

Phase IA Literature Search and Sensitivity Assessment

New York City Build it Back Program--Community Block Development Grant—Hurricane Sandy Disaster Recovery Sheepshead Bay Courts Sewer Infrastructure Improvement Project Brooklyn, New York

December 2017

SUBMITTED BY:

Dewberry Engineers Inc. 600 Parsippany Road, Suite 301 Parsippany, NJ 07054

SUBMITTED TO: NYC Office of Housing Recovery Operations 250 Broadway, 24th Floor New York, NY 10004

Phase IA Literature Search and Sensitivity Assessment

New York City Build it Back Program--Community Block Development Grant—Hurricane Sandy Disaster Recovery Sheepshead Bay Courts Sewer Infrastructure Improvement Project Brooklyn, New York

TABLE OF CONTENTS

ΝΛΑΝΙΑ		Page
MANA	GEMENT SUMMARY	
1.0	INTRODUCTION	1
2.0	METHODOLOGY	4
3.0	ENVIRONMENTAL CONTEXT	4
4.0	LITERATURE SEARCH	6
5.0	PEDESTRIAN RECONNAISSANCE	17
6.0	REVIEW OF SOIL BORING DATA AND EXISTING UTILITIES	21
7.0	ARCHAEOLOGICAL SENSITIVITY ASSESSMENT	26
8.0	CONCLUSIONS AND RECOMMENDATIONS	30
9.0	REFERENCES	31

LIST OF FIGURES

Project Location Map	2
Area of Potential Effects	3
Soils Map.	5
APE in 1845	9
APE in 1873	10
APE in 1886	11
APE in 1890	13
APE in 1899	14
APE in 1895	15
APE in 1920	16
APE in 1924	18
APE in 1951	19
Photo Key	20
Existing Utilities within the APE	27
Existing Utilities within the APE	28
	Project Location Map Area of Potential Effects Soils Map APE in 1845 APE in 1845 APE in 1873 APE in 1886 APE in 1890 APE in 1899 APE in 1895 APE in 1920 APE in 1920 APE in 1921 Photo Key Existing Utilities within the APE Existing Utilities within the APE

LIST OF TABLES

Table 1	Soil Types Mapped within the APE	4
Table 2	Archaeological Sites within One-Mile of the APE	6

LIST OF PHOTOGRAPHS

Photo 1	Utility Markouts and Exposed Gravel on Stanton	22
Photo 2	Manholes and Ramp on Gunnison Court.	23
Photo 3	Drains and Broken Sidewalk on Lincoln Terrace.	24
Photo 4	Utility Markouts on Losee Terrace. View East	25

Phase IA Literature Search and Sensitivity Assessment

New York City Build it Back Program--Community Block Development Grant—Hurricane Sandy Disaster Recovery Sheepshead Bay Courts Sewer Infrastructure Improvement Project Brooklyn, New York

TABLE OF CONTENTS

LIST OF APPENDICES

- Appendix A Correspondence
- Appendix B
 Soil Boring and Test Pit Location and Logs

Appendix C Professional Qualifications



MANAGEMENT SUMMARY

SHPO Project Review Number: 17PR04596

Involved State and Federal Agencies: New York City Office of Management and Budget, US HUD

Phase of Survey: Phase IA Literature Search and Archaeological Assessment

Location Information Location: Sheepshead Bay Courts Minor Civil Division: Brooklyn County: New York

Survey Area (Metric / English): Length: N/A Width: N/A Depth: N/A

Number of Acres Surveyed: N/A

USGS 7.5 Minute Quadrangle Map: Coney Island, NY-NJ

Archaeological Survey Overview: Number & Interval of Shovel Tests: N/A Number & Size of Units: N/A Width of Plowed Strips: N/A Surface Survey Transect Interval: N/A

Results of Archaeological Survey

Number & name of prehistoric sites identified: N/A Number & name of historic sites identified: N/A Number & name of sites recommended for Phase II/Avoidance: N/A

Results of Architectural Survey

Number of buildings/structures/cemeteries within project area: N/A Number of buildings/structures/cemeteries adjacent to project area: N/A Number of previously determined NR listed or eligible buildings/structures/cemeteries/districts: N/A

Number of identified eligible buildings/structures/cemeteries districts: N/A

Report Author(s): Tina Fortugno, MA, RPA Zachary J. Davis, MA, RPA

Date of Report: 09/22/2017



1.0 INTRODUCTION

The New York City Office of Management and Budget (OMB) serves as US Department of Housing and Urban Development's (HUD) Responsible Entity (RE) in the administration of Community Development Block Grants for Disaster Recovery (CDBG-DR). These funds were allocated under the "Disaster Relief Appropriations Act, of January 29, 2013" (Public Law 113-2) for Hurricane Sandy disaster recovery. This grant supports the execution of New York City's Housing Recovery Program known as Build It Back (BIB).

In July 2013, OMB became a signatory to the Programmatic Agreement (PA) developed between the New York State Historic Preservation Office (NYSHPO), the New York City Landmarks Preservation Commission (LPC), and the Federal Emergency Management Agency (FEMA), which established a programmatic approach to managing the cultural resources reviews for compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 in response to Hurricane Sandy (FEMA 2013). The PA was revised in November 2014. The PA established a tiered environmental review process for the BIB program which is compliant with the National Environmental Policy Act (NEPA) and HUD's implementing regulations at 24 CFR Part 58.15.

BIB is currently conducting an Environmental Assessment (EA) of the proposed Sheepshead Bay Courts Sewer Infrastructure Improvement Project (Project) per the PA. The Project is located in the Sheepshead Bay Courts neighborhood in Southern Brooklyn (Figure 1). The proposed Sewer Infrastructure Improvement Project (SIIP) includes replacement of inadequate, failing, non-functional portions of privately-owned sewer networks serving approximately 65 residential properties within a 0.02 square mile area of the floodplain affected by Hurricane Sandy in October 2012. Upon review of the proposed Project, OMB determined that certain Project-related ground disturbing activities may not conform to the original or existing utility corridor footprint and thus did not conform to applicable PA allowances which provide for expedited cultural resource reviews.

On June 28, 2017, OMB engaged in initial consultation with the NYSHPO regarding the Project for compliance with Section 106 and with the PA. On July 25, 2017, the NYSHPO responded to OMB's consultation and indicated that the proposed Project is located in an archaeologically sensitive area. NYSHPO requested a Phase IA archaeological background and sensitivity assessment of the Project to determine the Project's potential to affect known or potential archaeological resources. The conclusions from the Phase IA analysis would be used to form recommendations for additional archaeological investigations, if necessary.

Per NYSHPO's request, Dewberry Engineers, Inc. (Dewberry) has conducted this Phase IA Literature Search and Sensitivity Assessment in compliance with Section 106 of the NHPA. The APE for the Project is confined to the areas within which proposed ground disturbing activities will occur. Such ground disturbing activities include the removal of existing utility infrastructure and the installation of new utilities. Utility improvements include the replacement of sanitary sewers, water lines, storm sewers, and gas mains. The Project will remove or replace utilities located along the following streets within the Sheepshead Bay area: Lincoln Terrace between Nostrand Avenue and Emmons Avenue; Lake Avenue; Losee Terrace from Brown Street to a point west of Batchelder Street; Stanton Road from Gunnison Court to Losee Terrace; and Gunnison Court from Brown Street to Batchelder Street (Figure 2). The APE for the Project is restricted to these streetbeds (Figure 2). No ground disturbing work will occur outside the APE as described.





Figure 1: Project Location Map



2





3

\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx

2.0 METHODOLOGY

To assess the archaeological potential of the APE, Dewberry reviewed a variety of sources, including the NYSHPO's online Cultural Resources Information System (CRIS), past archaeological reports proximal to the APE, readily available historic maps and atlases, local histories, reports available online through the New York City Landmarks Preservation Commission (LPC), and other online sources in order to compile a site-specific environmental and historical background for the vicinity of the APE. A pedestrian reconnaissance of the APE was also conducted by Dewberry and BIB personnel on September 8, 2017. The purpose of the pedestrian reconnaissance was to ascertain current conditions and to document evidence of past disturbance, severe slope, and/or exposed archaeological deposits or features.

3.0 ENVIRONMENTAL CONTEXT

Natural Environment

The APE is located within the Atlantic Coastal Plain. The Atlantic Coastal Plain encompasses all of Long Island, a small portion of Staten Island, and all of southern New Jersey. The region is underlain by poorly consolidated sedimentary formations dating to the Cretaceous, Tertiary, and Quaternary. These formations gently dip seaward. The APE is also located in an area which was near the terminal extent of the Wisconsin Ronkonkoma Moraine. As such, surface deposits consist of till and outwash associated with glacial activity and retreat (US Geological Survey 2017). The bedrock geology in the area consists of the Monmouth Group, Matawan Group, and Magothy Formation. This formation dates to the Upper Cretaceous and consists of Coastal Plain sediments. The primary material within the formation is clay or mud (Fisher et al 1970). The surficial geology of the APE consists of Outwash sand and gravel (og). These deposits generally consist of well-rounded and stratified coarse to fine gravel with sand (Caldwell 1989).

Soils within the APE consist primarily of Urban Land-Flatbush type soils (UFA) (Table 1; Figure 3). Flatbush-type soils represent approximately 12 percent of this complex. Urban Land, outwash stratum soils (UoA) were also mapped along the southern portion of the APE. Both soil types are associated with slopes ranging from zero to three percent and are developed from asphalt over human-transported material (NRCS 2017). Table 1 presents the typical pedons for the soils within the APE. As the pedon for Urban Land is consistent between the Urban Land-Flatbush and the Urban Land, outwash stratum, the pedon for the Flatbush-type component is also provided.

Name	Soil Horizon	Depth in (cm)	Color	Texture, Inclusion	Percent Slope	Drainage	Landform
Urban	Α	0-9 (0-22.3)	VDkBrn	Lo			Leanner
Land –	Bwu	9-25 (22.3-63.5)	YBrn	V FiSaLo		Wall	Loamy
Flatbush	2Bwb	25-33 (63.5-83.8)	YBrn	FiSaLo	0-3	ducined	antinopogenic
Series	2BCb	33-42 (83.8-106.7)	YBrn/Brn	SaLo		drained	material over
(UFA) ¹	2C	42-72 (106.7-182.9)	YBrn	V Grl LoSa			outwash
Urban	M1	0-6 (0-15.2)		Cemented			
Land,			Not	material		Not	Asphalt over
outwash	M2	6-20 (15 2-50 8)	provided	Cemented	0-3	provided	anthropogenic
stratum	1412	$0^{-2.0}$ (10.2-30.8)	provided	material		provided	material
(UoA)	2C	20-72 (50.8-182.9)		Grl Sa			

Table 1: Soil Types Mapped within the APE

Key: <u>Shade:</u> *Dk=Dark; V=Very* <u>Color:</u> *Brn=Brown; YBrn= Yellowish Brown* <u>Texture:</u> *Cl=Clay; Lo=Loam; Sa=Sand; Si=Silt* <u>Other:</u> *Fi=Fine; Grl=Gravelly.* 1 Represents pedon for Flatbush-type soils.

The APE is currently located between 300 and 600 feet (91.4 to 182.9 meters) to the north of Sheepshead Bay. Early twentieth century topographic maps indicate that Emmons Avenue was previously at the coastline, with the southern portion of the APE being immediately adjacent to Sheepshead Bay. The topographic maps also indicate that drainages to the bay and drainage-fed marshland were located along the eastern extent of the APE and to its immediate west. The Sheepshead Bay is a natural bay along the Atlantic Ocean. The APE is now drained by a network of storm sewers that has replaced the original



Figure 3: Soils Map.



5

\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx

drainage. Historically, creeks and channels to the Atlantic Ocean were located to the east of Sheepshead Bay. The shoreline along Sheepshead Bay was a typical barrier beach prior to the installation of bulkheads along the bay in the 1930s and 1940s. The installation of bulkheads has stabilized the shoreline of Sheepshead Bay (US Army Corps of Engineers (ACOE) 1983).

4.0 LITERATURE SEARCH

In order to help develop a context within which to evaluate the potential precontact and historic archaeological sensitivity of the archaeological APE, Dewberry examined photographic and cartographic collections publicly available through the New York Public Library's Digital Collection and other online storehouses, regional historical overviews, and site files and previously conducted cultural resource reports available through CRIS. The research results provided data used to develop site-specific precontact and historic period backgrounds for the project area and its immediate vicinity.

New York State Cultural Resources Information System (CRIS) Review

A review of CRIS identified four previously recorded archaeological sites within one-mile of the APE (Table 2). All of the previously identified sites are NYSM Sites with each site dating to the precontact period. A portion of NYSM 7877 is located in the far western extent of the APE in the vicinity of Lincoln Terrace and Lake Avenue. This site was recorded by Arthur Parker in the 1920s and was described as shell middens/shell heaps. No further description is available for this site. NYSM Site 7878 is located less than 1000 feet (304.8 meters) to the north of the APE. This site was also recorded by Parker and was described as a burial site. No further description was provided. Two large overlapping sites—NYSM 3608 and NYSM7459, were located to the north-northeast of the APE. NYSM Site 3608 consisted of a burial site with deep oyster beds and precontact ceramics. According to Parker, at least 12 burials were found on site. NYSM Site 7459 has been associated with a contact period Canarsee Village. The site file indicates that a surface survey was conducted on site which collected a variety of precontact ceramic types. No further description is provided for the site. The APE is also located within a NYSHPO-defined area of archaeological sensitivity. Such areas of archaeological sensitivity represent a buffer area around recorded archaeological resources and, thus, do not represent actual locations of known archaeological sites. There are no previously identified historic properties within the APE or in its immediate vicinity.

Site #	Distance from APE ft (m)/bearing	Time Period	Site Type
NYSM7877	Within western portion of APE	Precontact	Shell Middens/Shell Heaps recorded by Parker. NRHP eligibility—Undetermined.
NYSM7878	686 feet (209.1 meters) north	Precontact	Burials recorded by Parker. NRHP eligibility— Undetermined.
NYSM3608	3,819.6 feet (1,164.2 meters) north	Precontact	Burial Place (at least 12 skeletons), Deep Beds of Oyster Shells; Pottery recorded by Parker. NRHP eligibility—Undetermined.
NYSM7459	4,136.3 feet (1,260.7 meters) northeast	Precontact/Contact	Canarsee Village—Latham conducted surface survey variety of precontact ceramic types. NRHP eligibility—Undetermined.

Table 2: Archaeological Sites within One-Mile of the APE

Previous Cultural Resources Surveys

Five previous cultural resources surveys have been conducted within one-mile of the project area. Two of these studies were conducted by Historic Conservation and Interpretation, Inc. (HCI) and consisted of a Phase IB cultural resource survey which was conducted in two stages in association with a proposed sludge force main route (HCI 1983a, 1983b). These surveys were located to the northeast of the APE. The first stage of the Phase IB survey consisted of the development of a testing plan for those portions of the proposed alignment which were assessed as having precontact sensitivity (HCI1983a). The four areas with potential sensitivity consisted of: the Fresh Creek Basin Crossing, the Paerdegat Basin Crossing, the Mill Basin Crossing, and the Gerritsen's Creek Crossing. For each of these areas, HCI identified evidence of past filling



associated with the construction of the Belt Parkway. As such, HCI recommended archaeological review of systematic soil borings within each area to determine the extent of past filling and the potential for buried potential cultural-bearing strata. In the second stage of the Phase IB report, HCI reviewed the soil boring data for each of the sensitive areas. The soil borings indicated past fill to depths ranging from two to 18 feet (0.61 to 5.5 meters) below grade. HCI did not identify any evidence of archaeological deposits or former ground surfaces within the boring profiles. While a narrow layer of peat and clay was identified in the Paerdegat Basin borings, this stratum was interpreted as a former marshy surface. Any shell observed within the excavated soil borings represented isolated deposits. As a result, HCI found that there was no potential for intact archaeological deposits within the proposed sludge route and thus recommended no additional archaeological investigations (HCI 1983b).

Celia Orgel also conducted a preliminary assessment of cultural resources within Sheepshead Bay in support of an Environmental Impact Statement (EIS) prepared in advance of proposed navigational improvements to the bay. Orgel observed that the configuration of Sheepshead Bay and the surrounding land dramatically changed over the last few centuries. She attributed these changes to both natural and cultural forces and noted that Manhattan Beach, the part of Coney Island to the south of the bay, had experienced the most dramatic changes over time. Orgel noted that several precontact archaeological sites had been recorded within the area and that shipwrecks had been previously documented in the bay. She concluded that the vicinity of the bay would be "ideally suited for coastal villages and camps of the Archaic and Woodland period cultures" (Orgel 1982:6). Orgel's analysis concluded that the boat basin and existing channel of Sheepshead Bay had experienced extensive past disturbance through past dredging and filling. If dredging was to occur outside these areas, she recommended additional research including possible remote sensing to identify shipwrecks. She also noted that if dredged material was to be deposited outside of a current disposal area, that further research might be needed including potential archaeological testing.

In 1998, Historical Perspectives, Inc. (HPI) conducted a Stage IA cultural resource assessment of the Belt Parkway Bridges. Two of the nine bridges evaluated by HPI were located within the vicinity of the APE the Nostrand Avenue Bridge and the Gerritsen Inlet Bridge. HPI concluded that both the Nostrand Avenue Bridge and the Gerritsen Inlet Bridge were sensitive for buried precontact cultural deposits. As such, they recommended that soil borings be excavated in the vicinity of both bridges and that the boring profiles be reviewed by an archaeologist. The archaeological analysis of the boring profiles would attempt to identify any potential precontact living surfaces or deposits. Further archaeological investigations might be warranted as a result of the soil boring analysis (HPI 1998).

In 2002, HPI conducted a geoarchaeological evaluation associated with a Phase IA archaeological assessment of the Belt Parkway over Gerritsen Inlet. In their 1998 study, HPI had previously assessed the Gerritsen Inlet Bridge as having the potential for deeply buried precontact cultural materials. Given this sensitivity, prior to proposed alterations to the Gerritsen Inlet Bridge, HPI examined soil borings excavated throughout their study area to determine the potential for deeply buried cultural deposits. HPI noted the presence of approximately 7.8 to 34.7 feet (2.4 to 10.6 meters) of twentieth century fill within the examined borings. These fill layers, associated with the construction of the Bay Parkway, overlain a clayey silt strata. HPI interpreted this clayey silt layer as a low-lying marsh deposit which predated the parkway construction. While shell and peat were noted in the profiles, these deposits were incidental, localized, and insubstantial. As a result, they were not interpreted as evidence of a shell midden, intact cultural deposit, or a potential cultural-bearing strata. Thus, HPI concluded that no archaeologically sensitive soils would be impacted by the proposed project and that no further archaeological testing was warranted (HPI 2002).

Precontact Period

The western extent of the APE is located within the far eastern extent of NYSM Site 7877. Parker indicated the presence of both shell heaps/middens and burials within southern Brooklyn (Parker 1920:582-583). Bolton indicated that this portion of Brooklyn was occupied by the Canarsee tribe at the time of European Contact (Bolton 1975:46-51). He identified the Canarsee as a smaller tribe within the Delaware lineage. He noted that the Canarsee had a village site at Ryder's Pond or Gerritsen Bay near the Sheepshead race track. This location is to the northeast of the APE. The portion of Sheepshead Bay within which the APE is located



was called Narrioch, "a point of land" (Bolton 1922:163-166). According to Bolton, several precontact pathways were located across the southern and eastern portions of Brooklyn. The inhabitants of Narrioch also controlled present-day Coney Island, which was called Mannahanning, "land on an island". M.R. Harrington noted the presence of shell heaps to the northeast of the APE near Shellbank Creek (Harrington 1909). It is believed that the creek was named for the shellheaps which were located along its banks (O'Halloran 1950; Orgel 1982:6).

Historical Background

Historical records indicate that the earliest European settlement within the vicinity of Sheepshead Bay occurred circa 1645. This English settlement was located to the northwest of Sheepshead Bay in Gravesend. The area was sparsely settled throughout the seventeenth and eighteenth centuries. In the early nineteenth century, a small cluster of wooden shacks developed around the inlet. The inlet also provided sheltered anchorage for small boats (Jackson 2010:1178).

Early to mid-nineteenth century historic maps reflect the dispersed and scarce nature of development within the area. The United State Coast Survey's 1845 map indicates the development of a few communities within southern Brooklyn including New Utrecht, Gravesend, Gravesend Neck, and the Flatlands (Figure 4). Several roadways were also located within the region and connected settlements. Development was centered upon the roadways and major intersections within the settlements. A hotel was located on Coney Island, to the southwest of the APE, suggesting the beginning of resort development within the area. A toll bridge crossed Coney Island Creek and connected the main land to Coney Island. The southern portion of the APE was submerged at this time; the northern portion was located in undeveloped marshland to the northwest of Plumb Inlet. Much of the southern portion of Brooklyn had been divided into farmland; undeveloped forest and marshland were located within the vicinity of and within present-day Sheepshead Bay.

Widespread development of the area began in the 1870s with the subdivision and development of farm lots. Hotels were also constructed along the waterfront catering to an increasing number of summer visitors who were attracted to the cool sea breezes and local seafood (Orgel 1982:8-12; Jackson 2010:1178). Beers' 1873 map indicates that the settlement of Sheepshead Bay had developed to the northwest of the APE (Figure 5). Extensive development was located along the southern portion of the historic roadways within the settlement. Hotels, including the John McMohess Hotel and the Lindermans Hotel, had developed along the northern coastline of Sheepshead Bay. Emmons Avenue was not extant. The far southern portion of the APE continued to be submerged; the northern portion of the APE consisted of undeveloped marshland and a partially cleared parcel in the immediate vicinity of a tributary to the bay and to the west of Hog Creek. More intense development was located to the north and west of Sheepshead Bay.

In 1879, racing establishments began to be developed in southern Brooklyn. In this year, the Brighton Beach Racing Association was formed by William Engeman. In six weeks, Engeman built a race track and grand stand at Brighton Beach. Soon thereafter, August Belmont, Jr., William R. Travers, and A. Wright Sanford formed the Coney Island Jockey Club. The Coney Island Jockey Club opened the Sheepshead Bay Race Track in June of 1880. A third race track was built in Gravesend in 1886 (Stanton 1997; Williams 2012; Works Project Administration 1939; Jackson 2010:1178). Coincident with the development of the race tracks was the extension of several railroads and boulevards to Coney Island. A spur line of the Long Island Rail Road terminated at the Sheepshead Bay Race Track. By 1884, the village of Sheepshead Bay contained a church, post office, four stores, a meat market, several hotels, and boarding houses. By this time, there were at least ten summer cottages within Lincoln Beach, which was located from East 27th Street to the eastern shore. This area became known as Millionaires Row. Many of these lots were located in marshy conditions which needed to be filled prior to development (Orgel 1982: 8-12).

The J.B. Beers & Co.'s 1886 map reflects increased development within both Sheepshead Bay and Coney Island (Figure 6). Two rail lines extended through the village and across Coney Island Creek. The Coney





Figure 4: APE in 1845



9



Figure 5: APE in 1873



10

\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx



Figure 6: APE in 1886



11

Island Jockey Club Race Course was located to the northwest of the APE. Dense development was located along several roadways in the vicinity of the village. Emmons Avenue had been constructed; dense development was located along the western portion of the road. It appears that Nostrand Avenue and several streets to its west had been proposed. The APE was located to the north of dispersed settlement along Emmons Avenue. The eastern portion of the APE was in the immediate vicinity of a tributary to Sheepshead Bay. There appeared to be no development within the APE; however, a street grid was proposed. It appears that conditions along the eastern extent of Emmons Avenue and to its north may have remained marshy. Robinson's 1890 *Atlas of Kings County* indicates that there were several small creeks or tributaries within the vicinity of the APE (Figure 7). A meandering creek was located around Haring Street and Nostrand Avenue; the Leonard Creek extended across Batchelder Street to the northwest. Dispersed frame structures were located to the west and south of the APE; there appeared to be no structures within the APE.

Hyde's 1899 Borough of Brooklyn Map indicates that many of the streets within the vicinity of the APE were unopened (Figure 8). Emmons Avenue was open and extended from west of East 26th Street to Brigham Street; sewer and water lines were located within Emmons Avenue. Settlements had developed on the southern frontage of Emmons Avenue, on the northern coast of Sheepshead Bay. Nostrand Avenue and Batchelder Street were unopened. The lot between Batchelder and Brown streets was undeveloped; Losee Terrace, Gunnison Court, and Stanton Road were not extant. Leonard Avenue extended in a diagonal from Brown Street and Emmons Avenue towards Voorhees Avenue. Present-day Haring Street may occupy portions of historic Leonard Avenue. Neither Lake Avenue, nor Lincoln Terrace were proposed at this time. However, both streets may follow historic plot lines. A frame building was located to the immediate east of the southern extent of Lincoln Terrace. Frame buildings were also located to the south of the eastern portion of the APE. The 1895 United States Coastal Survey Map does not indicate the degree of development within Sheepshead Bay by the late nineteenth century (Figure 9). Nevertheless, the map does indicate the marsh conditions within the APE prior to its development. According to the 1895 map, the APE was located within a parcel of partially cleared and partially undeveloped marshland adjacent to a tributary to the bay. A structure was located to the south of the western portion of the APE. The coastal survey map also indicates that there was a Coast Guard Life Saving Station on Manhattan Beach, to the southeast of the APE.

The hotel resort industry within Sheepshead Bay and its vicinity flourished through the 1890s. In 1898, a storm impacted the coast and resulted in the formation of new inlets and the erosion of portions of Manhattan Beach. The storm may have had severe impacts on the resort industry as many of the resorts failed in the early twentieth century. The Manhattan Beach Hotel was demolished in 1911; five years later, the Oriental Hotel was closed (Orgel 1983:8-12). In 1910, New York State banned horse track gambling and the Sheepshead Bay Race Track was closed. In 1915, the Sheepshead Speedway was opened within the former race track site. The speedway was considered the fastest automobile track in the world. The site was demolished in 1923; the site was then subdivided and developed (WPA 1939:495; Jackson 2010:1178; Stanton 1997; Williams 2012).

In 1920, a developer named Robert Densely purchased a large parcel of land which included the APE. This parcel was north of Emmons Avenue and extended from East 29th Street to Batchelder Street. In order to develop the area, sand was dredged from Sheepshead Bay and used to fill the marshland. Once filled, the parcel was subdivided into development lots. Densely constructed one-story bungalows within the subdivided lots. These bungalows represented one of the first housing developments within Sheepshead Bay (Blather from Brooklyn 2006; Pratt Center 2013; Forgotten New York 2017). Many of these bungalows were built within courts which were up to five feet (1.5 meters) below grade and provided little drainage infrastructure (Department of City Planning 2017).

Hyde's 1920 atlas of the region reflects the beginning of this development (Figure 10). The map does not indicate that Lincoln Terrace or Lake Avenue had been proposed; however, it does reflect extensive and dense stucco development to the east of present-day Lincoln Terrace and frame building development to the east and west of present-day Lake Avenue. Dense development had also occurred in the vicinity of







13

\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx





14

\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx



Figure 9: APE in 1895







\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx

Gunnison Court, Stanton Road, and Losee Terrace. It is unclear whether these roads were extant or whether they were informal alleyways. The southern portions of Brown and Betchelder streets had been constructed; a sewer line was located in the southern portion of Betchelder Street. During this period, the area enjoyed a real estate boom and a new era of vacationing began.

The 1924 historic aerial imagery for the area reflects extensive development in the vicinity of the APE (Figure 11). Dense housing continued to be located in-between Lincoln Terrace and Lake Avenue and between Lake Avenue and Haring Street, and in the vicinity of Gunnison Court, Stanton Road, and Losee Terrace. The 1930 Sanborn Fire Insurance Maps confirm the existence of the five streets within the APE and the presence of dense residential development in their immediate vicinity.

In 1921, the city government commissioned a bulkhead on the Manhattan Beach side of Sheepshead Bay. In 1931, New York City took title to the area surrounding the Sheepshead Bay Basin and began revitalizing it. During this time, Emmons Avenue was widened from 80 feet to 120 feet (24.4 to 36.6 meters) and its grade was raised. In widening the street, the city condemned all of the buildings to its south from East 27th Street to the head of the bay. The bay was dredged nine feet (2.7 meters) at low tide and 14 feet (4.3 meters) at high tide to allow for larger boats. The bay was also expanded and, thereafter, hosted a range of fishing and dining activities. Descriptions of the area noted the removal of shacks, the creation of new piers, and the installation of new bulkheads (Orgel 1982:8-12).

The Belt Parkway, then the Shore Parkway, was constructed in 1941. The parkway is located to the immediate north of the APE. The Belt Parkway was built over the former Plumb Island which was attached to the mainland through landfilling. Following construction of the parkway, Sheepshead Bay became a convenient housing location for commuters (Orgel 1982:8-12; Jackson 2010:1178; Department of City Planning 2017). In the 1950s, the character of the neighborhood changed with few remaining undeveloped areas and farms being increasingly subdivided and developed. Wooden houses were replaced by multi-story redbrick apartment buildings. Summer cottages were also winterized for full year habitation. The 1951 historic aerial imagery reflects the installation of the Belt Parkway to the north of the APE (Figure 12). The APE appears to be relatively unchanged from the 1924 aerial. However, increased development, including the development of secondary roads and structures, had occurred to the north and west of the APE.

By 1960, Sheepshead Bay was the fastest growing community in Brooklyn. The area was known for recreational fishing (Jackson 2010:1178; Orgel 1982:12). During the 1970s, Sheepshead Bay entered a period of decline. The Special Sheepshead Bay District was created in 1973 to reinforce the community's ties to waterfront recreation and fishing, an attempt at reviving the tourism industry. New York City also announced revitalization plans for the area in the 1980s; many of these plans never materialized (Jackson 2010:1178; New York City Regional Economic Development Council 2013). In the 1990s, rising real estate values resulted in higher housing costs and spurred the construction of new condominium units and an influx of younger immigrants.

Sheepshead Bay was significantly impacted by Superstorm Sandy in 2012. The hurricane resulted in extensive flooding, flooding one of the community's business corridors on Sheepshead Bay Road, and smashed apart storefronts, bungalows and other structures on Emmons Avenue. Since the storm, building has resumed within Sheepshead Bay at an increasing pace. Several resiliency programs and revitalization efforts are being undertaken for the area including the BIB program improvements. Sheepshead Bay remains an active and growing community (Department of City Planning 2017; Barkan 2016).

5.0 PEDESTRIAN RECONNAISSANCE

Dewberry archaeologist, Tina Fortugno, conducted a pedestrian reconnaissance of the APE and its vicinity on September 8, 2017. The purpose of the reconnaissance was to document existing conditions within the property, as well as to identify any potential evidence of past ground disturbance, or possible archaeological resources. Photographs were taken of the existing conditions within the APE (Figure 13).







\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx







Figure 13: Photo Key



20

\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx

The walkover included an examination of all five streets within the APE. The location of each street--Lincoln Terrace, Lake Avenue, Losee Terrace, Stanton Road, and Gunnison Court--is notably depressed from the elevation of the neighboring streets including Nostrand Avenue, Emmons Avenue, Brown Street, and Batchelder Street. Steps from Nostrand and Emmons avenues provide outlets for Lincoln Terrace; Lake Avenue also has steps at its only outlet onto Emmons Avenue. Losee Terrace and Gunnison Court also have stepped and ramped outlets onto Brown and Batchelder streets. At the time of the site visit, active house construction and renovation was ongoing by both private interests and in association with BIB on both Gunnison Court and Stanton Road. The sidewalks within each of the five streets consisted of inconsistent poured cement squares which evidenced subsurface utilities, drains, deterioration, and repairs (Photographs 1-4). The sewer drains observed along each of the streets were notably clogged with sand deposits that reached the surface. Large manholes were noted on Lake Avenue, the western portion of Gunnison Court, and Losee Terrace. Several of these manholes were not flush with the ground surface. The on-site BIB escort, Wil Fisher, indicated that the structures on Stanton Road had extended their front yards into the street, significantly diminishing the width of the road and potentially resulting in the location of existing utilities beneath fence lines and front yard deposits. Utility markouts indicating the presence of subsurface utilities were observed along each of the streets. Mr. Fisher indicated that some of the existing household utilities were located in rear yards, but that the majority of the utilities were situated in the front vard/streets and that all of the proposed utilities would be installed in the fronting streets.

The location of recent test pit excavations were noted within Stanton Road and Losee Terrace. The exposed excavated surface consisted of fine brown sand and gravel. The locations had been backfilled to the surface; as such, the excavated profiles were not visible (Photograph 5). The pedestrian reconnaissance did not identify any potential precontact or historic features. The majority of the APE consisted of paved surfaces with no exposed soil aside from the recent excavations.

6.0 REVIEW OF SOIL BORING DATA AND EXISTING UTILITIES

In April of 2017, LiRo Engineers, Inc. (LiRo) conducted soil borings and test pits in advance of the proposed Project (Appendix B). LiRo excavated a total of 13 soil borings; the borings were located along Emmons Avenue, Haring Street, and Brown Street. A total of 18 test pits were also excavated in the front and rear yards on Lincoln Terrace, Lake Avenue, Gunnison Court, Stanton Road, and Losee Terrace. The soil borings were located in the immediate vicinity of the APE; several of the test pits were within the APE. The soil borings evidenced an overlying fill deposit which extended in depth from five to nine feet (1.5 to 2.7 meters). Within two of the soil borings, a three-foot (0.91-meter) layer of tar underlain the fill. Within several of the borings, a layer of potential fill, sand with gravel and silt, was found underlying the initial fill layer and/or tar deposit. The potential fill deposit was approximately three feet (0.91 meter) thick. Beneath the initial fill or the potential fill layers, the exposed profiles generally consisted of sequential layers of compact fine to medium brown sand with a trace of silt. Loose fine to medium brown sand was also documented within several of the soil borings. One soil boring, SB1, located along Emmons Avenue near Nostrand Avenue, contained a soft organic silt layer beneath its tar deposit. The organic deposit was encountered at a depth of approximately 8.5 feet (2.6 meters) below the surface and extended for approximately two feet (0.61 meter) in depth. The matrix included fine brown sand. The soil borings were excavated to a depth ranging from 21 to 39.5 feet (6.4 to 12 meters) below the surface and terminated within the compact fine brown sand matrix (LiRo 2017:SB-003.01).

The soil profiles for 13 of the 18 test pits were available and reviewed. The test pit excavations were shallower than the soil borings and were excavated with the specific intent of identifying existing utilities. Utilities were identified at depths ranging from eight inches (20.3 centimeters) to 5 feet 10 inches (1.8 meters) below the surface. The deepest utilities were existing sanitary sewer mains. Water mains and gas lines were also identified. The water table was encountered within Test Pits 1, 2, 10, and 13; these test pits were located on Lincoln Terrace, Stanton Road, and Gunnison Court. There was no description provided for the soils encountered in the test pits.





Photo 1: Utility Markouts and Exposed Gravel on Stanton Road. View South. (T. Fortugno 9/8/2017).



Photo 2: Manholes and Ramp on Gunnison Court. View West. (T. Fortugno 9/8/2017).



Photo 3: Drains and Broken Sidewalk on Lincoln Terrace. View Southeast. (T. Fortugno 9/8/2017).



Photo 4: Utility Markouts on Losee Terrace. View East. (T. Fortugno 9/8/2017).



Photo 5: Test Pit on Lake Avenue. (T. Fortugno 9/8/2017).

A review of existing utility maps for this Project indicated existing sewer, water, and gas mains within each of the streetbeds in the APE (Figures 14a & 14b). Utilities within Lincoln Terrace and Lake Avenue consist of both gas and water mains. Sanitary sewer and water mains are located within the portion of Losee Terrace to the east of Stanton Road; a gas main is also located within the entire length of Losee Terrace. A water main and a sanitary sewer main are located within Stanton Road. The western portion of Gunnison Court contains both electrical and water mains; the eastern portion of the road contains a sanitary sewer main. The test pit profiles suggest the presence of multiple water and gas mains within Stanton Road (LiRo 2017). The pedestrian reconnaissance identified utility markouts and drains on each of the streets; manholes were also observed along several streets.

7.0 ARCHAEOLOGICAL SENSITIVITY ASSESSMENT

In order to assess the potential for the APE to possess intact archaeological resources, Dewberry has analyzed the results of the background research, environmental context, soil boring data, and pedestrian reconnaissance. Based upon the available information, the APE is considered to have no potential for historic period or precontact period archaeological resources.

Sensitivity models for precontact settlement in the Mid-Atlantic typically analyze the site location in relation to slope, distance to potable water, and soil drainage. These models also evaluate the location of a site to previously known precontact occupations within the region and any settlement patterns or trends evidenced by those sites. Generally speaking, undisturbed sites located within relatively flat, well-drained upland landforms within 500 feet (152.4 meters) of potable water sources are considered sensitive for precontact archaeological resources. This general model is further delimited into high sensitivity (0-300 feet (0-91.4 meters) from water), moderate sensitivity (300-400 feet (91.4 to 121.9 meters)), and low sensitivity (400-500 feet (121.9 to 152.4 meters)). Locations beyond 500 feet (152.4 meters) from a potable water source, within flat well-drained areas and not in proximal distance to known precontact sites, are typically determined to have no sensitivity for significant precontact archaeological deposits. Locations meeting some of the above environmental characteristics or within 500 feet (152.4 meters) of a known precontact archaeological site may also be characterized as having moderate to low sensitivity. The degree





Figure 14a: Existing Utilities within the APE



27

\\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx



Dewberry

\Paterson\Projects-ENV\50060367\Adm\Reports\Cultural Resources\Phase IA Report Sheepshead Bay.docx

of known past disturbance to an area is also a critical factor in assessing potential archaeological sensitivity. Areas which are known to have experienced extensive subsurface disturbance generally have no to low potential for intact archaeological deposits.

The archaeological site file review revealed that one precontact period site was located to the immediate west or within the far western extent of the APE. This site, NYSM Site 7877, consisted of shell middens/shell heaps. The location information for the site is vague and no further description of the site type or nature of the deposit was provided. Two precontact burial sites and a Canarsee Village site have been documented within one-mile to the north of the APE. The APE is currently located between 300 and 900 feet (91.4 to 274.3 meters) to the north of Sheepshead Bay. Historic maps indicate that the APE has been situated closer to and along the coastline of Sheepshead Bay. Portions of the APE may have been historically submerged. During the mid to late nineteenth century, the APE was located in undeveloped marshland fed by tributaries to the bay and by Leonard Creek. The mapped soils within the APE consist of disturbed soils—Urban Land-Flatbush and Urban Land, outwash soils. Flatbush-type soils are well-drained; however, the Urban Land component of these soils is not associated with particular drainage types. Slopes within the APE are less than ten feet (three meters) asl. Currently and historically, there were no locations of steep slope within the APE.

A review of the available soil boring and test pit data indicates that the APE contains at least five to nine feet (1.5 to 2.7 meters) of overlying fill. Existing utility lines, including water, sewer, and gas mains, are located within the fill. Existing utility plans indicate the presence of utility lines within all five of the streets in the APE. Beneath the fill deposits, the soil borings evidenced sequential layers of compact and/or loose sand with little silt and gravel to a depth ranging from 21 to 39 feet (6.4 to 12 meters) below the surface. The soil boring profiles did not evidence peat deposits or other deeply buried organic surfaces which could represent potentially cultural-bearing strata. Rather, only one soil profile evidenced organic silt deposits which were mottled with fine brown sand and, as such, did not represent an intact matrix. The general consistency in the soil boring profiles suggests past filling of the area possibly with dredged sand from the bay. It is unclear whether this fill replaced, truncated, and/or capped any preexisting soils. Regardless, the profiles indicate that intact potential precontact deposits are not extant within the APE at depths above 21 feet (6.4 meters) below the surface. As it is anticipated that the proposed utility replacement will occur within a maximum depth of 15 feet (4.6 meters) from the surface, the APE is not considered sensitive for precontact archaeological deposits.

With respect to historic archaeological sensitivity, a review of the cartographic and aerial imagery suggests that the southern portions of the APE may have been underwater in the mid-nineteenth century. The northern coastline of Sheepshead Bay appears to have been filled throughout the nineteenth century, pushing further to the south. By 1873, the majority of the APE was on land; by the late nineteenth century, Emmons Avenue had been constructed along the coastline with additional landfill being installed to its south. By 1890, roads were proposed within the vicinity of the APE and dispersed frame buildings were located around Emmons Avenue. By 1899, a small frame structure was located to the immediate east of the present-day location of Lincoln Terrace. No other structures were located within the APE although there was dispersed development in the vicinity. By 1920, the dense bungalow development along Lincoln Terrace and Lake Avenue had occurred; the previous frame structure had been removed. By this time, development had also occurred in the vicinity of the eastern portion of the APE. The historic map research suggests that in the late nineteenth century a frame building was located within the immediate vicinity of Lincoln Terrace; there is no indication of any other pre-twentieth century development within the APE.

The archaeological site review did not identify any historic archaeological sites within the vicinity of the APE. The streets within the APE date to the twentieth century and were formed in association with the bungalow development in the 1920s.

As previously noted, the soil borings and test pits did not indicate the presence of intact soils or potential ground surfaces. Rather, the boring profiles reflected a generally consistent deposition of fine to mediumgrained sand below overlying fill deposits. There were no historic artifacts or potential features identified within the soil profiles or test pits. Given the exhibited soil profiles, the evidence for disturbed soils, and the



lack of evidence for intact historic deposits, the APE is considered to possess no historic archaeological sensitivity.

Furthermore, current Project designs propose removal and replacement of utilities within the existing location or in immediate proximity to existing utilities. Project activities will be restricted to a depth within 15 feet (4.6 meters) of the ground surface. The soil boring profiles indicate that there are no intact soils or potential cultural deposits to a depth of at least 21 feet (6.4 meters) below the ground surface. Therefore, the APE is not considered sensitive for cultural resources and no additional archaeological investigations are recommended in association with the Project as it is currently designed.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Dewberry has completed a Phase IA Literature Search and Sensitivity Assessment for the proposed Sheepshead Bay Courts Sewer Infrastructure Project. This study consisted of a review of past cultural resource surveys and archaeological site files, historic background research, a review of historic maps and aerial imagery, a review of soil boring data and existing utility maps, and a pedestrian reconnaissance of the Project APE.

Based on environmental and topographic conditions, the history of development and disturbance, and the soil boring profiles, the APE has been assessed as having no sensitivity for precontact archaeological deposits to a depth of at least 21 feet (6.4 meters) below the surface. The review of historic maps and aerial imagery indicated the presence of one late nineteenth century structure in the immediate vicinity of the western portion of the APE. The soil borings and test pits produced no evidence of historic deposits or an intact historic period ground surface. Given the relatively limited historic development within the vicinity of the APE and the soil boring profiles, the APE is considered to possess no historic archaeological sensitivity. As the APE has been assessed as having no archaeological sensitivity, no further archaeological investigations are recommended in association with the Project as it is currently designed.



9.0 **REFERENCES**

Barkan, Ross

2016 "Transformation on Brooklyn's Southern Shore." *The New York Times* 16 September 2016.

Beers, F.W.

1873 *Atlas of Long Island, New York.* Beers, Comstock, & Cline, New York.

Blather from Brooklyn

2006 "A Day on Sheepshead Bay." Accessed online September 6, 2017 at <u>https://blatherfrombrooklyn.wordpress.com/2006/11/29/a-day-on-sheepshead-bay/</u>.

Bolton, R.P.

- 1975 *New York in Indian Possession.* Museum of the American Indian Heye Foundation, New York.
- 1922 *Indian Paths in the Great Metropolis.* New York Museum of the American Indian Heye Foundation, New York.

Caldwell, Donald H.

1989 *Surficial Geologic Map of New York: Lower Hudson Sheet.* New York State Museum. Geological Survey Map and Chart Series #40.

Castaneda, Catherine

2017 NHPA Section 106 Consultation: Environmental Assessment—Sheepshead Bay Courts Sewer Infrastructure Project. Initiation letter to Michael Lynch, Director, Division of Historic Preservation, New York State Office of Parks, Recreation, and Historic Preservation. 28 June 2017.

Cultural Resource Information System (CRIS)

2017 Cultural Resource Information System Online GIS Database. Accessed online at https://cris.parks.ny.gov.

Department of City Planning

2017 *Resilient Neighborhoods: Sheepshead Bay.* Accessed online September 6, 2017 at <u>www.nyc.gov/resilientneighborhoods</u>.

Federal Emergency Management Agency (FEMA)

2013 Programmatic Agreement Among the Federal Emergency Management Agency, the New York State Historic Preservation Officer, the New York State Office of Emergency Management, the Landmarks Preservation Commission, and the Advisory Council on Historic Preservation as a Result of Hurricane Sandy.

Fisher, D.W., Y.W. Isachsen, and L.V. Rickard.

1970 *Geologic Map of New York State.* New York State Museum and Science Service, Map and Chart Series No. 15.

Forgotten New York

2017 "Alleys of Sheepshead Bay." Accessed online September 6, 2017 at <u>http://forgotten-ny.com/2001/05/sheepshead-bay-hidden-alleys-between-the-bungalows/</u>.

Harrington, M.R.

1909 "Ancient Shell Heaps near New York City," in *The Indians of Greater New York*, editor, Clark Wissler. Anthropological Papers of the American Museum of Natural History, Vol 3: 169-179.

Historic Conservation and Interpretation, Inc. (HCI)



- 1983a Part One of a Phased Stage IB Cultural Resources Survey for the Proposed Sludge Force Main Route Coney Island Water Pollution Control Project Borough of Brooklyn, New York. Prepared for Malcolm Pirnie, Inc. and Michael Baker, Jr. of New York, Inc., New York.
- 1983b Part Two of a Phased Stage IB Cultural Resources Survey for the Proposed Sludge Force Main Route Coney Island Water Pollution Control Project Borough of Brooklyn, New York. Prepared for Malcolm Pirnie, Inc. and Michael Baker, Jr. of New York, Inc., New York.

Historical Perspectives, Inc. (HPI)

- 1998 Stage IA Cultural Resources Assessment Belt Parkway Bridges Project, Brooklyn, New York DOT CEQR No. 97DOT006K. On file with the Landmarks Preservation Commission, New York.
- 2002 Addendum: Geoarchaeological Evaluation: Stage IA Cultural Resources Assessment Belt Parkway Bridges Project, Brooklyn, New York, CEQR No. 97DOT006K. On file with the New York State Office of Parks, Recreation, and Historic Preservation, Albany, NY.

Hyde, E. Belcher

1920 *Atlas of the Borough of Brooklyn, City of New York*. Volume 3. E. Belcher Hyde, Brooklyn.

Jackson, Kenneth

2010 *The Encyclopedia of New York City.* Yale University Press, New York Historical Society, New York.

J.B. Beers & Co.

1886 *New Map of Kings and Queens Counties, New York.* J.B. Beers & Co., New York.

LiRo Engineers, Inc.

Moss, Larry K.

2017 Sheepshead Bay Courts Sewer Infrastructure Improvement Project in Brooklyn, Kings County, 17 PR04596. Response Letter to Catherine Castaneda, CB &I. 25 July 2017.

National Environmental Policy Act

1969 National Environmental Policy Act.

National Historic Preservation Act

1966 *National Historic Preservation Act*, as amended 2004 [NHPA]. 36 CFR 800.1-.16d.

Natural Resource Conservation Service (NRCS)

2017 Soils Data. Accessed online through the NRCS Web Soil Survey.

New York City Regional Economic Development Council

2013 "Downtown Revitalization Initiative—Sheepshead Bay—Emmons Avenue." Accessed online September 6, 2017 at <u>https://www.ny.gov/sites/ny.gov/files/atoms/files/SheepsheadBay.pdf</u>.

New York State Historic Preservation Act

1980 New York State Historic Preservation Act: Section 14.09.

NYCityMap

1924	Historic	Aerial	Imagery.	Accessed	online	September	11,	2017	at
	http://ma	ps.nyc.gov/	'doitt/nycityn	nap/.		-			
1951	Historic	Aerial	Imagery.	Accessed	online	September	11,	2017	at
	http://ma	ps.nyc.gov/	doitt/nycityn	<u>nap/</u> .					

O'Halloran, John

1950 "Canarsee Indian Village Sites," Long Island Forum, April.



²⁰¹⁷ *NYC Built It Back, Stanton Road and Lincoln Terrace Areas, Preliminary Design-Progress 2017-07-26.* Prepared for NYC Build it Back Program Infrastructure Improvements Project.

Orgel, Celia

1982 Preliminary Assessment of Cultural Resources, Sheepshead Bay, New York. Army Corps of Engineers, New York District.

Parker, Arthur C.

1920 *The Archeological History of New York*. New York State Museum Bulletin 235, 236. Albany, New York.

Pratt Center for Community Development

2013 *The Courts of Sheepshead Bay.* Accessed online September 6, 2017 at <u>http://www.prattcenter.net/sites/default/files/2013sheepsheadbaybrochure.pdf.</u>

Sanborn Map Company

1930 *Insurance Maps of the City of New York*. Sanborn Map Company, New York, NY.

Stanton, Jeffery

1997 "Coney Island—Horse Racing." Accessed online September 6, 2017 at <u>https://www.westland.net/coneyisland/articles/horseracing.htm</u>.

US Army Corps of Engineers (ACOE)

1983 Sheepshead Bay, Brooklyn, NY Detailed Project Report: Final Main Report and Environmental Impact Statement.

United States Coast Survey (USCS)

1845 *Map of New York Bay and Harbor and the Environs.* United States Coast Survey.

US Department of Housing and Urban Development

2003 *Environmental Review Procedures for Entities Assuming HUD Environmental Responsibilities.* 24 CFR Par 58.

US Geological Survey (USGS)

2017 "Atlantic Coastal Plain." Accessed online September 1, 2017 at <u>https://3dparks.wr.usgs.gov/nyc/coastalplain/coastalplain.htm</u>.

Williams, Keith

2012 "Sheepshead Bay: Built on the Bay of Kings." *The Weekly Nabe* 27 August 2012. Accessed online September 6, 2017 at <u>http://theweeklynabe.com/2012/08/27/sheepshead-bay-brooklyn-history/</u>.

Works Project Administration (WPA)

1939 *The WPA Guide to New York City.* Pantheon Books, New York.



Appendix A: Correspondence

www.dewberry.com



Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO Governor ROSE HARVEY Commissioner

July 25, 2017

Catherine Castaneda CB & I 1250 Capital of Texas Highway South, Bldg 3, Suite 400 Austin, TX 78746

Re: HUD/ CDBG-DR/ NYC Build It Back Program Sheepshead Bay Courts Sewer Infrastructure Improvement Project in Brooklyn/ Kings County 17PR04596

Dear Ms. Castaneda:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the submitted materials in accordance with Section 106 (Title 54, Section 306108) of the National Historic Preservation Act of 1966. These comments relate only to Historic/ Cultural resources. They do not include other environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Please provide the following information to the SHPO:

This project is located in an archaeologically sensitive area. However, the precise location and depth of proposed excavation and history of prior disturbance will substantially affect the potential for the presence of any pre-existing archaeological deposits within the APE. Therefore, SHPO requests the preparation of a Phase IA archaeological background and sensitivity assessment report. This will form the basis for recommendations regarding the need for archaeological field testing and/or monitoring

If I can be of further assistance, contact me at (518) 268-2187 or Larry.moss@parks.ny.gov

Sincerely,

noss

Larry K Moss, Historic Preservation Technical Specialist

CC: Daniel Herrara, NYC OMB



Catherine Castaneda, Ph.D. Senior Environmental Scientist Environmental & Infrastructure

CB&I 1250 Capital of Texas Highway South Austin, Texas 78746 713.306.7818 Catherine.castaneda@CBI.com

June 28, 2017

Michael Lynch Division Director, Division for Historic Preservation NY State Office of Parks, Recreation, and Historic Preservation Peebles State Park, PO Box 189 Waterford, New York 12188-0189

Subject: Community Development Block Grant – Hurricane Sandy Disaster Recovery NHPA Section 106 Consultation: Environmental Assessment – Sheepshead Bay Courts Sewer Infrastructure Improvement Project

Dear Mr. Lynch,

The New York City (City) Office of Management and Budget (OMB) was certified by the US Department of Housing and Urban Development (HUD) to serve as its Responsible Entity (RE) in the administration of Community Development Block Grant for Disaster Recovery (CDBG-DR). These funds were allocated under the "Disaster Relief Appropriations Act, of January 29, 2013" (Public Law 113-2) for Hurricane Sandy disaster recovery. This grant supports the execution of the City's Housing Recovery program known as Build It Back (BIB).

On behalf of the City, BIB is conducting an Environmental Assessment (EA) of the Proposed Project located in the Sheepshead Bay Courts neighborhood in Southern Brooklyn in New York City. The proposed **Sewer Infrastructure Improvement Project (SIIP)** includes replacement of inadequate, failing, non-functional portions of privately-owned sewer networks serving approximately 65 residential properties located within a 0.02 square mile area of the floodplain affected by Hurricane Sandy in October 2012, identified in the attached draft EA **Figure 4: Project Location: Lake and Stanton Courts**. Acting under HUD's authority, as the RE and the grant recipient of the CDBG-DR funds for Hurricane Sandy, OMB is assuming the role of Lead Agency for this EA under NEPA and related laws, for the environmental review of the SIIP (the Proposed Project). BIB has determined that the proposed Sewer Infrastructure Improvement Project Area (SIIPA) coincides with the Proposed Project's Area of Potential Effects and the Areas of Interest of the Delaware Nation, the Shinnecock Indian Nation, and the Stockbridge-Munsee Band of the Mohican Indians due to occupation in the vicinity, either prehistorically or historically. Additional findings are displayed in the attached draft EA Figure 8: Historical and Cultural Resources of Southern Brooklyn. As further described below, CB&I on behalf of the City (BIB and OMB) herein seeks to initiate NHPA Section 106 consultation with the NY State's Office of Historical Preservation (SHPO) regarding the Proposed Project. Consultation is concurrently being initiated with the above-mentioned Tribal Nations.

Background: BIB provides grants for housing recovery projects intended to benefit eligible homeowners impacted by Hurricane Sandy. As described in the City's Action Plan for Disaster Recovery approved by HUD in May 2013, and through subsequent amendments, BIB offers rehabilitation, elevation, reconstruction, reimbursement, buyout and acquisition options to applicants for consideration upon completion of property damage assessments and eligibility screenings. The BIB program has been subject to a tiered environmental review process in accordance with the NEPA and HUD's implementing regulations at 24 CFR Part 58.15. The Tier I environmental review (programmatic EA) for the BIB Single-Family program was initially approved in August 2013, and was subsequently re-evaluated to incorporate the reimbursement, buyout, and acquisition activities once the need for these three options were established through the Action Plan's amendment process. The Tier I EA, its respective re-evaluations, and over 12,452 Tier II EAs (site specific environmental reviews) have been approved for projects across the City, including approximately 3,947 in Brooklyn, all incorporated into the Environmental Review Record (ERR) managed by OMB. As part of BIB's Tier I environmental review process, the City completed federal consultation with Tribal Nations and other agencies. Also in 2013, the City joined Federal and State signatory agencies, and participating Tribes as a concurring party to the Programmatic Agreement (PA) established for effective and efficient implementation of Federal disaster recovery



programs in the State of New York that were necessitated by the impacts of Hurricane Sandy. The PA provides the stipulations by which the signatory agencies, Tribes, and concurring parties are allowed to satisfy their Section 106 responsibilities for 'Undertakings' in order to effectively integrate historic preservation compliance considerations into project delivery. To date, the BIB housing recovery activities have been planned and completed in accordance with the allowances stipulated in the PA. Upon review of the Proposed Project, the OMB determined that certain ground disturbing activities may not substantially conform to the original utility corridor footprint, and thus may not fall under the otherwise applicable PA allowances.

Need for the Proposed Project: As BIB reviewed housing recovery assistance applications to determine applicant eligibility, perform damage assessments, and complete Tier II reviews; it has encountered certain design challenges that presented opportunities to consider flood resiliency options. Such a case arose within the Lake and Stanton Courts of Sheepshead Bay, where by mid-2015, BIB's housing damage assessment findings suggested that typical project activities focused only on each applicant's storm-damaged homes could be supplemented by activities designed to address the deteriorated conditions of the shared sewer networks exacerbated by Hurricane Sandy. These activities would allow BIB to correct safety issues with the privately-owned infrastructure networks and provide a mechanism whereby the newly installed infrastructure would be maintained by direct resident beneficiaries through the creation of a Homeowners' Association (HOA) for each of these Courts within the Sheepshead Bay neighborhood.

Subsequently, BIB commissioned Infrastructure Investigations of the Lake Court and Stanton Courts. The two investigations completed by LiRo/H2M in 2015 and 2016 report the homes, originally built over a wetland area as summer cottages in the 1920's, were situated along narrow walkways or alleys themed after the small carriage house developments of London during the 17th and 18th centuries. While many of these homes have since been altered (e.g. winterization), they are typically one-story footprints of approximately 800 square feet built on shallow foundations situated at an elevation between two and six feet above mean sea level, and within approximately 400-800 feet from the Sheepshead Bay waterfront.

The sewer network servicing this Sheepshead Bay neighborhood with potable water, natural gas, stormwater, and sanitary collection developed in stages and over decades. It is the utilities provided through the privately-owned portions located under the narrow, paved walkways of Lincoln Terrace, Lake Avenue, Stanton Road, Losee Terrace, and Gunnison Court that have deteriorated over time. The services are inadequate for current demands, with some segments further affected by damage during Hurricane Sandy. While these lines ultimately connect with the City's sewer system surrounding Lake and Stanton Courts, the New York City Department of Environmental Protection (DEP) will not assume ownership/maintenance of the improved sewer infrastructure located along these narrow alleys of Lake and Stanton Courts. This sewer system is therefore expected to remain private. Other preliminary findings from the LiRo/H2M investigations include:

- The existing sanitary sewers along Lincoln Terrace, Lake Avenue, Stanton Road, Losee Terrace, and Gunnison Court connect to the City's sanitary sewer system on Emmons Avenue and Batchelder Street, with effluent conveyance towards the Coney Island Wastewater Treatment Plant. Other sanitary sewer lines in the SIIPA also connect to the City network, and combine with stormwater drainage. Some degree of flooding with sewer backups occurs during prolonged or intense rainfall where conditions are poorest.
- Inspections of the limited stormwater drainage infrastructure suggest the many small capacity inlets and lines are outdated, deteriorated, and/or failing due to dirt and sand accumulation and other obstructions. Although conditions vary, they also lack pipe/overflow to the City's adjacent combined sewer for localized flooding.
- City improvements to the sewer infrastructure on public streets surrounding Lake and Stanton Courts were completed during the 1970s along with street elevations. This work was accompanied with elevation incentives to homeowners with public street frontage, while Lake and Stanton Court home elevations were unchanged.
- Certain portions of the water supply main have been failing to provide adequate service to residents since Hurricane Sandy, despite various emergency utility repairs in its aftermath.



The subsurface location of lines to be installed by BIB remains preliminary at this time, and a topographic survey is underway. While LiRo has proposed its preliminary SIIP Master Plan to DEP for comment, this Plan has enabled development of a Project Description in support of the required EA.

Beneficiaries of the Proposed Project: Of the 175 total number of parcels located within the SIIPA, 60 are owned by active, eligible BIB applicants for single-family housing recovery assistance (June 2017). As displayed on draft EA **Figure 4: Project Locations – Lake and Stanton Courts**, the owners of these SIIPA properties are classified into three beneficiary populations: Direct Beneficiaries (56), Potential Future Beneficiaries (9), and Incidental Beneficiaries of the SIIP (110).

Of the 39 residential parcels in Lake Court, 31 of the owners intend to join the new homeowner's association thereby directly benefitting from the Proposed Project through home connections to the new infrastructure services. This direct beneficiary population includes including 20 active, eligible BIB applicants, and 11 ancillary property owners willing to grant BIB access easements during construction in exchange for connection of their homes to the improved infrastructure. While the owners of the eight remaining parcels in Lake Court are not currently intending to participate in the HOA, they will have the option to join in the future and connect to the improved infrastructure at their own expense.

Of the 26 residential parcels in Stanton Court, 25 owners intend to join the HOA to directly benefit from the Proposed Project. This includes 20 active, eligible BIB applicants plus five ancillary property owners granting BIB easements in exchange for connecting their homes to the improved infrastructure. The owner of the remaining Stanton Court parcel will have the opportunity to join the HOA in the future and, at own expense, and benefit from the improved services.

All other owners of parcels within the SIIPA are considered incidental beneficiaries given that improved infrastructure and housing conditions in Lake and Stanton Court will contribute to the area's overall flood resiliency and environmental quality.

Description of the Proposed Project: To provide housing recovery and flood resilience solutions to the 65 Lake and Stanton Court homeowners in accordance with federal grant requirements, NYC Construction Codes and local zoning ordinances, BIB has proposed improvements to the privately-owned portions of the sewer network within the SIIPA. Water, sanitary, and storm sewer services would be connected to homes where homeowner membership in each of the Lake Court and Stanton Court HOAs is confirmed at the time of project construction. As it is not possible to easily access existing utility corridors along these narrow alleys, and because infrastructure conditions are variable, BIB proposes a mix of optimally sequenced activities to address the sewer infrastructure needs of its applicants and their neighbors. For example, the National Grid utility company will concurrently relocate gas line and reconnect gas service for its customer's homes. Other SIIP activities include support for establishment of the two independent HOAs, securing access agreements for the staging of equipment and materials, and securing the utility easements from homeowners required to complete the construction work described¹ below:

Lake Court

- New Sanitary Sewer Lines would be installed within existing Right-Of-Way (ROW) utility corridor along 321 Linear Feet (LF) of Lincoln Terrace, and 440 LF of Lake Avenue (with existing sanitary sewer to remain in operation along alleys between Lincoln Terrace and Lake Avenue, and between Lake Avenue and Haring Street);
- 2) New storm sewer lines with manholes would be installed within existing ROW utility corridor along 336 LF of Lincoln Terrace, and 480 LF of Lake Avenue, and connected to City's combined sewer at Emmons Avenue;

¹ The reported lengths of the sewer lines to be installed are current approximations. The preferred sewer line placement depth is 4 Feet below the existing surface walkway, with a minimum depth of 2 Feet and maximum depths as needed to safely install multiple utility lines within the existing corridor widths.



Existing storm sewer inlets would be removed from Lincoln Terrace and Lake Avenue;

- New water mains would be installed within existing ROW utility corridor along 251 LF of Lincoln Terrace, and 464 LF of Lake Avenue (with existing water mains to remain in operation along alleys between Lincoln Terrace and Lake Avenue, and between Lake Avenue and Haring Street);
- 4) Gas main location within existing ROW utility corridor along 440 LF of Lake Avenue would be replaced and shifted to allow for optimal placement of other new utility lines.

Stanton Court

- New Sanitary Sewer Line would be installed within existing ROW utility corridor along 340 LF of Stanton Road; Existing sanitary sewer within existing ROW utility corridor along 170 LF of Gunnison Court would be replaced (with existing sanitary sewer, which would remain in operation along alleys between Brown Street and Stanton Road, and between Stanton Road and Batchelder Street);
- New storm sewer line would be installed within existing ROW utility corridor along 290 LF of Stanton Road, and 160 LF of Gunnison Court, and would be connected to the City's combined sewer at Batchelder Street; Existing storm sewer would be abandoned along Stanton Road and Losee Terrace;
- 3) New water mains would be installed within existing ROW utility corridor along 360 LF of Stanton Road, 210 LF of Gunnison Court, and 20 LF of Losee Terrace; and new water valves would be installed at Losee Terrace and Gunnison Court.

To better support neighborhood flood resiliency, BIB proposes to integrate required SIIP activities with its construction of resilient housing design solutions for BIB applicants by performing simultaneous construction where possible. The construction of the Proposed Project/SIIP is estimated to cost approximately \$19,000,000. At this time, construction work on the SIIP is expected to start in the fall of 2017, and would be completed over a nine to twelve-month duration.

Potential Effects of the SIIP: As designed, the SIIP is expected to noticeably support long-term housing recovery and flood resiliency within Lake and Stanton Courts, while incidentally benefitting the environmental quality of the surrounding area. The short-term effects of construction activities experienced by local residents and businesses would be mitigated by leveraging locations available within the SIIPA to efficiently stage equipment and materials, as well as to manage vehicle and pedestrian traffic as appropriate. Within Lake and Stanton Courts, construction activities that include sewer line replacements or new installations, would be limited to the existing utility corridors.

Considering that Tribal Nations have declared interest in this coastal area of Southern Brooklyn, BIB understands that disturbance of any deeper, previously-undisturbed soils within these existing utility corridors could result in the discovery of artifacts and human remains. Should any such items be encountered, BIB will require contractors to halt work pending consultation with the New York SHPO and/or others per SHPO's Human Remains Protocol (2008).

Should the NY SHPO have comments on the SIIP's potential effects on the environment, Tribal areas of interest, recommendations for consideration in the EA and on the attached figures, we respectfully request a response be provided within 30 calendar days of the receipt of this letter, or the City of New York may assume that your office has no NEPA or otherwise related issues with the SIIP. Please do not hesitate to contact <u>catherine.castaneda@cbi.com</u> with your response or any questions. Your agency's participation and input will help ensure the project's success.

Sincerely,

Catherine Castaneda, Ph.D. Senior Environmental Scientist CB&I, Inc.



- cc: Eram Qadri, Unit Head Environmental Review, CDBG-Disaster Recovery, NYC Office of Management & Budget; <u>qadrie@omb.nyc.gov</u>
 Drew Sweet, Deputy Director of Pre-Construction and Technical Services, NYC Build It Back: Single Family Houses; <u>dsweet@recovery.nyc.gov</u>
- Attachments: draft EA Figure 4: Project Location: Lake and Stanton Courts draft EA Figure 8: Historic and Cultural Sites in Southern Brooklyn





DRAFT

Legend

Sewer Infrastructure Improvement Project Area (SIIPA) (501,326 SqFt) NYC Mayor's Office of Housing Recovery Operations

- Cemeteries NYC Dept. of Planning (Jan 2017) t[†]t
- Landmark Interiors NYC Landmarks Preservation Commission (2016)
- Individual Landmarks NYC Landmarks Preservation Commission (2016)
- Scenic Landmarks NYC Landmarks Preservation Commission (2016)
- Historic Districts NYC Landmarks Preservation Commission (2016)

Public Parks NYC Department of City Planning (2017)

Tribal Nations Areas of Interest

Delaware Nation, Shinnecock Indian Nation Stockbridge-Munsee Community Band of the Mohican Indians NYS Historic Preservation Office (Nov. 2016)

Note:

The information depicted in this figure has been obtained from public sources and does not represent a complete accounting of historic and cultural resources, some of which may be undergoing evaluation and others are unknown.







YC Housing Recovery

620

1,240 Feet



Appendix B: Soil Boring and Test Pit Location and Logs

www.dewberry.com





LEGEND:



SOIL BORING LOCATION

Ν

TEST PIT LOCATION

NOTES:

1. FOR SEE SOIL BORING LOG ON DW. ----

	SB 1	SB 2		SB 3
				· · · ·
	SUKF. ELEV.+9.3	SURF.EL	E-V.+9.8	SURF ELEV.
	30 MISC FILL! +8.3	20 MISC. FI	u +8.3	15
	TO GRAVEL +8.0	500	+7.8	100 MIGC FILL
	300 SAND,	450	+4.8	121 SAND,
	350	+4-3 92 SILT,	1 300	100 4.476-1
	120 EDILT, +3.8 1 63	0.3 3:30PM 107	-L0.2 2P.M.	100 TAX +3.2
	92 TAR	8-18-64 30 POSSIBLE		40
ELEV.		21 SAND, 51	-0.2	21 FILL
a de la companya de l No companya de la comp	9 SILT, Some 24	30 COMPA	CT 1 -1.2	25 GRAVEL,
	36 -2.7	41 F-C		40
	40 COMPACT	50 BROW	~ -57	40 COMPACT
	40 F-MTC 3.64	-5.7 30 LITTLE 9	JUT 339	32 54 ND
	30 GAND	41 TRACE	-	30 TRACE
	31 TRACE	37		31 -5127.
	32 TRACE	-107 32 COMPAG	-10-2	38
	28 GRAVEL 4-21	31 BROWN	4 [4]	35 COMPACT
	30	31 SAND,		45 F-M
	31	33 TRACE	- 157	46 BROWN
	32	1 30	5 24	40 TRACE
	30	31 COMPAC	-17.2	40 -11.
	30	41 F-M BKO	MN .	41
	42 COMPACT	-20.7 47 TRACE -	T. 6 21	50
	33 BROWN GIG		-21.2	Later and the second
	41 SAND,	· ·		
	41 TRACE			•
	40 7127	- 25.7		
	40		•. •	
	41			
	40	- 30.7		
· · · ·	42 COMPACT 0120	2	•	
	50 SAND,			· . .
	55 GAME	-35.7		
	921			
			· · · ·	

<u>SB 8</u>

		1.14		-	Gain
ę	عناه	えす: ホトホイ・ナ	-8.5	•••	
1211	73 34	MISC.FILL	UAV		184
	79 60 12	SILT, CINDER,	- 20	3	147
-	24	GRAVEL.		+3.5 1.2 11 A.M.	204
	6			8-10-64	164
1.1.	52 29 23	COMPACT	25	a	81
	43 54	SAND, LITCH			63
1.1	47		311	-6.5 B	표
1.1.1	3941	COMPACT		-115	68
	22	EROWN BROWN SAND,	411	5	11 58
1.1.1	63 74	LITTLE- SILT.		-16.5	63 71 32
141	31 40 57		5 2		49 76
	7 <u>8</u> 02		C P	-21.5	88
	9	COMPACT FINE	1013	- 22 5	
					یں۔ 1920ء - یار



<u>SB 9</u>



		CD 7		
•				
V .	+6.8	SURF. F	LEV	~7.2
		40 MISC.	FTLL:	CA
·, · ·		90 GRA	(50), /E-L),	1 5
°a s	+18	52		
-		39	* # 	
	-1.2	36 COM	PACT	-0.6 8:30AM. 8-7-64
	230	20 BKO	un .	2.126
	8-10-6	45 LIT		
-	-8.2	41 151	ι.	-7.8
	310	18 25		320
4		31		-10.8
	4101-13.2	30 100		416
	-15.2	24 COM	PACT	
r		BRO	w w	
	5 24	30 TR	ND, ACE	5 21
•	-21.2	31 51	LT.	
	-23.2	41 42	,	-22.8
	622 24.2			16129 23.8
•.				
, ,				
		SB 13		
	i internet		+6.5	
	87		Te.	•
Π	96 63	MICC. FILL	13	
ŝ	<u>51</u> 59	SAND,	- 20	
<u>ક</u> ે.	29	GRAVEL.		-1.5 0.0
0.9	2P.M: 52			0:30 A.M. 8-13-64
හ- ය	43		2.08	- 5.5
4	5.0 64			
	76	COMPACT		- a =
-1	25	F-M-C	324	-0.2
2	45	BROWN		
	42	SAND,		-13.5
តា	15.0 26	SILT.	4118	
	47 52			
	59	1 	5 20	-18.5
4	20.0 51		-20.	5
-	61.0 62	COMPACT		-23.5
-	25.0 51	F-M	618	
ב	26.0 76	BROWN	**	
	28	TRACE SILT		-28.5
	49 57		1 1 41	
	71 86	LOOSE	-31.9	5
	110	SAND, SOME	8117	2.20

-35.5

-38.5

-39.5

COMPACT

DUACE

TRACE SILT. 925

89 FIM BROWN

90



XX of XX





<u>TEST PIT # 5</u> <u>SECTION</u> N.T.S.



<u>TEST PIT # 11</u> SECTION N.T.S.





Appendix C: Professional Qualifications

www.dewberry.com



EDUCATION:

PhD (ABD) Interdepartmental Doctoral Program in Anthropology, SUNY Stony Brook, 2006

MA, Anthropology, SUNY Stony Brook, 2000

MA, Archaeology, University of London, 1994

BA, Archaeological Studies, Boston University, 1993

REGISTRATIONS / TRAINING:

Registered Professional Archaeologist

An Advanced Workshop for National Register Nomination Preparers, National Park Service and New Jersey Historic Trust (2012)

Cultural Resources Best Practices Workshop, 7-Hour Training Program, New Jersey Historic Preservation Office (2006)

OSHA 40-Hour Hazardous Waste Operations Training; Annual Refreshers: US

Trenching and Excavation Safety – OSHA Construction Industry Standards, Subpart P (29 CFR 2926. 650-652) (2009)

YEARS OF EXPERIENCE:

Dewberry: 2

Prior: 23

AFFILIATIONS:

Register of Professional Archaeologists

Society for American Archaeology

Millburn Short Hills Historic Society

New York Archaeological Council Commissioner, Millburn Historic

Preservation Commission, 2016-

CHRONOLOGY:

Zachary Davis RPA

Senior Archaeologist

Zach Davis is a senior archaeologist and project manager practiced in National Environmental Policy Act (NEPA) and State Environmental Quality Review Act (SEQRA) compliance, as well as Phase IA Archaeological Assessments, Phase IB Archaeological Surveys, and Phase II Archaeological Site Evaluations. Zach has been project manager for over 100 projects in New York, New Jersey, and other Mid-Atlantic States.

SELECTED EXPERIENCE

Non-Disaster Grants Environmental and Historic Preservation (EHP) Technical Support, FEMA, Nationwide, US. Cultural Resources Lead for environmental planning and historic preservation support to perform compliance reviews for grant program projects. Projects include renovation, retrofitting, or modification of facilities funded by a series of non-disaster grant programs. This work supports FEMA's Office of Environmental Planning and Historic Preservation (OEHP) and is a task order under Dewberry's Hazard Mitigation Technical Assistance Program contract.

Environmental Services Task Order Contract, NJ TRANSIT, Statewide, NJ. Senior Cultural Resources Specialist for tasks under a \$4-million contract. Responsible for assessing the effects of projects on cultural resources, preparing cultural resources studies, and coordinating with the New Jersey Historic Preservation Office.

Bruckner-Sheridan Interchange Reconstruction, New York State Department of Transportation, Bronx, NY. Cultural Resources Lead for a NEPA EIS process that is evaluating infrastructure and access improvements between the Bruckner and Sheridan Expressways (I-278 and I-895) and the Hunts Point Peninsula / Hunts Point Food Distribution Center. Work also includes a Section 4(f) evaluation for publicly owned open space. The goal of this estimated \$1.8-billion phased project is to reduce traffic on local roads.

Phase I Archaeological Investigation, West Apartments Building J, SUNY Stony Brook/DASNY, Town of Brookhaven, Suffolk County, NY. Cultural Resources Specialist, as a subconsultant. Responsible for archival research and archaeological field investigation. While evidence of intense prehistoric activity in the region exists, shovel tests did not yield prehistoric artifacts or features and no further archaeological investigations were recommended.

Lake Dam Road Bridge Replacement, Lake Dam Road, City of Raleigh, Wake County, NC, Cultural Resources Lead for completion of a North Carolina State Historic Preservation Office project review checklist for a proposed bridge replacement project. Checklist provided project description, known

Senior Archaeologist

historic property information and assessment of the proposed project's potential to affect historic properties. NCSHPO concurred that the project will have no effect to historic properties, thereby allowing the City of Raleigh to advance the replacement project.

Rebuild By Design Meadowlands, New Jersey Department of Environmental Protection (NJDEP), Bergen County, NJ. Senior Archaeologist, as a subconsultant, for the NEPA Environmental Impact Statement (EIS) for this project that conceptually consists of a large natural reserve along the Hackensack River, which would connect and expand marshland. The design aims to use a system of green and gray infrastructure, to protect against ocean surges and rain event flooding.

Phase III Archaeological Data Recovery, Winding Brook Townhouse Project, Evesham Township, Burlington County, NJ. Cultural Resources Lead for documentation of archaeological data recovery at William Jones #2 archaeological site's (28-BU-69). Monitored heavy machine removal of the plow zone distributed across the archaeological site to reveal potential archaeological features present in the substrate. Monitoring of the removal of the plow zone failed to identify intact culturally derived subsurface features. At the completion of the Phase III work, the NJHPO concurred with the recommendation that no further archaeological investigations were recommended for the proposed development project.

Phase II Archaeological Investigations, Winding Brook Townhouse Project, Evesham Township, Burlington County, New Jersey. Cultural Resources Lead for archaeological site investigations and determination of the William Jones #2 archaeological site's (28-BU-69) eligibility for inclusion in the National Register of Historic Places. Directed archaeological investigations, including delineation of archaeological site boundaries and large-scale excavations to ascertain the site's contextual setting of the archaeological site representing multiple periods of occupation ranging from the Late Archaic (3,000-1,000 BC) through Late Woodland (900-1600 AD). Also directed the lab analysis and interpretation of the recovered archaeological material. The site was recommended as meeting eligibility criteria for inclusion in in the National Register of Historic Places.

Environmental Assessment Field Contractor for Superstorm Sandy Community Development Block Grant-Disaster Recovery (CDBG-DR), New Jersey Department of Environmental Protection, New Jersey. Cultural Resources Lead for NEPA Environmental Assessments and compliance with Section 106 of the NHPA, in support of CDBG-DR projects funded by US Housing and Urban Development (HUD). Work involves desktop assessments (review of aerials, historic maps, and NJDEP GIS files), field reconnaissance, and environmental documentation, as well as extensive coordination with local, state, and federal agencies.

Senior Archaeologist

Maritime Archaeology, Route 35 Steel Sheet Pile Dune Restoration Project, New Jersey Department of Environmental Protection (NJDEP), Mantoloking Sea Wall, Brick Township, NJ. Senior Archaeologist responsible for Dewberry's services to conduct maritime archaeological recordation and damage assessment for the cultural materials (i.e., shipwreck remains) encountered during the installation of steel sheet piles.

Rebuild By Design Hudson River: Resist-Delay-Store-Discharge, NJ TRANSIT and New Jersey Department of Environmental Protection (NJDEP), Hudson County, NJ. Cultural Resources Lead for the Feasibility Study and National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) for a \$230-million comprehensive urban water strategy conceived to protect the Hoboken waterfront, as well as parts of Weehawken and Jersey City. Responsible for assessing the effects of project alternatives on cultural resources as well as preparing the Cultural Resources Technical Environmental Study, the Cultural Resources section of the EIS, and the Programmatic Agreement. Coordinated with the Advisory Council on Historic Preservation, New Jersey Department of Environmental Protection, New Jersey Department of Community Affairs, and New Jersey Historic Preservation Office. Participated in public outreach.

Phase IA Cultural Resources Assessment, Dormitory Authority of the State of New York (DASNY), Hashamomuck Marine Waterways Access Site, Town of Southold, Suffolk County, NY. Cultural Resources Manager for compliance with Section 106 of the National Historic Preservation Act. Assessment involved completion of a Phase IA archaeological survey and a reconnaissance-level architectural survey. Assessment concluded that the project site possesses a low pre-Contact archaeological potential, but the proposed project will create minimal disturbances in the area of archaeological potential. Additionally, no historic architectural resources were identified within the project area.

Build It Back Program, New York City Economic Development Corporation and Mayor's Office of Housing Recovery Operations, New York, NY. Historic Preservation Lead for the cultural resources review of residential properties damaged as a result of Hurricane Sandy. Involves reviewing properties for historic preservation issues, both architectural (above ground) and archaeological (below ground), under the May 2013 Programmatic Agreement executed between the Federal Emergency Management Agency, the New York State Historic Preservation Office, and the New York City Landmarks Preservation Commission for compliance with the National Environmental Policy Act (NEPA) and US Department of Housing and Urban Development (HUD) regulations. Other tasks include consultation with New York State and City review agencies and developing mitigation treatment plans for historic properties adversely affected by the recovery project.

Senior Archaeologist

Marshes Mitigation Banking Pilot, New York City Economic Development Corporation, Staten Island, Richmond County, NY (9/2013-5/2014). Cultural Resources Manager. Coordinated the Phase IA Cultural Resources assessment for the creation of a wetland mitigation bank on Staten Island's West Shore and prepared consultation documents for New York State Office of Parks, Recreation and Historic Preservation and New York City Landmarks Preservation Commission.

Freedom Pier Utility Project, City of Gloucester City, Camden County, NJ (10/2014-2/2015). Project Archaeologist. Prepared Cultural Resource Management Protocol to be implemented during the installation of various utilities crossing through the extent of the multicomponent Coast Guard Archaeological Site (28-Ca-94).

Lloyd Avenue Surface Anode Bed, Section 106 Consultation, Columbia Pipeline Group, Caln Township, Chester County, PA (11/2014). Prepared Pennsylvania Historical and Museum Commission project review form for the initiation of Section 106 consultation for an upgrade to an existing gas pipeline in eastern Pennsylvania. Prepared consultation letter on behalf of client and recommended that the proposed project will have no effect to historic properties; PHMC concurred with recommendations.

Priority Repair of Seawall, NYCDPR and New York City Department of Transportation, Henry Hudson Parkway, Southbound, West 89th to West 86th Street, Manhattan, NY. Project Archaeologist. Seawall stabilization project requiring a U.S. Army Corps of Engineers permit and involving preparation of historic resource documentation for review by LPC and OPRHP. Provided historic mapping of the project area from before the construction of the Parkway through the mid-20th century and prepared consultation document for submittal to historic preservation review agencies. Project was advanced with a no adverse effect to historic properties determination and concurrence from OPRHP and LPC.

Flood Mitigation and Resiliency, New York City Transit (NYCT), 207th Street Yard, 8th Avenue Line, Borough of Manhattan, New York County, NY (7/2014-11/2014). Project Archaeologist. Prepared historic resource consultation correspondence for the proposed construction of flood mitigation measures at the 207th Street rail yard. Provided client with known historic property information relevant to the proposed project area and drafted correspondence for review by New York State Office of Parks, Recreation and Historic Preservation (OPRHP). Prepared additional research related to the historic cemetery present at 207th Street and secured OPRHP concurrence of no historic properties affected by the proposed project.

Senior Archaeologist

Flood Mitigation and Resiliency, New York City Transit, 148th Street Yard, Lenox Avenue Line, Borough of Manhattan, NY (7/2014-9/2014). Project Archaeologist. Prepared historic resource consultation correspondence for the proposed construction of flood mitigation measures at the 148th Street rail yard. Provided client with known historic property information relevant to the proposed project area, drafted correspondence for review by New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and secured OPRHP concurrence of no historic properties affected by the proposed project.

Phase I Archaeological Investigation, Access Control Alteration and Rehabilitation, New York Office of General Services and New York Army National Guard, Camp Smith Training Site, Cortlandt Manor, Westchester County, NY (10/2014 – 1/2015). Supervised the preparation of the archaeological investigation for the proposed entrance improvements at Camp Smith. Field investigations revealed significant disturbance to the project area resulting from past utility installation and prior modifications to the alignment of the entrance to the Camp. Recommended that the project will have no effect to historic properties.

Phase IA Documentary Study, Proposed Development 181 Avenue A, LLC/Steiner NYC, 181 Avenue A, Manhattan, NY (7/2013-9/2013). Project Manager. Prepared archaeological documentary study in advance of proposed housing development in Manhattan's Lower East Side. Study focused on the potential for the project area to contain unanticipated human remains associated with the Old St. Patrick's Cathedral cemetery at the site of the c. 1915 Mary Help of Christians Church. Use of historic maps georeferenced to the modern street grid demonstrated that all burials were located west of the proposed development project.

Phase IA Cultural Resource Survey, Sterling Forest Resort, Town of Tuxedo, Orange County, New York (4/2014-5/2014). Principal Investigator. Assessed the potential of a proposed resort to be located within Sterling Forest to affect cultural resources. Preponderance of prehistoric sites located in close proximity to the proposed development and the project's setting in proximity to water sources suggested that undisturbed areas would require archaeological survey to determine the presence or absence of archaeological resources.

Phase IA Cultural Resource Survey, New York State Thruway Interchange 15B, Town of Tuxedo, Orange County, New York (4/2014-5/2014). Principal Investigator. Assessed the potential of a proposed Thruway interchange to affect cultural resources at the western edge of Harriman State Park. Numerous prehistoric sites are known in close proximity to the Thruway and the proposed interchange's location on well-drained soils suggested that undisturbed areas would require archaeological survey to determine the presence or absence of archaeological resources.

Senior Archaeologist

Phase I Archaeological Reconnaissance Survey, Safety Improvements on the Jackie Robinson Parkway Eastbound, Town of Kew Gardens/Richmond Hill, Queens County, New York. Excavator. Assisted with the field survey for proposed safety improvements, including excavation of an existing slope and construction of a widened shoulder and stone retaining wall along eastbound Jackie Robinson Parkway.

Abri Castanet, Sergeac (Perigord), France (6/1996-8/1996, 6/1997-8/1997, 6/1998-7/1998). Excavator. Assisted with the long-term excavations of an early Upper Palaeolithic (Aurignacian) rockshelter in the southwest of France, containing evidence of osseous projectile points, personal adornments and cave wall engravings dating to 32,000 years ago.

African Meeting House, Nantucket, Nantucket County, MA

(9/1993). Excavator. Assisted with the excavation and interpretation of archaeological deposits surrounding this c. 1820 post and beam structure, the second constructed African Meeting House in America. Supervisor: Mary Beaudry, Boston University.

Standing Committee on the Environment, NCHRP Project 25-25/Task 61 American Association of State Highway and Transportation Officials (AASHTO). Best Practices for Establishing and Maintaining and Statewide Cultural Resource GIS Databases for use by State DOTs (7/2009-9/2010). Principal investigator. Conducted a nationwide survey of 50 state DOTs to inventory the range of statewide cultural resource GIS databases already established by state DOTs for the purpose of identifying best practices for those state DOTs intending to develop their own statewide cultural resource GIS. The study developed questions for 24 state DOTs with a cultural resource GIS in place to determine similarities and identify best practices for future development of similar GIS databases. The study also prepared a sample GIS database structure based on the similarities exhibited amongst the GIS databases developed by the 24 state DOTs.

ARCADIS/BBL, Phase I Archaeological Assessment, Alcan Aluminum Sheet and Plate Company Site, Town of Scriba, Oswego County, NY (6/2006-8/2007). Project Manager. Phase IA archaeological assessment and Phase IB archaeological field survey under SEQRA for the Alcan Facility, located south of Lake Ontario, prior to mitigation of contaminated soils.

Phase IA Archaeological Assessment, Blasland, Bouck and Lee, Inc., Niagara Mohawk, Hudson (Water Street) Site, City of Hudson, Columbia County, NY (3/2003-5/2003). Principal Investigator. Archaeological assessment of late nineteenth-/early twentieth-century coal-to-gas generating facility located on the banks of the Hudson River. Involved research and analysis of past disturbances and potential for historic archaeological resources associated with the industrial use of the project area.

Senior Archaeologist

Phase IA Archaeological Assessment, Remedial Options Pilot Study, Blasland, Bouck and Lee, Inc., Grasse River Study Area, Alcoa-Massena, Massena, St, Lawrence County, NY (3/2005-5/2005). Principal Investigator. Archaeological assessment of early twentieth-century Alcoa fabricating, ingot, and extrusion and smelting plant under U.S. EPA jurisdiction as a Superfund Site. Research and analysis of past disturbances and assessment of potential for historic archaeological resources associated with industrial use of the project area.

Boston University Archaeological Field School, Spencer-Peirce-Little Farm, Newbury, Essex County, MA (7/1992-8/1992). Excavator. Boston University archaeological field school at a late seventeenth-century farmstead. Supervisor: Mary Beaudry, Boston University.

Archaeological Monitoring, Bryant Park Corporation, Bryant Park Terrace, Manhattan, NY (2/2010-4/2010). Project Manager. Coordinated the placement of deep-trench excavation for the identification of the foundation to the nineteenth-century Croton Reservoir distributing tank formerly located on the present location of the New York Public Library. Archaeological monitoring of the heavy machine excavation on the eastern end of Bryant Park failed to locate intact evidence of the reservoir foundation wall but identified potential locations for future exploratory excavations.

Buckeye Perth Amboy Terminal Phase 2 Project, Buckeye Perth Amboy Terminal LLC, City of Perth Amboy, Middlesex County, NJ (5/2013-7/2013). Project Manager. Coordinated the review of existing cultural resource information and survey of two historic properties located at the Perth Amboy Terminal facility.

Calverton Naval Weapons Industrial Reserve, Calverton, Suffolk County, NY (7/1995-9/1995). Field supervisor. Cultural resource survey of 6,000-acre parcel with several early to mid-twentieth-century buildings and several Late Archaic and Late Woodland prehistoric sites.

Calverton Naval Weapons Industrial Reserve, Calverton, Suffolk County, NY (9/1996-3/1997). GIS Analyst. Integrated GIS analysis with lithic analysis to interpret prehistoric activity patterns across the former naval facility.

Phase IA Archaeological Assessment, Montclair State University, Dormitory Construction Project, Capstone Development Corporation, Little Falls, Passaic County, NJ (2/2010-5/2010). Project Manager. Prepared archaeological assessment for a proposed dormitory construction project located in the northern section of Montclair State University campus. Review of historical documents, aerial photographs, and maps indicated that the entire project area, now a parking lot for the university, was historically used as a quarry. The project

Senior Archaeologist

area was heavily impacted by past activities and retained no potential for archaeological resources.

Archaeological Monitoring, Demolition of the Gloucester City Water Works Reservoir, City of Gloucester, Camden County, NJ (5/2009-1/2013). Project Manager. Coordinated the archaeological monitoring of the demolition of the circa 1873 NRHP-listed Gloucester City Water Works Reservoir, preparation of a Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) recordation of the water works, and the photo documentation of its components during demolition.

Phase IA Cultural Resource Assessment, Replacement of the Central Avenue Bridge over Blind Brook, City of Rye, Westchester County, NY (7/2007-5/2009). Project Manager. Cultural resource assessment, including background research, on-site evaluation, limited field testing, and historic architectural survey and evaluation of early twentieth-century bridge and surrounding area.

Phase I Archaeological Survey, Mount Vernon Avenue Bridge, County of Morris, Department of Public Works, and the County of Union, Department of Public Works, Chatham, Morris County, and Summit, Union County, NJ (8/2003-5/2004). Principal Investigator. Coordinated Phase I archaeological assessment of the proposed bridge replacement. Included archaeological fieldwork and assessment of project's potential to affect archaeological resources.

Cultural Resources Eligibility/Effects Documentation, Two Bridges Road Bridge, County of Passaic and the North Jersey Transportation Planning Authority, Lincoln Park, Wayne and Fairfield, Morris, Passaic and Essex Counties, NJ. (5/2003-5/2005, 3/2008-2/2009). Principal Investigator. Cultural resource screening, archaeological survey, and historic architectural resource survey for proposed bridge construction. Survey identified the historical bridge crossing the Pompton River, constructed in 1887 and eligible for the NRHP, identified extensive prehistoric occupation to the project area, and evaluated the surrounding area for additional historic properties. One archaeological site identified in the project area.

Phase IA Cultural Resource Assessment, Intersection Improvements for Church Street, County of Somerset, Department of Public Works, Bernards Township, Somerset County, NJ (6/2009-10/2010). Project Manager. Coordinated the preparation of a cultural resource assessment for proposed improvements to three signalized interchanges along Church Street in Bernards Township. Historic documentary research and environmental factors indicate that portions of the project area are sensitive for prehistoric and/or historic archaeological deposits. Additionally, the project area includes one known historic property, the National Register-listed Liberty Corner Historic District. Further cultural resource investigations were recommended to determine the

Senior Archaeologist

presence or absence of archaeological resources and to evaluate the potential of the project to affect the historic character and setting of the Liberty Corner Historic District.

Phase IA Cultural Resource Assessment, Harlem Hospital Center Modernization, DASNY and the New York City Health and Hospitals Corporation, Manhattan, NY (5/2004-10/2006). Project Manager. Cultural resource assessment of proposed modernization project. Archaeological assessment of area of potential effect, and historic architectural evaluation of the surrounding area and the preservation, removal, storage, and adaptive reuse of five Works Progress Administration-commissioned murals in buildings slated for demolition. Required Level-II HABS documentation of the Old Nurses Residence (circa 1915), the New Nurses Residence (circa 1932), and the Women's Pavilion Building (circa 1932) prior to demolition.

Phase IA/IB Cultural Resource Assessment, Beacon Institute for Rivers and Estuaries, DASNY and the New York State OPRHP on behalf of the Beacon Institute for Rivers and Estuaries, Beacon, Dutchess County, NY (10/2006-5/2009). Project Manager. Phase IA archaeological assessment and limited Phase IB archaeological field survey of proposed location for the Center for Advanced Environmental Research, positioned on the remnants of nineteenthand twentieth-century historic brickwork at Denning's Point. Historical document and cartographic research, georeferencing historical maps to modern maps to ascertain past disturbances and/or prior settlement and land use, and assessment of the property's potential to contain historic and/or prehistoric archaeological resources. Identified several locations on Denning's Point with high archaeological potential.

Phase IA Cultural Resource Assessment, DASNY on behalf of Fordham University, Fordham University New Residence Halls, Fordham University Rose Hill Campus, Bronx, NY (1/2008-5/2008). Project Manager. Coordinated cultural resource assessment of new residence halls on southwest portion of campus. Required the georeferencing of historical maps to the modern campus to determine archaeological potential of the proposed building locations.

Historic Architectural Assessment, DASNY, Louis Armstrong House Museum (LAHM) Visitors Center. Corona, Queens County, NY (8/2008-5/2010). Project Manager. Managed the preparation of a historic architectural assessment for the area surrounding the proposed location of a new visitor's center for the Louis Armstrong House Museum, a National Historic Landmark and New York City Landmark. The historic architectural survey assessed 43 historic properties within view of the proposed visitor's center, including the LAHM, and determined that none of the other 42 historic properties met NRHP eligibility criteria and that the LAHM would not be visually affected by the construction of the proposed visitor's center.

Senior Archaeologist

Historic Resource Inventory Form Preparation, Baruch College Field Building Renovation, DASNY, 17 Lexington Avenue, Manhattan, NY (5/2010-7/2010). Project Manager. Coordinated the preparation of New York State OPRHP historic resource survey inventory forms for three historic buildings that would be physically and/or visually affected by the renovation of the 1929 Field Building. The three buildings, the Lawrence and Eris Field Building, the Administrative Building for Baruch College (the former Domestic Relations Court Building at 135 East 22nd Street), and Baruch College's Newman Hall (the former Children's Court Building at 137 East 22nd Street) were all found to be eligible for listing in the NRHP.

Historic Resource Inventory Form Preparation, Brooklyn College (CUNY) Performing Arts Center (PAC) Addition, DASNY, Brooklyn, NY (4/2009-6/2009). Project Manager. Coordinated the preparation of New York State OPRHP historic resource survey inventory forms for Brooklyn College's Gershwin Hall and associated Hillel Gate entrance, which would be replaced with a stateof-the-art performing arts facility. Gershwin Hall and the Hillel Gate were found to lack sufficient integrity to meet NRHP eligibility criteria.

Phase IA Cultural Resource Assessment, City College of New York/Advanced Science and Research Science Facility Project, DASNY, City College of New York Campus, Manhattan, NY (4/2006-5/2009). Project Manager and Principal Investigator. Archaeological assessment and historic architectural survey of proposed location for the Advanced Science Research Center Facility Project, located over the foundation remains of the nineteenthcentury Convent of the Sacred Heart, the precursor to Manhattanville College. Conducted historical and cartographic research, identified and analyzed past disturbances and/or prior settlement and land use, used GIS technology to locate the proposed construction on historical maps, and assessed the project's potential effect on historic properties. Identified the potential location of a nineteenthcentury burial vault in the proposed project area, which was then monitored for potential burials during excavation for the foundation to the science facility.

Phase IA Cultural Resource Assessment, Lehman College New Science Facility Project, DASNY, Lehman College, Bronx, NY (11/2007-

2/2009). Project Manager. Cultural resource assessment for proposed science facility to be attached to Gillet Hall, one of the original buildings at Hunter College's Bronx branch, constructed in 1931. Traced the history of the campus location, which included the nineteenth-century Jerome Park Racetrack followed by the Jerome Park Reservoir at the end of the nineteenth century. No archaeological areas of concern were identified; historic architectural survey identified the Hunter College Campus (Gillet Hall, the Music Building, the Gymnasium, Davis Hall, and the fences, piers, and underground passages) as eligible for listing in the State and National Registers for their historic and architectural significance for the campus's role as the site of the first United Nations, and as a Depression-era Collegiate Gothic-style campus.



www.dewberry.com