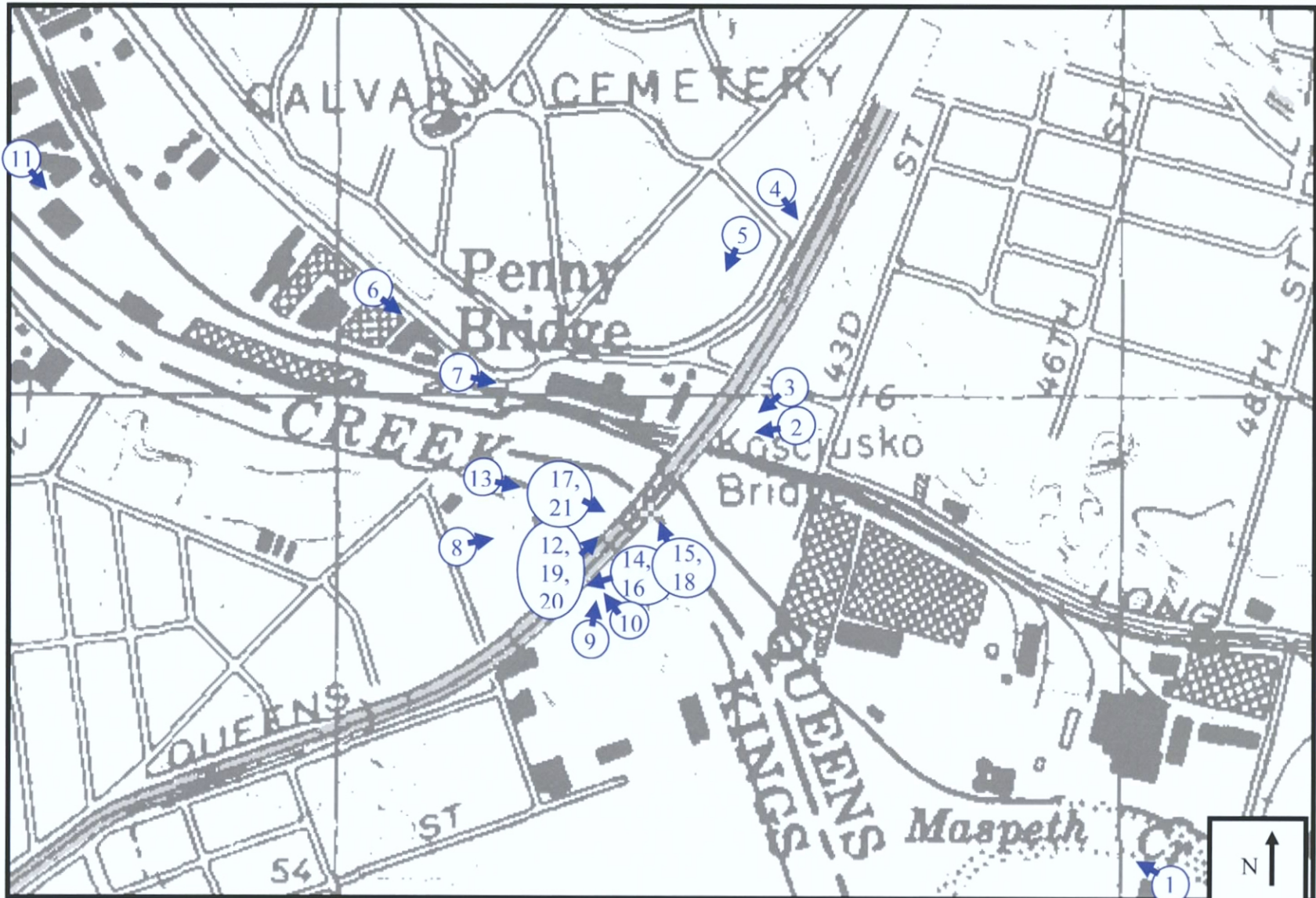
Library of Congress, Geography and Map Division, Washington D.C.
Municipal Archives, NY, NY
New York Historical Society, NY, NY
Queens Borough Public Library, Jamaica, NY
The Brooklyn Public Library, Brooklyn, NY
The New York Public Library, NY, NY

Agencies and organizations consulted by telephone and internet include:

NYC Department of Records, NY, NY
Pratt Institute Library, Brooklyn, NY
The Brooklyn Historical Society, Brooklyn, NY
The Kosciuszko Foundation, Inc., NY, NY
The Queens Historical Society, Flushing, NY

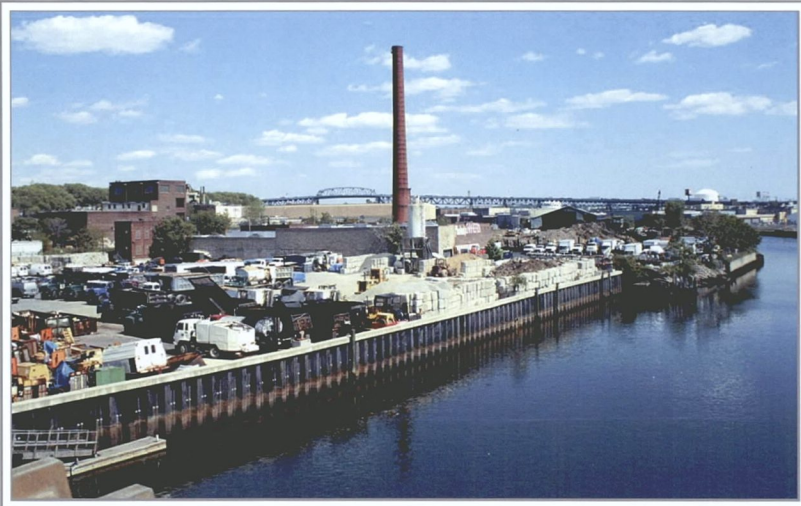
TABLE 1: Kosciuszko Bridge Photograph Location Index

Photograph Location Number	Description
1	View of Kosciuszko Bridge, looking east from Greenpoint Avenue Bridge
2	Extent of Kosciuszko Bridge looking south from Laurel Hill Boulevard, Queens, New York
3	Kosciuszko Bridge, looking west from 56th Road, Queens, New York
4	Kosciuszko Bridge, looking northwest from Grand Street Bridge
5	Detail of steel substructure looking southwest from Greenpoint, Brooklyn, New York
6	Detail of concrete piers and substructure, looking southwest from Greenpoint, Brooklyn, New York
7	Detail of the Warren truss main span and overhead bracing, looking northwest from Greenpoint, Brooklyn, New York
8	View of Kosciuszko Bridge supports over Newtown Creek, looking northeast from Greenpoint, Brooklyn, New York
9	Detail of truss connection beneath Kosciuszko Bridge
10	Detail of sawtooth brick elements on exterior of bridge abutments, on the Brooklyn side

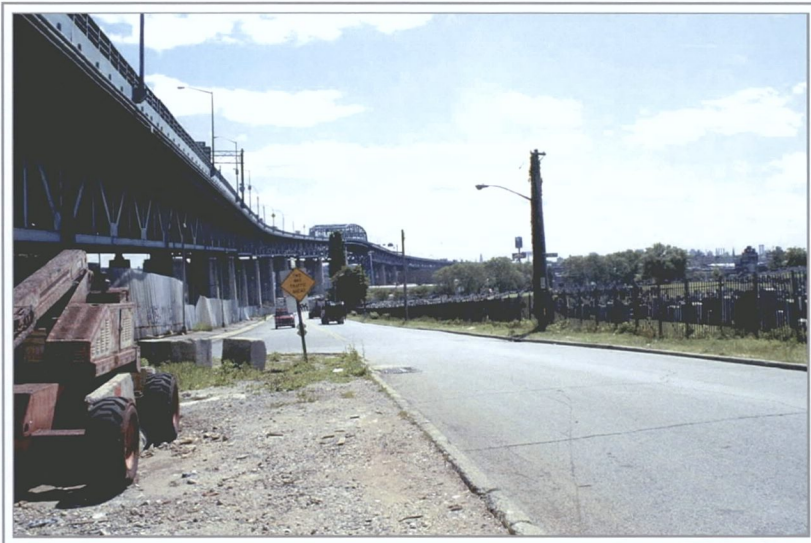


Brooklyn/Queens, New York
Kosciuszko Bridge Photograph Location Map

USGS Map, 2006



View of Kosciuszko Bridge, looking east from Greenpoint Avenue Bridge



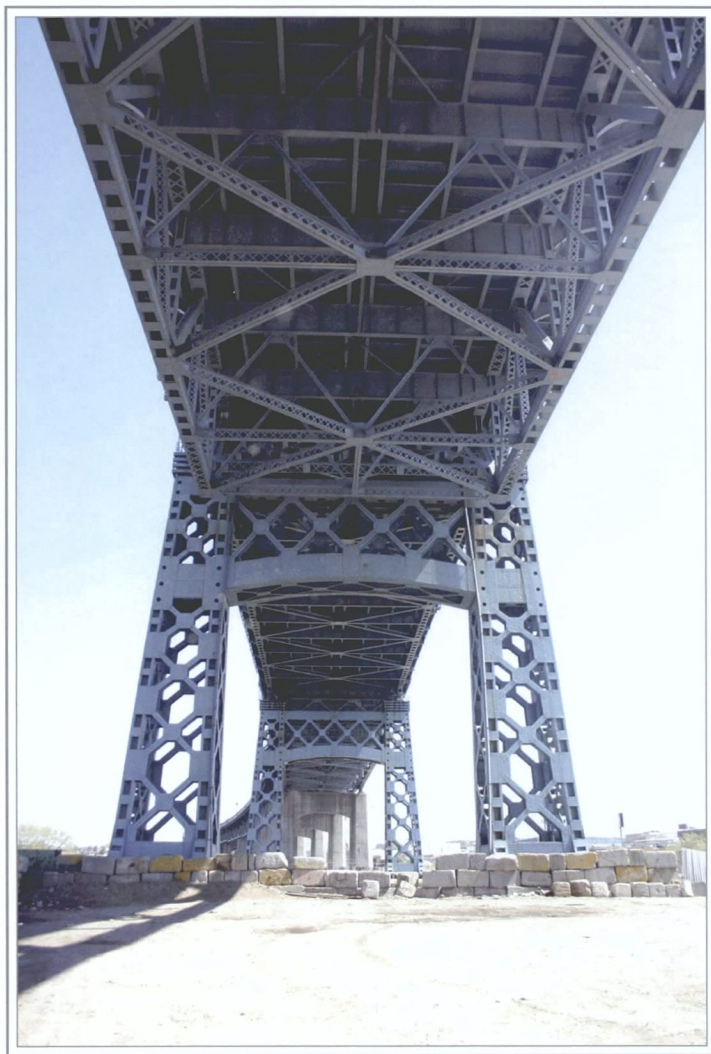
Extent of Kosciuszko Bridge looking south from Laurel Hill Boulevard, Queens, New York



Kosciuszko Bridge, looking west from 56th Road, Queens, New York



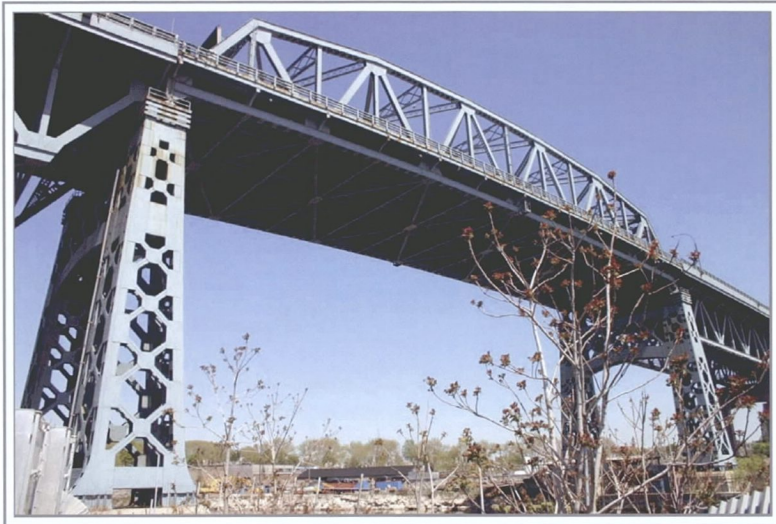
Kosciuszko Bridge, looking northwest from Grand Street Bridge



Detail of steel substructure looking southwest from Greenpoint, Brooklyn, New York



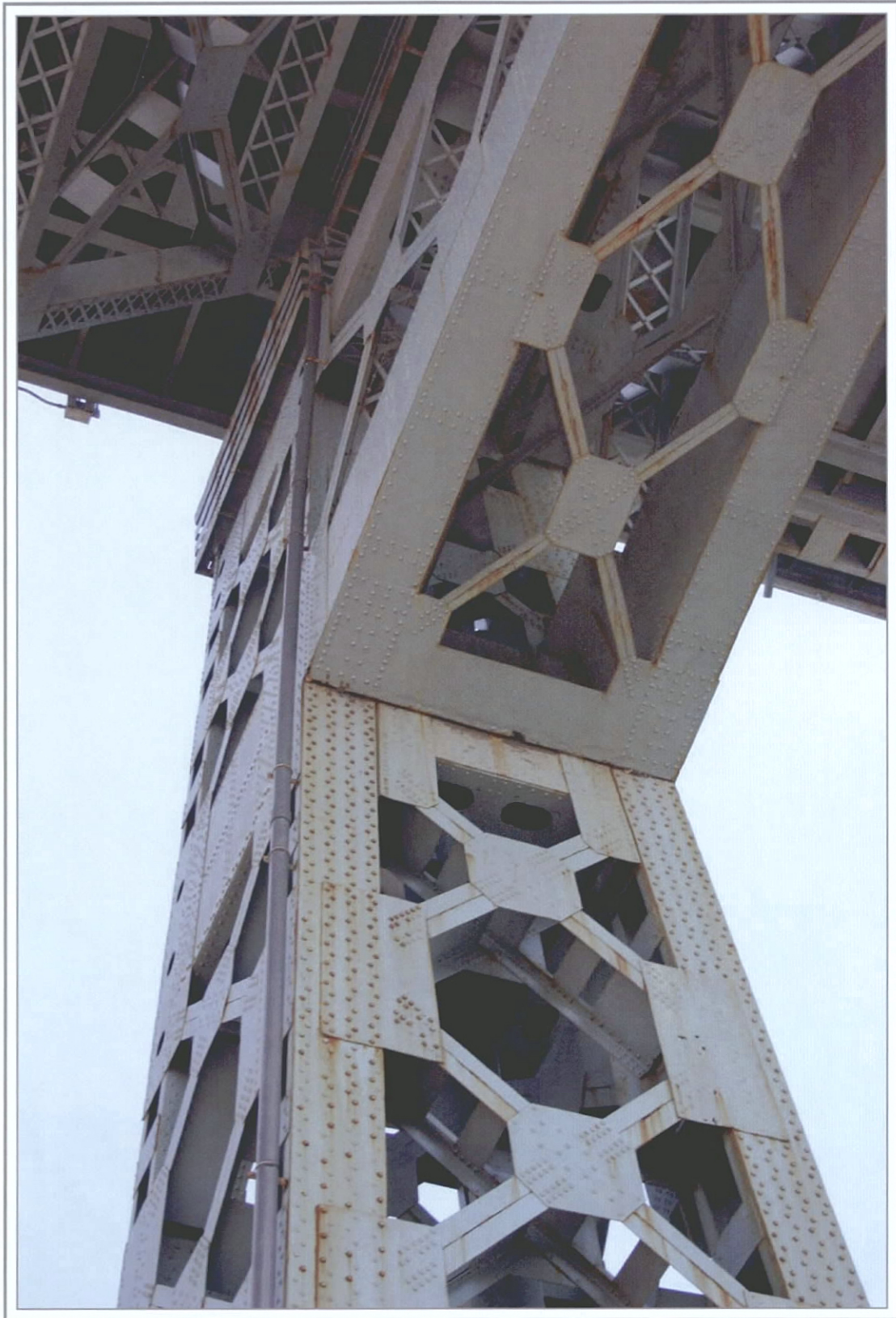
Detail of concrete piers and substructure, looking northeast from Greenpoint, Brooklyn, New York



Detail of the Warren truss main span and overhead bracing, looking north from Greenpoint, Brooklyn, New York



View of Kosciuszko Bridge supports over Newtown Creek, looking northeast from Greenpoint, Brooklyn, New York



Detail of truss connection beneath Kosciuszko Bridge



Detail of sawtooth brick elements on exterior of bridge abutments, on the Brooklyn side



NEW YORK STATE DEPARTMENT OF TRANSPORTATION
BRIDGE INVENTORY FORM

DATE: June 1, 2006 PIN: X729.77 BIN: 1-07569-9
PREPARER/ AFFILIATION: EHT Traceries, Inc.
EVALUATION APPLYING METHODOLOGY OF NYSDOT 2002 HISTORIC BRIDGE INVENTORY
National Register Eligible National Register Criteria C-6 Not Eligible

IDENTIFICATION

- 1. BRIDGE NAME(S): (if known) Kosciuszko
Bridge
- 2. TOWN/CITY/VILLAGE (MCD): New York City
HAMLET: _____
- 3. COUNTY:
Kings/Queens
- 4. FEATURE CARRIED (street, route no., railroad): Brooklyn-Queens Expressway (I-
278)
- 5. FEATURE CROSSED (river, highway, railroad): Newtown
Creek
- 6. YEAR BUILT: 1939

DESCRIPTION

- 7. BRIDGE TYPE: Warren Truss (deck and thru with overhead
bracing)
- 7a. Number of Spans: 22 7b. Length of Span(s): 100-
300'
- 8. STRUCTURAL MATERIAL: a. timber b. stone c. steel d. concrete e. cast/
wrought iron f. other
- 8a. Abutment Material: concrete stone faced laid-up stone other
brick
- 9. PHOTOS: (see attached)

10. INTEGRITY: a. list major alterations and dates (if known): See attached

b. previous use _____ c. moved__ if so, when? _____

11. RELATED BUILDINGS AND PROPERTY (check more than one if necessary): a. power house __

b. railroad station _____

c. bridge operators house _____ d. landscape features (specify) (i.e. stone walls, light standards)

_____ e. other _____

12. BRIDGE SURROUNDINGS (check more than one if necessary): a. open land__ b. woodland__

c. scattered buildings__

d. densely built-up__ e. commercial f. industrial g. residential h. potentially eligible historic district _____ i. other _____

13. OTHER NOTABLE BRIDGE FEATURES (e.g. aesthetic treatment, multiple spans, cantilevered):

The Kosciuszko Bridge is a fixed, multiple span, Warren deck and thru truss bridge with overhead bracing. The bridge measures 125 feet in height, 6,021.3 feet in length, and has a total of 22 spans. For more information, please see attached New York State Historic Resources Inventory Form.

14. HISTORIC IMPORTANCE/ ASSOCIATION (include plate information): Engineer or builder:

See attached New York State Historic Resources Inventory Form.

15. LOCATION MAP:

9/9/02

APPENDIX F. ARCHITECTURAL EVALUATION OF 14 BUILDINGS

This appendix describes the results of the reconnaissance level survey for the 14 buildings that are 50 years of age or older and would be completely or partially demolished under one or more of the alternatives for this project.

F.1 11-17 Anthony Street, Brooklyn

F.1.a. Building Description

The two-story, seven-bay wide building, constructed between 1907 and 1933, is located at Anthony Street on Block 2810 (Lot 37). A casket manufacturer originally occupied the building. The showroom and offices of the Stone Depot currently occupy it. Adjacent to the building is a supply yard that is enclosed by security fencing. This block was originally double in size, but was cut in half to accommodate the ramp for the Kosciuszko Bridge and BQE. As a result, the rear of the property fronts Meeker Avenue and the BQE viaduct.

The brick building is constructed upon a concrete foundation, and the exterior brick walls have been stuccoed. The half-gable roof at the main and rear sections of the building are clad in terra cotta tiles, and the center section of the building has a flat roof. The stucco encapsulates the molded cornice at the main elevation.

The original window openings at the first story of the main (south) elevation have been bricked in. A service entrance has been installed at the first bay, resulting in the alteration of the original window opening. The main showroom entrance with its double glass doors is located at the fourth bay. The window openings have modest stone sills and segmented arch lintels. The wood stair leading to the main entrance is not original to the building. Six 12-light metal windows with modest stone sills and segmented arch lintels pierce the second story. The central window opening at the second story, directly above the main entrance, has been sealed and partially covered with signage. A second sign projects from the west end of the second story.

The side (east) elevation faces the enclosed supply yard and was partially inaccessible. The elevation is pierced at the second story by three 12-light metal windows.

The rear (north) elevation faces Meeker Avenue and mimics the main elevation at Anthony Street. A central entrance pierces the first story with window openings (sealed and opened) flanking the entrance. All of the window openings have modest stone sills and segmented arch lintels. A non-original metal stair leads to the entrance. Five 12-light metal windows pierce the second story.

The side (west) elevation faces a gas station and car wash at the corner of Anthony Street, Morgan Avenue, and Meeker Avenue. The first story is not visible. Four 12-light metal windows pierce the second story. These windows have segmented arch lintels, but no stone sills.

F.1.b. NRHP Evaluation

The commercial property at 11-17 Anthony Street is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). Before Brooklyn became part of New York City in 1898, it was the third most populous city in the country (Weil 2000). Population mushroomed in Brooklyn from 840,000 in 1890 to 2.7 million residents in 1940 (Burrows and Wallace 1999). This area of Brooklyn became increasingly industrial and commercial in nature during the late nineteenth and early twentieth centuries. This resource is a typical building constructed after the turn of the century as a casket manufacturer that

supported the numerous cemeteries in the adjacent areas, including Calvary Cemetery across Newtown Creek. The Catholic Church purchased the former Alsop estate in Laurel Hill in 1848 and established Calvary Cemetery on the tract. The cemetery was accessible from Brooklyn via the Penny Bridge. Two cemetery memorial companies were situated along Meeker Avenue, just southeast of Penny Bridge. Steamboat services were initiated from East 23rd Street in Manhattan to accommodate funeral corteges. Other cemeteries were founded soon thereafter in Queens, including Mount Olivet in Maspeth in 1851 (Burrows and Wallace 1999).

Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The building at 11-17 Anthony Street is a typical two-part commercial building for small and moderate scale businesses. The loss of its extensive casket shed and yard (most of which was eliminated when the block was reconfigured) diminishes the scale of the building in relation to its original manufacturing landscape. The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the reconfiguration of the block. The design of the building has been preserved, but the material and workmanship have been compromised with the stuccoing of the main elevation, sealing of window openings, and introduction of unsympathetic signage.

F.2 19-25 Anthony Street, Brooklyn

F.2.a. Building Description

The one-story warehouse incorporates two pre-1950 buildings (19-21 and 23-25 Anthony Street) and two post-1960 buildings with a loading area (27 and 35 Anthony Street) (Block 2810 Lot 34). An auto repair shop and a chicken feed manufacturer originally occupied the two pre-1950 buildings. This block was originally double in size, but was cut in half to accommodate the ramp for the Kosciuszko Bridge and BQE. As a result, the rear of the buildings fronts Meeker Avenue and the BQE viaduct.

The utilitarian warehouse of 19-21 and 23-25 Anthony Street is constructed upon a concrete foundation and has exterior brick walls that have been painted in sections. Because the flat roof is not visible from the ground, its cladding is unknown. Barbed wire lines the roof edge and security gates and fencing protects the various entrances at all elevations.

The main (south) elevations of 19-21 and 23-25 Anthony Street are pierced by various original and non-original openings to accommodate pedestrian entrances, windows, and vehicular openings. 19-21 Anthony Street is a three-bay wide building with the first bay, a window opening, having been bricked in. The window opening has retained its brick sill and lintel. A vehicular opening with a rolling, metal security gate and metal fencing pierces the second bay. A pedestrian entrance with a rolling, metal security gate pierces the third bay. 23-25 Anthony Street is six-bays wide with sealed window openings at the first, third, fifth, and sixth bays. Like 19-21 Anthony Street, a vehicular opening with a rolling, metal security gate and metal fencing pierces the second bay. A pedestrian entrance with a single-leaf metal door is recessed at the fourth bay. 27 and 35 Anthony Street dominates the remainder of the block, continuing along Vandervoort and Meeker Avenues.

The rear (north) elevation of 19-21 and 23-25 Anthony Street is partially obscured by security fencing. A single pedestrian entrance with a rolling, metal security gate pierces the rear elevation of 23-25 Anthony Street.

These buildings are now connected internally through openings in the party walls.

F.2.b. NRHP Evaluation

The commercial property at 19-25 Anthony Street is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). By the late 1880s, development was clustered along both sides of Meeker Avenue, with a mixture of residential, commercial, and industrial buildings. This resource is a typical building constructed to support the commercial endeavors for this area of Brooklyn. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The building at 19-25 Anthony Street is a typical warehouse building. The interior alterations of the buildings include the introduction of openings in the party walls for internal circulation between the two pre-1950s buildings, as well as the loading dock and corner warehouse buildings constructed in 1965 and 1977. The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the reconfiguration of the block. The design of the building has been compromised with the construction of modern additions and the piercing of party walls to allow for internal circulation. The material and workmanship have been compromised with the sealing of window openings and introduction of new openings.

F.3 513 Porter Avenue, Brooklyn

F.3.a. Building Description

The utilitarian warehouse (Block 2811, Lot 14), constructed between 1907 and 1933, is built upon both a stone and concrete foundation. The more modern section at the southwest corner is constructed of concrete block, and the remaining sections of the sprawling warehouse are constructed of brick. The flat roof is not visible from the ground, and its cladding is unknown. The parapet wall at the southeast, east, and north sections of the building are stepped, and the roof coping is executed in stone. Barbed wire and fencing lines sections of the roof edge.

The main (east) elevation of 513 Porter Avenue is pierced by four altered openings that include three pedestrian entrances and a single vehicular opening. All four openings having rolling, metal security doors, and the brickwork surrounding these openings has been damaged or does not match the original facing. The original sections of brickwork at this elevation are laid in six-course American bond. However, a circa 1940 photograph and physical evidence revealed that this elevation originally was pierced by expansive window openings. These openings would have been emphasized by the vertical nature of the engaged, brick piers symmetrically positioned at this elevation.

The side (north) elevation faces Cherry Street and the BQE viaduct. This elevation continues the treatment of the exterior wall that is found at the main elevation. Graffiti covers the brickwork at this elevation, and painted signage lines the frieze at the first five bays. The northeast sections of this elevation have been covered in stucco, and it is unclear if window openings similar to the arrangement at the main elevation originally existed at these bays. The sixth and seventh bays are pierced by two large vehicular openings fitted with rolling, metal security doors. Two pedestrian entrances and a vehicular opening with a rolling, metal security door pierce the northwest end of this elevation. Two window openings, flanking the vehicular opening, have been sealed.

The rear (west) elevation faces Sgt. William Dougherty Playground. There are no openings at this elevation, and the walls have been painted or covered in graffiti.

The side (south) elevation faces Anthony Street and includes the modern section of the warehouse at the southwest corner. This section is constructed of concrete block. The modern section is four bays wide. A pedestrian entrance with a single-leaf metal door pierces the first bay. Two small, window openings with awning windows are covered by metal security bars. A large, vehicular opening with a rolling, metal security door is the final opening at the modern section. The southwest corner incorporates the original section of the warehouse and no openings are located at this elevation. However, physical evidence suggests that this elevation originally was pierced by expansive window openings like the main elevation.

F.3.b. NRHP Evaluation

The commercial property at 513 Porter Avenue is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Brooklyn became extensively industrial and commercial during the late nineteenth and early twentieth centuries, and this resource is a typical building constructed to support these activities. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The building at 513 Porter Avenue is a typical warehouse building. The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association has been lost with the construction of the elevated roadway along Cherry Street. The design of the building has been compromised by the construction of a modern section of the warehouse within the original footprint. The material and workmanship have been compromised with the sealing of window openings and introduction of new brickwork.

F.4 810 Meeker Avenue, Brooklyn

F.4.a. Building Description

The utilitarian building, constructed circa 1947, is located at the corner of Meeker Avenue and the Meeker Avenue/Morgan Avenue off-ramp of the BQE. This block was originally double in size, but was cut in half to accommodate the ramps for the BQE. As a result, the lot, occupied by the Conch USA Inc., building is irregular. The lot (Block 2805, Lot 5) includes the building and a small open area at the rear and side. Fencing is located at the rear of the property against the ramp and at the perimeter lot lines.

The one-story, six-bay wide masonry structure is constructed upon a concrete foundation. The brickwork is laid in Flemish bond with a decorative diamond pattern in the brickwork. A decorative brick frieze continues the intricate brick design found at the main elevation. The parapet wall at the main elevation is slightly stepped at the center of the building. The roof slopes upward toward the rear of the building and gives the impression of a two-story building. This roof is covered in metal sheathing, and corrugated metal sheathing covers the west elevation of this upper story. The flat roof of the main block of the warehouse was not visible from the ground, and the roofing material is unknown.

The main (north) elevation is pierced by pairs of industrial, metal windows at the first, third and fourth bays. The window openings have modest stone sills and soldier brick lintels. The three vehicular openings located at the second, fifth, and sixth bays are obscured by their rolling, metal security doors. The sixth bay at the northwest corner has been altered by the removal of the original window openings to accommodate a vehicular opening. The brickwork at this corner has been stuccoed. This alteration has compromised the symmetrical layout of the main elevation.

The side (west) elevation faces the dwellings on Meeker Avenue and the brick enclosure wall of the BQE. This elevation is two bays wide, with the first bay pierced by a show window (obscured by the rolling, metal security gate) and the second bay pierced by a pair of industrial metal windows.

The rear (south) elevation faces the Meeker Avenue/Morgan Avenue off-ramp. The four window openings at this elevation have been bricked in. The modest brick sills and lintels are still visible.

The side (east) elevation faces a parking area. The two large window openings at this elevation have been bricked in and stuccoed.

F.4.b. NRHP Evaluation

The commercial property at 810 Meeker Avenue is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Brooklyn became extensively industrial and commercial during the late nineteenth and early twentieth centuries, and industrial developments mixed with sparse residential development characterized the area north of Meeker Avenue, between Varick Avenue and Newtown Creek. This resource is a typical building constructed to support these activities. Research has not indicated that it is associated with a historically significant person (Criterion B). *The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C).* The warehouse at 810 Meeker Avenue is a typical utilitarian design for an industrial structure, and although its use of a decorative brick pattern is not typical, it is not distinctive. Additional examples of decorative brickwork executed on buildings are evident throughout this area of Brooklyn. The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the construction of the Vandervoort Avenue on-ramp and the reconfiguration of the block. The design of the building has been retained, but the material and workmanship of the building have been compromised by the stuccoing of sections of the building and sealing of original window openings.

F.5 814-836 Meeker Avenue, Brooklyn

F.5.a. Building Description

The utilitarian building, constructed circa 1950, is located at 814-836 Meeker Avenue (Block 2805, Lot 12), and the lot is adjacent to the Meeker Avenue/Morgan Avenue off-ramp. This block was originally double in size, but was cut in half to accommodate the ramps for the BQE. The one-story, four-bay wide masonry structure is constructed upon a concrete foundation. The brickwork is laid in six-course American bond. The flat roof is not visible from the ground, and the roofing material is unknown.

Two vehicular openings and a single-leaf metal door at the first three bays pierce the main elevation of the one-story, four-bay wide warehouse. An original window opening east of the first vehicular opening has been bricked in. The fourth bay, west of the pedestrian entrance, has been altered with the sealing of part of the original window opening for the introduction of two window openings.

The side (west) elevation faces a parking area adjacent to 810 Meeker Avenue. The four original window openings at this elevation have been bricked in. Two new openings for windows have been introduced, and a large vehicular opening is located at the south end of this elevation.

The rear (south) elevation was not accessible and is adjacent to the Meeker Avenue/Morgan Avenue off-ramp.

The side (east) elevation abuts the neighboring building.

F.5.b. NRHP Evaluation

The commercial property at 814-836 Meeker Avenue is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Brooklyn became extensively industrial and commercial during the late nineteenth and early twentieth centuries, and industrial developments mixed with sparse residential development characterized the area north of Meeker Avenue, between Varick Avenue and Newtown Creek. This resource is a typical building constructed after World War II to support these activities. Research has not indicated that the property is associated with a historically significant person (Criterion B). The warehouse at 814-836 Meeker Avenue is a typical utilitarian design for an industrial structure. The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the construction of the Vandervoort Avenue on-ramp and the reconfiguration of the block. The design of the building has been retained, but the material and workmanship of the building have been compromised by the sealing and reconfiguration of original window openings.

F.6 68 Cherry Street, Brooklyn

F.6.a. Building Description

The one-story warehouse at 68 Cherry Street (Block 2812, Lot 5), constructed in 1951, is located at the corner of Cherry Street and Varick Avenue. The modest building is located within a large, fenced-in lot with parking areas on each side to accommodate the extensive number of loading docks for the building. The utilitarian warehouse is constructed upon a concrete foundation. The brickwork is laid in a six-course American bond and the flat roof of the building and awnings are sheathed in metal.

The main (east) elevation of 68 Cherry Street faces into the parking and loading area to the west of the building. A pedestrian entrance with a single-leaf metal door pierces the brick building. Stairs lead to this entrance and to the walkway in front of the loading dock openings at this elevation. The rear elevation is dominated by openings for the loading area and rolling, metal security doors protect these openings. The roof overhangs at this area to protect the walkway from the elements.

The side (south) elevation faces an enclosed parking area. This elevation consists of a structural wall at the end of the loading dock area.

The rear (west) elevation mimics the spatial arrangement that is evident at the main elevation. A pedestrian entrance with a single-leaf metal door pierces the main block of the building. Stairs lead to this entrance and to the walkway in front of the loading dock openings. The rear elevation is dominated by the openings for the loading area, and rolling, metal security doors protect these openings. The roof overhangs at this area to protect the walkway from the elements.

The side (north) elevation faces Cherry Street and the Vandervoort Avenue on-ramp to the BQE. Metal industrial windows pierce the three bays at this elevation.

F.6.b. NRHP Evaluation

The commercial property at 68 Cherry Street is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Brooklyn became extensively industrial and commercial during the late nineteenth and early twentieth centuries, and this resource is a typical building constructed to support these activities. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The building at 68 Cherry Street is a typical warehouse building. Loading docks dominate both the main and rear elevations. The property is not likely to yield information that is important in prehistory or history (Criterion D).

Although the property is not associated with an important historic context, the seven aspects of integrity (location, setting, feeling, association, design, workmanship, and materials) have been retained. However, to be eligible for listing in the NRHP, a property must retain integrity and be associated with an important historic context.

F.7 515-521 Gardner Avenue, Brooklyn

F.7.a. Building Description

The two-story warehouse and office at 515-521 Gardner Avenue, constructed in 1954, is located on Block 2814 between Cherry and Anthony Streets. Parking and storage areas to the north and south surround the modest building. Security fencing encloses this area, and the side and rear elevations of this building were not accessible. The utilitarian building is constructed upon a concrete foundation. The brickwork is laid in a six-course American bond and the flat roof of the building is not visible.

The main (east) elevation of 515-521 Gardner Avenue is two bays wide with extensive alterations to the original first-story window opening. The ribbon windows at the first bay have been removed, and part of the opening has been sealed to accommodate smaller windows and an air conditioner unit. The sealed area is stuccoed. The brickwork above the opening has been damaged. A pedestrian entrance with a single-leaf metal door and a glass block transom pierces the second bay. A ribbon and one single-pane metal windows at the first bay pierce the second story of the building. A single, metal window is located at the second bay. All of the window openings at the first and second stories have modest brick sills. The windows at the second story have soldier brick lintels.

The side (north) elevation faces an enclosed parking area. The view from public property did not identify any openings at this elevation.

The rear (west) elevation faces an enclosed parking area. This elevation was not visible from public property.

The side (south) elevation faces an enclosed parking area along Anthony Street. The view from public property identified a window opening with a pair of metal windows at the second story. Metal security bars obscure the windows, and a modest brick sill is visible.

F.7.b. NRHP Evaluation

The commercial property at 515-521 Gardner Avenue is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Brooklyn became extensively industrial and commercial during the late nineteenth and early twentieth centuries, and industrial developments mixed with sparse residential development characterized the area north of Meeker Avenue, between Varick Avenue and Newtown Creek. This resource is a typical building constructed to support these activities. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, setting, feeling, and association. The design of the building has been preserved, but the material and workmanship have been compromised with the sealing and reconfiguration of window openings and changes to the main entrance.

F.8 538-542 Stewart Avenue, Brooklyn

F.8.a. Building Description

The one-story warehouse at 538-542 Stewart Avenue, constructed in 1953, is located on Block 2807 and is north of the Brooklyn approach to the Kosciuszko Bridge. Parking and storage areas to the north and south surround the modest building. Security fencing encloses the side and rear portions of the lot. The utilitarian building is constructed upon a concrete foundation, and the brickwork for the main building is laid in six-course American bond. The side building is a metal frame building with corrugated metal siding. The cladding material for the flat roof at the main building is unknown, but the roof of the side building is metal sheathing.

The main (west) elevation of the main building at 538-542 Stewart Avenue is pierced by a single pedestrian entrance and a large garage opening. Rolling, metal security gates protect both of these entrances. A window opening at the main building has been bricked in. A single vehicular entrance pierces the side building.

The side (south) elevation faces a parking area and storage yard under the Brooklyn approach to the Kosciuszko Bridge. The side elevation has no openings.

The rear (east) elevation faces an enclosed parking area. This elevation was not visible from public property.

The side (north) elevation faces an enclosed parking area and driveway. An original window opening at this elevation has been altered with the introduction of an air conditioner window unit and the sealing of the opening. The remainder of this elevation was not accessible.

F.8.b. NRHP Evaluation

The commercial property at 538-542 Stewart Avenue is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Brooklyn became extensively industrial and commercial during the late nineteenth and early twentieth centuries, and industrial developments mixed with sparse residential

development characterized the area north of Meeker Avenue, between Varick Avenue and Newtown Creek. This resource is a typical building constructed after World War II to support these activities. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the closing of Thomas Street to the north. The design of the building has been altered with the construction of the metal frame side addition. The material and workmanship have been compromised with the sealing of window openings.

F.9 54-08 43rd Street, Queens

F.9.a. Building Description

The one-story warehouse at 54-08 43rd Street, constructed between 1936 and 1941, is on Block 2515 just east of the Queens approach to the Kosciuszko Bridge. Security fencing encloses the rear portion of the lot and is inaccessible. The utilitarian building is constructed upon a concrete foundation, and the brickwork is laid in six-course American bond. The cladding material for the flat roof is unknown.

The main (east) elevation of 54-08 43rd Street is two bays wide and has been extensively altered at this elevation. A pedestrian entrance with a single-leaf, metal door and a large vehicular opening with a rolling, metal security door pierce this elevation. Large sections of the original brick facing at this elevation have been replaced with a non-matching brick, and a window opening at this elevation has been sealed with the same non-matching brick.

The side (north) elevation faces an enclosed area, and the sections of the warehouse that are visible from public property indicate there are no openings.

The rear (west) elevation faces an enclosed area and is inaccessible.

The side (south) elevation is attached to the adjacent building.

F.9.b. NRHP Evaluation

The commercial property at 54-08 43rd Street is recommended as **not eligible** for the National Register of Historic Places because it is not associated with an important event or trend (Criterion A). This area of Queens, east of Laurel Hill Boulevard and Calvary Cemetery, was historically open space and farmland during the nineteenth century. However, waterfront industries began to dominate the southern portion of this area during the late nineteenth and early twentieth centuries. Residential, commercial, and industrial buildings began to occupy this area, often in the same block. This resource is a typical building constructed during the 1930s and 1940s to support the commercial activities of this area. Research has not indicated that it is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting,

feeling, and association have been lost with the construction of the elevated roadway and the reconfiguration of the block. The design of the building has been preserved, but the material and workmanship have been compromised with the sealing of a window opening and introduction of non-matching brick at the main elevation.

F.10 54-14 43rd Street, Queens

F.10.a. Building Description

The one-story warehouse at 54-14 43rd Street, constructed between 1936 and 1941, is on Block 2515 just east of the Queens approach to the Kosciuszko Bridge. Security fencing encloses the rear portion of the lot, and the lot is inaccessible. The utilitarian building is constructed upon a concrete foundation, and the brickwork is laid in seven-course American bond. The cladding material for the flat roof is unknown.

The main (east) elevation of 54-14 43rd Street is two bays wide and is dominated by the vehicular opening at the first bay. A single-leaf metal door pierces the elevation at the second bay. Two original window openings and a pedestrian entrance have been sealed.

The side (north and south) elevations are attached to the adjacent buildings.

The rear (west) elevation faces an enclosed area and is inaccessible.

F.10.b. NRHP Evaluation

The commercial property at 54-14 43rd Street is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Queens, east of Laurel Hill Boulevard and Calvary Cemetery, was historically open space and farmland during the nineteenth century. However, waterfront industries began to dominate the southern portion of this area during the late nineteenth and early twentieth centuries. Residential, commercial, and industrial buildings began to occupy this area, often in the same block. This resource is a typical building constructed during the 1930s and 1940s to support the commercial activities of this area. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the construction of the elevated roadway and the reconfiguration of the block. The design of the building has been preserved, but the material and workmanship have been compromised with the sealing of window openings.

F.11 54-18 43rd Street, Queens

F.11.a. Building Description

The one-story warehouse at 54-18 43rd Street, constructed between 1941 and 1955, is on Block 2515 just east of the Queens approach to the Kosciuszko Bridge. The utilitarian building is constructed upon a concrete foundation, and the brickwork is laid in seven-course American bond. The cladding material for the flat roof is unknown. An open area is located at the rear of the property and is surrounded by security fencing.

The main (east) elevation of 54-18 43rd Street is four bays wide, with a window opening piercing the first and fourth bays. A pedestrian entrance with a single-leaf metal door is located at the second bay, and a vehicular opening with a rolling, metal security gate pierces the third bay.

The side (north) elevation is attached to the adjacent building.

The rear (west) elevation faces an enclosed area. This elevation has no openings.

The side (south) elevation faces 54th Road and is five bays wide. A large vehicular opening secured by a rolling, metal security gate pierce the first and fourth bays. Pedestrian entrances with single-leaf, metal doors, pierce the second and third bays; the entrance at the second bay has a multi-light window above the opening. A window opening with a multi-light metal window is located at the east end of this elevation.

F.11.b. NRHP Evaluation

The commercial property at 54-18 43rd Street is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Queens, east of Laurel Hill Boulevard and Calvary Cemetery, was historically open space and farmland during the nineteenth century. However, waterfront industries began to dominate the southern portion of this area during the late nineteenth and early twentieth centuries. Residential, commercial, and industrial buildings began to occupy this area, often in the same block. This resource is a typical building constructed during the 1930s and 1940s to support the commercial activities of this area. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the construction of the elevated roadway and the reconfiguration of the block. The design, material, and workmanship of the building have been preserved.

F.12 54-38 43rd Street, Queens

F.12.a. Building Description

The residential building at 54-38 43rd Street, constructed between 1914 and 1929, is on Block 2516 just east of the Queens approach to the Kosciuszko Bridge. The steep grade of the street results in the house being a considerable distance from the street. A large concrete stair provides access from the street to the front entrance. A concrete retaining wall with a metal fence is located at the street. The modestly designed wood-frame building is constructed upon a brick foundation, and the building has been re-clad in aluminum siding. The cross-gable roof, the shed roof of the main entrance, and the shed roof of the additions at the rear are clad in asphalt shingles.

The main (east) elevation of 54-38 43rd Street has an English basement with two sliding metal windows piercing the lower level. The first story has been altered by the enclosing of the entrance porch at the first bay. A single-leaf, wood and glass door is located at the new entranceway. One-over-one double-hung, wood sash windows pierce the remaining two bays, at the gable front. The second-story is pierced by three 1/1 double-hung, wood sash windows.

The side (north) elevation abuts the adjacent building. The second story of 54-38 43rd Street is visible, and there are no openings at this elevation.

The rear (west) elevation faces an enclosed area and is inaccessible. The second-story is visible from public access. Three 1/1 double-hung, wood sash windows pierce this elevation.

The side (south) elevation faces a small yard that is enclosed by fencing. A single octagonal window opening pierces the first story.

F.12.b. NRHP Evaluation

The residential property at 54-38 43rd Street is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Queens, east of Laurel Hill Boulevard and Calvary Cemetery, was historically open space and farmland during the nineteenth century. However, waterfront industries began to dominate the southern portion of this area during the late nineteenth and early twentieth centuries. Residential, commercial, and industrial buildings began to occupy this area, often in the same block. This resource is a typical vernacular residential building constructed in this area of Queens during the first quarter of the twentieth century. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the reconfiguration of the block. The design of the building has been retained, but the material and workmanship of the building have been compromised by the re-cladding of the building, enclosing of the first story porch, and introduction of non-original windows.

F.13 54-42 43rd Street, Queens

F.13.a. Building Description

The residential building at 54-42 43rd Street, constructed between 1914 and 1929, is on Block 2516 just east of the Queens approach to the Kosciuszko Bridge. The steep grade of the street results in the house being a considerable distance from the street. A large, concrete stair provides access from the street to the front entrance. A concrete retaining wall with a chain link fence is located at the street. The modestly designed building is constructed upon a poured concrete foundation and the building has been re-clad in vinyl siding. The cross-gable roof, the shed roof of the main entrance, and the shed roof of the additions at the rear are clad in asphalt shingles.

The main (east) elevation of 54-42 43rd Street has an English basement with two sliding metal windows piercing the lower level. The first story has been altered by the enclosing of the entrance porch at the first bay. A single-leaf, metal door is located at the new entranceway. One-over-one double-hung, vinyl sash windows pierce the remaining two bays, at the gable front. The second-story is pierced by one sliding vinyl window and two 1/1 double-hung, vinyl sash windows.

The side (north) elevation faces 54-42 43rd Street. There are no openings at this elevation.

The rear (west) elevation faces an enclosed area and is inaccessible. The second-story is visible from public access. Three 1/1 double-hung, vinyl sash windows pierce this elevation.

The side (south) elevation faces a small yard that is enclosed by fencing. Two 1/1 double-hung, vinyl sash windows at the first story are visible from public space. There are no openings at the second story.

F.13.b. NRHP Evaluation

The residential property at 54-42 43rd Street is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Queens, east of Laurel Hill Boulevard and Calvary Cemetery, was historically open space and farmland during the nineteenth century. However, waterfront industries began to dominate the southern portion of this area during the late nineteenth and early twentieth centuries. Residential, commercial, and industrial buildings began to occupy this area, often in the same block. This resource is a typical vernacular residential building constructed in this area of Queens during the first quarter of the twentieth century. Research has not indicated that the property is associated with a historically significant person (Criterion B). The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the reconfiguration of the block. The design of the building has been retained, but the material and workmanship of the building have been compromised by the re-cladding of the building, enclosing of the first story porch, and introduction of non-original windows.

F.14 42-21 54th Drive, Queens

F.14.a. Building Description

The residential building at 42-21 54th Drive, constructed circa 1910, is on Block 2516 just east of the Queens approach to the Kosciuszko Bridge. 54th Drive dead-ends west of the lot, and the street services 42-21 54th Drive and the adjacent commercial building. The house faces 54th Drive. The foundation of the house is not visible and its material is unknown. The building has been re-clad in stucco. The front gable roof and the flat roof of the first story enclosed porch are clad in asphalt shingles and metal sheathing.

The one-and-a-half-story, four-bay wide, vernacular building has been extensively altered since its original construction during the first quarter of the twentieth century. The main (south) elevation of 42-21 54th Drive has a projecting storage shed with a single-leaf wood door at the lower level. A single sliding, metal window pierces the lower level of the house. The first story has been altered by the enclosing of the entrance porch at the first bay. The enclosed porch expands across the width of the main elevation and continues around the side (west) elevation. A single-leaf, wood and glass door is located at the new entranceway. 1/1 double-hung, metal sash windows pierce the remaining three bays. The two, second story windows at the gable front are 1/1 double-hung, metal sash windows.

The side (east) elevation faces the backyards of 54-42 and 54-38 43rd Street. There are no openings at this elevation.

The rear (north) elevation faces an enclosed area and is inaccessible. A one-story, front-gable addition projects from the rear elevation. Two 1/1 double-hung, metal sash windows pierce the gable end at the upper story. An interior stone chimney is located at the north end of the gable roof.

The side (west) elevation faces a commercial property. A single, sliding metal window pierces the enclosed porch. There are no openings at the upper story. A narrow walkway leads to the backyard along the edge of the lot.

F.14.b. NRHP Evaluation

The residential property at 42-21 54th Drive is recommended as **not eligible** for the National Register of Historic Places. It is not associated with an important event or trend (Criterion A). This area of Queens, east of Laurel Hill Boulevard and Calvary Cemetery, was historically open space and farmland during the nineteenth century. However, waterfront industries began to dominate the southern portion of this area during the late nineteenth and early twentieth centuries. Residential, commercial, and industrial buildings began to occupy this area, often in the same block. This resource is a typical vernacular residential building constructed in this area of Queens during the first quarter of the twentieth century. Research has not indicated that the property is associated with a historically significant person (Criterion B). The vernacular building has been extensively altered with the enclosing of the first story porch, stuccoing of the entire building, and the construction of unsympathetic additions. The building's design does not embody the distinctive characteristics of a type or method of construction nor is it representative of the work of a master (Criterion C). The property is not likely to yield information that is important in prehistory or history (Criterion D).

In addition to the property not being associated with an important historic context, its historic integrity has been compromised. The property has retained integrity of location, but the setting, feeling, and association have been lost with the reconfiguration of the block. The design of the building has been compromised with the construction and removal of additions. The material and workmanship have been have no longer retained integrity with the stuccoing of the building, enclosing of the first story porch, and introduction of non-original windows.

APPENDIX G. CORRESPONDENCE



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
HUNTERS POINT PLAZA
47-40 21ST STREET
LONG ISLAND CITY, N.Y. 11101

DOUGLAS A. CURREY, P.E.
REGIONAL DIRECTOR

PHILLIP ENG, P.E.
DEPUTY REGIONAL DIRECTOR

JOSEPH H. BOARDMAN
COMMISSIONER

January 13, 2005

Kathleen A. Howe
Historic Preservation Specialist
New York State Office of Parks, Recreation,
and Historic Preservation
Bureau of Historic Preservation
Pebbles Island, P.O. Box 189
Waterford, NY 12188-0189

Dear Ms. Howe:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration (FHWA), is preparing a Draft Environmental Impact Statement (DEIS) that will consider a range of options to improve the Kosciuszko Bridge, which crosses Newtown Creek between Brooklyn and Queens. The Kosciuszko Bridge Project will focus on a 1.1-mile segment of the Brooklyn-Queens Expressway (BQE) portion of Interstate 278, from Morgan Avenue in Brooklyn to the Long Island Expressway (LIE) interchange in Queens, including the Kosciuszko Bridge. Because FHWA and NYSDOT propose to use federal funds, the project is subject to compliance with Section 106 of the National Historic Preservation Act, and its implementing regulations, 36 CFR Part 800. NYSDOT wishes to initiate Section 106 consultation with your office for the Kosciuszko Bridge Project.

As part of I-278, the Kosciuszko Bridge is a vital link in the region's transportation network, connecting the BQE with the LIE, the region's major east-west highway. More than 170,000 vehicles use the bridge daily, including many trucks. It is highly congested during rush hours, affecting conditions not only on the BQE, but local streets as well. In addition, this section of the BQE has an above-average accident rate, and the deteriorated structural conditions of the bridge continue to require an aggressive maintenance program. NYSDOT recently completed the Alternatives Analysis phase of the project, selecting five (5) Build alternatives, along with the "No Build" alternative, to be studied in the DEIS. These alternatives include two (2) alternatives that would involve rehabilitation of the existing bridge and three (3) alternatives that would completely replace the existing bridge. Attached please find a schematic plan and profile sketch with description of staging activities for each of the five (5) Build alternatives and the No Build alternative.

Kathleen A. Howe
January 13, 2005
Page 2

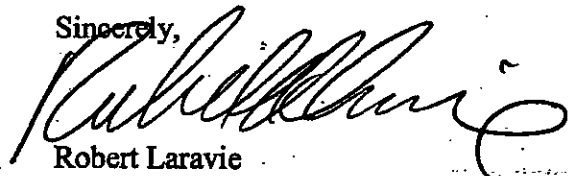
Pursuant to Section 800.4(a)(1) of the Section 106 regulations, an Area of Potential Effect (APE) needs to be determined for the proposed undertaking in order to properly assess the potential impacts to historic architectural and archaeological resources within the vicinity of the project. The scale of the proposed project and the potential construction requirements for the proposed improvements to this section of I-278 has led to the following recommendation of the APE for the project (see Figure 1). For archaeology, the APE will be within the Limits of Disturbance proposed for any of the alternatives under consideration. For architecture, the APE will be 500 feet east and west of the center line of the current I-278 roadway, between the LIE at the northern end of the project area and a point 500 feet beyond the proposed limits of disturbance at the project's southern terminus. The APE for architecture was designed to take into consideration potential audible or visual impacts, in addition to direct impacts from the proposed construction.

We request your concurrence on the proposed APE and appreciate your views pertaining to the proposed project.

The Project Team looks forward to future coordination with your office on the issues discussed above and in completing the environmental review and Section 106 processes. Please copy Parsons, who has been retained as our consultant for this project, on all correspondence (Mr. Steven Bennett, Project Manager, Parsons, 100 Broadway, New York, NY 10005). If you have any questions regarding the project, please contact Robert Adams, NYSDOT Project Manager, by telephone at (718) 482-4694 or by e-mail at kosciuszko@dot.state.ny.us.

Thank you for your time and anticipated cooperation in this matter.

Sincerely,



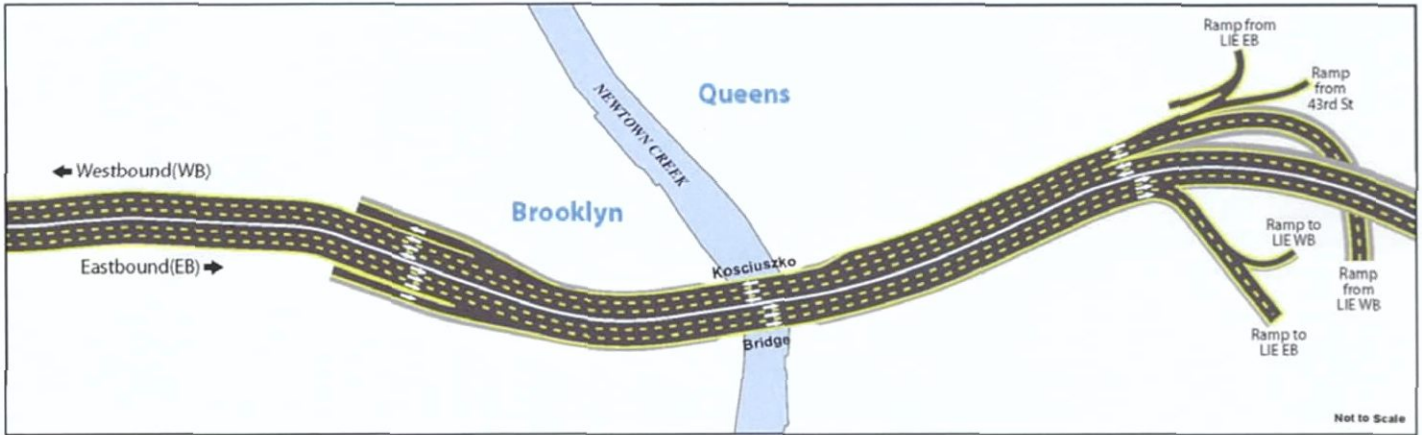
Robert Laravie
Regional Environmental Coordinator
NYSDOT - Region 11

Enclosures

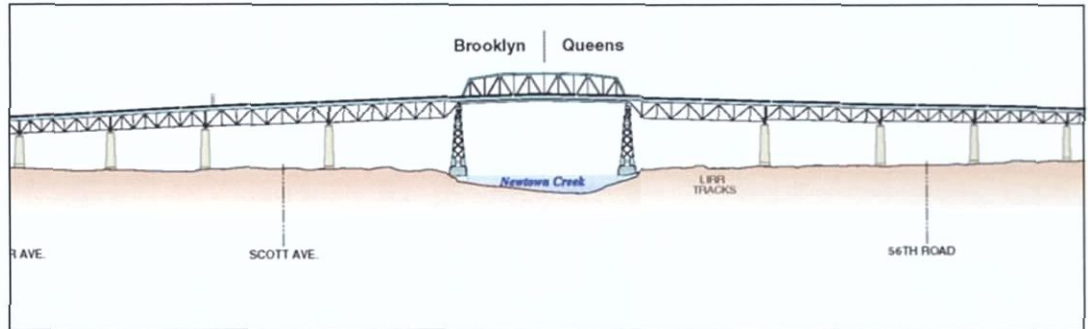
cc: D. Hitt, Cultural Resources, NYSDOT Environmental Analysis Bureau
G. Santucci, Environmental Review Coord., NYC Landmarks Preservation Commission
File

No Build Alternative

The No Build Alternative makes no physical or operational improvements to the Kosciuszko Bridge, but continues NYSDOT's aggressive maintenance program.



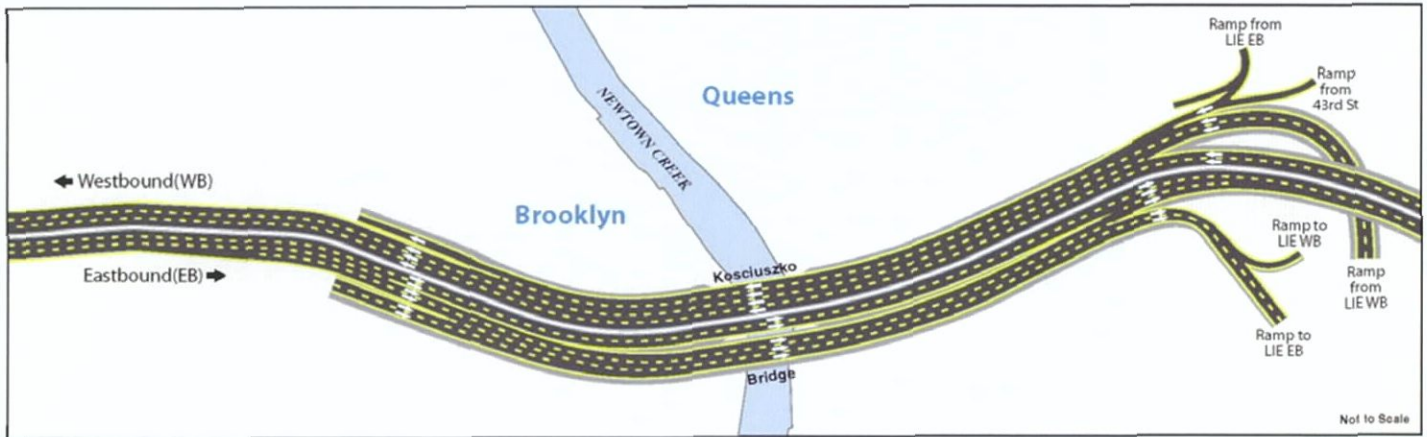
The existing bridge, and its steep grades, would remain as it is today.



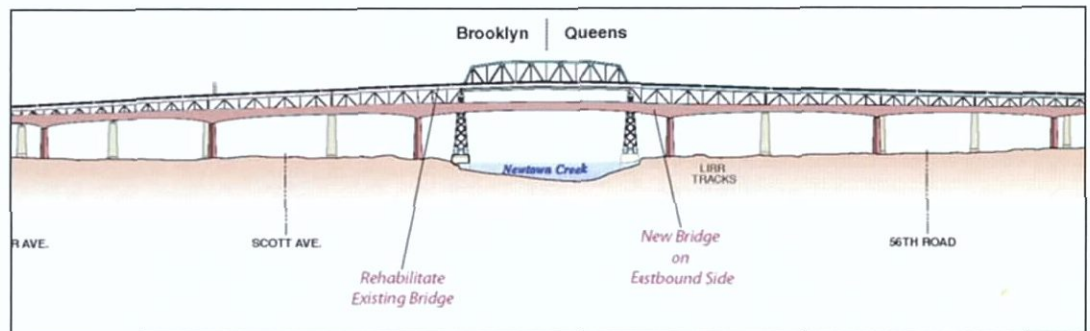
Alternative RA-5

Rehabilitation with New Parallel Bridge on Eastbound Side

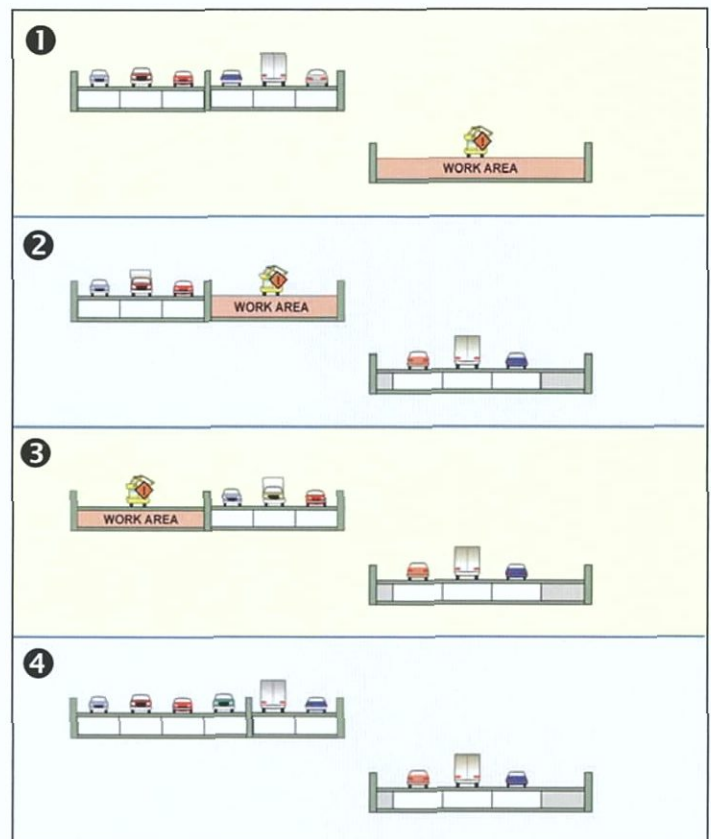
Alternative RA-5 rehabilitates the existing bridge and constructs a new parallel bridge on the eastbound side.



The parallel bridge would be built at a lower elevation to allow for lower grades.



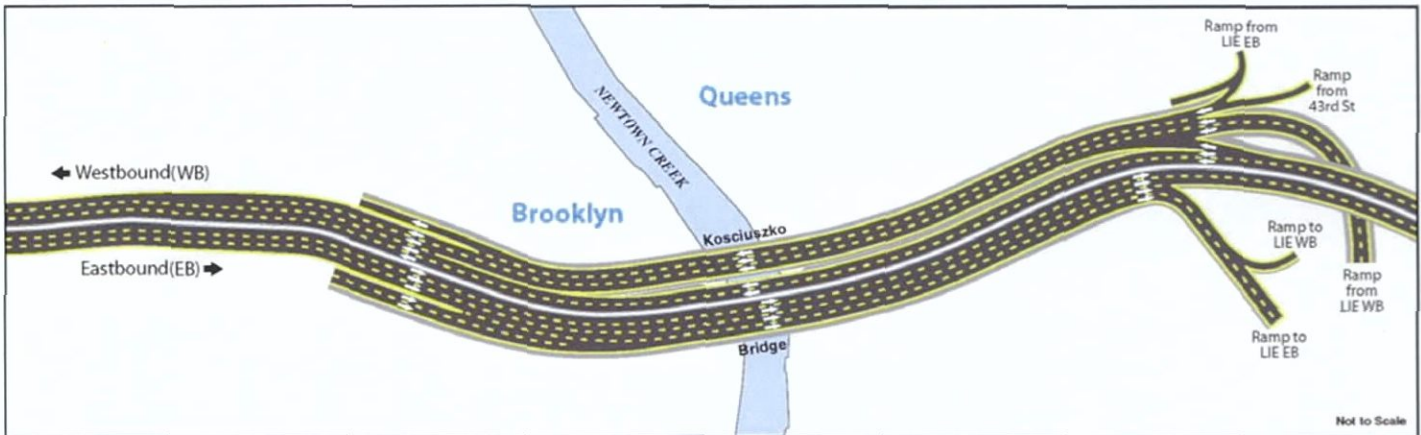
Alternative RA-5 would be constructed by first building a 3-lane parallel structure on the eastbound side of the existing bridge (1) and then rehabilitating the existing bridge in two stages (2 3). When completed, the new bridge would carry three lanes of eastbound traffic and have standard lane widths and shoulders (4). The existing bridge would continue to carry six lanes of traffic (2 eastbound, 4 westbound), maintaining the existing narrow lane widths and non-standard (narrow) shoulders.



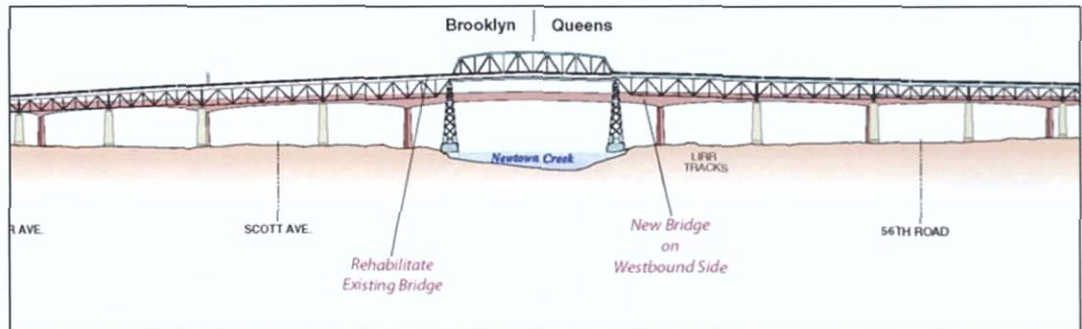
Alternative RA-6

Rehabilitation with New Parallel Bridge on Westbound Side

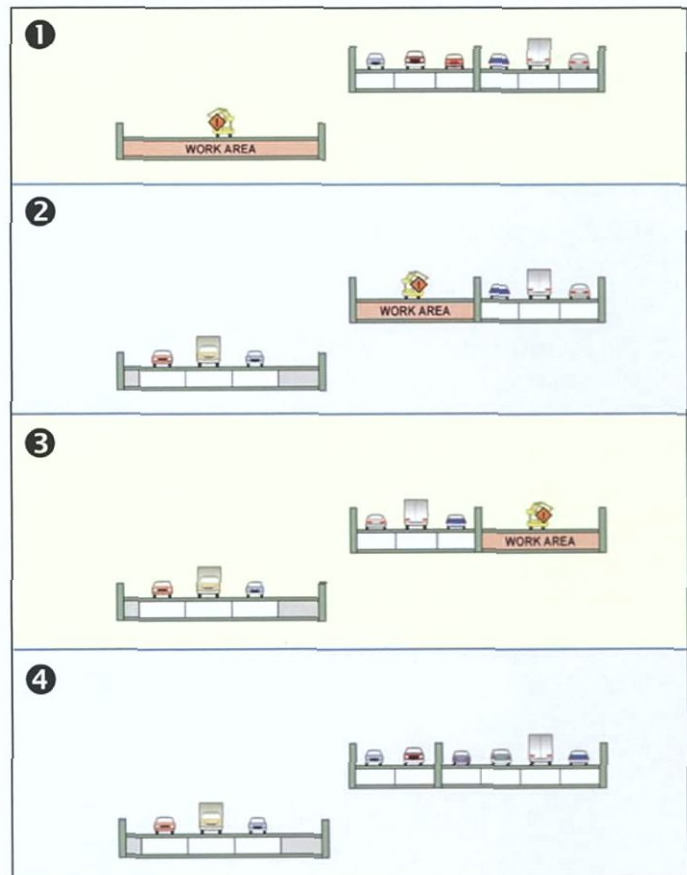
Alternative RA-6 rehabilitates the existing bridge and constructs a new parallel bridge on the westbound side.



The parallel bridge would be built at a lower elevation to allow for lower grades.



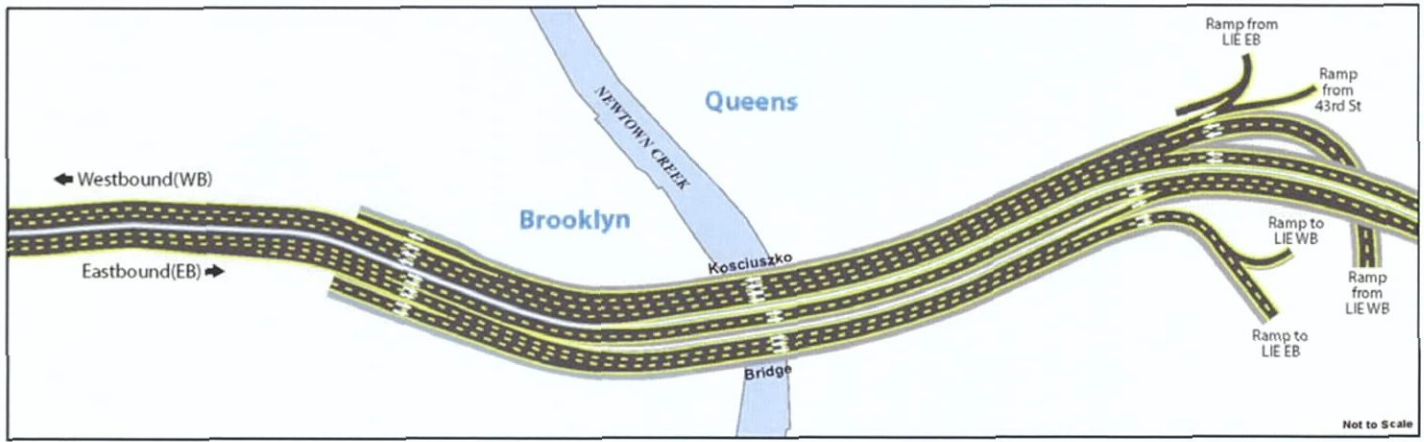
Alternative RA-6 would be constructed by first building a 3-lane parallel structure on the westbound side of the existing bridge (1) and then rehabilitating the existing bridge in two stages (2 3). When completed, the new bridge would carry three lanes of westbound traffic and have standard lane widths and shoulders (4). The existing bridge would continue to carry six lanes of traffic (4 eastbound, 2 westbound) maintaining the existing narrow lane widths and non-standard (narrow) shoulders.



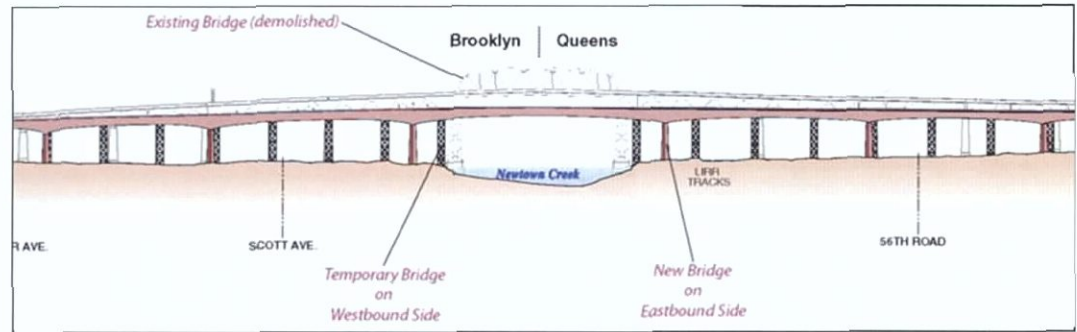
Alternative BR-2

New Bridge on Same Route – Option 1

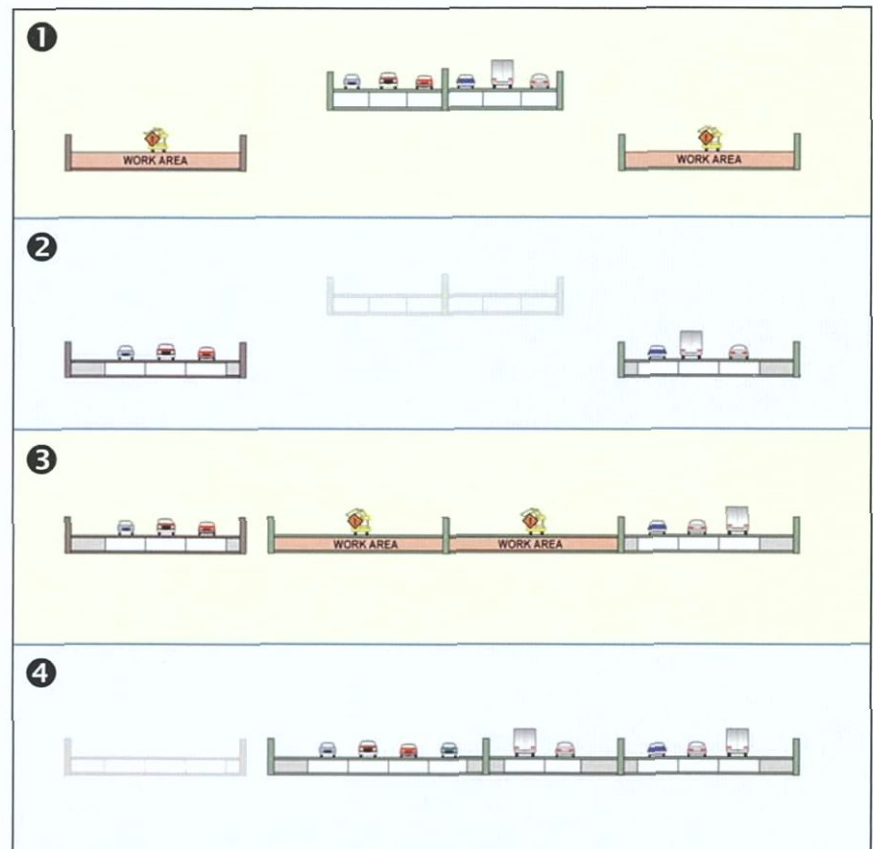
Alternative BR-2 replaces the existing bridge with a new bridge by building new parallel bridges on both sides of the existing bridge – one temporary, one permanent.



The new bridge would be built at a lower elevation to allow for lower grades.



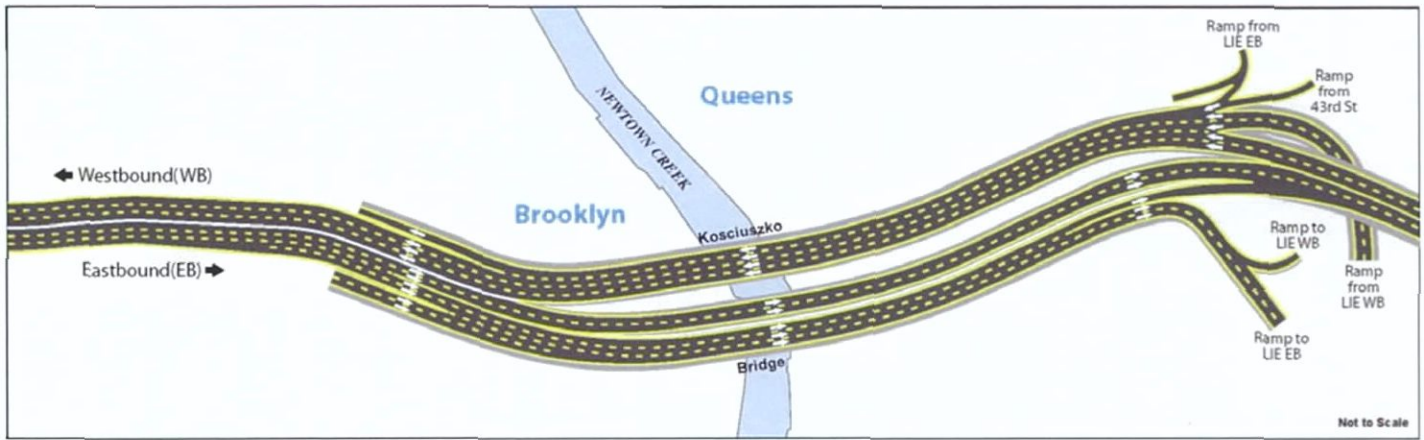
Alternative BR-2 would be constructed by building 3-lane parallel structures on each side of the existing bridge – the eastbound bridge would be permanent and the westbound one temporary (1). The old bridge would be demolished (2) and a new structure built in its place (3). When the new bridge is complete, the temporary westbound bridge would be demolished (4). When completed the new bridge would carry five lanes of eastbound traffic and four lanes of westbound traffic and have standard lane widths and shoulders.



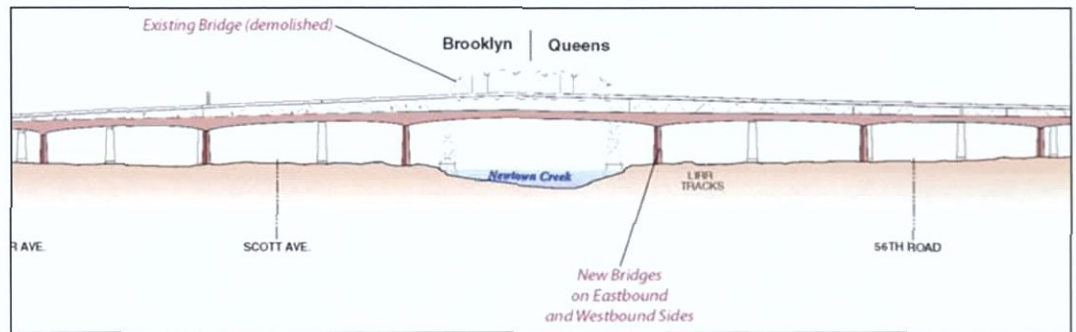
Alternative BR-3

New Bridge on Same Route – Option 2

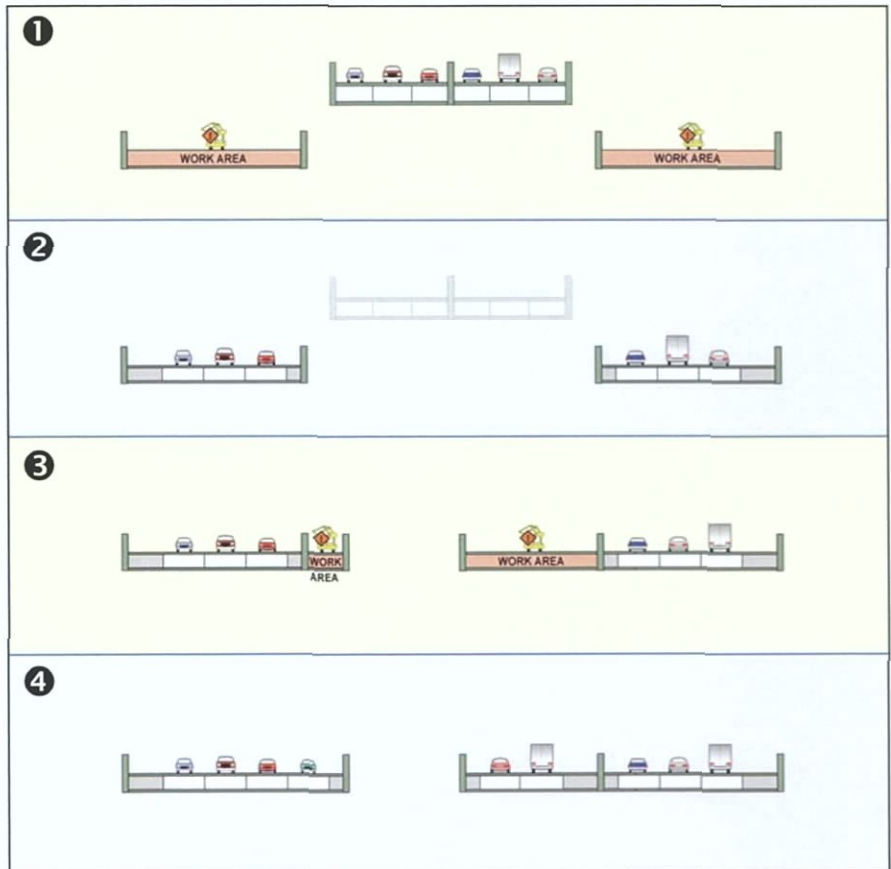
Alternative BR-3 replaces the existing bridge with a new bridge by building new parallel bridges on both sides of the existing bridge.



The new bridge would be built at a lower elevation to allow for lower grades.



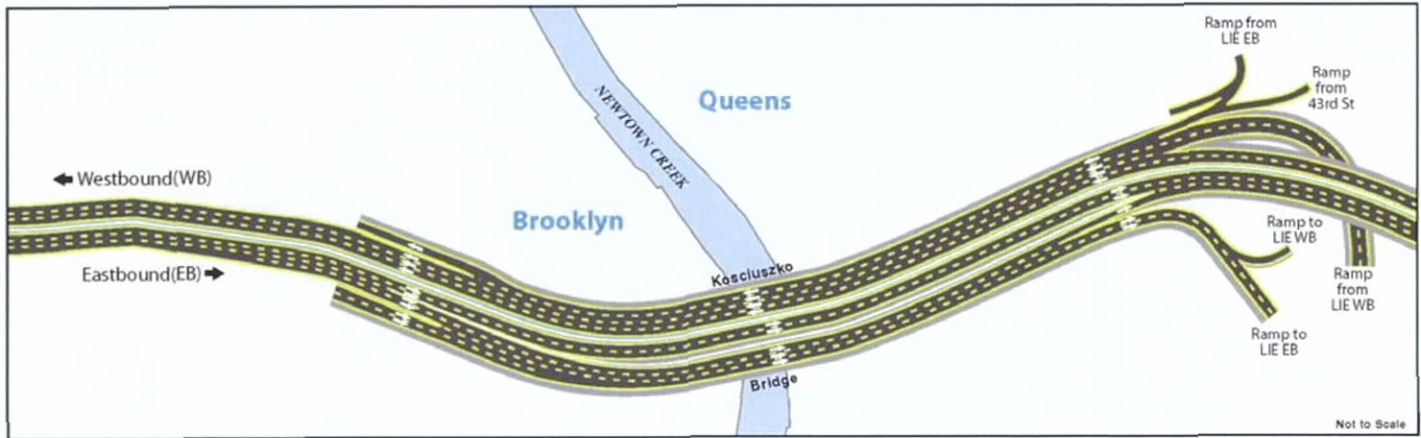
Alternative BR-3 would be constructed by building 3-lane parallel structures on each side of the existing bridge (1). The old bridge would be demolished (2) and a new structure built in its place (3). When completed the new bridge would carry five lanes of eastbound traffic and four lanes of westbound traffic and have standard lane widths and shoulders (4).



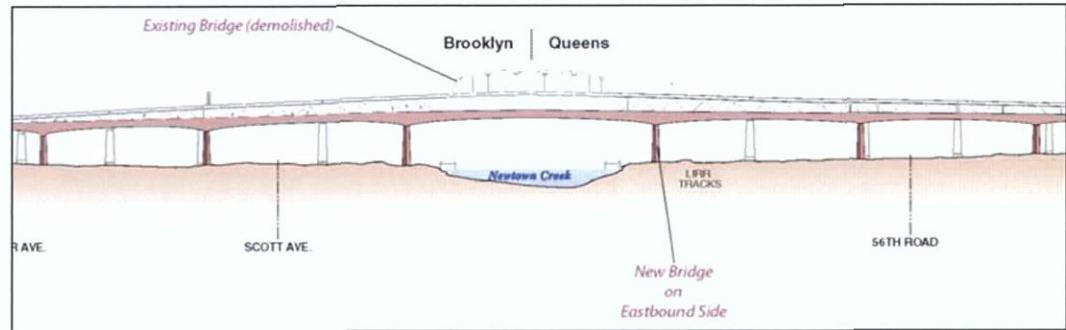
Alternative BR-5

New Bridge on Same Route – Option 4

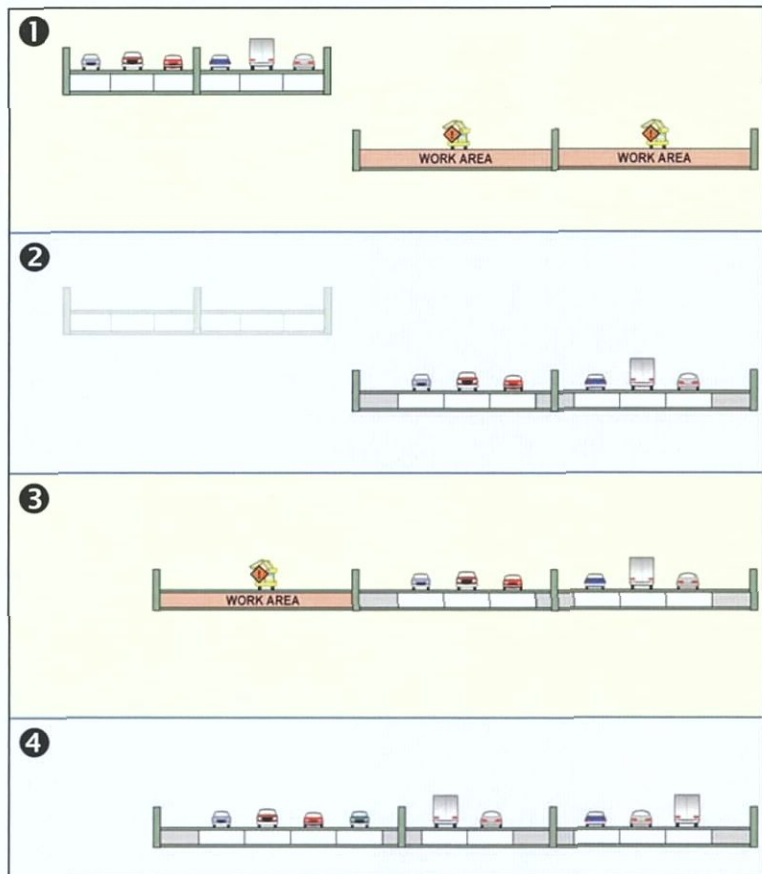
Alternative BR-5 replaces the existing bridge with a new bridge by building new permanent, parallel bridge on the eastbound side of the existing bridge.



The new bridge would be built at a lower elevation to allow for lower grades.





Alternative BR-5 would be constructed by building a 6-lane parallel structure on the eastbound side of the existing bridge (1). The old bridge would be demolished (2) and a new structure built in its place (3). When completed, the new bridge would carry five lanes of eastbound traffic and four lanes of westbound traffic and have standard lane widths and shoulders (4).





LEGEND

-  Area of Potential Effect, Archaeology and Architecture
-  Area of Potential Effect, Architecture



0 250 500 1,000
Feet

1 inch equals 1,000 feet

Figure 1
Proposed Area of Potential Effect (APE)
for Archaeology and Architecture





New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

February 3, 2005

Robert Laravie
Regional Environmental Coordinator
NYSDOT Region 11
Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101

Dear Mr. Laravie,

Re: FHWA/DOT
Kosciuszko Bridge Project
I-278, Brooklyn Queens Expressway
Kings and Queens Counties, NY
05PR00256

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO) with regard to the potential for this project to affect significant historical/cultural resources. SHPO has reviewed your correspondence of January 13, 2005 and we concur with the outlined Preliminary Areas of Potential Effect for architecture and archaeology.

We look forward to continued consultation regarding this project as it progresses. Please contact Kathy Howe at extension 3266 if you have any questions regarding structural issues, or myself at extension 3291, if you have any questions regarding archaeology.

Sincerely

Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology

Cc: Daniel Hitt, NYSDOT-EAB
Steven Bennett, Parsons.



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

Bernadette Castro
Commissioner

In an effort to better serve the public and other agencies, the New York State Historic Preservation Office (SHPO) is introducing its **On Line Resource Center**. This tool is part of our new web site. Simply go to www.nysparks.state.ny.us/shpo and select **On Line Resources** from the menu. Here users will discover links to three new web based programs:

Geographic Information System (GIS)

A map based program that allows the user to select a community and view the boundaries of properties listed in the State and National Registers of Historic Places in New York State. The site also allows the user the ability to see a graphic depiction of areas that may be archeologically sensitive. These two components will provide most users with a comprehensive initial overview of the cultural resources of a specific location within the state.

National Register Document Imaging Program

This program contains the images of New York's more than 4,400 State and National Registers of Historic Places documents. An easy search program allows the user to select listed resources by community, type, style, materials, or historic use.

SPHINX (State Preservation Historic Inventory Network Exchange)

This system provides access to the State Historic Preservation Office's program-wide database for bureau records. This database includes information on more than 250,000 addresses in the state. (requires a password signup)

We are requesting that you utilize these applications to determine the *general* presence or absence of cultural resources in your community or project area **prior** to submitting a request for this data to our office. It is expected that these on-line tools should eliminate your need to submit information queries where only the State Environmental Quality Review Act (SEQRA) is involved. Consultation with the SHPO is mandatory when there is any state or federal involvement in a project.

If you should have questions regarding these new programs please do not hesitate to contact John Bonafide at (518) 237-8643, ext. 3263

Thank you for your assistance in helping us to streamline our process and to better meet your needs.

ATTENTION

Please find attached a REVISED Project Review Cover Form. This new version replaces the one currently in circulation. Please include this form with ALL submissions to this office.



PROJECT REVIEW COVER FORM

Rev. 10-04

Please complete this form and attach it to the top of any and all information submitted to this office for review.
 Accurate and complete forms will assist this office in the timely processing and response to your request.

This information relates to a previously submitted project.

PROJECT NUMBER PR

COUNTY _____

If you have checked this box and noted the previous Project Review (PR) number assigned by this office you do not need to continue unless any of the required information below has changed.

2. This is a new project.

If you have checked this box you will need to complete ALL of the following information.

Project Name _____

Location _____

You MUST include street number, street name and/or County, State or Interstate route number if applicable

City/Town/Village _____

List the correct municipality in which your project is being undertaken. If in a hamlet you must also provide the name of the town.

County _____

If your undertaking* covers multiple communities/counties please attach a list defining all municipalities/counties included.

TYPE OF REVIEW REQUIRED/REQUESTED (Please answer both questions)

A. Does this action involve a permit approval or funding, now or ultimately from any other governmental agency?

No Yes

If Yes, list agency name(s) and permit(s)/approval(s)

Agency Involved	Type of permit/approval	State	Federal
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

B. Have you consulted the NYSHPO web site at <http://www.nysparks.state.ny.us/shpo> to determine the preliminary presence or absence of previously identified cultural resources within or adjacent to the project area? If yes:

Yes No

Was the project site wholly or partially included within an identified archeologically sensitive area?

Yes No

Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the NY State or National Registers of Historic Places?

Yes No

CONTACT PERSON FOR PROJECT

Name _____ Title _____

Firm/Agency _____

Address _____ City _____ STATE _____ Zip _____

Phone (____) _____ Fax (____) _____ E-Mail _____

The Historic Preservation Review Process in New York State

In order to insure that historic preservation is carefully considered in publicly-funded or permitted undertakings*, there are laws at each level of government that require projects to be reviewed for their potential impact/effect on historic properties. At the federal level, Section 106 of the National Historic Preservation Act of 1966 (NHPA) directs the review of federally funded, licensed or permitted projects. At the state level, Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law of 1980 performs a comparable function. Local environmental review for municipalities is carried out under the State Environmental Quality Review Act (SEQRA) of 1978: (regulations on line at: www.nysparks.state.ny.us/shpo Environmental Review)

Project review is conducted in two stages. First, the Field Services Bureau assesses affected properties to determine whether or not they are listed or eligible for listing in the New York State or National Registers of Historic Places. If so, it is deemed "historic" and worthy of protection and the second stage of review is undertaken. The project is reviewed to evaluate its impact on the properties significant materials and character. Where adverse effects are identified, alternatives are explored to avoid, or reduce project impacts; where this is unsuccessful, mitigation measures are developed and formal agreement documents are prepared stipulating these measures.

ALL PROJECTS SUBMITTED FOR REVIEW SHOULD INCLUDE THE FOLLOWING MATERIAL(S).

Project Description

Attach a full description of the nature and extent of the work to be undertaken as part of this project. Relevant portions of the project applications or environmental statements may be submitted.

Maps Locating Project

Include a map locating the project in the community. The map must clearly show street and road names surrounding the project area as well as the location of all portions of the project. Appropriate maps include tax maps, Sanborn Insurance maps, and/or USGS quadrangle maps.

Photographs

Photographs may be black and white prints, color prints, or color laser/photo copies; standard (black and white) photocopies are NOT acceptable.

-If the project involves rehabilitation, include photographs of the building(s) involved. Label each exterior view to a site map and label all interior views.

-If the project involves new construction, include photographs of the surrounding area looking out from the project site. Include photographs of any buildings (more than 50 years old) that are located on the project property or on adjoining property.

NOTE: Projects submissions will not be accepted via facsimile or e-mail.

* **Undertaking** is defined as an agency's purchase, lease or sale of a property, assistance through grants, loans or guarantees, issuing of licenses, permits or approvals, and work performed pursuant to delegation or mandate.



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
HUNTERS POINT PLAZA
47-40 21ST STREET
LONG ISLAND CITY, N.Y. 11101

DOUGLAS A. CURREY, P.E.
REGIONAL DIRECTOR

PHILLIP ENG, P.E.
DEPUTY REGIONAL DIRECTOR

THOMAS J. MADISON, JR.
COMMISSIONER

February 28, 2006

Kathleen A. Howe
Historic Preservation Specialist
New York State Office of Parks, Recreation,
and Historic Preservation
Bureau of Historic Preservation
Peebles Island, P.O. Box 189
Waterford, NY 12188-0189

**RE: PIN X729.77
KOSCIUSZKO BRIDGE PROJECT
I-278, BROOKLYN-QUEENS EXPWY
KINGS & QUEENS COUNTIES, NY
05PR00256**

Dear Ms. Howe:

As described in earlier correspondence, the New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration, is preparing a Draft Environmental Impact Statement (DEIS) that will consider a range of options to improve the Kosciuszko Bridge, which crosses Newtown Creek between Brooklyn and Queens. The DEIS will focus on a 1.1-mile segment of the Brooklyn-Queens Expressway (BQE) portion of Interstate 278, from Morgan Avenue in Brooklyn to the Long Island Expressway interchange in Queens, including the Kosciuszko Bridge.

In February 2005, your office concurred with the Area of Potential Effects (APE) proposed by the NYSDOT for both architecture and archaeology. The APE for historic architectural resources was defined as the area within 500 feet of the centerline of the proposed bridge reconstruction project. However, additional field investigation of existing conditions and re-assessment of the potential for visual effects now prompt a recommendation that the historic architectural APE be re-delineated as described and shown in the attached memorandum.

Please note that no revision of the APE for archaeology is proposed. The APE for archaeology is defined as the area within the Limits of Disturbance for any of the alternatives under consideration.

Kathleen A. Howe
February 28, 2006
Page 2

We request your concurrence on the proposed revision to the APE for historic architectural resources and appreciate your views pertaining to the proposed project. If we do not hear from you within 30 days, we will assume you concur with our revised APE and will proceed with our data collection and analysis.

The Project Team looks forward to future coordination with your office on the issues discussed above and in completing the environmental review and Section 106 processes. If you have any questions regarding the project, please contact Robert Adams, NYSDOT Project Manager, by telephone at (718) 482-4694 or by e-mail at kosciuszko@dot.state.ny.us.

Thank you for your time and anticipated cooperation in this matter.

Sincerely,



Robert Laravie
Regional Environmental Coordinator
NYSDOT - Region 11

Enclosures

cc: T. Breslin, Federal Highway Administration
N. Tatevossian, Director of Structures, NYSDOT, Region 11
H. Fink/R. Adams, Structures, NYSDOT, Region 11
P/ Dunleavy/W. Mausling, Design, NYSDOT, Region 11
D. Hitt, Cultural Resources, NYSDOT, Environmental Analysis Bureau
G. Santucci, Environmental Review Coord., NYC Landmarks Preservation Commission
File

To: Robert Adams, P.E.
NYSDOT-Region 11

From: Anthony Lee, AICP

Subject: **Kosciuszko Bridge Project**
Area of Potential Effect for Historic Architectural Resources and
Tasks Necessary for Regulatory Compliance

Date: February 14, 2006

This memorandum summarizes the analysis supporting the proposed revision of the Area of Potential Effects (APE) for historic architectural resources for the *Kosciuszko Bridge Project* in Brooklyn and Queens.

The existing APE, delineated by NYSDOT with the concurrence of the State Historic Preservation Officer (SHPO), is defined as the area within 500 feet of the centerline of the proposed bridge rehabilitation/reconstruction project. Additional field investigation of existing conditions and re-assessment of the potential for visual effects now prompt a recommendation that the historic architectural APE be re-delineated as shown in **Figure 1**. (The APE for archaeology remains unchanged and is shown in **Figure 2**.)

1. Advisory Council's Definitions

The Advisory Council on Historic Preservation (ACHP) defines the **Area of Potential Effects** as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The Area of Potential Effects is influenced by the nature and scale of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16(d)).

ACHP defines an **Effect** as an alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register (36 CFR 800.16(i)).

2. Project Characteristics

The following project characteristics were taken into account when determining the appropriate APE:

- New structure on essentially same alignment
- Larger "footprint" (wider overall)
- Slightly lower profile
- Fewer piers due to longer spans
- Beam rather than deck- and through-truss structure

3. Characteristics of Existing Built Environment

The existing bridge and approaches extend through several distinct built environments:

Brooklyn, north of the Brooklyn-Queens Expressway (BQE) between Monitor and Van Dam Streets, and south of BQE around Monitor and Kingsland

- Dense urban residential area, with long, fully built-out blocks with late 19th- to early 20th-century three-story rowhouses. Commercial/residential mixed use concentrated along Meeker facing the BQE.
- Sight lines are rather narrow, limited to views up and down the streets.
- Elevated BQE appears (and in fact is) lower than most buildings in this area, and as a result recedes quickly into the background; bridge itself is not part of viewshed. [Photos 1, 2, and 3]

Brooklyn, north of BQE east of Van Dam Street, and south of BQE east of Vandervoort Street

- Relatively open areas containing a wide variety of industrial and warehousing activities, in one- or two-story buildings dating from the very late 19th/early 20th century to present, plus large areas devoted to open materials storage; some parcels vacant.
- Gradually rising bridge approach is a strong visual element. [Photos 4 and 5]

Queens, south of BQE

- Mixed-use area dominated by industrial/warehousing, with scattered remnants of a formerly more densely built-up residential/industrial development. The land rises noticeably as one moves away from (southeast) of the bridge approach, so that toward the north end of the project the approach structure loses visual prominence. [Photos 6 and 7]

Queens, north of BQE

- Principal feature is Calvary Cemetery, a large expanse of hilly ground with wholly unobstructed views of the bridge and the Queens approach. [Photo 8]
- Review Avenue runs along south side of cemetery, which is edged with high stone retaining walls. The large scale of the bridge and of its steel members are clearly appreciable from this street, which is lined with industrial complexes ranging in date from the late 19th century to the late 20th century. [Photo 9]

4. Proposed Area of Potential Effect for Historical/Architectural Resources

Various actions related to the reconstruction of the Kosciuszko Bridge could result in effects to properties in the vicinity of the project, ranging from the physical destruction of all or part of a property to the introduction of secondary visual, atmospheric, or audible effects that compromise a property's historic integrity. The potential for each type of effect to occur was used to identify locations that should be included within the APE.

a.) Potential effects involving destruction of or damage to all or part of a historic property:

The area in which these kinds of effects could occur would encompass the existing bridge and approach corridor, as well as the corridors of proposed new alignments up- or downstream, as follows:

- All locations where buildings are to be removed (demolished).

- All locations where buildings could suffer damage during demolition of adjacent buildings (shared party walls or foundations, or proximity that could place them in the way of construction equipment).
- All locations where buildings within a lateral distance of 90 feet from the outer limits of construction/demolition could suffer damage from vibration (consistent with NYC Department of Buildings Technical Policy and Procedure Notice #10/88 regarding "fragile" buildings (including historic buildings)).

b.) Potential effects involving change of the character of a property's use or of physical features within a property's setting (including introduction of incompatible visual, atmospheric, or audible elements) that contribute to its historical significance:

The project proposes to rehabilitate or replace the existing bridge in essentially the same location to maintain this important transportation artery. The existing built environment is a dynamic urban setting of multiple land uses and will remain so if the project proceeds. The project will not introduce any new features that are inconsistent or incompatible with those already present in the built environment, or out of character with this built environment's historical development.

The potential of the project to diminish the integrity of a historic property's significant historic features therefore is limited to the following locations in which the existing bridge and/or its approaches are dominant features of the immediate setting:

Brooklyn, north of BQE

- Between Monitor and Van Dam streets, all lots fronting on Meeker Avenue.
- East of Van Dam Street, entire area between Meeker Avenue, the BQE, and Newtown Creek.

Brooklyn, south of BQE

- Between Monitor and Morgan avenues, the area between the BQE and Lombardy Street; also lots fronting on the south side of Lombardy Street.
- East of Morgan Avenue, the area between the BQE and Anthony Street, plus lots fronting on south side of Anthony Street, to Newtown Creek.

Queens, west of BQE

- Eastern portion of Calvary Cemetery.
- Areas between Review Avenue and Newtown Creek for a distance of approximately 1,000 feet along Review Avenue; and between Laurel Hill Boulevard and Newtown Creek.

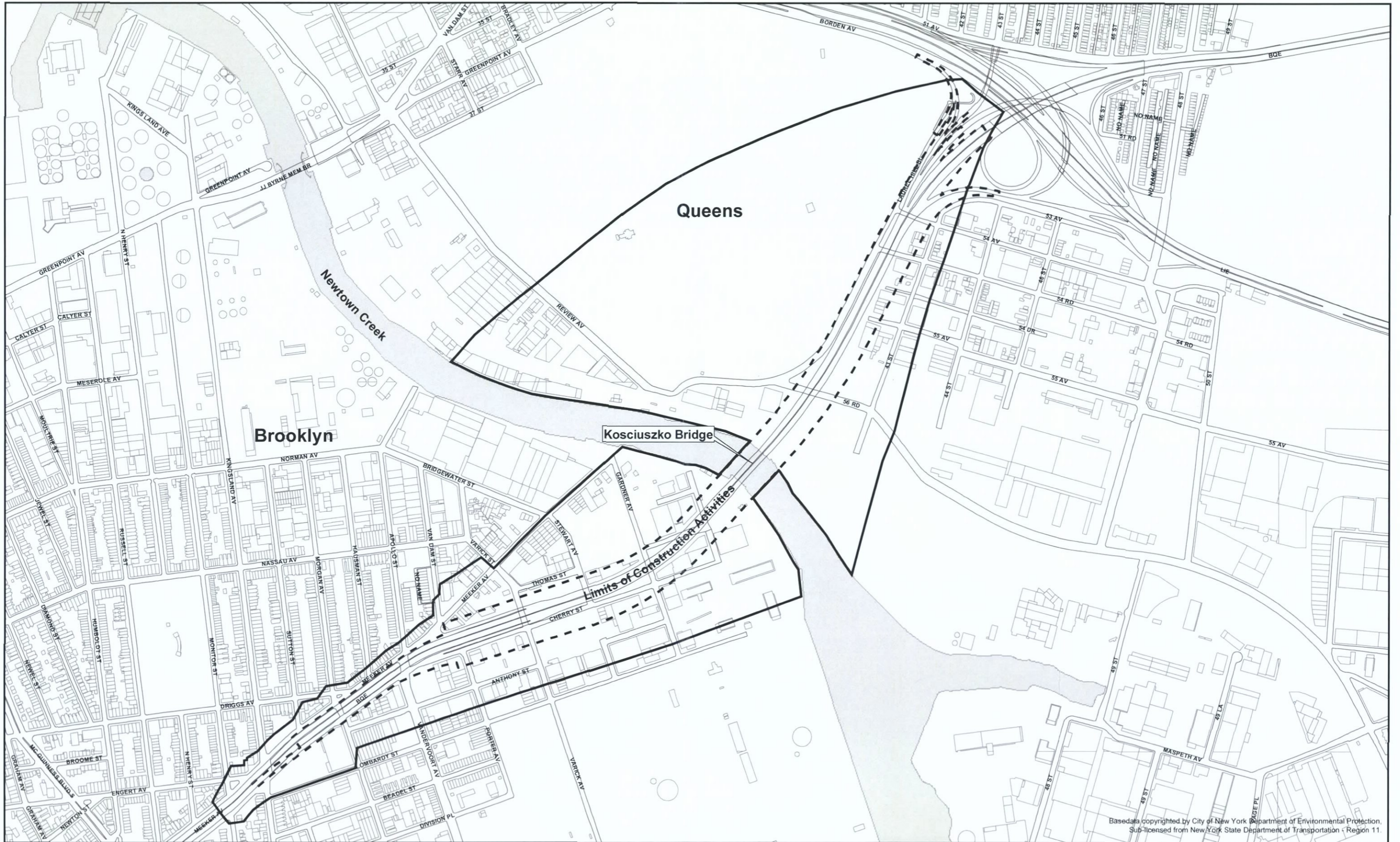
Queens, east of BQE

- Blocks between the BQE and 43th Street, plus lots fronting on west side of 43th Street, from 53rd Avenue to 56th Road.

In addition, as may be determined during the field survey and evaluation of buildings in the above locations, the APE would include any significant concentrations of resources partially within but also extending beyond these locations that may constitute potential districts.


5. Conclusion

This APE considers the nature and scale of the proposed project, the existing built environment in which it will occur, and the various ways in which the project could reasonably affect historic properties. The APE provides an appropriate basis for taking into account the effects of the proposed Kosciuszko Bridge Project on historic properties.



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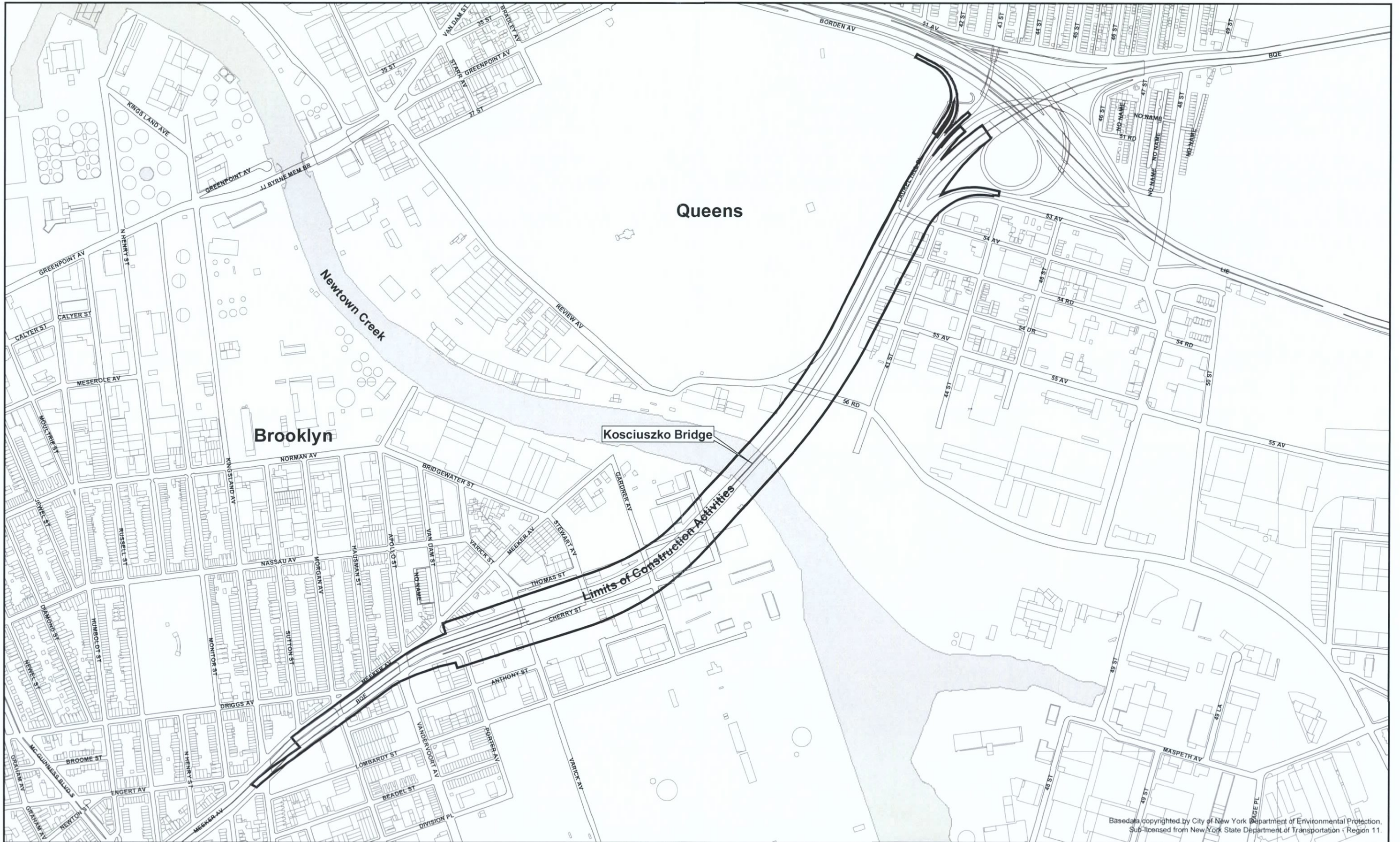
Figure 1
Revised Architectural Area of Potential Effect

-  Limits of Construction Activities
-  Area of Potential Effect - Architecture









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Figure 2
Archaeological Area of Potential Effect

— Area of Potential Effect - Archaeology

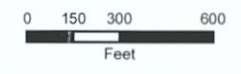




PHOTO 1: VIEW SOUTH ALONG SUTTON STREET



PHOTO 2: VIEW SOUTH ON KINGSLAND AVENUE FROM DRIGGS AVENUE



PHOTO 3: VIEW EAST ALONG DRIGGS AVENUE



PHOTO 4: VIEW NORTHEAST ON MEEKER AVENUE AT WESTBOUND EXIT RAMP



PHOTO 5: VIEW NORTHEAST ON MEEKER AVENUE AT STEWART STREET



PHOTO 6: VIEW NORTH ON PORTER AVENUE AT ANTHONY STREET



PHOTO 7: VIEW WEST ON 56TH ROAD AT UPS FACILITY



PHOTO 8: VIEW OF THE KOSCIUSZKO BRIDGE FROM CALVARY CEMETERY

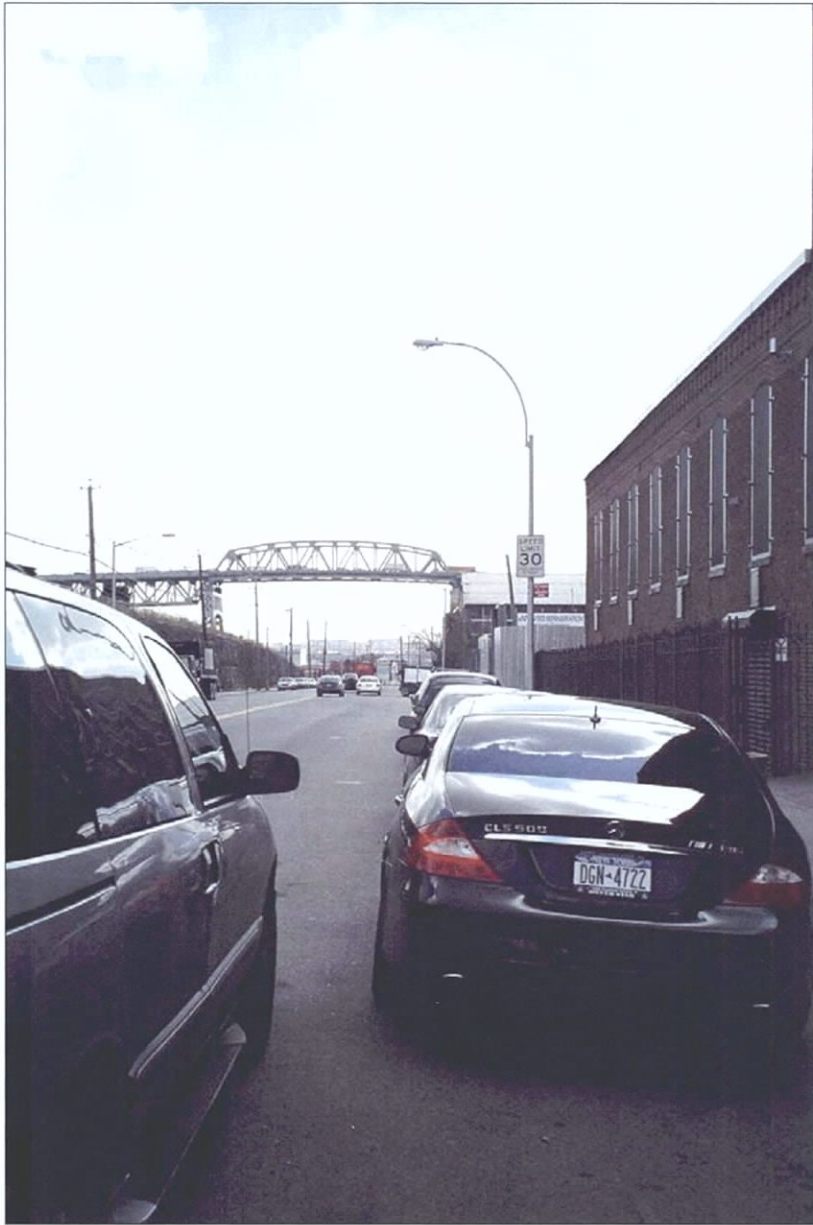


PHOTO 9: VIEW OF THE KOSCIUSZKO BRIDGE FROM REVIEW AVENUE LOOKING SOUTHEAST



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Pebbles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

Bernadette Castro
Commissioner

March 6, 2006

Robert Laravie
Regional Environmental Coordinator
NYSDOT Region 11
Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101

RE: FHWA/DOT
Kosciuszko Bridge Project
I-278, Brooklyn-Queens Expressway
Kings and Queens Counties, NY
05PR00256

Dear Mr. Laravie:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO) with regard to the potential of this project to affect significant historic architectural resources. SHPO has reviewed your correspondence of February 28, 2006 and we concur with the proposed revision of the Area of Potential Effects (APE) for historic architectural resources in Brooklyn and Queens.

We look forward to continued consultation regarding this project as it progresses. If you have any questions please contact me at 518-237-8643 extension 3266.

Sincerely,

Kathleen A. Howe
Historic Preservation Specialist

cc: Robert Adams, NYSDOT
Anthony Lee, Parsons



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

July 21, 2006

Mr. Robert Adams
Project Manager
State of New York Department of Transportation
Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101

RE: PIN X729.77
Kosciuszko Bridge Project
I-278, Brooklyn-Queens Expressway
Kings & Queens Counties
05PR00256

Dear Mr. Adams:

Thank you for requesting the comments of the State Historic Preservation Office concerning your project's potential effect upon historic resources. We have reviewed the *Draft Determination of Eligibility: Kosciuszko Bridge* and the *Draft Cultural Resources Survey Report for the Kosciuszko Bridge Project* both dated July 17, 2006 in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966.

We concur with your assessment that the Kosciuszko Bridge and the Old Calvary Cemetery meet the National Register criteria for listing. Attached are the Resource Evaluations for these two National Register eligible historic resources. We also concur with your assessment that the remaining 95 buildings/structures identified within the APE do not meet the National Register criteria.

We look forward to ongoing consultation for this project. If you have any questions regarding this review, please call me at (518) 237-8643, ext. 3266. Please refer to the Project Review (PR) number noted above in any correspondences.

Sincerely,

Kathleen A. Howe
Historic Preservation Specialist

cc: Gina Santucci, LPC
enc. Resource Evaluations



New York State Office of Parks, Recreation and Historic Preservation
 Historic Preservation Field Services Bureau
 Peebles Island, PO Box 189, Waterford, New York 12182-0189

518-237-8643

RESOURCE EVALUATION

DATE: 07/20/06

STAFF: Kathy Howe

PROPERTY: Kosciuszko Bridge (BIN 1075699)

MCD: Brooklyn & Queens

ADDRESS: I-278, Brooklyn-Queens Expressway over

COUNTY: Kings & Queens

Newtown Creek

PROJECT REF: 05PR00256 (PIN X729.77)

USN: 04701.015621

08101.009757

- I. Property is individually listed on SR/NR:
 name of listing:
- Property is a contributing component of a SR/NR district:
 name of district:
- II. Property meets eligibility criteria.
- Property contributes to a district which appears to meet eligibility criteria.

Pre SRB: Post SRB: SRB date

Criteria for Inclusion in the National Register:

- A. Associated with events that have made a significant contribution to the broad patterns of our history;
- B. Associated with the lives of persons significant in our past;
- C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;
- D. Have yielded, or may be likely to yield information important in prehistory or history.

STATEMENT OF SIGNIFICANCE:¹

The Kosciuszko Bridge is a fixed, multiple span, combination (deck and through) Warren truss bridge with overhead bracing. Part of the six-lane, Brooklyn-Queens Expressway (I-278) in Queens and Kings Counties, New York, the bridge spans Newtown Creek and the truss spans extend northeast from Maeker Avenue and Varick Street in Greenpoint, Brooklyn, to Laurel Hill Boulevard and 54th Street in

¹ The Statement of Significance is excerpted from *Draft Determination of Eligibility: The Kosciuszko Bridge* (BIN 1075699), prepared by Laura H. Hughes, Laura V. Treischmann, Janet Emery Flynn, Laura FitzGerald of EHT Tracerics, Inc., July 17, 2006: pp. 12 and 67.

Queens. Built in 1939, the bridge meets National Criterion C in the area of engineering design as a significant and unusual variation of the Warren truss type.

Whereas most eligible bridges have one feature of individuality considered to be a significant variation within the Warren truss post-standardization subtype, the Kosciuszko Bridge possesses several including its multiple spans (total of 22 spans), combination (deck and through) Warren trusses, and overhead bracing. Moreover, the Kosciuszko Bridge demonstrates its individuality from post-standardization Warren truss bridges because of its combination (deck and through) span type. According to the NYS DOT Historic Bridge Inventory (updated 2006), there are only three examples of bridges with a combination (deck and through) truss in the entire database. The Kosciuszko Bridge therefore, embodies distinctive characteristics of multiple span bridges, as well as combination (deck and through) Warren truss types with overhead bracing. Built in 1939, the Kosciuszko Bridge reflects its period and methods of its construction.

If you have any questions concerning this Determination of Eligibility, please call Kathy Howe at (518) 237-8643, ext. 3266.



Historic Preservation Field Services Bureau

Resource Evaluation

DATE: 20 July 2006

STAFF: Virginia L. Bartos

PROPERTY: Old Calvary Cemetery

MCD: Queens

ADDRESS: Greenpoint Avenue

COUNTY: Queens

PROJECT REF: 05PR00256

USN: 08101.011168

I. Property is individually listed on SR/NR:
name of listing:

Property is a contributing component of a SR/NR district:
name of district:

II. Property meets eligibility criteria.

Property contributes to a district which appears to meet eligibility criteria.

Pre SRB: Post SRB: SRB date:

Criteria for Inclusion in the National Register:

A. Associated with events that have made a significant contribution to the broad patterns of our history;

B. Associated with the lives of persons significant in our past;

C. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;

D. Have yielded, or may be likely to yield information important in prehistory or history.

III. Property does not meet eligibility criteria.

STATEMENT OF SIGNIFICANCE:

Based on the information submitted, it is the opinion of the State Historic Preservation Office that Old Calvary Cemetery located in Queens County, New York is historically and architecturally significant as the primary burial ground for Roman Catholics in New York City and for following the designs of the popular rural cemetery movement when it was established in 1845. The layout of the cemetery reflects the curved roads and walkways of the movement, but also reflects changes in cemetery philosophy in the late nineteenth and early twentieth centuries. The cemetery also contains several monuments and buildings that reflect nineteenth century ecclesiastic Roman Catholic architecture.



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
 Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

Bernadette Castro
 Commissioner

October 18, 2006

Norik Tatevossian, P.E.
 Director of Structures
 NYS DOT – Region 11
 Hunters Point Plaza
 47040 21st Street
 Long Island City, NY 11101

2006 OCT 24 AM 10:12
 STRUCTURES DIV
 L.I.C. NY 11101
 NYSDOT - R11
 RECEIVED

Dear Mr. Tatevossian:

Re: FHWA/DOT
 Kosciuszko Bridge
 Kings/Queens County
 05PR00256

Thank you for providing the Cultural Resources Effects Report dated September 19, 2006 for the Kosciuszko Bridge Project for review by the State Historic Preservation Office (SHPO). We have reviewed the information in accordance with Section 106 of the National Historic Preservation Act of 1966 and relevant implementing regulations.

Based upon our review, we offer the following comments:

1. We concur that Alternatives BR-2, BR-3 and BR-5 would constitute a determination of Adverse Effect. Each of these alternatives requires demolition of the Kosciuszko Bridge which has been determined to be eligible for the National Register of Historic Places.
2. We understand that Alternatives RA-5 and RA-6 include rehabilitation of the historic bridge with a new Parallel bridge in either the eastbound or westbound direction. Based upon our review, it is our opinion that it is unlikely that the addition of a parallel bridge, in itself, would constitute an Adverse Effect. Based upon the Resource Evaluation for the Kosciuszko Bridge, it is eligible for the National Register based on Criteria "C" in the area of engineering design. Given that the character defining features of the bridge will not be lost, our preference is for either Alternative RA-5 or RA-6.
3. Given our comments in number 2, we feel that a Programmatic Agreement (PA) is premature at this time for effects to the existing bridge. Clearly there is a prudent and feasible alternative to demolition that should be evaluated prior to implementation of a PA.
4. Douglas Mackey of our Archeology Unit offers several comments regarding this project. These are attached for your review.

Thank you for your request. If you have any questions, I can be reached at (518) 237-8643, ext. 3282. Please refer to the SHPO Project Review (PR) number in any future correspondences regarding this project.

Sincerely,

Beth A. Cumming SAC
 Historic Preservation Specialist - Technical Unit
 e-mail: Beth.cumming@oprhp.state.ny.us

Attachment: Archeology Comments

BOB

Archaeology comments - 05PR00256

Kosciuszko Bridge Project - FHWA/DOT PIN X729.77

DRAFT Cultural Resources Effect Report (9/19/2006) and
DRAFT – Appendix A - Programmatic Agreement

CR Effect Report

1. Although we understand that a specific alternate has not been chosen, SHPO recommends that the archaeological APE for each proposed alternative be clearly identified on a separate figure. This figure should also identify the results of the archaeological sensitivity assessment. This would act as an excellent supplement to the text descriptions indicating how many blocks of archaeologically sensitive areas will be impacted by each alternative (Section III.C Effects of the proposed undertaking , pages 13- 16).
2. SHPO was pleased to see FHWA/DOT's commitment to conducting archaeological investigations "immediately prior to the commencement of construction..." (page 13) wherever possible. Repeated experience has demonstrated that this approach is more beneficial for all parties than monitoring during construction. However, it is clear from the rest of the document that monitoring may well be a major component of the actual investigation. SHPO would appreciate an evaluation of potential areas, or types of areas, where you realistically believe that testing can be conducted in advance of construction and those were you believe it will be necessary to conduct monitoring. This evaluation will be helpful in providing our comments on any alternatives analysis that will be conducted.
3. On page 8, Section III.A.2, the next to last bullet indicates that "archaeological sensitivity maps available online through the SPHINX system" were examined. This is not an accurate statement as SPHINX has no relation to the archaeological sensitivity maps. The maps are available through the "Geographic Information System for Archeology and National Register". Please correct this.
4. At the bottom of Page 8 it is noted that "a limited Phase I Reconnaissance Survey" was conducted to identify any previously unrecorded archaeology sites. It was SHPO's understanding, and it stated elsewhere in the document, that archaeological field testing has not been undertaken yet. While a Phase 1A documentary background has been completed, the goal of such work is to identify areas likely to contain sites (potential), not to actually identify them. Please provide further details on any study conducted so far to identify unrecorded sites.
5. In the Reference Cited section (page 20) three items published by the New York Archaeological Council and one by the New York State Museum are listed. We could not find where these items are referenced in the text. Please be sure that these references were not inadvertently omitted if appropriate. Additionally, one of these referenced works (New York Archaeological Council 2004) does not exist. It is likely that this is meant to be a second reference to the 2000 reference or an indication of the internet availability of this document. Please review this and insure that the correct citations are made.

Turning to Appendix A- the draft Programmatic Agreement

6. Stipulation I.A. the general scope of work should also be known as the Archaeological Work Plan (AWP). The first sentence should end with "Environment." Followed by "The AWP shall specify..."
7. Stipulation II.C. indicates that the SHPO will have 30 days to respond to proposed treatment plans. While SHPO would appreciate the full 30 days to review such plans, we are aware of the realities of conducting archaeological work under monitoring conditions and the potential delays that can be incurred when archaeological deposits are encountered. Therefore, we recommend that you consider shortening the review period for Archaeological treatment plan review and consultation to determine if a site is National Register Eligible if the finds are made during monitoring. SHPO has successfully accomplished this on a variety of project under similar conditions with the MTA. The trade off is that there has to be verification from the SHPO staff that they have received the material to review before the abbreviated clock is set in motion. In our dealing with the MTA this has been accomplished through a combination of telephone and e-mail notifications and verified responses. Please consider this and contact appropriate SHPO staff to work out details. Please note that the full 30 day period should still apply to any other issues.
8. Stipulation III.E – in addition to making material available for publication and public dissemination, if any mitigation work is needed the FHWA/DOT will need to include funding for public outreach as part of any treatment plan. SHPO recommends that this be extended to the results of the Site identification and assessment phases of work as well. SHPO recommends that this stipulation include a clause similar to that found in Stipulation III.A – "the FHWA and the NSYDOT shall insure that adequate funding shall be assigned to cover costs associated with public outreach efforts to disseminate information regarding the archaeological testing program to the public".
9. Stipulation IV – regarding the treatment of Human Remains. Since the project will not be on federally owned lands the provisions of NAGPRA will not apply to any remains identified. Therefore, rather than indicating that treatment of remains will be in "accordance" with NYAC and NAGPRA, SHPO recommends that you indicate treatment will be "consistent with the provisions of" them.



Preserving America's Heritage

April 11, 2007

Mr. Robert Arnold
Division Administrator
New York Division
Federal Highway Administration
Leo W. O'Brien Federal Building, Room 719
Clinton Avenue & North Pearl Street
Albany, NY 12207

RE: *Kosciuszko Bridge Project*
Kings and Queens Counties, New York
PIN X728.77

Dear Mr. Arnold:

On March 16, 2007, the Advisory Council on Historic Preservation (ACHP) received a copy of the Design Report/Draft Environmental Impact Statement/Draft Section 4(f) Evaluation for the referenced undertaking. Our comments pursuant to the National Environmental Policy Act of 1969 (NEPA) were requested. We have no comments pursuant to NEPA at this time.

While the documentation provided indicates that the proposed undertaking may adversely affect historic properties, we have no record of receiving notification of adverse effects from FHWA regarding this undertaking as is required under our regulations, "Protection of Historic Properties" (36 CFR Part 800). Please continue to consult with the New York State Historic Preservation Office (SHPO) and other consulting parties to complete the requirements of the Section 106 process. If, or when, FHWA makes an adverse effect finding in this case, you should provide the required notification and documentation to ACHP in accordance with 36 CFR § 800.6 and § 800.11(e).

If you have any questions or would like to discuss this issue, please contact me by telephone at (202) 606-8520 or by e-mail at kharris@achp.gov.

Sincerely,

Katry Harris
Historic Preservation Specialist
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 Pennsylvania Avenue NW, Suite 809 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov



New York State Office of Parks, Recreation and Historic Preservation

Historic Preservation Field Services • Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

www.nysparks.com

May 17, 2006

Norik Tatevossian, P.E.
Director of Structures
NYS DOT – Region 11
Hunters Point Plaza
47040 21st Street
Long Island City, NY 11101

Re: FHWA/DOT
Kosciuszko Bridge
Kings/Queens County
05PR00256

Dear Mr. Tatevossian,

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO) for the proposed work at the Kosciuszko Bridge in Brooklyn and Queens Counties. Based upon our understanding of the project, the project proposes to use federal highway funds. Since there is federal involvement in the project, we have reviewed the information submitted in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations. In cases where there is more than one federal agency involved, a lead federal agency should be designated.

Based upon our review of the submitted Draft EIS and Cultural Resources Report, we offer the following comments:

1. Since there are still a number of alternative being evaluated, we believe it is premature to move forward with a Programmatic Agreement at this time. It is clear that BR-2, BR-3 and BR-5 would constitute an Adverse Effect due to the demolition of the National Register Eligible Kosciuszko Bridge. However, RA-5 and RA-6 are clearly alternatives to the demolition of this historic bridge. As such, it is our opinion that these two alternatives should be the preferred alternatives moving forward.
2. Further it is our opinion that, once further defined, a Programmatic Agreement (PA) or a Memorandum of Agreement (MOA) may be an appropriate procedure for the review of project elements as the design progresses. Any agreement document put in place must address all cultural resources; both archeological and architectural.
3. These comments do not include Archeological comments which will come under a separate cover.

At this point, it may be appropriate for us to meet and further review the project alternatives. If you have any questions, I can be reached at (518) 237-8643, ext. 3282. Please refer to the SHPO Project Review (PR) number in any future correspondences regarding this project.

Sincerely,

Beth A. Cumming
Historic Preservation Specialist – Technical Unit
e-mail: Beth.cumming@oprhp.state.ny.us

NYS DOT - P11
2007 MAY 25 PM 2:59
STRUCTURES UNIT

Ellot Spitzer
Governor

Carol Ash
Commissioner



New York State Office of Parks, Recreation and Historic Preservation

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Elliot Spitzer
Governor

Carol Ash
Commissioner

June 28, 2007

William Mausling
NYS DOT – Region 11
Hunters Point Plaza
47040 21st Street
Long Island City, NY 11101

Dear Mr. Mausling:

Re: FHWA/DOT

Review of Archaeological Phase 1, Monitoring Plan and
Draft Programmatic Agreement
Kosciuszko Bridge
Kings/Queens County, New York
05PR00256

2007 JUL -5 PM 3:12
NYS-DOT-REGION 11
RECEIVED DESIGN R11-220

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO) with regard to the potential for this project to affect significant historic/cultural resources. SHPO has reviewed the Draft Cultural Resource Survey Report (CRS) for this project prepared in February 2007, as well as the Draft Programmatic Agreement and the Draft Archaeological Monitoring Plan (both also prepared in February 2007). Based on this review we offer the following comments with regard to archaeological issues.

Overall, the CRS is comprehensive and forms a good basis for any field testing that needs to be completed. SHPO concurs with the findings of the report with regard to the archaeological potential of various areas. However, with regard to landfill features (cribbing, retaining structures, etc.) the report suggests that the potential for locating such features is low, but does not address why this should be so. Past experience at many areas within New York City has shown that such features are often well preserved and can yield important archaeological information. Therefore, SHPO can not concur with this assessment without further information. If specific information can not be provided to support this assumption SHPO recommends that the statement be removed from documents associated with this project.

With regard to the Draft Programmatic Agreement (PA), the 13th Whereas clause indicates that possible consulting parties have been contacted, including the New York City Landmarks Preservation Commission. However, it is not clear if Native American tribes or the ACHP itself have been provided an opportunity to comment. It would be appropriate to identify these contacts and summarize their response as part of the PA.

The 8th Whereas clause indicates that due to the developed nature of the APE, no archaeological testing has been conducted and the 12th Whereas refers to the Archaeological

Monitoring Plan (AMP). Based on this it appears that no attempt will be made to conduct testing in advance of construction. In previous discussions it seemed that there was a commitment to conducting any testing possible in advance of starting construction and SHPO continues to recommend this approach. While much of the project area is covered by "hard materials" at present a similar situation exists on many projects where archaeological testing is successfully conducted in advance of construction. Although no photos were included in the report to show the existing surface conditions, I have examined aerial photos which show that much of the potential construction area should be accessible for testing in advance (parking areas, etc.). Testing of such areas can be easily accomplished through sampling trench areas where the surface cover is cut away. We have many successful examples of such testing in parking lots, roadways and even beneath current and former buildings.

This approach would allow a significant reduction in the potential for construction delays which are typically associated with archaeological monitoring, and reduce the potential for conflict between completing the necessary studies and keeping the project on schedule and on budget. By completing as much of this work as possible in advance construction crews would be able to proceed unimpeded by archaeological considerations in any areas deemed clear of resources. Additionally, in areas where resources are identified that will need more extensive study, sufficient time to conduct the appropriate study can be built into construction scheduling. While specific details can not be determined until an alternative is chosen, SHPO recommends that a Generic Archaeological Testing Plan (as opposed to monitoring plan) be developed that can be included as part of the PA.

While archaeological testing in advance of construction is a preferred approach SHPO understand there are likely to be some areas where it may not be possible to test in advance for a variety of reasons. These are the areas where the AMP should be applied. In reviewing the AMP I notice that there are several areas where it contradicts stipulations of the PA. For example, Stipulations I.B, I.D, II.A, and II.D of the PA specifically indicate that the SHPO will be consulted with regard to assessing affects to archaeological resources, evaluating eligibility of all archaeological sites, assessing the potential for avoidance of a resource and assessing proposed treatment plans. However the AMP indicates (Section V.A.3) that the EAB of NYSDOT will determine if Data Recovery should be implemented and if there is a need to consult with SHPO. As identified in the PA, the SHPO should be consulted on determinations of eligibility, and the need for Data Recovery for any resources identified. While we understand that there should not be a need to consult for every individual artifact encountered, for any deposit significant enough to be considered eligible by the archaeologist in the field, the SHPO should be consulted. Likewise, Section V.A.4 sets out the process for assessing a scope of work for Data Recovery, but this process does not involve consultation with the SHPO. We understand the need for expedited review in such cases and we are willing to agree to reduced time frames. We have successfully implemented similar measures in agreements with the FTA/MTA on a number of projects in the New York City area. SHPO recommends that the AMP be revised to reflect the procedures already established in the Draft PA.

SHPO is also concerned that the AMP is lacking in details regarding the specific actions expected by the archaeological and construction teams. The plan should include a description of the range of proposed construction activities with a summary of the various types of work to be undertaken. Experience has shown that this is an important element in our assessment of whether an AMP can be successfully carried out. For example, will construction consists of narrow/deep excavations for piers - removing only as much soil as is needed for a column, or will large areas be opened that will later be refilled. These various approaches to

construction can have a major effect on how an archaeological crew is actually able to conduct its work. It is not clear at this point if construction will be limited to relatively narrow trenches (easy to monitor archaeologically) or if it will include the excavation of wide areas (may require a very different approach to monitoring)

The AMP should include specific details about how often archaeologists will be able to enter an excavation (both horizontal and vertical measurements) as well as indicating that they will have the ability to stop mechanical excavation at the first sign that a significant deposit might be present. Section V.C.1.2 indicates that "Most recording may be done at the completion of excavation in an area but". While the remainder of this statement indicates that archaeologists may need to enter the trench earlier, this initial statement sets a tone in which recording more often is an unusual event rather than an expected condition. SHPO recommends that this section be reworked.

The plan should provide details regarding who has the authority to stop excavation (can the field archaeologist direct the machine operator or must they go through an Engineer in Charge (EIC) – if so, are there guarantees that the EIC will be on site at all times, etc.).

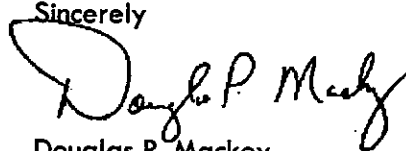
The AMP should also include more information on how archaeologists will be able to directly access deep deposits. This is especially important given the knowledge that fill exists over many of the areas to be examined and intact historic deposits are likely to be significantly deeper than 1.5 meters.

The AMP states that "No features or cultural layers will be hand excavated" (Section IV.A, 5th paragraph). SHPO can not concur with this approach. While we agree that careful use of mechanical equipment can be of great assistance to archaeological excavation, by their very nature some deposits necessitate close inspection and hand excavation. Therefore SHPO will not agree to an AMP that removes this tool from the archaeologist in the field.

Finally, we recommend modifying Section VI.5 which ends with "...discussion regarding removal and reburial of the remains." We recommend modifying this to "...removal, analysis and reburial of the remains as appropriate." This highlights that the goal of archaeology is data collection and that, where appropriate, the analysis of human remains can provide significant data regarding past populations.

I hope you find these comments helpful. We look forward to continued consultation regarding this project. Please contact me at extension 3291, or by e-mail at douglas.mackey@oprhp.state.ny.us, if you have any questions regarding these comments.

Sincerely



Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology

M-2: Cultural Findings Documentation and Supporting Material





Kosciuszko Bridge Project

Cultural Resources Finding Documentation

PIN: X729.77

05PR00256

Kosciuszko Bridge Project
I-278, Brooklyn-Queens Expressway
Kings & Queens Counties, New York

October 19, 2007

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1. PROJECT DESCRIPTION

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration (FHWA), will improve traffic and safety conditions in the portion of the Brooklyn-Queens Expressway (BQE) over the Kosciuszko Bridge, which crosses Newtown Creek. The Kosciuszko Bridge project area focuses on a 1.1-mile segment of the BQE from Morgan Avenue in Brooklyn to the Long Island Expressway (LIE) interchange in Queens (Attachments 1 and 2). NYSDOT and FHWA have evaluated options for the rehabilitation or replacement of the bridge through preparation of a Draft Environmental Impact Statement (DEIS). The project area setting is an urbanized area with a mixture of commercial, industrial, and residential uses (Attachment 3).

The FHWA has delegated to NYSDOT the authority to identify historic properties and assess the project effects in accordance with Section 106 of the National Historic Preservation Act [NHPA] (36 CFR 800.4[b]). As the lead federal agency, FHWA retains legal responsibility for all Section 106 findings and determinations.

1.A. Area Of Potential Effect (APE)

Archaeology APE

The APE for archaeology for this project takes into account all of the potential construction requirements for the proposed improvements to this section of the BQE (Attachment 4). It encompasses Limits of Disturbance (both horizontal and vertical) of all of the bridge components and approach ramps for all of the proposed Build Alternatives under consideration. The New York State Historic Preservation Office (NYSHPO) concurred with this APE in February 2005.

The Brooklyn (western) portion of the APE is composed of industrial, commercial, and residential buildings. Industrial (manufacturing, warehouse, petroleum related uses) and commercial uses dominate the blocks closest to Newtown Creek and directly below the elevated BQE roadway. Residential neighborhoods within the APE generally are located away from the creek and north of Meeker Avenue, while warehouses dominate the APE south of Meeker Avenue and Cherry Street between Kingsland Avenue and Gardner Avenue.

The Queens (eastern) section of the APE is dominated by Old Calvary Cemetery to the west of the BQE with small-scale businesses and residential homes to the east. The shoreline of Newtown Creek is occupied by warehouses, the Long Island Rail Road (LIRR), the former Phelps Dodge Refining Company site, and industrial uses.

The APE for archaeology has been further revised through the identification of specific ground disturbing activities including, but not limited to, the following:

- Excavation of permanent pile footings
- Excavation of permanent spread footings

- Excavation of abutments
- Excavation of temporary spread footings
- Relocation of existing utility lines

The horizontal area and vertical depth of excavation varies by construction feature or activity (Table 1).

TABLE 1: AREA AND DEPTH OF CONSTRUCTION FEATURE OR ACTIVITY

Construction Feature/Activity	Area of Disruption (approximate)	Depth of Excavation below current grade (approximate)
New Bridge Abutment (each)	445.9 m ² (4,800 ft ²)	4.3 m (14 ft)
Permanent Pile Footing (each)	72.3 m ² to 273.5 m ² (778 ft ² to 2,944 ft ²)	4.3 m (14 ft)
Permanent Spread Footing (each)	7.5 m ² (81 ft ²)	3.0 m (10 ft)
Temporary Spread Footing (each)	7.5 m ² (81 ft ²)	1.2 m (4 ft)
Demolition of Existing Footing (each)	117.2 m ² to 563.4 m ² (1,261 ft ² to 6,064 ft ²)	0.6 m (2 ft)

Architectural APE

A preliminary APE was developed consisting of the area 500 feet on either side of the center line of the existing BQE, from the LIE at the northern end of the project area to a point 500 feet beyond the proposed limits of disturbance at the project's southern terminus. This preliminary APE, with which the NYSHPO concurred in February 2005, was intended to conservatively estimate all potential physical, audible, or visual impacts of the project alternatives under consideration.

This APE was refined in February 2006 based on observations during subsequent site visits and information taken from the DEIS' construction impacts analysis of the various project alternatives (Attachment 5). The revised APE takes into account the potential of the project to diminish the integrity of a historic property's defining features. As a result, the revised APE for architectural resources was decreased in width along the Brooklyn portion and eastern edge of the Queens portion of the project area. The APE was expanded substantially west of the BQE in Queens. This revised APE received NYSHPO concurrence in March 2006.

2. STEPS TAKEN TO IDENTIFY HISTORIC PROPERTIES

Background research was conducted to identify the presence of known archaeological sites and architectural resources within the APEs. A brief 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 be found within the project area. Efforts to identify historic properties included, but were not limited to:

- Input obtained from public scoping meetings, other public meetings including monthly stakeholder meetings, conducted for NEPA compliance;
- Meetings or contact with other interested parties and agencies, including the New York City Landmarks Preservation Commission (NYCLPC) and the NYSHPO;
- Contact with individuals knowledgeable about known or potentially historic properties;
- Historic literature and map research;
- Historic context information from state and local guidelines and secondary sources;
- Reviews of key file materials, such as NRHP and National Historic Landmark nomination forms; files and inventories for locally significant properties online through the New York State Preservation Historical Information Network Exchange (SPHINX) system, housed at the Queens Public Library, the Brooklyn Public Library, the Queens Historical Society, the Brooklyn Historical Society, the New York City Public Library, and the Institute Archives and Special Collections research library at Rensselaer Polytechnic Institute; information from the Library of Congress, the U.S. Geological Survey, and the National Archives; and previous investigations (e.g., surveys and compliance-related reports);
- Review of architectural resource files provided by NYCLPC;
- Review of archaeological resource maps and files housed at the NYCLPC, archaeological sensitivity maps available online through the Geographic Information System for Archeology and National Register, and reports of previous investigations; and
- Architectural survey of the APE.

A Cultural Resource Survey Report 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 APEs that are eligible for inclusion in the New York State Register and/or National Register of Historic Places (S/NRHP). Various sections of the Cultural Resource Survey Report were prepared by cultural resources technical staff from Parsons, Louis Berger and Associates, and EHT Tracerics, Inc. The Cultural Resource Survey Report is attached to the DEIS as Appendix M-1 (Parsons 2006, *Cultural Resources Technical Report. Kosciuszko Bridge Project. Draft, October 5, 2006.*

Prepared by Parsons Transportation Group, Washington, D.C. Prepared for the New York State Department of Transportation, Region 11, and the Federal Highway Administration, New York.)

Phase 1A archaeological investigations, consisting of historical archival research and assessment of archaeological sensitivity, were conducted in September 2004. No archaeological sites have been formally identified within the APE. Because the project area is covered by pavement and/or concrete roads, parking lots, sidewalks, and driveways; concrete loading docks, existing buildings and storage facilities, or contains contaminated soil, archaeological survey areas are inaccessible at this time. Due to the developed nature of the project area and because the design drawings have not been prepared and finalized, no archaeological testing has been conducted. Archaeological sites, some of which may be considered NRHP-eligible, may be located during the design phase prior to construction. The results of the Phase 1A archaeological investigations are presented in Section IV of the Cultural Resource Survey Report (Appendix M-1 of the DEIS).

A location, identification, and evaluation survey of historical architectural resources in the vicinity of the Kosciuszko Bridge Project was undertaken between March 2005 and March 2006. The survey identified 97 resources 50 years of age or older that have not been previously recorded or evaluated for NRHP eligibility, and have the potential to be temporarily or permanently disturbed under one or more of the proposed alternatives. Of the 97 resources recorded in this study, only two were recommended as eligible for inclusion in the National Register of Historic Places. The results of the architectural survey are presented in Section V of the Cultural Resource Survey Report (Appendix M-1 of the DEIS).

A formal NRHP evaluation of the Kosciuszko Bridge was conducted in June 2006 and the bridge was recommended as NRHP-eligible under NYSDOT criterion C-6. This report was prepared by EHT Tracerics, Inc. (Laura H. Hughes, Laura V. Trieschmann, Janet Emery Flynn, and Laura FitzGerald 2006, *Final Determination of Eligibility: The Kosciuszko Bridge (BIN 1075699), Kings and Queens County, New York, New York*. Prepared for Parsons, New York, New York. Prepared by EHT Tracerics, Inc., Washington, D.C. October 5, 2006.). This formal evaluation is presented in Section VI: Appendix E, in Appendix M-1 of the DEIS.

3. DESCRIPTION OF HISTORIC PROPERTIES

In accordance with Section 106 of the NHPA (36 CFR 800.4[b]), two cultural resources eligible for inclusion in the NRHP have been identified in the APE, both architectural resources: Old Calvary Cemetery and the Kosciuszko Bridge (Attachment 5). The NYSHPO concurred with these findings in July 2006.

No archaeological resources have been identified to date in the APE based on information gathered for the Phase IA investigations (Parsons 2006). Because the APE is currently covered by pavement and/or concrete, buildings or contains contaminated soil, and the design drawings have not been prepared and finalized to identify the exact areas of construction activities, no archaeological testing has been conducted. Archaeological sites, some of which may be considered NRHP-eligible, may be located during the design phase prior to construction.

3.A. Architectural Resources

Old Calvary Cemetery

Old Calvary Cemetery, overlooking Newtown Creek in Queens is roughly bounded by the BQE, the LIE, Greenpoint Avenue, and Review Avenue (Attachment 5). The site, a former farm, was acquired by the New York Roman Catholic Diocese in 1845 and served as the primary Catholic burial ground in New York City until the early twentieth century. Making use of the formerly rural setting and natural topography, Calvary Cemetery, which with successive additions throughout the late nineteenth and early twentieth century came to be known as Old Calvary Cemetery, was laid out with winding and curving paths and roads that follow the natural contours of the land. Minor improvements were made to improve drainage, but the circulation system was intended to maintain the pastoral setting. Throughout the nineteenth century, the landscape evolved to include stone walls and wrought iron fences to enclose the cemetery and some individual plots within it, and in 1892 and 1895 respectively, a substantial Queen Anne style gatehouse and a Roman-Byzantine style chapel were built (Attachment 6).

Old Calvary Cemetery is eligible for the National Register of Historic Places under Criteria A and C. It derives its primary significance under Criterion C, for its distinctive design values. Although the landscape designer of the cemetery was not determined through available resources, the cemetery clearly follows the aesthetic of other large nineteenth century cemeteries, creating a naturalistic setting for burials. The mortuary art and sculpture associated with many of the burials contribute to the character of this designed landscape. Architecturally, the gatehouse on Greenpoint Avenue and the chapel are significant examples of their respective styles. They are exemplary illustrations of the Queen Anne and Roman-Byzantine styles that represent high degrees of craftsmanship, embody the distinctive characteristics of the period, and possess high artistic value. Within this setting, the gatehouse, chapel, related outbuildings, headstones and mausoleums which, although burial markers, display distinctive architectural styles and merit, together convey the historical trend in nineteenth centurial burial practices (Criterion C). The NYSHPO concurred with this NRHP determination in July 2006. Old Calvary Cemetery is also considered eligible under Criterion A by the NYSHPO because it served as a primary burial ground for Roman Catholics in New York

City and as an example of the design of the popular rural cemetery movement. Old Calvary Cemetery retains integrity with respect to location, design, materials, workmanship, association, and feeling. The original pastoral setting has been compromised by urban development.

Kosciuszko Bridge

The Kosciuszko Bridge is a fixed, multiple span, combination (deck and through) Warren truss bridge with overhead bracing. Part of the six-lane BQE in Queens and Kings Counties, New York, the bridge spans Newtown Creek extending northeast from Meeker Avenue and Varick Avenue in Greenpoint, Brooklyn, to Laurel Hill Boulevard and 54th Street in Maspeth, Queens (Attachment 5). Originally constructed as the Meeker Avenue Bridge in 1939, the bridge was renamed the Kosciuszko Bridge in 1940 to commemorate the Polish-born Revolutionary War hero, Thaddeus Kosciuszko. In 1960, with the completion of the BQE (I-278), the Kosciuszko Bridge was officially linked to the completed highway system (Attachment 7).

The bridge has a vertical clearance of 38.1 m (125 ft) over Newtown Creek, and rises 53.3 m (175 ft) in height at its highest point and is 1835.3 m (6,021.3 ft) in length with a total of 22 spans that rest on 21 cast-in-place, segmental arched, reinforced concrete piers. The span over Newtown Creek measures 91.4 m (300 ft), while the approach spans vary from 36.5 m (120 ft) to 70.1 m (230 ft). There are 10 deck truss spans at the Brooklyn side, 11 deck truss spans at the Queens side, and one through truss span over the Newtown Creek. On the Brooklyn side, the deck truss begins at Meeker Avenue and Varick Avenue. The first two pairs of concrete piers for the structure were constructed parallel to Cherry Street between Varick and Stewart Avenues.

Bridge piers rest on concrete foundations. Constructed of reinforced concrete, shafts for the piers were cast in sections according to the height of the piers—taller piers are made up of four sections, for example. The tallest piers are those supporting the main span. These piers are double cross braced, riveted steel towers on concrete bases. The pattern of the cross bracing on the main span piers has a lattice-like pattern.

The truss spans connect to abutments located at Meeker Avenue and Varick Street in Greenpoint, Brooklyn, and at Laurel Hill Boulevard and 54th Street in Maspeth, Queens. These abutments lead to low level reinforced concrete approaches which are clad in brick in a stretcher bond pattern. The approaches are further decorated with interspersed panels approximately five feet wide that feature sawtooth detailing. A roll-up metal garage bay and a single-leaf metal door are located at the east elevation of the Brooklyn side of the bridge, providing access to the storage areas located within the abutments. Windows for the storage spaces are located beneath the roadway and remain at both the Brooklyn and Queens sides of the bridge. Window openings are enclosed by metal grills and rest on concrete sills. The Brooklyn viaduct has concrete rigid frames that provide vehicular access to the areas perpendicular to the bridge's approaches at Morgan Avenue, Vandervoort Avenue, Varick Avenue, and Stewart Avenue.

The main superstructure element of the bridge is of the Warren deck truss type. The riveted steel deck truss extends from the abutments to the main bridge spans at each side of the bridge. The bridge's roadway is supported by concrete filled steel grating and topped by asphalt to create the road surface. The roadway is cantilevered over the trusses, supported by cross bracing beneath the I-beam-supported roadway. The

roadway is lined by concrete curbs with a metal railing and three foot steel panels or splash guards. The roadway of the main span is lined with open metal railings. Light for the bridge is provided by light posts spaced evenly at the sides of the bridge.

The Warren through truss main span of the bridge features a superstructure made of polygonal top riveted steel chords and overhead cross bracing. Centrally located on the overhead bracing at the Brooklyn side and the Queens side are commemorative plaques. Installed when the bridge was renamed in 1940, the plaques bear the crests of the United States and Poland in addition to the "new" name of the bridge, the Thaddeus Kosciuszko Bridge. J. Frank Johnson is also recognized on the plaque as the Chief Engineer.

The original bridge was designed with sidewalks at the deck to provide pedestrian access across the bridge to either borough. These sidewalks were removed in 1967 to accommodate a widening of the road. The original center island was replaced during the 1967 renovations, and the original concrete slab at the deck has been subsequently replaced and resurfaced since 1967. As originally designed, the main bridge was approached from both Brooklyn and Queens by elevated Warren deck truss spans. These roadways essentially split the neighborhoods in Brooklyn in sections.

Concrete rigid frames provided vehicular access to the areas west and east of the elevated roadways at Morgan Avenue, Vandervoort Avenue, Varick Avenue, and Stewart Avenue. These bridges have been altered by the removal of the decorative parapet walls at the elevated roadway surface. The concrete viaduct, enclosed in curtain walls between the bridges, has been re-faced with brick in some sections.

Based on a formal NRHP evaluation conducted by EHT Tracerics Inc., the Kosciuszko Bridge has been recommended as NRHP-eligible under National Register Criterion C and more specifically, under NYSDOT Criterion C-6 (demonstrates individuality or variation of features within a particular bridge type). Built in 1939, this fixed, multiple span, Warren combination (deck and through) truss bridge with overhead bracing represents a significant and unusual variation of the Warren truss type. Whereas most eligible bridges have one feature of individuality considered to be a significant variation within the post-standardization Warren truss type, the Kosciuszko Bridge possesses several including its multiple spans, Warren combination (deck and through) trusses, and polygonal top chords with overhead bracing. The NYSHPO concurred with this NRHP determination in July 2006.

3.B. Archaeological Resources

Prehistoric sites that might be present in the Kosciuszko Bridge Project APE include the remains of fish weirs along former creek and stream edges, 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).

In the Brooklyn portion of the APE, expected historic site types include historic industrial foundations, historic industrial and commercial secondary refuse deposits, and historic roads. Historic house foundations are not expected in most of the Brooklyn APE

because the locations of houses have been documented and are typically beyond the APE. However, portions of two blocks (Blocks 2810 and 2817) contain dwellings that were taken in the late 1930s for construction of the approach to the Kosciuszko Bridge and the reconstruction of Meeker Avenue to the north and south of the bridge approach. Historic domestic deposits such as wells, privies, and primary and secondary refuse deposits dating from the late nineteenth century to the 1930s may be expected in the former footprints of these two blocks. Historic burials are not expected within the Brooklyn APE.

In the Queens portion of the APE, expected historic site types include industrial foundations, commercial structure foundations, greenhouse foundations, industrial and commercial secondary refuse deposits, historic roads, foundations of sheds, outbuildings, privies, stables, and garages. Numerous dwelling foundations are likely present, including those of detached houses, farmhouses, and apartment buildings. Primary and secondary domestic refuse deposits related to domestic occupations may also be present in middens, pits, privies, wells, and as broadcast scatters in yards.

4. EVALUATION OF UNDERTAKING'S IMPACT ON IDENTIFIED HISTORIC PROPERTIES

Impacts to the Old Calvary Cemetery from ground disturbing activities is the same for all alternatives. The Old Calvary Cemetery could be affected by ground disturbing activities associated with the permanent or temporary construction. Construction activities causing severe vibration effects (vibration in excess of 65 VdB, the threshold for impacts to historic structures) include pile driving, excavation, and demolition. Stone mortuary art and sculpture, headstones, and mausoleums which are contributing elements to this NRHP-eligible site have the potential to be cracked, toppled, or displaced by vibration impacts from construction activities occurring nearby.

4.A Project Impacts from Alternative RA-5

Old Calvary Cemetery

Visual effects to the Old Calvary Cemetery viewshed would occur because a new parallel bridge (built at a lower elevation) would be constructed adjacent to (and directly east of) the existing structure. Although built on the opposite side from the cemetery, the new bridge approach and supporting columns would be visible through the columns of the existing bridge. However, these visual effects would not alter the character of the Old Calvary Cemetery's setting, which has been previously compromised by urban development, resulting in no adverse effect to the setting of this NRHP-eligible resource. To address any visual impact issues, the final design process would ensure the new structure has a "contextual design," so that it would serve the same place making function of the current bridge. Increased auditory intrusions to the pastoral setting of the cemetery would occur for the duration of construction but would be temporary.

Kosciuszko Bridge

The existing Kosciuszko Bridge would be rehabilitated in accordance with the *Secretary of Interior's Standards for Rehabilitation* (36 CFR 67). The existing bridge structure would remain intact: a steel truss bridge with deck truss supported by concrete piers on both approaches and a Warren through truss Main Span supported by steel piers. All architectural features of the Kosciuszko Bridge which characterize its NRHP eligibility would remain intact. Visual intrusions to the Kosciuszko Bridge would occur with the addition of new structural columns, discontinuous profiles from the construction of a new, lower bridge, and differences in design and materials between the two bridges. However, these visual intrusions would not alter the character of the Kosciuszko Bridge, resulting in no adverse effect to this NRHP-eligible resource.

Archaeological Resources

Eight blocks within the APE (Blocks 2516, 2519, 2520, 2806, 2808, 2812, 2813, and 2814) are designated moderate potential for prehistoric resources; two additional blocks within the APE (Blocks 2515 and 2517) are designated as high potential (Attachment 8).

Preliminary design locations indicate that seven permanent pile footings, one permanent spread footing, the Brooklyn side abutment, and six temporary spread footings would be excavated in blocks designated as moderate potential for prehistoric resources (Blocks 2516, 2519, 2520(4), 2806, 2808, 2813, and 2814). One permanent pile footing would be excavated in Block 2515, designated as a high potential area for prehistoric campsites, middens, and activity areas.

Ten blocks within the APE (Blocks 2515, 2516, 2519, 2520, 2805, 2806, 2808, 2810, 2812, and 2817) associated with this alternative are designated with moderate potential for historic resources (Attachment 9). However, preliminary design locations of the permanent pile and spread footings, Brooklyn side abutment, and temporary spread footings would not affect any specific areas in each block which may contain intact historic resources.

4.B Project Impacts from Alternative RA-6

Old Calvary Cemetery

Visual effects to the Old Calvary Cemetery viewshed would occur because a new parallel bridge (built at a lower elevation) would be constructed adjacent to the existing structure. The new bridge approach and supporting columns would be built closer to the cemetery above Laurel Hill Boulevard. However, these visual effects would not alter the character of the Old Calvary Cemetery's setting, which has been previously compromised by urban development, resulting in no adverse effect to the setting of this NRHP-eligible resource. To address any visual impact issues, the final design process would ensure the new structure has a "contextual design," so that it would serve the same place making function of the current bridge. Increased auditory intrusions to the pastoral setting of the cemetery would occur for the duration of construction but would be temporary.

Kosciuszko Bridge

The existing Kosciuszko Bridge would be rehabilitated in accordance with the *Secretary of Interior's Standards for Rehabilitation* (36 CFR 67). The existing bridge structure would remain intact: a steel truss bridge with deck truss supported by concrete piers on both approaches and a Warren through truss Main Span supported by steel piers. All architectural features of the Kosciuszko Bridge which characterize its NRHP eligibility would remain intact. Visual intrusions to the Kosciuszko Bridge would occur with the addition of new structural columns, discontinuous profiles from the construction of a new, lower bridge sited closer to this NRHP-eligible resource, and differences in design and materials between the two bridges. However, these visual intrusions would not alter the character of the Kosciuszko Bridge, resulting in no adverse effect to this NRHP-eligible resource.

Archaeological Resources

Six blocks within the APE (Blocks 2516, 2519, 2520, 2806, 2808, and 2813) associated with this alternative are designated moderate potential for prehistoric resources; two additional blocks within the APE (Blocks 2515 and 2517) are designated as high potential (Attachment 10). Preliminary design locations indicate that seven permanent pile footings, one permanent spread footing, the Brooklyn side abutment, and six temporary spread footings would be excavated in blocks designated as moderate potential for prehistoric resources (Blocks 2516, 2519, 2520(3), 2806, 2808, and 2813). No project excavation is expected for intact areas in Block 2517, designated as high potential for prehistoric resources. Excavation of the permanent pile footings in Block 2520(3) would occur in fill; intact prehistoric resources are unlikely to exist in this area.

Nine blocks (Blocks 2515, 2516, 2519, 2520, 2805, 2806, 2808, 2810, and 2817) associated with this alternative are designated with moderate potential for historic resources (Attachment 11). However, preliminary design locations of the permanent pile and spread footings, Brooklyn side abutment, and temporary spread footings would not affect any specific areas in each block which may contain intact historic resources.

4.C. Impacts from Alternative BR-2

Old Calvary Cemetery

Visual effects to the Old Calvary Cemetery viewshed would occur, but are expected to be more limited than for BR-3, since the new bridge would not be built any closer to the cemetery than the existing bridge. To address any visual impact issues, the final design process would ensure the new structure has a "contextual design," so that it would serve the same place making function of the current bridge. Increased auditory intrusions to the pastoral setting of the cemetery would occur for the duration of construction but would be temporary.

Kosciuszko Bridge

The NRHP-eligible Kosciuszko Bridge would be demolished, resulting in an adverse effect.

Archaeological Resources

Seven blocks within the APE (Blocks 2516, 2519, 2520, 2806, 2808, 2813, and 2814) associated with this alternative are designated moderate potential for prehistoric resources; two additional blocks within the APE (Blocks 2515 and 2517) are designated as high potential (Attachment 12). Preliminary design locations indicate that eighteen permanent pile footings, one permanent spread footing, the Brooklyn side abutment, and twenty-two temporary spread footings would be excavated in blocks designated as moderate potential for prehistoric resources (Blocks 2516, 2519, 2520, 2806, 2808, and 2813). One permanent pile footing would be excavated in Block 2515, designated as a high potential area for prehistoric campsites, middens, and activity areas. Demolition of existing footings would occur in areas previously disturbed by the original construction of the Kosciuszko Bridge; intact prehistoric resources are not likely to exist in these areas.

Nine blocks within the APE (Blocks 2515, 2516, 2519, 2520, 2805, 2806, 2808, 2810, and 2817) associated with this alternative are designated with moderate potential for historic resources (Attachment 13). However, preliminary design locations of the permanent pile and spread footings, Brooklyn side abutment, and temporary spread footings would not affect any specific areas in each block which may contain intact historic resources. 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 exist in these areas.

4.D. Impacts from Alternative BR-3

Old Calvary Cemetery

Visual effects to the Old Calvary Cemetery viewshed would occur and would be the greatest of the replacement alternatives because the new bridge approach and supporting columns would be constructed closer to the cemetery above Laurel Hill Boulevard. However, these visual effects would not be expected to alter the character of the Old Calvary Cemetery's setting, which has been previously compromised by urban development, resulting in no adverse effect to the setting of this NRHP-eligible resource. To address any visual impact issues, the final design process would ensure the new structure has a "contextual design," so that it would serve the same place making function of the current bridge. Increased auditory intrusions to the pastoral setting of the cemetery would occur for the duration of construction but would be temporary.

Kosciuszko Bridge

The NRHP-eligible Kosciuszko Bridge would be demolished, resulting in an adverse effect.

Archaeological Resources

Seven blocks within the APE (Blocks 2516, 2519, 2520, 2806, 2808, 2813, and 2814) associated with this alternative are designated moderate potential for prehistoric resources; two additional blocks within the APE (Blocks 2515 and 2517) are designated as high potential for prehistoric resources (Attachment 14). Preliminary design locations indicate that eighteen permanent pile footings, one permanent spread footing, the Brooklyn side abutment, and thirteen temporary spread footings would be excavated in blocks designated as moderate potential for prehistoric resources (Blocks 2516, 2519, 2520, 2806, 2808, and 2813). One permanent pile footing would be excavated in Block 2515, designated as a high potential area for prehistoric campsites, middens, and activity areas. Demolition of existing footings would occur in areas previously disturbed by the original construction of the Kosciuszko Bridge; intact prehistoric resources are not likely to exist in these areas.

Nine blocks within the APE (Blocks 2515, 2516, 2519, 2520, 2805, 2806, 2808, 2810, and 2817) associated with this alternative are designated with moderate potential for historic resources (Attachment 15). However, preliminary design locations of the permanent pile and spread footings, Brooklyn side abutment, and temporary spread footings would not affect any areas in each block which may contain intact historic resources. 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 exist in these areas.

4.E. Impacts from Alternative BR-5

Old Calvary Cemetery

Visual effects to the Old Calvary Cemetery viewshed would occur but are expected to be more limited than for BR-3, since the new bridge would not be built any closer to the cemetery than the existing bridge. To address any visual impact issues, the final design process would ensure the new structure has a "contextual design," so that it would serve the same place making function of the current bridge. Increased auditory intrusions to the pastoral setting of the cemetery would occur for the duration of construction but would be temporary.

Kosciuszko Bridge

The NRHP-eligible Kosciuszko Bridge would be demolished, resulting in an adverse effect.

Archaeological Resources

Eight blocks within the APE (Blocks 2516, 2519, 2520, 2806, 2808, 2812, 2813, and 2814) associated with this alternative are designated moderate potential for prehistoric resources; two additional blocks within the APE (Blocks 2515 and 2517) are designated as high potential for prehistoric resources (Attachment 16). Preliminary design locations indicate that twenty permanent pile footings, one permanent spread footing, and the Brooklyn side abutment would be excavated in blocks designated as moderate potential for prehistoric resources (Blocks 2516, 2519, 2520, 2806, 2808, 2813, and 2814). Two permanent pile footings would be excavated in Block 2515, designated as a high potential area for prehistoric campsites, middens, and activity areas. Demolition of existing footings would occur in areas previously disturbed by the original construction of the Kosciuszko Bridge; intact prehistoric resources are not likely to exist in these areas.

Ten blocks within the APE (Blocks 2515, 2516, 2519, 2520, 2805, 2806, 2808, 2810, 2812, and 2817) associated with this alternative are designated with moderate potential for historic resources (Attachment 17). However, the preliminary design locations of the pile and spread footings and the abutments for nine blocks occur in areas that have been previously disturbed with little or no probability of containing intact historic archaeological resources. Preliminary 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 exist in these areas.

5. BASIS FOR RECOMMENDED PROJECT FINDING

5.A. Application of Criteria of Adverse Effect

An undertaking is considered to have an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the NRHP. An effect is considered adverse when it diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties (*i.e.*, NRHP-listed or eligible resources) include, but are not limited to:

- physical destruction, damage, or alteration of all or part of the property;
- isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the NRHP;
- introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- neglect of a property resulting in its deterioration or destruction; and
- transfer, lease, or sale of the property (36 CFR 800.9[b]).

RA-5 Alternative

Alternative RA-5 would create vibration effects and temporary auditory intrusions during construction to the NRHP-eligible Old Calvary Cemetery and potentially disturb or destroy NRHP-eligible archaeological sites. NRHP-eligible Kosciuszko Bridge would not be demolished but would be rehabilitated in accordance with the Secretary of Interior's Standards for Rehabilitation (36 CFR 67). Alternative RA-5 would have an Adverse Effect on historic properties.

RA-6 Alternative

Alternative RA-6 would create vibration effects and temporary auditory intrusions during construction to the NRHP-eligible Old Calvary Cemetery and potentially disturb or destroy NRHP-eligible archaeological sites. NRHP-eligible Kosciuszko Bridge would not be demolished but would be rehabilitated in accordance with the Secretary of Interior's Standards for Rehabilitation (36 CFR 67). Alternative RA-6 would have an Adverse Effect on historic properties.

BR-2 Alternative

Alternative BR-2 would create vibration effects and temporary auditory intrusions during construction to the NRHP-eligible Old Calvary Cemetery, demolish the existing NRHP-eligible Kosciuszko Bridge resulting in a total loss of the NRHP-eligible resource, and potentially disturb or destroy NRHP-eligible archaeological sites. Alternative BR-2 would have an Adverse Effect on historic properties.

BR-3 Alternative

Alternative BR-3 would create visual effects to the NRHP-eligible Old Calvary Cemetery due to construction of the new bridge in closer proximity to the cemetery, create vibration

effects and temporary auditory intrusions to the cemetery during construction, demolish the existing NRHP-eligible Kosciuszko Bridge resulting in a total loss of the NRHP-eligible resource, and potentially disturb or destroy NRHP-eligible archaeological sites. Alternative BR-3 would have an Adverse Effect on historic properties.

BR-5 Alternative

Alternative BR-5 would create vibration effects and temporary auditory intrusions during construction to the NRHP-eligible Old Calvary Cemetery, demolish the existing NRHP-eligible Kosciuszko Bridge resulting in a total loss of the NRHP-eligible resource, and potentially disturb or destroy NRHP-eligible archaeological sites. Alternative BR-5 would have an Adverse Effect on historic properties.

5.B. Conditions or Future Actions to Avoid, Minimize or Mitigate Adverse Effects

Alternatives which Avoid Adverse Effects

As documented in the DEIS, all of the five "Build" alternatives are considered feasible. The "No-Build" alternative would be feasible, but only for a limited time, as it would simply continue the present maintenance program, leaving in place the pressing deficiencies which led to identification of the current undertaking. The "No-Build" and "Rehabilitation" Alternatives (RA-5 and RA-6) do avoid the adverse effect of removing the NRHP-eligible Kosciuszko Bridge. For these alternatives, while there would be effects, the criteria of adverse effect do not apply to Kosciuszko Bridge since the bridge structure would remain and would be rehabilitated in accordance with the Secretary of Interior's Standards for Rehabilitation (36 CFR 67). Effects to archaeological resources, as previously explained, cannot be fully ascertained prior to Design Approval.

While feasible, there are many reasons why both "Rehabilitation" Alternatives are not prudent. The structural condition of the bridge is deteriorating, with several elements requiring repair or full replacement. The existing deck and through trusses of the Brooklyn Approach, Main Span and Queens Approach are non-redundant for loading. Although the trusses could be strengthened and hardened (to address some security and structural concerns), they could not be made fully redundant (a safety improvement need). This factor alone, especially in light of the recent collapse of the truss bridge in Minnesota, makes keeping and maintaining the current structure an imprudent long-term management approach. Add to this the fact that numerous other project goals (e.g. substandard sight lines, steep grades) would not be fully met under Alternatives RA-5 and RA-6 and would not be met at all under the "No-Build" alternative. All would therefore be considered feasible but not prudent, leading to the dismissal of the Rehabilitation Alternatives (RA-5 and RA-6) as avoidance alternatives.

Alternatives with Adverse Effects

Any of the Bridge Replacement Alternatives (BR-2, BR-3 or BR-5), on the other hand, are considered both feasible and prudent, since all structural (and other) goals of the project can be met. Modern engineering technology and construction techniques can be used in the entirely new structures which would replace the structurally vulnerable existing deck and through trusses. Their design life and future maintenance needs are

superior to alternatives that would only rehabilitate the existing 65 year old bridge. A detailed condition assessment (2006 Inspection Report) is provided as Appendix A.

All replacement alternatives have the added benefit of providing superior safety, operational, and structural improvements over the Rehabilitation Alternatives (RA-5 and RA-6). Specifically, each would provide standard lane widths, standard shoulders, and significantly improved sight lines and steep grades across the entire facility.

With all replacement alternatives, however, the criteria of adverse effect do apply, specifically 36 CFR 800.9(b)(1): "Physical destruction, damage, or alteration of all or part of the property" Even though there would be no adverse effect to the Old Calvary Cemetery, and even were there to be no effect or no adverse effect to archaeological resources (once these are fully assessed during the Design Phase), the overall finding for each of these alternatives must be one of "adverse effect". With these alternatives, there are no conditions or future actions which could avoid or minimize this impact. Only mitigation, as described below, could occur.

5.C. Preferred Alternative

Alternative BR-5 stands out from the other two Bridge Replacement Alternatives in a number of areas. Its design includes construction of two new bridges on the eastbound side of the existing bridge to carry traffic during demolition of the existing bridge and construction of a third bridge in its place (Attachment 18). This design allows for simplified construction staging and minimizes the need for temporary structures, resulting in a shorter construction duration than Alternative BR-2 (1 year longer) and lower cost than both Alternatives BR-2 (\$82 million more) and BR-3 (\$62 million more).

Alternative BR-5 also provides the greatest benefit and fewest impacts to the surrounding community. Bridge Alternative BR-5 has the least right-of-way impacts of the three Bridge Replacement Alternatives, resulting in less impact on nearby businesses and employees (Attachments 19 and 20). In Brooklyn, Alternative BR-5 shifts the highway to the south, moving it further away from residences on Meeker Avenue between Van Dam Street and Hausman Street, providing noise reduction and visual benefits to these residents. In addition, the lower bridge profile results in less visual impacts (Attachment 21); the horizontal shift provides more opportunities for recreational, open space and streetscape amenities (Attachments 22, 23, and 24). Alternative BR-5 will also create over 15,000 m² (161,000 ft², 3.7 acres) of new parkland in Brooklyn and Queens.

NYSDOT has identified Alternative BR-5 as the preferred alternative. This alternative best addresses the project's goals and objectives, as developed in conjunction with the project's Stakeholders Advisory Committee (SAC).

5.D Mitigation Measures

Mitigation for the vibration effects to contributing elements of the Old Calvary Cemetery may include use of different construction methods such as use of low-impact equipment and minimizing multiple construction operations in the same time period to reduce cumulative vibration effects, and special control measures such as a pre-construction vibration survey and vibration monitoring program during construction.

Mitigation for the demolition of the Kosciuszko Bridge may include coordination with the National Park Service on documentation to Historic American Engineering Record (HAER) standards, HAER documentation including bridge history, photodocumentation and measured drawings, dissemination of this documentation to the appropriate state and national repositories (i.e. the Library of Congress), and/or interpretive displays on-site associated with the new bridge.

If archaeological resources are identified within the APE of the preferred alternative during the design phase prior to construction, and determined potentially eligible for the NRHP, then specific mitigation measures would be developed in consultation with the NYSHPO. The preferred mitigation under federal guidelines is avoidance. Avoidance may be accomplished through redesign of the proposed construction footprint and relocation of construction staging areas. Avoidance preserves the integrity of archaeological sites and protects their research potential (i.e., NRHP eligibility). Avoidance also avoids costs and potential construction delays associated with data recovery. Traditionally, data recovery of archaeological sites through professional techniques such as mapping, photography, subsurface excavation, technical report preparation and dissemination, has been the standard mitigation measure. However, data recovery is labor intensive (i.e., costly) but may be necessary if NRHP-eligible sites cannot be avoided. Data recovery of archaeological information is now considered, in and of itself, an adverse effect under the revised Section 106 regulations (36 CFR 800.5(a)(2)(i)). If NRHP-eligible resources occur and cannot be avoided through project redesign, Phase III data recovery investigations and/or targeted archival research on historic occupations should be developed in consultation with NYSHPO and implemented prior to construction.

5.E Resolution of Adverse Effects

Because adverse effects to historic properties have been identified in the DEIS, NYSDOT has prepared a draft Programmatic Agreement (PA) in accordance with 36 CFR 800.14(b)(ii). The draft PA identifies possible mitigation measures for resolving adverse effects to the Old Calvary Cemetery and Kosciuszko Bridge, and the process for the identification, evaluation (NRHP eligibility), and determination of effects on archaeological sites located during the design phase prior to construction. NYSDOT has also prepared a draft Archaeological Work Plan which follows established methodology and procedures identified in the SED Scope (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.)

With the submittal of this Finding Documentation to the NYSHPO, Section 106 consultation with the NYSHPO will continue and include review and revisions to the draft PA and draft Archaeological Work Plan.

6. PUBLIC INVOLVEMENT

The agency coordination and public outreach program for the Kosciuszko Bridge Project was established to ensure that the EIS process would be supported by a comprehensive and extensive program of public outreach and involvement activities. The program, which was initiated in late 2001 and continued through the scoping and EIS processes, was developed in full compliance with federal and state public involvement regulations. It was specifically designed as an open and ongoing process aimed at establishing and maintaining effective dialogue between interested and involved constituencies, stakeholders and public agencies.

Interactive components of the program included large public forums, small group meetings and presentations, regular meetings of the project's Stakeholders Advisory Committee (SAC), and outreach to potentially affected businesses. Informational components included regular updates of a project website and widespread distribution of materials—including two project newsletters and a fact sheet to a mailing list of several hundred individuals and organizations. Additional materials, including Frequently Asked Questions (FAQ) documents, were distributed to residents and businesses in the vicinity of the Kosciuszko Bridge.

Throughout the extensive public outreach program there have been comments and questions about the Old Calvary Cemetery and preservation/documentation of portions of the Kosciuszko Bridge (interpretive displays, the eagle, flags, etc.) throughout the process – SAC meetings, Public Meetings, Public Hearing. At no time have these comments included suggestions to select anything other than a bridge replacement alternative.

6.A. Agency Coordination

Internal coordination with NYSDOT's Environmental Analysis Bureau (EAB) and the FHWA, Section 106 consultation with the NYSHPO, and notification to the New York City Landmarks Preservation Commission has been routinely conducted.

On January 13, 2005, NYSDOT sent the NYSHPO a letter initiating the Section 106 process, defining the APEs, and requesting concurrence with APEs.

On February 3, 2005, the NYSHPO concurred with the APE definitions.

On February 28, 2006, NYSDOT sent the NYSHPO a letter re-defining the APE for architectural resources.

On March 6, 2006, the NYSHPO concurred with the revised APE definition for architectural resources.

On April 13, 2006, NYSDOT and FHWA met with EAB to discuss the status of the DEIS, selection of a preferred alternative, adverse effects to NRHP-eligible properties, and possible mitigation measures to resolve adverse effects.

On July 10, 2006, NYSDOT submitted the *Draft Cultural Resources Technical Report* and the *Draft Determination of Eligibility: Kosciuszko Bridge* to the NYSHPO for review and concurrence with the determinations of eligibility.

On July 21, 2006, the NYSHPO concurred with the determinations of eligibility.

On September 18, 2006, NYSDOT submitted the Draft Cultural Resources Effect Report and the Draft Programmatic Agreement to the NYSHPO for review and concurrence with the determinations of effect to NRHP-eligible resources.

On October 18, 2006, NYSHPO sent a letter concurring with the Draft Cultural Resources Effect Report that Alternatives BR-2, BR-3, and BR-5 would cause an adverse effect on the NRHP-eligible Kosciuszko Bridge and that, because it is the design of the bridge that makes it eligible for the NRHP, the addition of parallel bridges in Alternatives RA-5 and RA-6 would not constitute an adverse effect.

On March 23, 2007, the NYSDOT submitted the DEIS to the NYSHPO and the ACHP for review and concurrence.

On April 11, 2007, the ACHP sent a letter indicating receipt of the DEIS and requesting notification by FHWA of an adverse effect to historic properties.

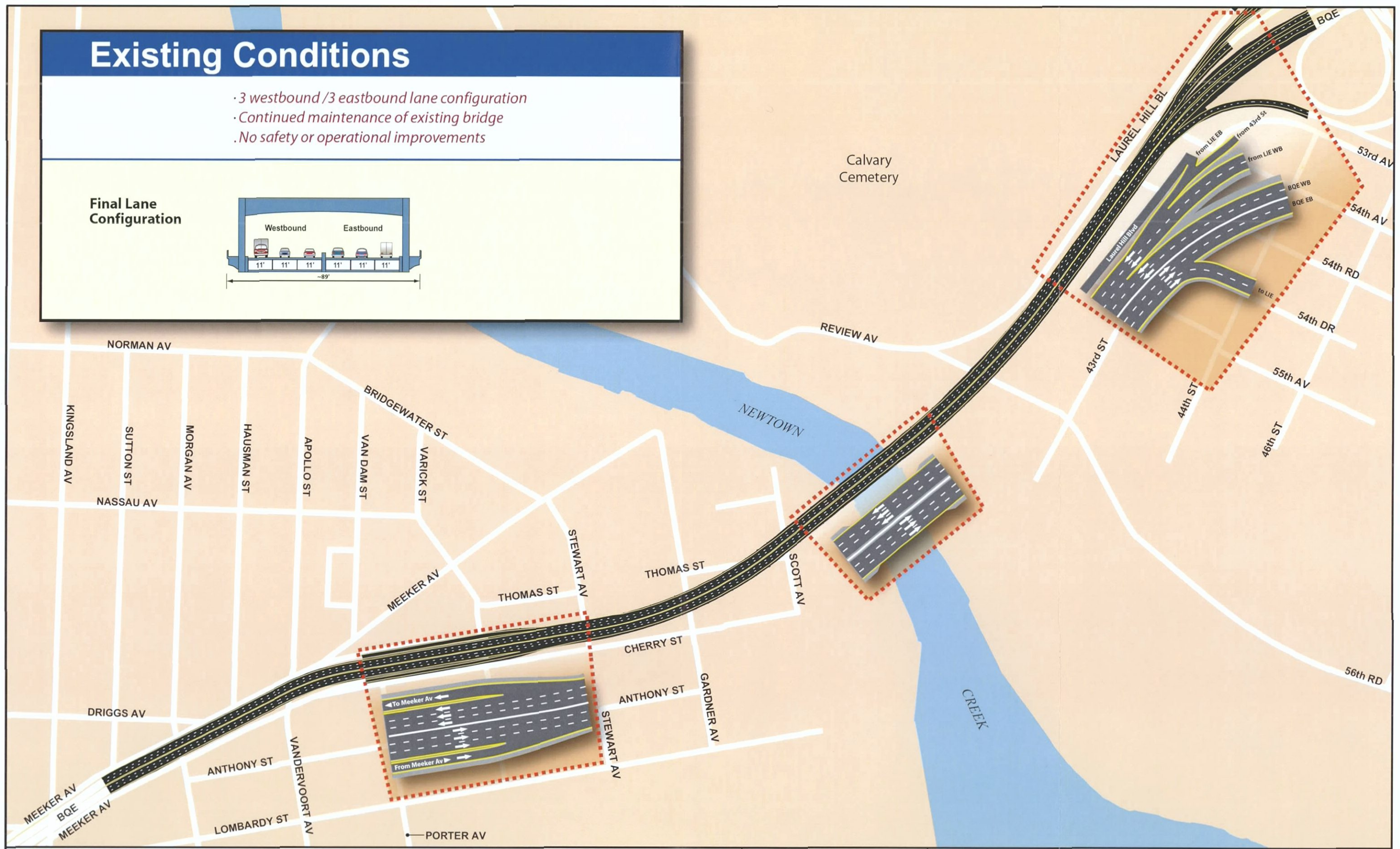
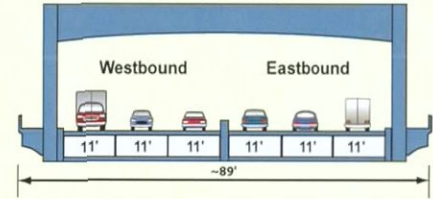
On May 17, 2007, NYSHPO submitted comments on the DEIS including concern that a Programmatic Agreement may be premature because a preferred alternative had not yet been selected.

On June 28, 2007, NYSHPO submitted comments pertinent to archaeological resources as discussed in the DEIS, draft PA, and draft Archaeological Monitoring Plan.

Existing Conditions

- 3 westbound / 3 eastbound lane configuration
- Continued maintenance of existing bridge
- No safety or operational improvements

Final Lane Configuration



ATTACHMENT 3: KOSCIUSZKO BRIDGE PHYSICAL ENVIRONMENT

The visual character of the project area consists of an urban setting which includes: the Kosciuszko Bridge; the grassy hillside of Old Calvary Cemetery; varying size rooftops of rectilinear buildings within the manufacturing/industrial area; Newtown Creek; flat vacant land along the shoreline of Newtown Creek; and a mixed-use residential/commercial neighborhood. Motorists using the BQE would have unobstructed views of changes between districts and distant views of the Brooklyn, Manhattan and Queens Skylines. Aerial photographs depicting the bridge in relation to existing facilities are provided in Figures 1 through 6.



FIGURE 1: AERIAL VIEW OF THE BROOKLYN APPROACH LOOKING SOUTHWEST



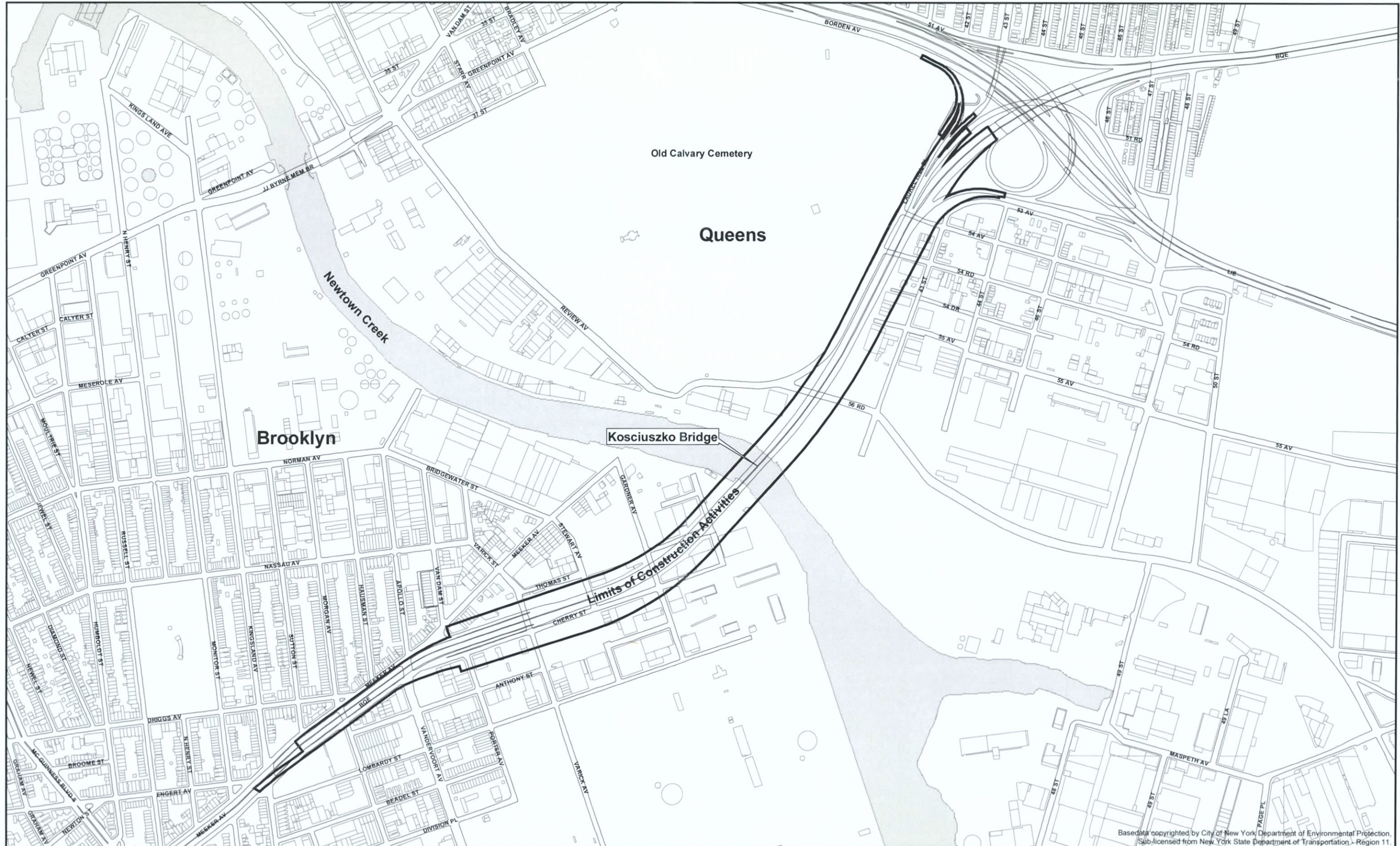
FIGURE 2: AERIAL VIEW OF THE BROOKLYN APPROACH AND WESTBOUND EXIT RAMP



FIGURE 3: AERIAL VIEW OF THE BROOKLYN CONNECTOR (CONCRETE VIADUCT AND CLOSURE WALL) AT VARICK AVENUE



FIGURE 4: AERIAL VIEW OF THE MAIN SPAN ABOVE NEWTOWN CREEK LOOKING EAST

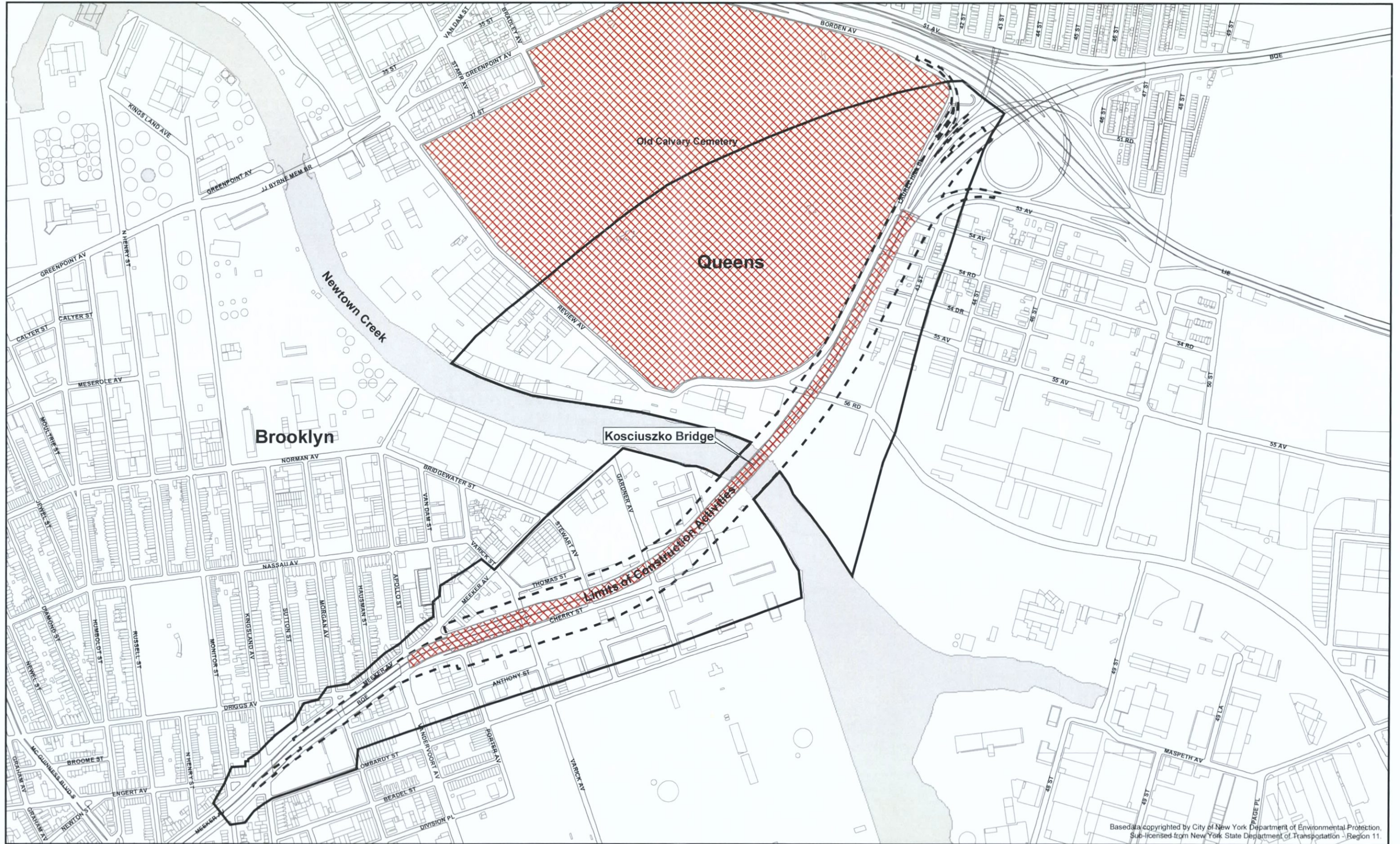


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— Area of Potential Effect - Archaeology

Attachment 4
Archaeological Area of Potential Effect



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- Limits of Construction Activities
- Historic Property
- Area of Potential Effect - Architecture

Attachment 5
Architectural Area of Potential Effect and Historic Properties

ATTACHMENT 6: OLD CALVARY CEMETERY PHOTOGRAPHS AND INDEX

Old Calvary Cemetery Photograph Index

Photograph Location Number	Photo Number	Description
1	V-1	Old Calvary Cemetery, Looking Southeast towards Kosciuszko Bridge
2	V-2	Old Calvary Cemetery Stone Building and Gates, Laurel Hill Boulevard, Looking Southeast
3	V-3	Old Calvary Cemetery Gates, Greenpoint Avenue, Looking Southeast
4	V-4	Old Calvary Cemetery, Queen Anne Style Gatehouse, Looking Southwest
5	V-5	Old Calvary Cemetery Roman Byzantine Style Chapel, Looking Southwest
6	V-6	Old Calvary Cemetery Tombs. Looking Northeast
7	V-7	Old Calvary Cemetery Tomb, Looking Northwest
8	V-8	Old Calvary Cemetery Equipment Shed, Looking Northeast
9	V-9	Old Calvary Cemetery, Looking Southeast towards Kosciuszko Bridge
10	V-10	Old Calvary Cemetery, Looking East
11	V-11	Old Calvary Cemetery from Laurel Hill Boulevard, Looking West



Photo V-1 Old Calvary Cemetery, looking Southeast towards Kosciuszko Bridge



Photo V-2 Old Calvary Cemetery Stone Building and Gates, Laurel Hill Boulevard, Looking Southeast



Photo V-3 Old Calvary Cemetery Gates, Greenpoint Avenue, Looking Southeast



Photo V-4 Old Calvary Cemetery, Queen Anne Style Gatehouse, Looking Southwest



Photo V-5 Old Calvary Cemetery, Roman Byzantine Style Chapel, Looking Southwest



Photo V-6 Old Calvary Cemetery Tombs, Looking Northeast



Photo V-7 Old Calvary Cemetery Tomb, Looking Northwest



Photo V-8 Old Calvary Cemetery Equipment Shed, Looking Northeast



Photo V-9 Old Calvary Cemetery, Looking Southeast towards Kosciuszko Bridge



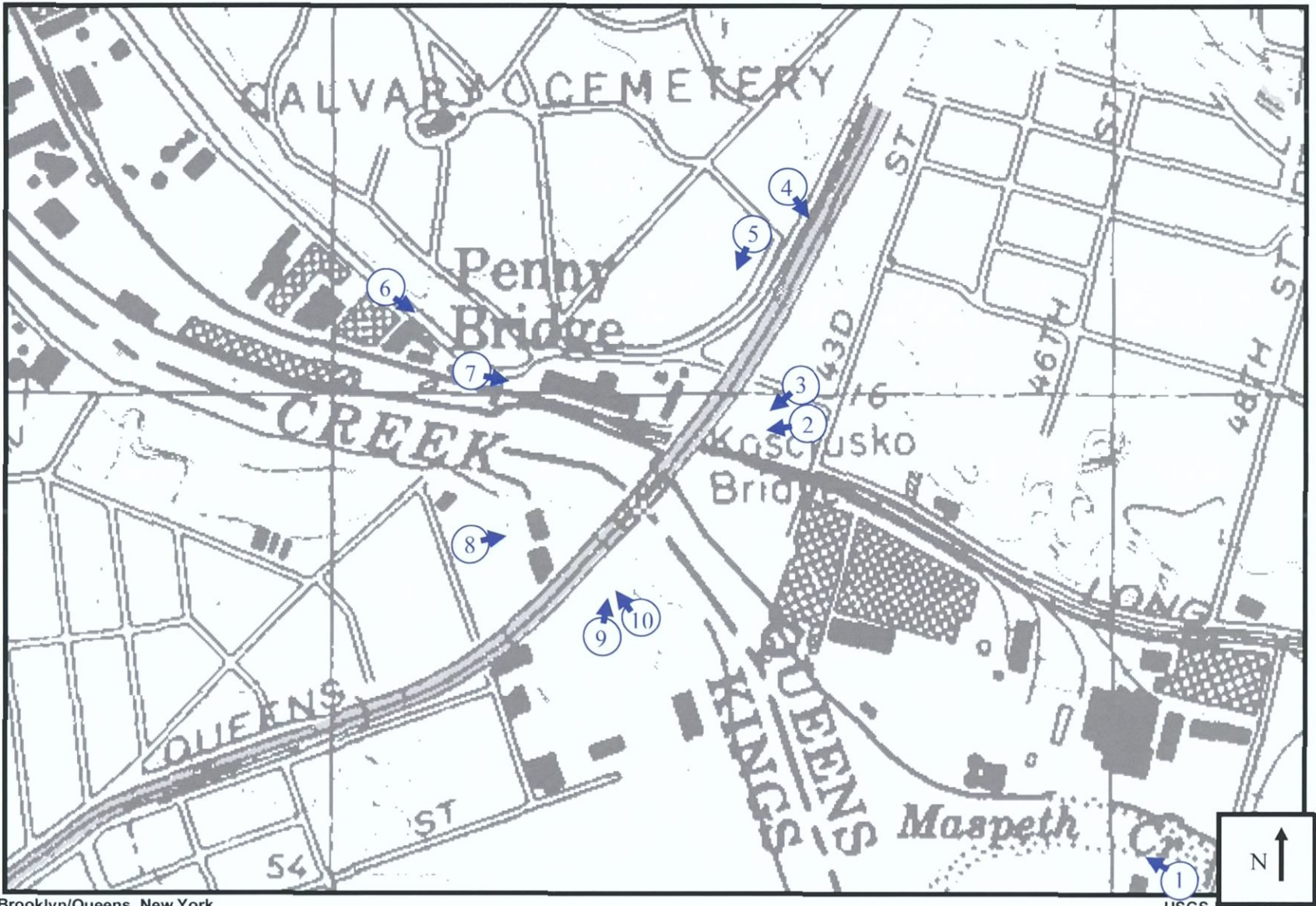
Photo V-10 Old Calvary Cemetery, Looking East



Photo V-11 Old Calvary Cemetery from Laurel Hill Boulevard, Looking West

ATTACHMENT 7: KOSCIUSZKO BRIDGE PHOTOGRAPHS AND INDEX**Kosciuszko Bridge Photograph Location Index**

Photograph Location Number	Description
1	View of Kosciuszko Bridge, looking east from Greenpoint Avenue Bridge
2	Extent of Kosciuszko Bridge looking south from Laurel Hill Boulevard, Queens, New York
3	Kosciuszko Bridge, looking west from 56th Road, Queens, New York
4	Kosciuszko Bridge, looking northwest from Grand Street Bridge
5	Detail of steel substructure looking southwest from Greenpoint, Brooklyn, New York
6	Detail of concrete piers and substructure, looking southwest from Greenpoint, Brooklyn, New York
7	Detail of the Warren truss main span and overhead bracing, looking northwest from Greenpoint, Brooklyn, New York
8	View of Kosciuszko Bridge supports over Newtown Creek, looking northeast from Greenpoint, Brooklyn, New York
9	Detail of truss connection beneath Kosciuszko Bridge
10	Detail of sawtooth brick elements on exterior of bridge abutments, on the Brooklyn side



Brooklyn/Queens, New York
Kosciuszko Bridge Photograph Location Map

USGS Map, 2006

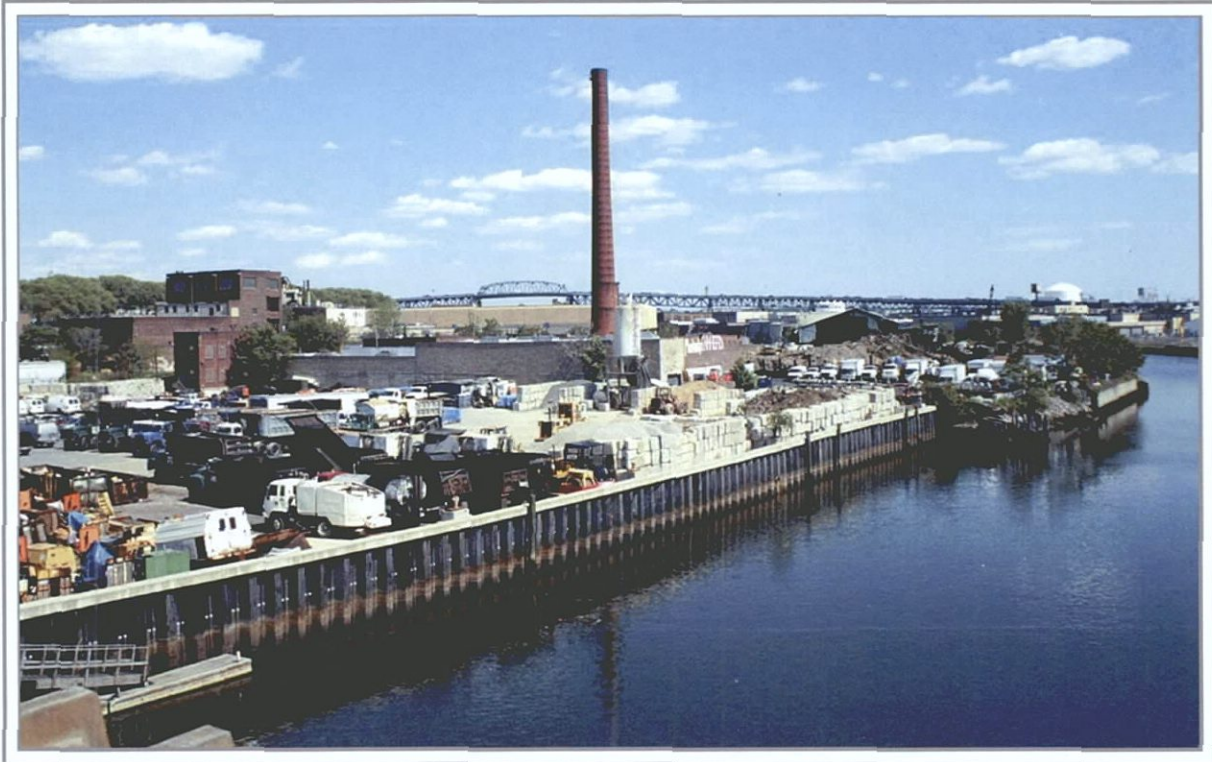


Photo 1: View of Kosciuszko Bridge, looking east from Greenpoint Avenue Bridge

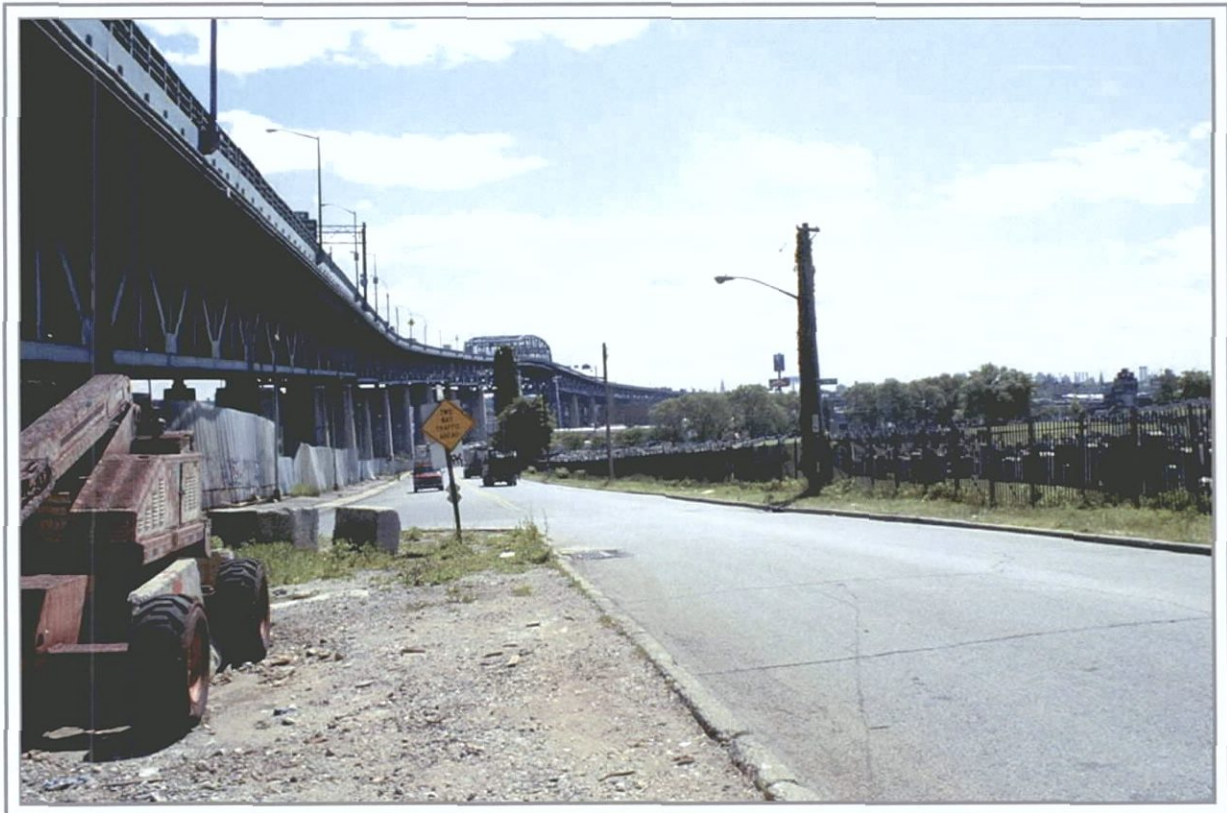


Photo 2: Extent of Kosciuszko Bridge looking south from Laurel Hill Boulevard, Queens, New York



Photo 3: Kosciuszko Bridge, looking west from 56th Road, Queens, New York



Photo 4: Kosciuszko Bridge, looking northwest from Grand Street Bridge

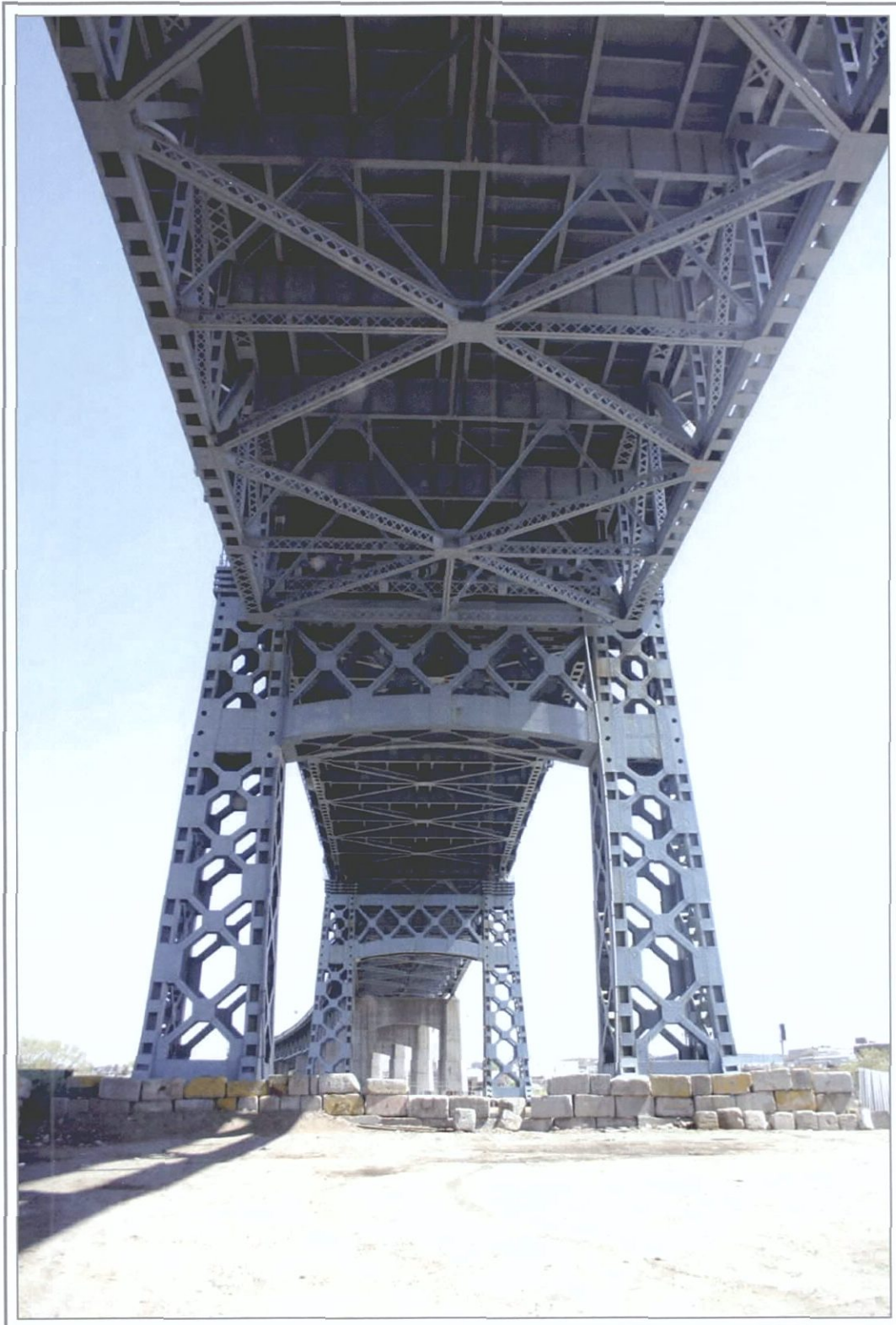


Photo 5: Detail of steel substructure looking southwest from Greenpoint, Brooklyn, New York



Photo 6: Detail of concrete piers and substructure, looking northeast from Greenpoint, Brooklyn, New York

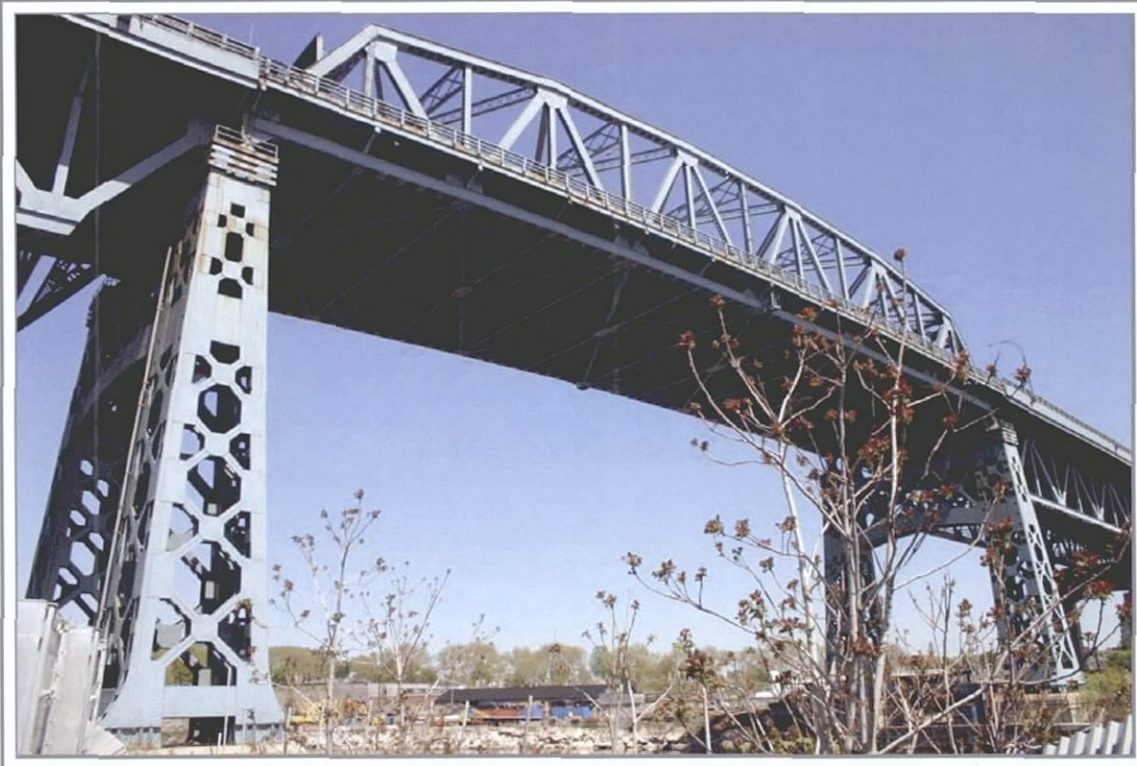


Photo 7: Detail of the Warren truss main span and overhead bracing, looking north from Greenpoint, Brooklyn, New York



Photo 8: View of Kosciuszko Bridge supports over Newtown Creek, looking northeast from Greenpoint, Brooklyn, New York



Photo 9: Detail of truss connection beneath Kosciuszko Bridge



Photo 10: Detail of sawtooth brick elements on exterior of bridge abutments, on the Brooklyn side

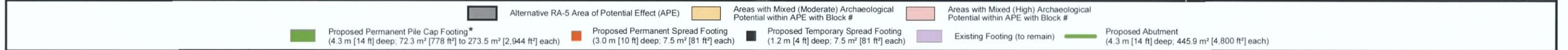


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Proposed Permanent Pile Cap Footing* (4.3 m [14 ft] deep; 72.3 m² [778 ft²] to 273.5 m² [2,944 ft²] each)	Proposed Permanent Spread Footing (3.0 m [10 ft] deep; 7.5 m² [81 ft²] each)	Proposed Temporary Spread Footing (1.2 m [4 ft] deep; 7.5 m² [81 ft²] each)	Existing Footing (to remain)	Proposed Abutment (4.3 m [14 ft] deep; 445.9 m² [4,800 ft²] each)
Alternative RA-5 Area of Potential Effect (APE)	Areas with Mixed (Moderate) Archaeological Potential within APE with Block #	Areas with Mixed (High) Archaeological Potential within APE with Block #		



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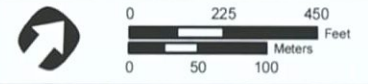
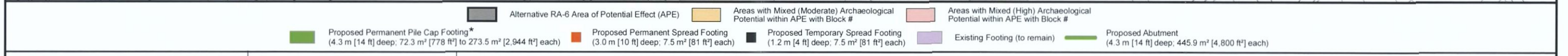
- Alternative RA-6 Area of Potential Effect (APE)
- Areas with Mixed (Moderate) Archaeological Potential within APE with Block #
- Areas with Mixed (High) Archaeological Potential within APE with Block #
- Proposed Permanent Pile Cap Footing* (4.3 m [14 ft] deep; 72.3 m² [778 ft²] to 273.5 m² [2,944 ft²] each)
- Proposed Permanent Spread Footing (3.0 m [10 ft] deep; 7.5 m² [81 ft²] each)
- Proposed Temporary Spread Footing (1.2 m [4 ft] deep; 7.5 m² [81 ft²] each)
- Existing Footing (to remain)
- Proposed Abutment (4.3 m [14 ft] deep; 445.9 m² [4,800 ft²] each)

*Includes 1.8 m [6 ft] diameter piles at depth of 15 m [50 ft] to 26 m [85 ft].

Figure 10
Archaeological Sensitivity for Prehistoric Resources, Alternative RA-6



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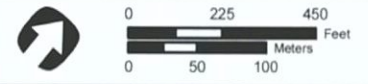
*Includes 1.8 m [6 ft] diameter piles at depth of 15 m [50 ft] to 26 m [85 ft].

Figure 11
Archaeological Sensitivity for Historic Resources, Alternative RA-6



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- Proposed Permanent Pile Cap Footing* (4.3 m [14 ft] deep; 72.3 m² [778 ft²] to 273.5 m² [2,944 ft²] each)
- Areas with Mixed (Moderate) Archaeological Potential within APE with Block #
- Areas with Mixed (High) Archaeological Potential within APE with Block #
- Proposed Permanent Spread Footing (3.0 m [10 ft] deep; 7.5 m² [81 ft²] each)
- Proposed Temporary Spread Footing (1.2 m [4 ft] deep; 7.5 m² [81 ft²] each)
- Existing Footing (Demolish to 0.6 m [2 ft] depth)
- Proposed Abutment (4.3 m [14 ft] deep; 445.9 m² [4,800 ft²] each)
- Alternative BR-2 Area of Potential Effect (APE)

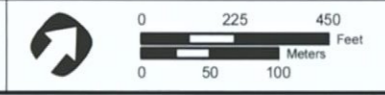


*Includes 1.8 m [6 ft] diameter piles at depth of 15 m [50 ft] to 26 m [85 ft].



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- Proposed Permanent Pile Cap Footing* (4.3 m [14 ft] deep; 72.3 m² [778 ft²] to 273.5 m² [2,944 ft²] each)
- Proposed Permanent Spread Footing (3.0 m [10 ft] deep; 7.5 m² [81 ft²] each)
- Alternative BR-2 Area of Potential Effect (APE)
- Areas with Mixed (Moderate) Archaeological Potential within APE with Block #
- Proposed Temporary Spread Footing (1.2 m [4 ft] deep; 7.5 m² [81 ft²] each)
- Existing Footing (Demolish to 0.6 m [2 ft] depth)
- Proposed Abutment (4.3 m [14 ft] deep; 445.9 m² [4,800 ft²] each)
- Areas with Mixed (High) Archaeological Potential within APE with Block #



*Includes 1.8 m [6 ft] diameter piles at depth of 15 m [50 ft] to 26 m [85 ft].



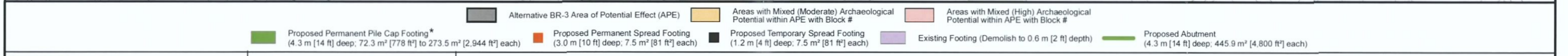
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- Alternative BR-2 Area of Potential Effect (APE)
- Areas with Mixed (Moderate) Archaeological Potential within APE with Block #
- Areas with Mixed (High) Archaeological Potential within APE with Block #
- Proposed Permanent Pile Cap Footing* (4.3 m [14 ft] deep; 72.3 m² [778 ft²] to 273.5 m² [2,944 ft²] each)
- Proposed Permanent Spread Footing (3.0 m [10 ft] deep; 7.5 m² [81 ft²] each)
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- Proposed Abutment (4.3 m [14 ft] deep; 445.9 m² [4,800 ft²] each)

*Includes 1.8 m [6 ft] diameter piles at depth of 15 m [50 ft] to 26 m [85 ft].



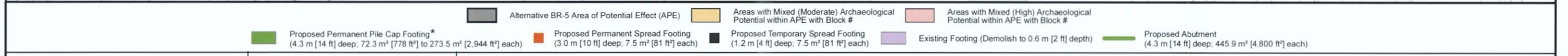
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*Includes 1.8 m [6 ft] diameter piles at depth of 15 m [50 ft] to 26 m [85 ft].



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*Includes 1.8 m [6 ft] diameter piles at depth of 15 m [50 ft] to 26 m [85 ft].



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Proposed Permanent Pile Cap Footing* (4.3 m [14 ft] deep; 72.3 m² [778 ft²] to 273.5 m² [2,944 ft²] each)	Alternative BR-5 Area of Potential Effect (APE)	Areas with Mixed (Moderate) Archaeological Potential within APE with Block #	Areas with Mixed (High) Archaeological Potential within APE with Block #	Existing Footing (Demolish to 0.6 m [2 ft] depth)	Proposed Abutment (4.3 m [14 ft] deep; 445.9 m² [4,800 ft²] each)
Proposed Permanent Spread Footing (3.0 m [10 ft] deep; 7.5 m² [81 ft²] each)	Proposed Temporary Spread Footing (1.2 m [4 ft] deep; 7.5 m² [81 ft²] each)				



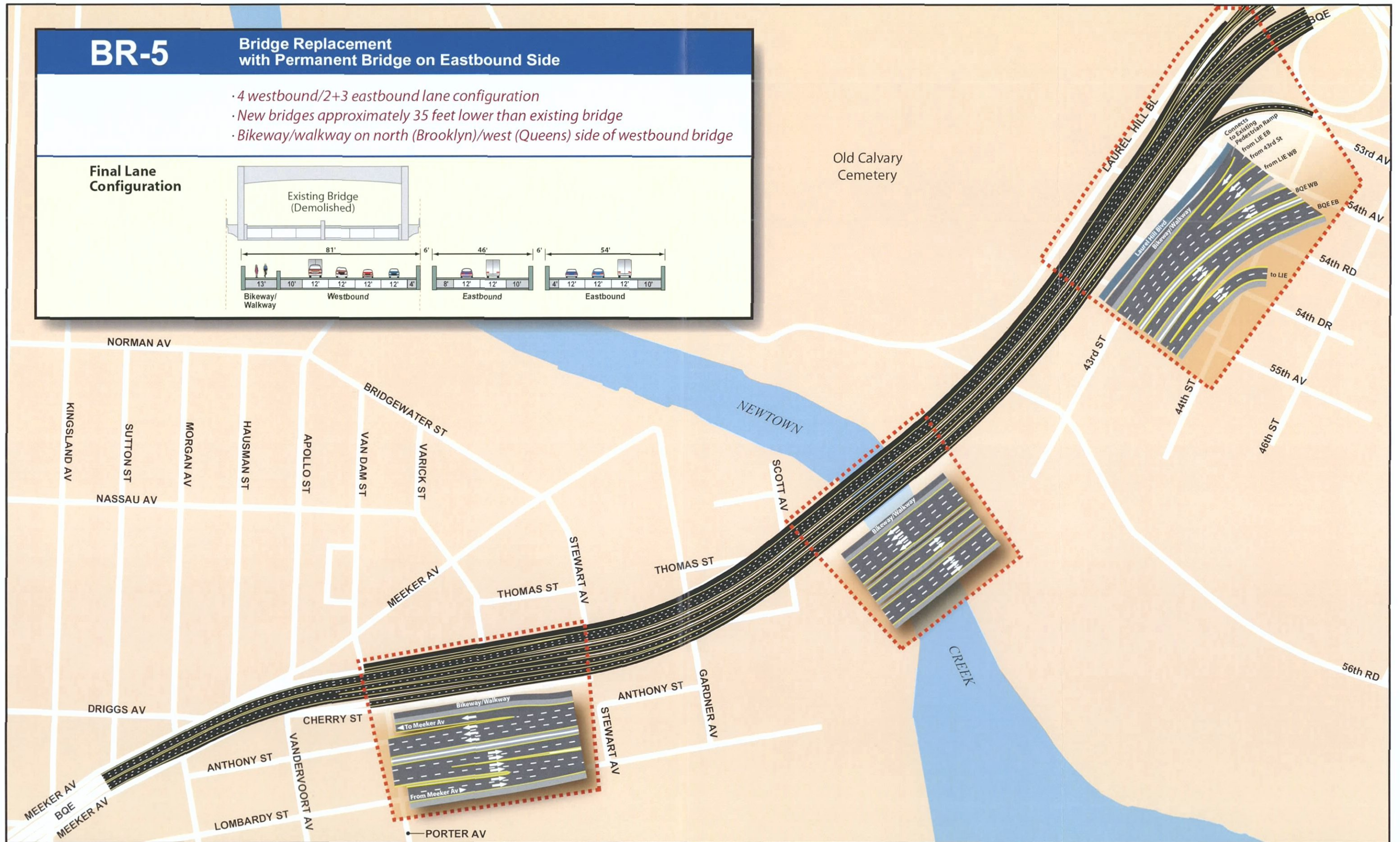
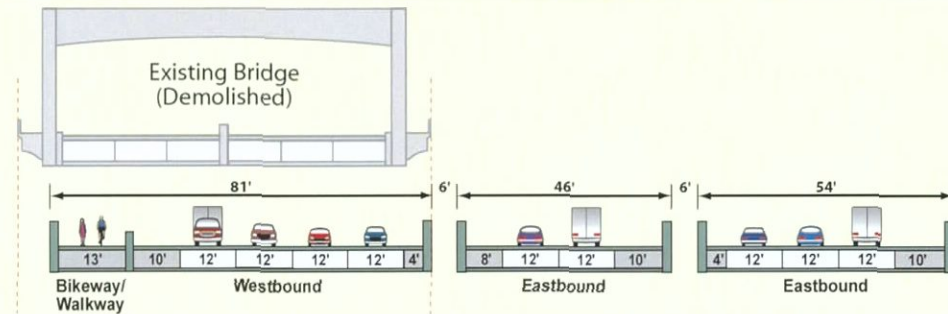
*Includes 1.8 m [6 ft] diameter piles at depth of 15 m [50 ft] to 26 m [85 ft].

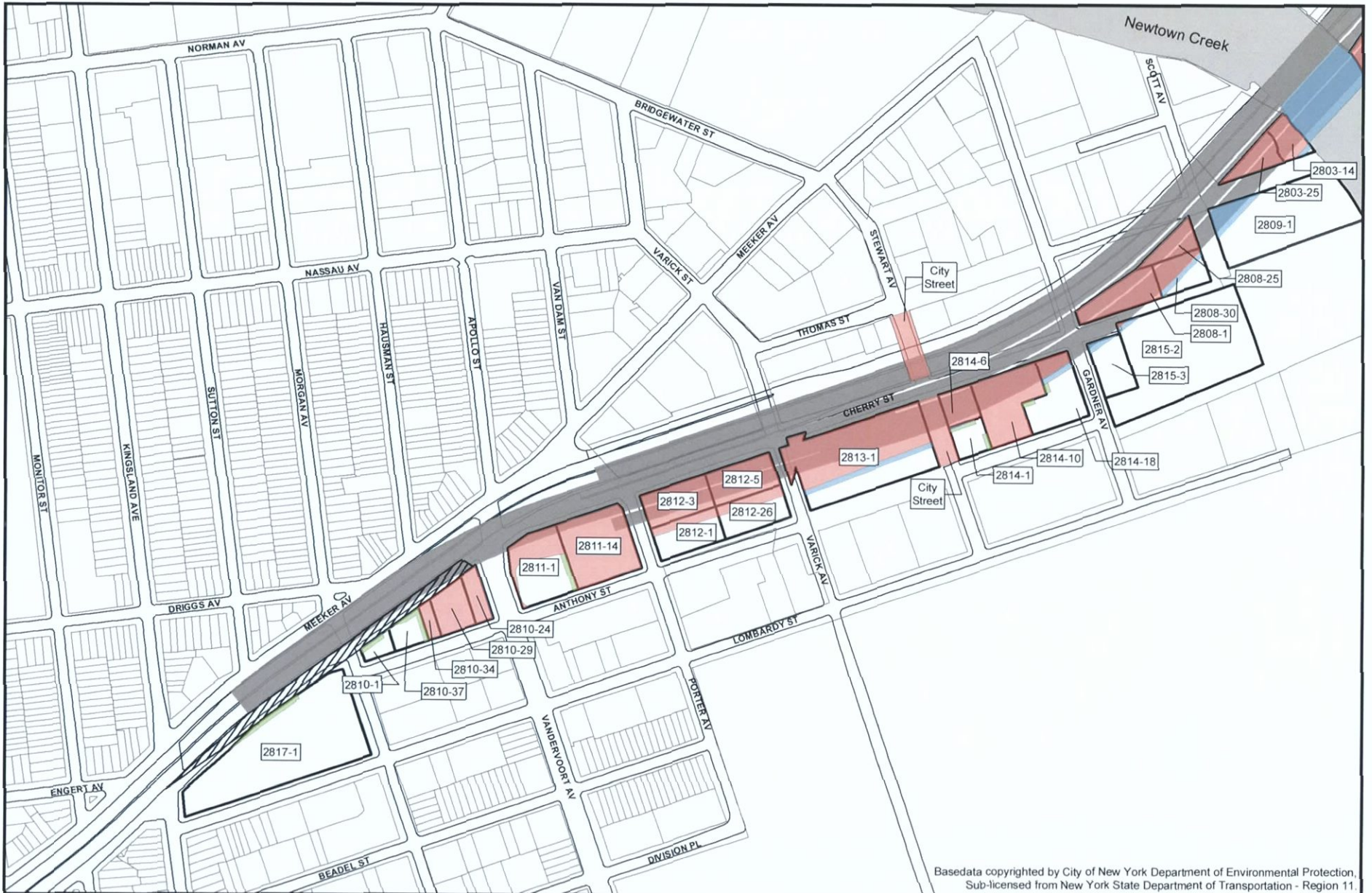
BR-5

Bridge Replacement with Permanent Bridge on Eastbound Side

- 4 westbound/2+3 eastbound lane configuration
- New bridges approximately 35 feet lower than existing bridge
- Bikeway/walkway on north (Brooklyn)/west (Queens) side of westbound bridge

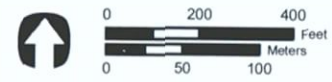
Final Lane Configuration



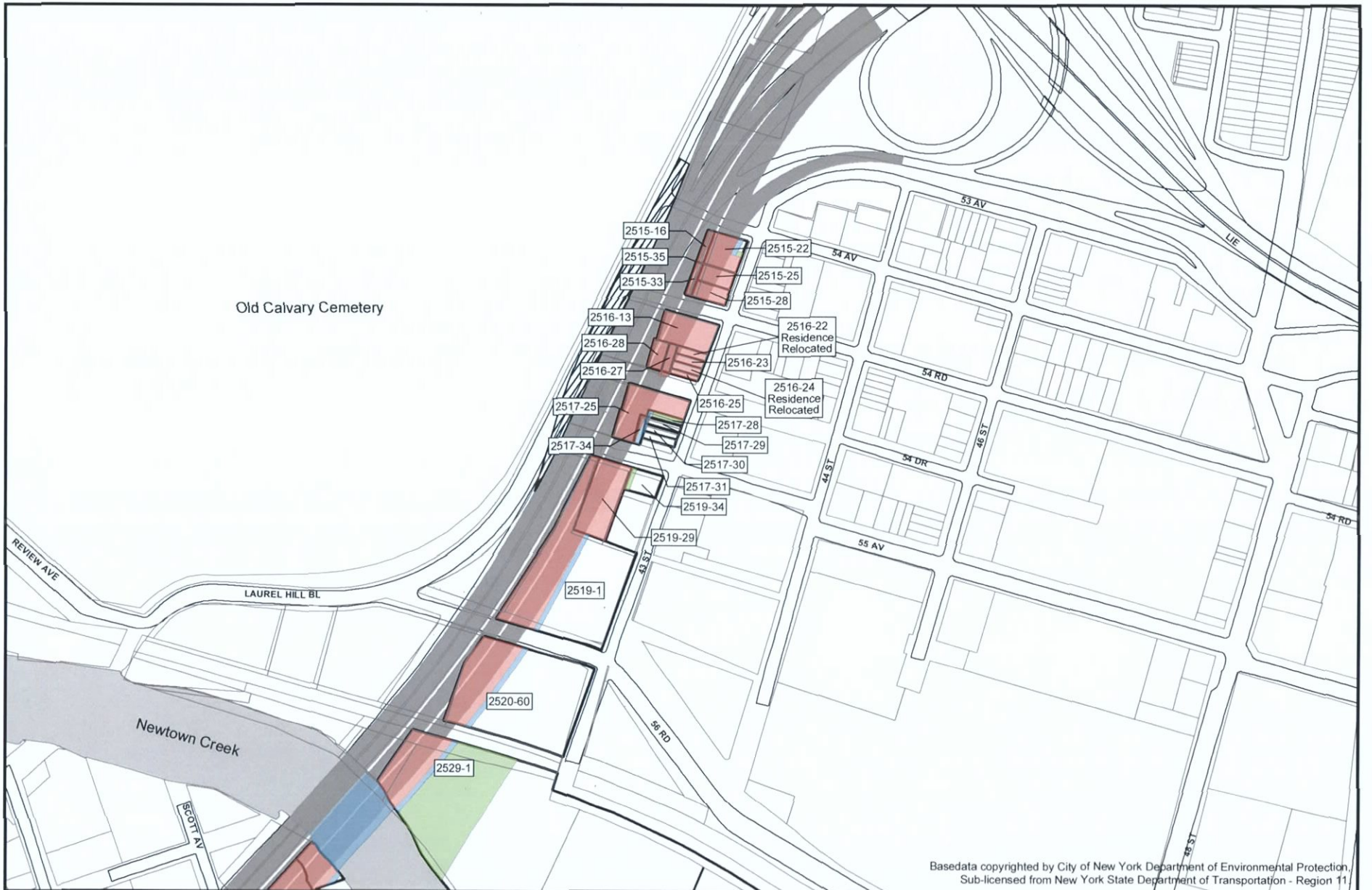


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Proposed Permanent Structure
 Proposed Temporary Structure
 Affected Parcels
 Fee Take
 Permanent Easement
 Temporary Easement



Attachment 19
BR-5 Right of Way Impacts (Brooklyn)



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Proposed Permanent Structure
 Proposed Temporary Structure
 Affected Parcels
 Fee Take
 Permanent Easement
 Temporary Easement



New York State
Department of Transportation



Attachment 20

BR-5 Right of Way Impacts (Queens)



EXISTING CONDITIONS



BRIDGE REPLACEMENT ALTERNATIVES

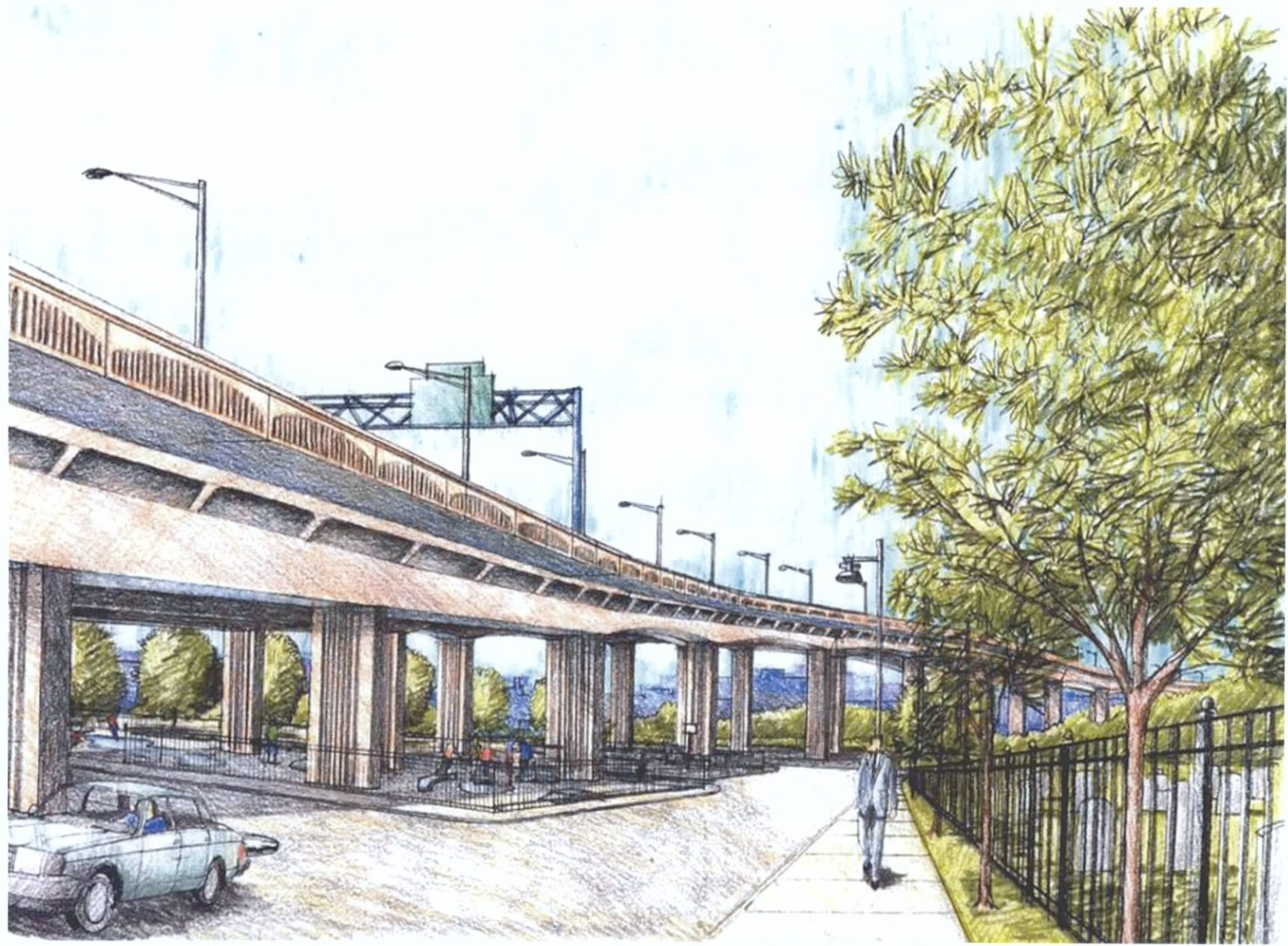


New York State
Department of Transportation



New York State
Department of Transportation

Attachment 23
Meeker Avenue Triangle



New York State
Department of Transportation

Attachment 24
Laurel Hill Boulevard Park