



**Phase 1A Archaeological Documentary Study**

**Mill Basin Projects: Kristal Auto Mall and Toys 'R' Us**

**Block 8591, Lots 100 (part), 125 (part), and 175  
Borough of Brooklyn, Kings County, New York**

**Prepared for:**

**New York City Economic Development Corporation  
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New York, NY**

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**October 2011**

**(Revised December 2011)**

## Management Summary

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SHPO Project Review Number: n/a

Involved Agencies: New York City Environmental Development Corporation  
Office of the Deputy Mayor for Economic Development  
New York City Department of Small Business Services  
New York City Planning Commission  
New York City Department of Environmental Protection  
New York State Department of Environmental Conservation

Phase of Survey: Phase 1A Documentary Study

Location Information

Location: New York City Tax Block 8591, Lots 100 (part), 125 (part), and 175

Minor Civil Division: 04701

County: Kings

Survey Area

Length: 365.76 meters (1,200 feet)

Width: 53.34 to 228.6 meters (175 to 750 feet)

Total Area Surveyed: Approximately 11.75 acres

USGS 7.5 Minute Quadrangle Map: Coney Island

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Date of Report: October 2011 (Revised December 2011)

## Table of Contents

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<b>Chapter 1: Introduction and Methodology .....</b>	<b>1</b>
A. Project Overview and description .....	1
B. Research Goals and Methodology .....	2
<b>Chapter 2: Environmental and Physical Settings .....</b>	<b>4</b>
A. Geology and Topography .....	4
B. Hydrology .....	4
C. Soils.....	5
D. Paleoenvironment .....	5
E. Current Conditions .....	6
<b>Chapter 3: Precontact Period .....</b>	<b>7</b>
A. Precontact Context .....	8
B. Previously Identified Native American Archaeological Sites.....	8
<b>Chapter 4: The Historic Period .....</b>	<b>10</b>
A. The History of the Project Site.....	10
<b>Chapter 5: Conclusions and Recommendations .....</b>	<b>13</b>
A. Sensitivity Assessment.....	13
B. Recommendations .....	13
<b>References.....</b>	<b>14</b>

## List of Figures

---

**Figure 1:** Project Location; United States Geological Survey (USGS) Maps, Coney Island Quadrangle.

**Figure 2:** Project site map showing camera angles for site photographs; Sanborn Insurance Map.

**Figure 3:** Proposed Site Plan.

**Figure 4:** Depth of Fill as Indicated by Soil Borings

**Figure 5:** 1898 USGS Map.

**Figure 6:** Aerial Photograph.

**Figure 7:** Nautical Chart, 1924.

**Figure 8:** Nautical Chart, 1954.

**Figure 9:** 1986 Sanborn Map.

## List of Photographs

---

*See Figure 2 for Camera Angles*

**Photograph 1:** Looking northwest from Lot 100 at the existing Toys ‘R’ Us.

**Photograph 2:** Looking north from Lot 125 towards Lot 175, showing the structures associated with the Sea Traveler’s Marina and the Mill Basin waterfront.

**Photograph 3:** The Sea Traveler’s Marina on Lot 175.

**Photograph 4:** The paved path at the northern side of the development parcel, looking west towards Flatbush Avenue.

## List of Tables

---

**Table 1:** Project Area Soils ..... 5

**Table 2:** Previously Identified Precontact Archaeological Sites ..... 8

**Table 3:** Previously Identified Historic Archaeological Sites ..... 10

## A. PROJECT OVERVIEW AND DESCRIPTION

The Mayor’s Office of Economic Development is proposing the disposition and redevelopment of City-owned land in the Marine Park neighborhood of Brooklyn, Kings County, New York (see **Figure 1**). The proposed project site is located on the eastern side of Flatbush Avenue northeast of the interchange with the Belt Parkway and about a half mile south of the intersection with Avenue U. The project is located on Block 8591, Lots 100 (part), 125 (part), and 175, which combined make up an approximately 11.75-acre parcel of land currently owned by the City of New York (see **Figure 2**). The disposition of the project site and its subsequent redevelopment by privately-owned businesses would be consistent with the City’s objectives to revitalize its underutilized properties for the purposes of providing economic and fiscal benefits.

The project site is bordered to the north and south by vacant City land and to the east by the existing Sea Traveler’s Marina—which leases the portion of the project site on which it is located from the City—and the waters of Mill Basin. The project site is currently managed by the New York City Department of Small Business Services (NYCDSBS). The proposed actions would include the disposition of the site from NYCDSBS to the New York City Environmental Development Corporation (NYCEDC) and then sold to private developers.

An existing 1-story concrete structure currently occupied by Toys ‘R’ Us and an associated parking lot are currently located on Lot 125. As part of the proposed actions, Toys ‘R’ Us Delaware Inc. would purchase the land from the City. The existing facility would remain on the project site and the adjacent parking lot would be expanded to cover a 26,800 square foot easement covering a portion of Lot 100. Other improvements to this portion of the project site could include landscaping and minor site and utility improvements and grading and paving of the expanded parking area.

The proposed Kristal Auto Mall development, which is proposed by the Bical Development Corporation, would involve the purchase of the land from the City and the subsequent construction of a new 2-story structure with an automobile showroom and sales and service space; an accessory parking lot; and a small accessory structure on Lots 125 and 175. There would also be stormwater runoff, infrastructure improvements, and landscaping involved with the construction of the proposed auto mall.

No changes are proposed along the waterfront and underwater portions of Lots 125 and 175 and the Sea Travelers Marina would continue to lease the property from the City. Thus, the City would retain ownership of all waterfront and underwater lands within the project site to maintain public waterfront access. In addition, agreements would be made between the City and Bical Development Corporation to allow for the construction of a 10-foot wide public walkway along City-owned waterfront land.

The proposed developments on the project site would be sponsored by the New York City Department of Small Business Services (NYCDSBS) and two prospective land purchasers, Toys ‘R’ Us Delaware Inc. and Bical Development Corporation (see **Figure 3**). A number of discretionary actions are necessary for the completion of the proposed development projects, including changes to the City map; disposition of the project site to the two prospective purchasers; waterfront zoning lot subdivision; and the rezoning the project site. The proposed actions will also require permits and approvals from the Office of the Deputy Mayor for Economic Development (ODMED), the New York State Department of Environmental Conservation (DEC), the New York City Planning Commission (NYCCPC), and the New York City Department of Environmental Protection (NYCDEP). Several of these actions are subject to review under the City’s Uniform Land Use Review Procedure (ULURP), and City Environmental Quality Review

(CEQR), and the State Environmental Quality Review Act (SEQRA). ODMED is serving as the lead agency for environmental review.

As part of the CEQR review process, consultation was initiated with the New York City Landmarks Preservation Commission (LPC) to determine if the proposed project possessed archaeological significance. In comments dated December 16, 2010, LPC determined that Block 8591, Lot 125 was not potentially sensitive for archaeological resources, however, Lots 100 and 175 were determined to have archaeological significance. LPC requested that a Phase 1A Archaeological Documentary Study be prepared for those lots only.

## **B. RESEARCH GOALS AND METHODOLOGY**

This Phase 1A Archaeological Documentary Study has four major goals: (1) to determine the likelihood that the project site was occupied during the precontact (i.e. Native American) and/or historic periods; (2) to determine the effect of subsequent development and landscape alteration on any potential archaeological resources that may have been located at the project site; (3) to make a determination of the project site's potential archaeological sensitivity; and (4) to make recommendations for further archaeological analysis, if necessary. The steps taken to fulfill these goals are explained in greater detail below. The study has been designed to satisfy the requirements of LPC and it follows the guidelines of the New York Archaeological Council (NYAC).

The first goal of this documentary study is to determine the likelihood that the project site was inhabited during the precontact or historic periods and identify any activities that may have taken place on the project site that would have resulted in the deposition of archaeological resources. In order to determine the likelihood of the project site's occupation during the precontact and historic periods, documentary research was completed to establish a chronology of the project site's development, landscape alteration, and to identify any individuals who may have owned the land or worked and/or resided there and to determine if buildings were present on the project site in the past. Data were gathered from various published and unpublished primary and secondary resources, such as historic maps, topographical analyses (both modern and historic), historic photographs, newspaper articles, local histories, previously conducted archaeological surveys, and information from the files of LPC and the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) and the New York State Museum (NYSM) regarding previously identified archaeological sites within 1 mile of the project site. On-line textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed.

The second goal of this Phase 1A study is to determine the likelihood that archaeological resources could have survived intact on the project site after development and landscape alteration (i.e. erosion, grading, filling, etc). Historic maps documenting structures on the project location were analyzed and historic and current topographical maps were compared to determine the extent to which the project site has been disturbed. Potential disturbance associated with paving and utility installation was also considered.

After identifying the likelihood that archaeological resources were deposited on the project site and that the likelihood that they could remain intact given subsequent development and landscape alteration, a sensitivity determination was made for the project site for both precontact and historic period resources. As described by NYAC in their *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (1994: 2):

“An estimate of the archaeological sensitivity of a given area provides the archaeologist with a tool with which to design appropriate field procedures for the investigation of that area. These sensitivity projections are generally based upon the following factors: statements of locational preferences or tendencies for particular settlement systems, characteristics of the local environment which provide essential or desirable resources (e.g. proximity to perennial water sources, well-drained soils, floral and

faunal resources, raw materials, and/or trade and transportation routes), the density of known archaeological and historical resources within the general area, and the extent of known disturbances which can potentially affect the integrity of sites and the recovery of material from them.”

As stipulated by the NYAC standards, sensitivity assessments should be categorized as low, moderate, or high to reflect “the likelihood that cultural resources are present within the project area” (NYAC 1994: 10). For the purposes of this study, those terms are defined as follows:

- **Low:** Areas of low sensitivity are those where the original topography would suggest that Native American sites would not be present (i.e. locations at great distances from fresh and salt water resources), locations where no historic activity occurred before the installation of municipal water and sewer networks, or those locations determined to be sufficiently disturbed so that archaeological resources are not likely to remain intact.
- **Moderate:** Areas with topographical features that would suggest Native American occupation, documented historic period activity, and with some disturbance, but not sufficient disturbance to eliminate the possibility that archaeological resources are intact on the project site.
- **High:** Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

## A. GEOLOGY AND TOPOGRAPHY

The borough of Brooklyn is found within a geographic bedrock region known as the Atlantic Coastal Plain Province. This has been described as “that portion of the former submerged continental shelf which has been raised above the sea without apparent deformation” (Reeds 1925: 3). Soils on Long Island, on which Kings County is located, are composed of glacial till or undifferentiated sediments such as sand and clay. The Atlantic Coastal Plain is typified by “flat, low-lying” ground “that slopes very gently toward the sea” (Isachsen, et al. 2000: 149).

The glacial till making up the upland portions of Kings County was deposited by the massive glaciers that retreated from the area towards the end of the Pleistocene (1.6 million years before present [“BP”] to approximately 10,000 years BP). There were four major glaciations that affected New York City, culminating approximately 12,000 years ago with the end of the Wisconsin period. During the ice age, a glacial moraine bisected Brooklyn, running in a northeast-southwest direction (Homberger 1994). The deposition of glacial till in the wake of the retreating glaciers resulted in the creation of sand hills, known as kames, across New York City, some of which rose to heights of one hundred feet. The Hempstead Outwash Plain, on which the project site is situated, was formed at this time (Bernstein and Merwin 2009).

The surface topography of the area generally slopes down to the north, toward the Mill Basin Creek, a tidal estuary north-adjacent to the project site. According to maps compiled by the U.S. Geological Survey, the property lies at an elevation of between approximately 5 to 10 feet, based on the National Geodetic Vertical Datum of 1929 (an approximation of mean sea level). Current site plans of the development parcel show that the elevation of the proposed development parcel rises to heights of 12 to 16 feet above sea level, sloping gently down to sea level to the east. Elevations in the vicinity of Lot 175 rise to a height of 10 to 11 feet along Flatbush Road, again sloping down to the water. This suggests the presence of many feet of fill throughout the majority of the project site.

A series of soil borings completed within Lot 100 in 2000 as part of a previous environmental assessment of the site indicated that the fill level was at least 14 feet thick across most of the site (see **Figure 4**). In addition, peat, which likely made up the original marshy islands that once occupied the site, was identified in only a few of the 22 borings that were completed. This is possibly the result of landscape modifications in the 20th century, when the area was transformed during the construction of the Belt Parkway, during which both natural and artificial deposits were removed and replaced with clean, sandy fill (Historical Perspectives, Inc. 2000). The peat levels were identified between approximately 27 and 31 feet below the ground surface (ibid).

## B. HYDROLOGY

The project site is located in an area that was historically occupied by a series of tidal marsh islands at sea level (see **Figure 5**). The marshes were punctuated by channels and streams of various sizes. The project site is adjacent to the Four Sparrow Marsh, Mill Basin, and Jamaica Bay (see **Figure 6**). Portions of the marshland were filled in the mid-20th century (described in greater detail below). Soil borings completed by AKRF in 2007 as part of a Phase II Environmental Site Assessment indicate that groundwater on Lot 125 is located between 4.5 and 8 feet below grade (AKRF 2007).

The Four Sparrow Marsh, within Lot 100 to the south of the project site contains four wetlands as mapped by the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) tidal and



freshwater wetland maps. The majority of the area is classified as intertidal estuarine wetlands that are irregularly flooded. In addition, the marsh contains an unnamed tidal creek and tidal open water area.

**C. SOILS**

The *New York City Soil Reconnaissance Survey* published by the National Resource Conservation Service (2005) indicates that the soils in the vicinity of the project site belong to two soil complexes; soils across the majority of the project site (near Lots 125 and 175) are known as the “Pavement & Buildings—Wet Substratum” complex, while Lot 100 is typified by the “Inwood-Laguardia-Ebbets Complex” (New York City Soil Survey Staff 2005).

The soils in Lots 125 and 175, the Pavement & Buildings—Wet Substratum complex, are found in highly urbanized, nearly level to gently sloping areas (0 to 5 percent slopes) that are more than 80 percent covered with impervious pavement and/or buildings (New York City Soil Survey Staff 2005). These areas are typically in areas of filled swamp, tidal marsh, or water. The soils of Lot 100, the Inwood-Laguardia-Ebbets Complex, are also typically found in nearly level to gently sloping areas (0 to 8 percent slopes), however, in areas “that have been filled with a mixture of natural soil materials and construction debris; a mixture of anthropogenic soils which vary in coarse fragment content” (ibid: 12). Summaries of the components of this soil complex are provided in **Table 1**, below. In addition, historic accounts suggest that the salt meadows were covered with “Galveston Clay,” which was described as “black muck and a matted mass of eel grass roots, with bluish or leaf-colored silty clay beginning at a depth of approximately two feet” (Pickman 1987: 3).

Soil borings completed by AKRF in 2007 as part of a Phase 2 Environmental Site Assessment suggested that the soils on Lots 125, the only lot included in the soil boring program at that time, are primarily composed of sand. Concrete and timber fragments were observed in the borings, suggesting that the soil at the site is urban fill. The borings identified 5 to 10 feet of fill throughout Lot 125. All borings were terminated at 10 feet below grade, so the maximum depth of fill in the vicinity is not known. Groundwater was encountered between 4.5 and 8 feet below ground surface. As mentioned previously, additional borings completed in 2000 identified 13 to 16 feet of fill in the northern portion of Lot 100 (Historical Perspectives, Inc. 2000).

**Table 1  
Project Area Soils**

Series Name	Soil Horizon Depth (in inches)	Color	Texture, Inclusions	Slope (%)	Drainage	Landform
Inwood	A: 0 to 6	Yellowish Brown (10YR5/4)	Fill materials; gravelly sandy loam	0-3	Well-drained	Modified landscapes near urban centers
	Bw: 6 to 12					
	C1: 12 to 16	Yellowish Brown (10YR5/6)				
	C2: 16 to 65					
Laguardia	A: 0 to 8	Brown (10YR4/3)	Fill materials; gravelly sandy loam	0 to 10	Well-drained	Modified landscapes near urban centers
	Bw: 8 to 26					
	C: 26 to 79					
Ebbets	<i>Description not available</i>					
<b>Sources:</b> Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Available online at <a href="http://soils.usda.gov/technical/classification/osd/index.html">http://soils.usda.gov/technical/classification/osd/index.html</a> . Accessed February 2011.						

**D. PALEOENVIRONMENT**

Due to the extended glacial period that left the Northeast blanketed in thick ice sheets for thousands of years, the area was not inhabited by humans until approximately 11,000 years ago. As temperatures

increased, a variety of flora and fauna spread through the region. At this time, large open forests of spruce, fir, pine, and other tree species expanded across the Northeast, interspersed with open meadows and marshland. A wide variety of animal life could also be found, including large mammals such as mammoth, mastodon, caribou, musk ox, moose, as well as smaller mammals such as fox, beaver, hare, and many kinds of marine animals.

Climate changes continued to re-shape the environment of the Northeast as time progressed. As the climate grew increasingly warmer, jack pine, fir, spruce, and birch trees were replaced with hardwood forests of red and white pine, oak, and beech (Ritchie 1980). Furthermore, a decrease in glacial runoff resulted in the creation of small bodies of water such as lakes as well as, later on, low-lying marshes and swampy areas. By the time of the Early Archaic period, beginning approximately 10,000 BP, there was “considerable environmental diversity, with a mosaic of wetlands, oak stands, and a variety of other plant resources...[making it]...an attractive and hospitable quarter for both human and animal populations” (Cantwell and Wall 2001: 53). Warmer temperatures forced the herds of large mammals to travel north before eventually dying out. The new surroundings attracted other animals such as rabbit, turkey, waterfowl, bear, turtles, and white-tailed deer. The expanded water courses became home to a variety of marine life, including many varieties of fish, clams, oysters, scallops, seals, and porpoises, among others (ibid).

#### **E. CURRENT CONDITIONS**

The project site is currently divided into three tax lots, two of which, Lots 100 (part) and 175, are the subject of this Phase 1A Archaeological Documentary Study. Lot 175, the site of the proposed Kristal Auto Mall site, is currently a paved lot used for parking and boat storage and sales associated with the adjacent Sea Traveler’s Marina. Three small adjacent structures are present at the southern end of the lot. Lot 125, which is not analyzed in this study, contains a paved lot and a 1-story commercial structure currently occupied by a Toys ‘R’ Us. The Sea Traveler’s Marina occupies the area to the east of the building on this lot. In 1996, twelve 550-gallon underground gasoline storage tanks were removed from the western portion of the marina and were replaced with two 4,000-gallon tanks (AKRF 2004). Vent pipes likely associated with these tanks were visible near the marina’s shed (presumably on Lot 175) during a 2004 Environmental site assessment completed by AKRF (ibid).

Finally, Lot 100 is mostly occupied by the Four Sparrow Marsh, a 67-acre wetland preserve. The majority of this lot is covered with tidal wetland. While the landscape has been transformed from that seen prior to the 20th century, the marshland has been largely isolated from the adjacent developed areas and as a result “has been allowed to remain in a fairly natural condition” and is home to a wide variety of flora and fauna, including hundreds of species of migratory birds (New York City Department of Parks n.d). The wetlands have natural intertidal and high marsh shoreline edges. The southern edges of the marsh along Shore Parkway are upland and planted with trees. The portion of Lot 100 adjacent to Lot 125, including the portion that is situated within the project site, was filled in the late-20th century and is the site of the proposed development parcel (see **Figures 2 and 3**). This area is covered with grass and vegetation. The Mill Basin shoreline of Lot 100 is lined with rip-rap and a stormwater runoff outfall is located in the area. The filled portion of the lot contains a narrow asphalt-paved path that connects it to Flatbush Avenue, and a dirt nature path crosses through the area.

### A. PRECONTACT CONTEXT

Archaeologists have divided the time between the arrival of the first humans in northeastern North America and the arrival of Europeans more than 10,000 years later into three periods: Paleo-Indian (11,000-10,000 BP), Archaic (10,000-2,700 BP), and Woodland (2,700 BP–AD 1500). These divisions are based on certain changes in environmental conditions, technological advancements, and cultural adaptations, which are observable in the archaeological record.

As mentioned in Chapter 2, human populations did not inhabit the Northeast until the glaciers retreated some 11,000 years ago. These new occupants included Native American populations referred to by archaeologists as Paleo-Indians, the forbearers of the Delaware—also called the Lenape Indians—who would inhabit the land in later years. Archaeological evidence suggests that the Paleo-Indians were likely highly mobile hunters and gatherers who utilized a distinct style of lithic technology, typified by fluted points. They appear to have lived in small groups of fewer than 50 individuals (Dincauze 2000) and did not maintain permanent campsites. In addition, most of the Paleo-Indian sites that have been investigated were located near water sources. Because of the close proximity of Paleo-Indian sites to the coastline, few have been preserved in the New York City area.

The Archaic period has been sub-divided into three chronological segments, based on trends identified in the archaeological record which reflect not only the ecological transformations that occurred during this period, but the cultural changes as well. These have been termed the Early Archaic (10,000–8,000 BP), the Middle Archaic (8,000–6,000 BP) and the Late Archaic (6,000–2,700 BP) (Cantwell and Wall 2001). The Late Archaic is sometimes further divided to include the Terminal Archaic (3,000-2,700 BP). The abundance of food resources which arose during this period allowed the Archaic Native Americans to occupy individual sites on a permanent or semi-permanent basis, unlike their nomadic Paleo-Indian predecessors. Fishing technology was developed during the Middle Archaic in response to an increasing dependence on the area's marine resources. Tools continued to be crafted in part from foreign lithic materials, indicating that there was consistent trade among Native American groups from various regions in North America throughout the Archaic period. Few Early and Middle Archaic archaeological sites have been identified in New York City, although numerous Late Archaic sites have been identified in the area.

The Woodland period represents a cultural revolution of sorts for the Northeast. During this time, Native Americans began to alter their way of life, focusing on a settled, agricultural lifestyle rather than one of nomadic hunting and gathering. Social rituals become visible in the archaeological record from this time period. Composite tools, bows and arrows, domesticated dogs, and elaborately decorated pottery were introduced to Native American culture at this time and burial sites grew increasingly complex. Woodland-era sites across North America indicate that there was an overall shift toward full-time agriculture and permanently settled villages. Archaic sites in New York City, however, suggest that the Native Americans there continued to hunt and forage on a part-time basis. This was most likely due to the incredibly diverse environmental niches that could be found across the region throughout the Woodland period (Cantwell and Wall 2001, Grumet 1995).

The Woodland period ended with the arrival of the first Europeans in the early 1500s. After the Dutch settled the colony of New Amsterdam in the early 17th century, they quickly began to purchase large areas of land from the Native Americans. By the mid-17th century, the Native Americans had sold nearly all of their land in Brooklyn to the Dutch (Black 2001).

**B. PREVIOUSLY IDENTIFIED NATIVE AMERICAN ARCHAEOLOGICAL SITES**

Site file searches at OPRHP and NYSM indicate that 5 precontact archaeological sites have been identified within approximately one mile of the project site. Most of these sites were discovered in the early 20th century by avocational archaeologists and were reported by authors such as Arthur C. Parker (1922), Reginald P. Bolton (1922), and Alanson Skinner (1920). Unfortunately, few of these sites were well-documented and little is known about the precontact sites’ exact locations, extent, or artifact collections. In fact, many of these reported sites seem to overlap and several have been grouped together in **Table 2**, below. The majority of the sites represented precontact villages, some with burials and shell middens.

All of the previously identified sites in the area were located on upland areas near the border of the marshy islands of the Jamaica Bay. The most well-documented and largest-known archaeological site in Brooklyn is the Ryder’s Pond site, located on the western side of Gerritsen’s Creek, approximately one mile west of the project site (Cantwell and Wall 2001). This precontact village was also known as *Shanscomacocke*, meaning “wholly enclosed place” or “landing place” (Grumet 1981). The settlement was in the upland area which rose “quite abruptly above the high-tide level in the pond” (Bolton 1922: 160). In 1979, H. Arthur Bankoff and Frederick Winters of Brooklyn College conducted an excavation in the vicinity of Ryder’s Pond in an area where landfilling was proposed (Bankoff, et al. 1997). Intact Native American deposits dating to the Late Woodland were encountered, including shell middens, pottery, and beads (ibid).

**Table 2**  
**Previously Identified Precontact Archaeological Sites**

Site Name	Site Number	Approximate Distance from APE	Time Period	Site Type and Information	Reference(s)
<i>Equendito</i>	SHPO: 04701.000114	1.33 miles (7,000 feet)	Late Precontact-early Historic	Native American village on Barren Island	
<i>Winnipague</i>	SHPO: 04701.000115	0.85 miles (4,500 feet)	Early historic, possibly <i>Canarsee</i>	Native American village and shell middens; The area has since been disturbed through development and landfilling.	Bolton (1934)
ACP Kings-4	NYSM: 3608	0.71 miles (3,750 feet)	Woodland	Burials, shell middens, and pottery	Parker (1922)
ACP Kings-3B	NYSM: 7391	0.9 miles (4,750 feet)	Unknown	Shell middens at Bergen Island	Parker (1922)
Ryder's Pond/ <i>Shanscomacocke</i>	NYSM: 7459 SHPO: 04701.000112	1 mile <b>(5,280 feet)</b>	Late Archaic-Contact	<i>Canarsee</i> village on the western bank of Ryder's Pond/Gerritsen's Creek, burials were located on higher ground in the vicinity of Avenue U. Native American pottery recovered; excavated extensively in the late-19th and early-20th centuries. The area has since been disturbed through development and landfilling.	Bolton (1922)

**Source:** Site files of OPRHP.

The area surrounding the project site was occupied by the *Canarsee* Indians, a branch of the *Munsee* (Cantwell and Wall 2001). Their “principal station” was the *Canarsee* site, more than one mile to the northeast of the project site (ibid). Other major *Canarsee* stations were at *Winnipague*, later known as Bergen Beach, to the northeast of the project site, and *Equendito*, later known as Barren Island, to the south. Both of these sites were identified within areas of fast land surrounded by marsh. The term *Equendito* has been translated as “land broken up” and may refer to the entire chain of marshy islands in the vicinity of the project site, although the precontact village was located on the dry land making up Barren Island (Grumet

1981). The presence of significant quantities of shell in this area suggests that it was likely a center for wampum manufacture (Black 2001).

To date, no Native American sites have been identified within the former marshy islands of Jamaica Bay. The sites that have been located were near upland areas that would not have been affected by the tidal waters but were close enough to the marsh to exploit the tremendous resources that it provided. Marine life and wild game were abundant in this area during the precontact period, making the shores of Jamaica Bay attractive habitation sites to the *Canarsee*. As mentioned above, evidence of Native American activity has been documented in some of the small areas of dry land that punctuated the marshes, such as Mill and Barren Islands. However, the border between marshes and dry land has not been consistent and sea levels have changed dramatically since the population of the northeastern United States began more than 10,000 years ago. It has been estimated that the marshes of Jamaica Bay, which were formed as a result of melting glacial ice, were created approximately 2,500 to 3,800 years ago (Pickman 1987). Therefore, it is possible that archaeological deposits associated with the earliest occupation of the Jamaica Bay area may have been inundated by tidal marshes after their occupation by Native Americans, potentially preserving artifacts beneath protective layers of peat and clay deposits. However, dredging, channeling, and landfilling have drastically altered the landscape of this area.

### A. THE HISTORY OF THE PROJECT SITE

The project site was occupied by islands of salt marsh making up “Flatlands Bay” until the 20th century. Maps dating to the 19th and early 20th centuries, such as the 1898 USGS map included as **Figure 5**, depict the project site as sea-level, tidal salt marsh surrounded by channels and inlets, including a precursor to Mill Basin to the northeast. Several marsh islands of various sizes were formerly located in the project site. The creeks and islands were named in the 19th century by local fishermen (Black 2001) and the marshes located near the project site were bounded to the west by Mill Creek, John’s Creek to the south (this may be a precursor to the stream that runs through the center of the Four Sparrow Marsh), Flat Creek to the northeast, and Irish Creek and Crooked or Orabus Creek to the east. The islands making up the project site were not always given names on historic maps, unlike the larger Mill Island to the northeast and Riches Meadow to the south, although some maps identify the large marsh on the western side of the project site as Hemlock Meadows and the easternmost marsh as Orabus Meadows.

Settlement in this part of Brooklyn occurred slowly during the historic period, however some of the oldest homes established in the area in the 17th century were on the waterfront near Jamaica Bay. In addition, numerous mills were established along the many creeks and streams that ran out into the marshes of the Jamaica Bay. Five historic period archaeological sites have been reported within 1.5 miles of the project site, including the Gerritsen Home to the west in the vicinity of the Ryder’s Pond precontact archaeological site. These sites are summarized in **Table 3**, below.

**Table 3**  
**Previously Identified Historic Archaeological Sites**

Site Name	Site Number	Approximate Distance from APE	Time Period	Site Type and Information
Bergen House	SHPO: 04701.000119	1.14miles (6,000 feet)	18th-20th century	Historic home
Schenck-Crooke House and Mill	SHPO: 04701.000120	0.9 miles (4,750 feet)	17th-20th century	Historic home and mill
Gerritsen Home and Mill	SHPO: 04701.000122	0.85 miles (4,500 feet)	17th-20th century	Historic home and mill
Rendering Plant	SHPO: 04701.000124	1.42 miles (7,500 feet)	19th century	Glue manufacturing industrial complex on Dead Horse Bay
Vorhees Site	SHPO: 04701.000126	0.66 miles (3,500 feet)	Late-19th century	Historic home

**Source:** Site files of OPRHP.

In the immediate vicinity of the project site, one of the first major improvement projects was the filling in of Mill Island and the creation of Mill Basin adjacent to the project site. At the end of the 19th century and into the first decades of the 20th, the Department of Docks maintained control of Jamaica Bay and encouraged industrial development in the area as well as the increased occupation of the area by “fishermen, boaters, and summer cottagers” (Black 2001: 37). In anticipation of the industrialization of the area, marshes were dredged and filled and Flatbush Avenue was extended as far south as Barren Island, now the location of Floyd Bennett Field. Early industries on Mill Island, which was accessed via Gerritsen’s and Mill Creeks, included a lead company and smelting works (ibid).

Mill Basin was constructed in 1915 in order to restore water access to Mill Island after Flatbush Avenue was constructed across Rockaway Inlet (Black 2001). In order to create the artificial channel, its route

was dredged to a depth of 18 feet below mean low water (*New York Times* 1917). The construction of Flatbush Avenue took place between 1913 and 1923 and required landfilling and bulkheading to construct a roadway through the marshlands (Black 2001). Industries moved into the area, although significant industrial development did not occur and instead, the area became a waterfront vacation destination in the early 20th century (ibid).

Landfilling and landscape alterations in the vicinity of the project site began in the early 20th century and United States Coastal Charts show that the project site began to take on an appearance similar to that seen today by 1924 (see **Figure 7**). An aerial photograph of New York City made available on the City's "NYCityMap"<sup>1</sup> website depicts the beginnings of this filling process. The photograph depicts significant filling along the line of Flatbush Avenue and through a large portion of the current Four Sparrow Marsh, although other areas of the project site, mostly in the vicinity of Lots 125 and 175, remained inundated by marsh.

The construction of Floyd Bennett Field, the municipal airport located to the south of the project site, was proposed in the late 1920s (*New York Times* 1927). Now part of the Floyd Bennett Field Historic District, the Field was the first municipal airport in New York City and was constructed between 1928 and 1931 by the City Department of Docks. The airport was designed to attract air traffic to the New York City area from Newark Airport, where most New York-bound flights landed, and in 1933 the Field was the second busiest airport in the country. Floyd Bennett Field was closed to commercial use and conveyed to the U.S. Navy in 1941, following the opening of Idlewild Airport, now John F. Kennedy International Airport, in 1938. The *New York Times* contains several accounts of accidents involving small planes in the vicinity of the airfield, including one in 1932 when Captain Yoshinori Nagoya, a Japanese pilot, crash landed "just over the marshy southern border of Mill Creek," possibly in the vicinity of the project site, where his plane exploded (*New York Times* 1932).

By 1930, Sanborn maps depict the area as largely undeveloped. A large crescent-shaped stream, both ends of which connected to the Mill Basin, was present within the project site. That map depicts two small structures just north of Lot 175. By the publication of the 1951 Sanborn map, the area was depicted as entirely filled in although still undeveloped. By that time, Shore Parkway, originally known as Circumferential Parkway, was constructed, forming the southern boundary of the project site. The road is part of the Belt Parkway system that was officially opened in 1940 (*New York Times* 1940). The bridge crossing Mill Basin near the eastern side of the project site was constructed in 1939 (*New York Times* 1939). At that time, scattered throughout the marshes of Jamaica Bay were "disreputable shanties, houseboats, and fishing smacks" (ibid: 1).

A coastal chart from 1954 (see **Figure 8**) depicts the project site as partially filled, but still largely marshy. An aerial photograph from 1951 available on the above-referenced NYCityMap website depicts additional filling within the project site, much of which appears to be connected to the construction of Shore Parkway to the south. Land in the vicinity of Lot 175 was filled out and piers were constructed out into the water. Lot 125 appeared to have been largely marshy, although the proposed development parcel within Lot 100 appears to have been filled in to a greater extent and a small path or road ran along its western side, adjacent to Flatbush Avenue.

The first developments on the project site are depicted on a Sanborn map from 1968. That map identifies the current Four Sparrow Marsh area, including portions of Lots 100 and 125, as a "golf driving range." This may actually represent a later update of the map, as the *New York Times* suggests that the Flatbush Avenue Golf Driving Range leased the project site from the City circa 1972 and began "illegally placing landfill on 30 acres of undeveloped property and wetlands" to build the driving range (Surfaro 1975). As

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<sup>1</sup> <http://gis.nyc.gov/doitt/nycitymap/>

a result of the poor quality of fill materials used—which allegedly included “old mattresses and parts of automobiles”—there was significant community backlash and in 1975 the driving range was ordered to vacate the property immediately (ibid). Despite this, the site is labeled a driving range on Sanborn maps dating to 1979, 1986 (see **Figure 9**), 1992, and 1996.

The 1968 Sanborn map also depicts a filling station to the north in the vicinity of Lot 125, however the map may have been in error as aerial photos suggest that the filling station was further north (AKRF 2004). Sanborn maps from 1979 and 1986 (see **Figure 9**) continue to depict these developments, as well as a 1-story commercial structure within Lot 125 lining the eastern side of Flatbush Avenue, which subsequent maps identify as an office supply store (Historical Perspectives, Inc. 2000). This structure continues to appear on current USGS maps (see **Figure 1**).

The maps also show that boats were being sold in Lot 125 and possibly in Lot 175 as well. The area was identified as the Four Sparrow Marsh by 1987, when *The New York Times* mentioned that the site at that time measured 85-acres. Of that land, 14 acres of the preserve were proposed as the location of a new retail center because unlike the rest of the area, they were composed of landfill and were therefore ecologically worthless (Waite 1987). The name was coined by naturalists in honor of four sparrow species living in the marshes that “require undisturbed marshland for nesting” (New York City Department of Parks n.d.).

In the late 1970s, a larger retail center had been proposed and a retailer leased the property for 99 years, although nothing had been constructed (Waite 1987). By 1992, Sanborn maps show that the structure on Lot 125 had been demolished and the existing Toys ‘R’ Us, constructed in 1991, is shown. Eight above-ground fuel storage tanks were removed from the lot around that time (AKRF 2004). A 1996 aerial photograph available at the NYCityMap website depicts the existing asphalt path at the northern end of the proposed development parcel and depicts debris piles and irregular topography on the remainder of the parcel. A similar aerial photograph taken 10 years later depicts the same area as flat and covered with grass.

The later aerial also depicts greater inundation, possibly the result of marsh restorations that occurred in the late 1990s and early 2000s. In 1997, funds generated by the Exxon Corporation’s lawsuit settlement after the *Exxon Valdez* disaster were used to repair and maintain many wetlands in New York City, including the Four Sparrow Marsh (Martin 1997). Later, in 2001, additional developments were proposed for the area. Around that time, a group called “Friends of Marine Park” planted “a couple hundred” trees in the area (Reeves 2001). A 3-acre section of the salt marsh was restored in the spring of 2004 by the New York City Parks Department to “restore tidal flow to previously filled areas” (New York City Department of Parks n.d.).



### A. SENSITIVITY ASSESSMENT

As part of the background research for this Phase 1A Archaeological Documentary Study, various primary and secondary resources were analyzed, including historic maps and atlases, historic photographs and lithographs, newspaper articles, and local histories. The information provided by these sources was analyzed to reach the following conclusions.

#### DISTURBANCE ASSESSMENT

The peripheries of the project site would have experienced some disturbance as a result of dredging associated with the early-20th century industrial development of the area. The majority of the site is covered with 20th century landfill. All developments dating to the historic period, including road and building construction and associated infrastructure improvements (septic systems, water and sewer connections, gasoline tanks, etc) would likely have impacted fill levels only.

#### PRECONTACT SENSITIVITY ASSESSMENT

The precontact sensitivity of project sites in New York City is generally evaluated by a site's proximity to level slopes (less than 12 to 15 percent), water courses, well-drained soils, and previously identified precontact archaeological sites (NYAC 1994). In the vicinity of the project site, the upland areas near the border of the marshy islands that covered the project site until the early-20th century would have been ideal locations for Native American occupation sites because of the wide variety of exploitable resources provided by the marshes. The marshes were likely formed approximately 2,500 to 3,800 years ago and prior to that, sea levels were lower and the project site may have been habitable dry land (Pickman 1987). Therefore, Paleo-Indian and Archaic archaeological sites may have been submerged by the rising sea levels and may therefore be protected by layers of peat, clay, and fill.

The project site is considered to have moderate sensitivity for archaeological resources below the depth of the historic fill, which is estimated to extend to approximately 5 to 20 feet below ground surface. Soil borings indicate that the fill layer is thicker towards the south. In addition, it is likely that fill deposits were removed and replaced with clean sandy fill during the construction of the Belt Parkway (Historical Perspectives, Inc. 2000).

#### HISTORIC SENSITIVITY ASSESSMENT

The project site was not filled and developed until the early 20th century and there is no indication that it was ever used for residential purposes. Therefore, the project site is determined to have no sensitivity for archaeological resources dating to the historic period.

### B. RECOMMENDATIONS

The project site has moderate sensitivity for precontact archaeological resources at depths below the historic fill, approximately 5 to 20 feet below ground surface. Once the project plans are finalized, Phase 1B testing is recommended in any areas where excavation is expected to extend below the depth of fill as exhibited on **Figure 4**. The Phase 1B testing could include geoprobes and additional soil borings to investigate the subsurface conditions. As the depth of fill across the project site varies, project plans should be reviewed by an archaeologist to ensure that no archaeological resources would be impacted by the construction of the proposed project.

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**Mill Basin Projects—Phase 1A Archaeological Documentary Study**

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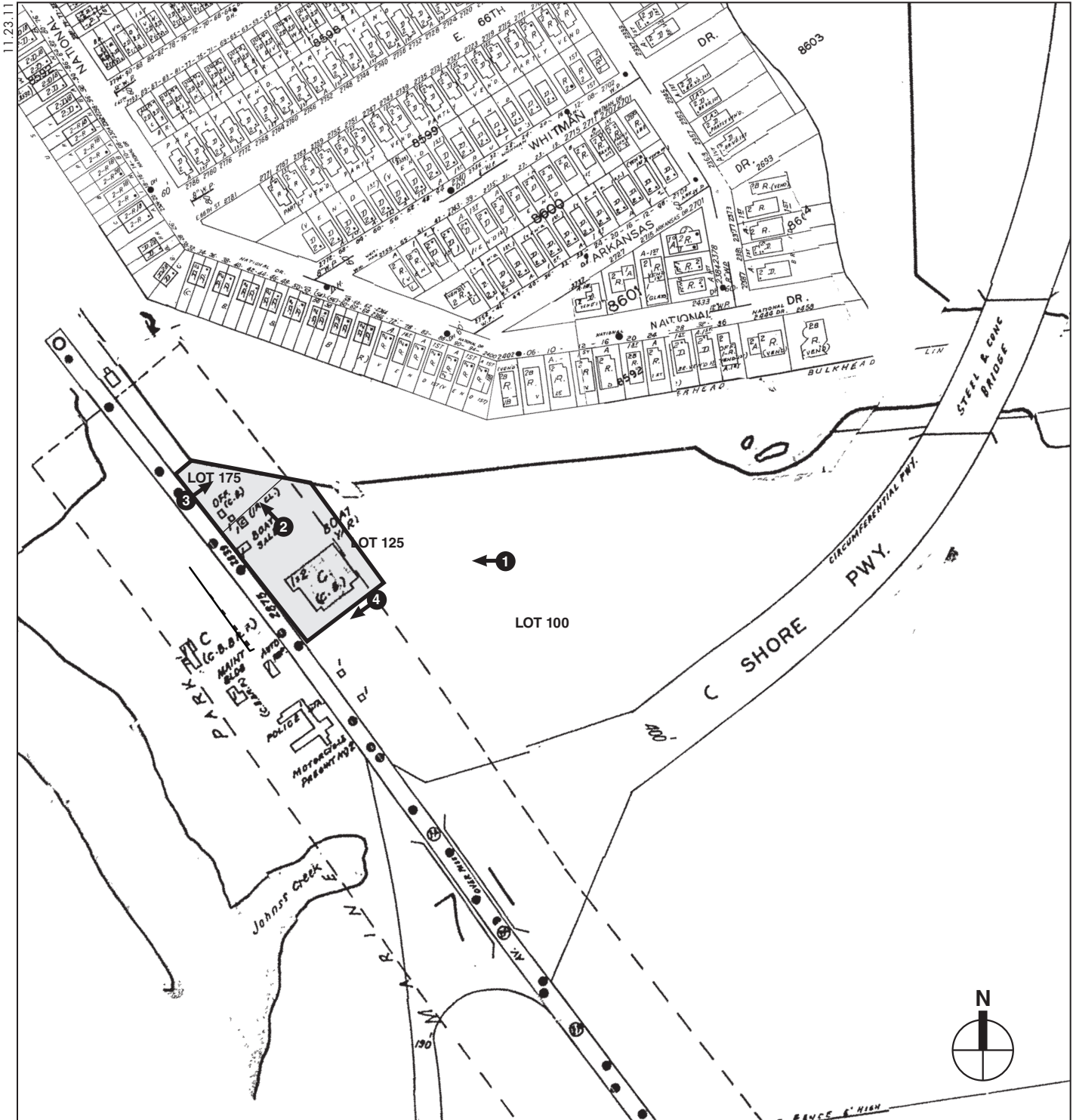
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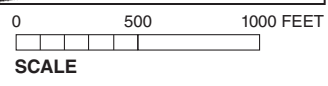
 Project Site

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USGS Topographic Map  
Coney Island Quadrangle  
Figure 1

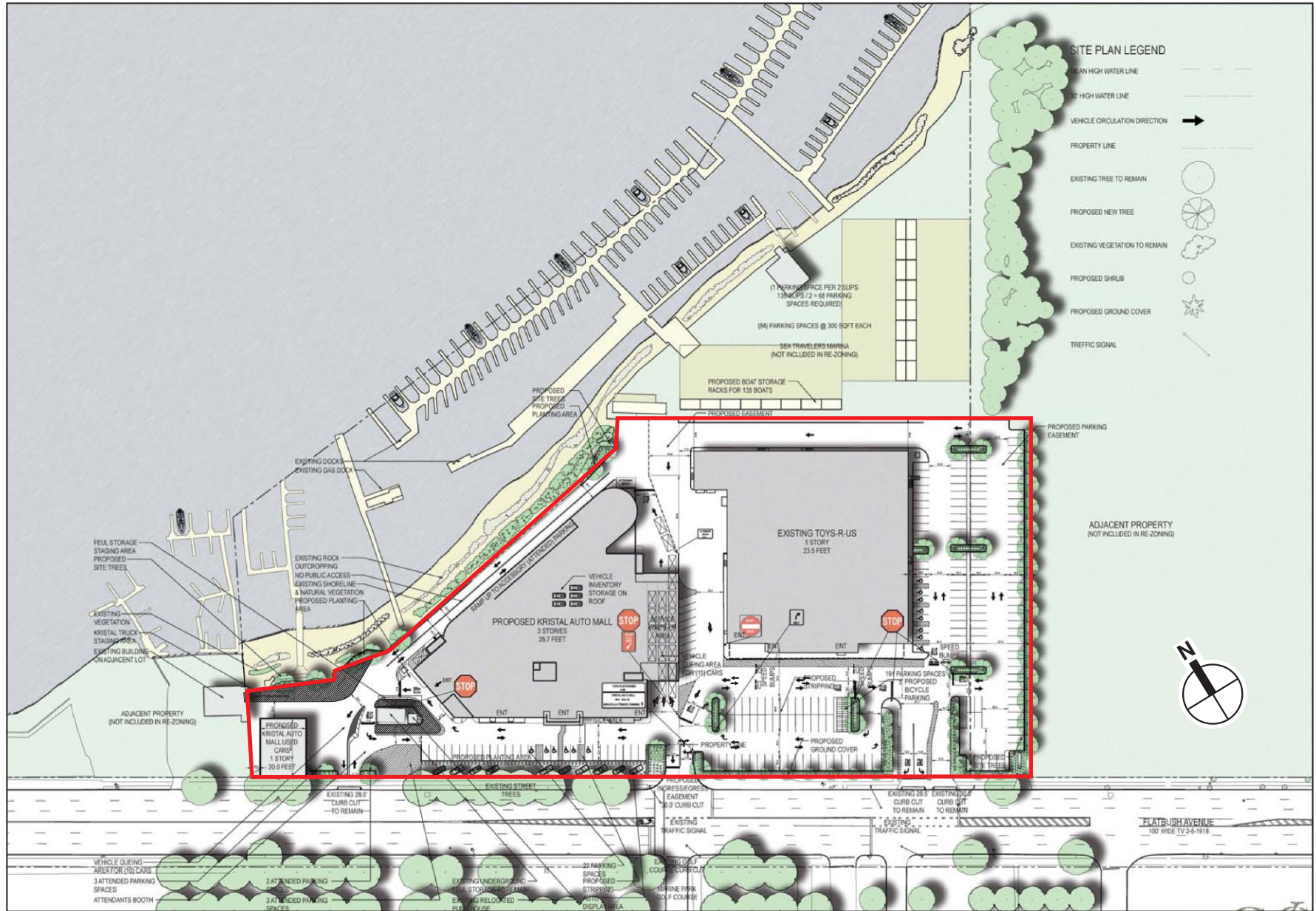


- Proposed Project Site
- ➔ Photograph View Direction and Reference Number



Four Sparrow Retail Center at Mill Basin

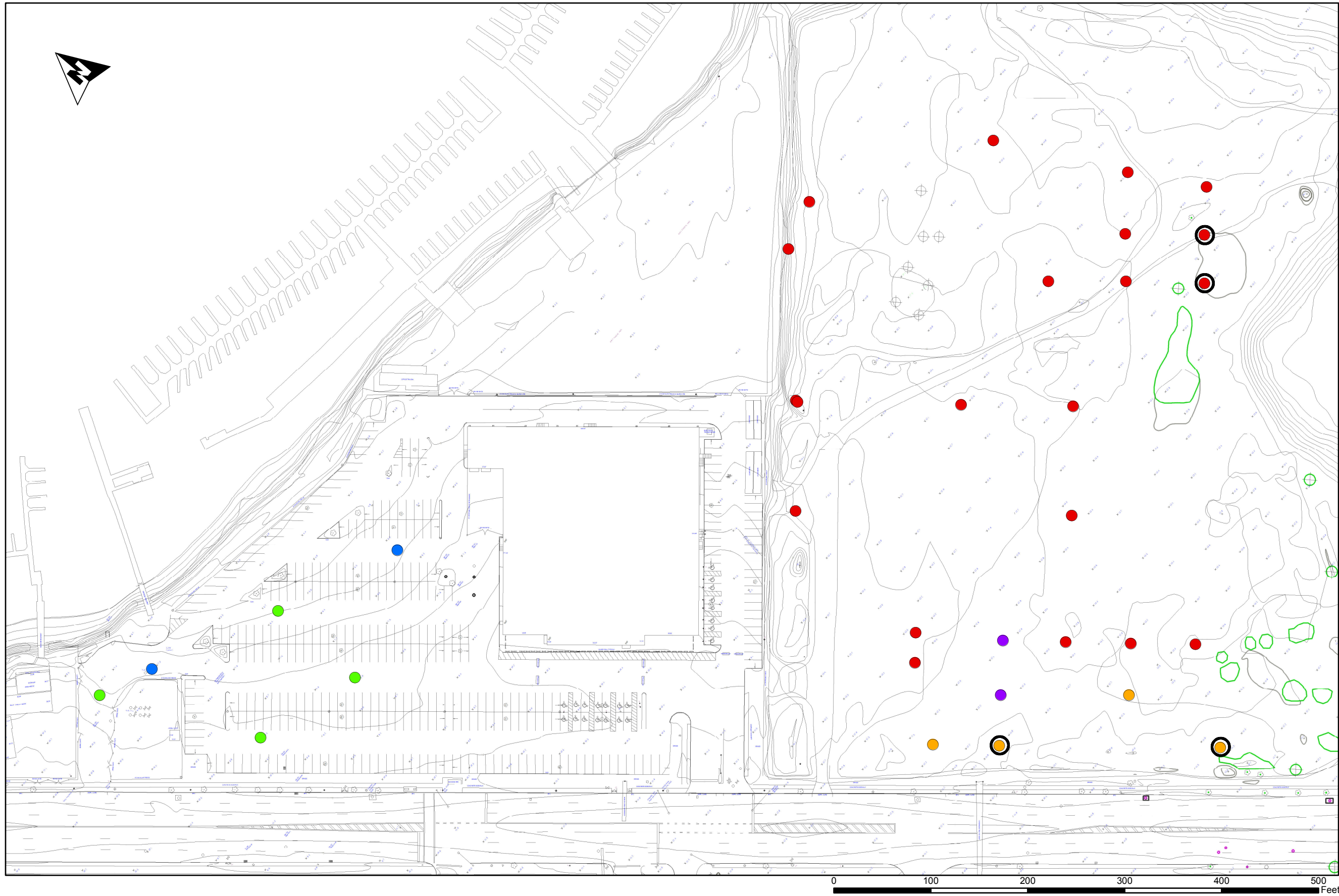
Sanborn Map  
Figure 2



Waterfront Parcel to be Retained in City Ownership

Project Site



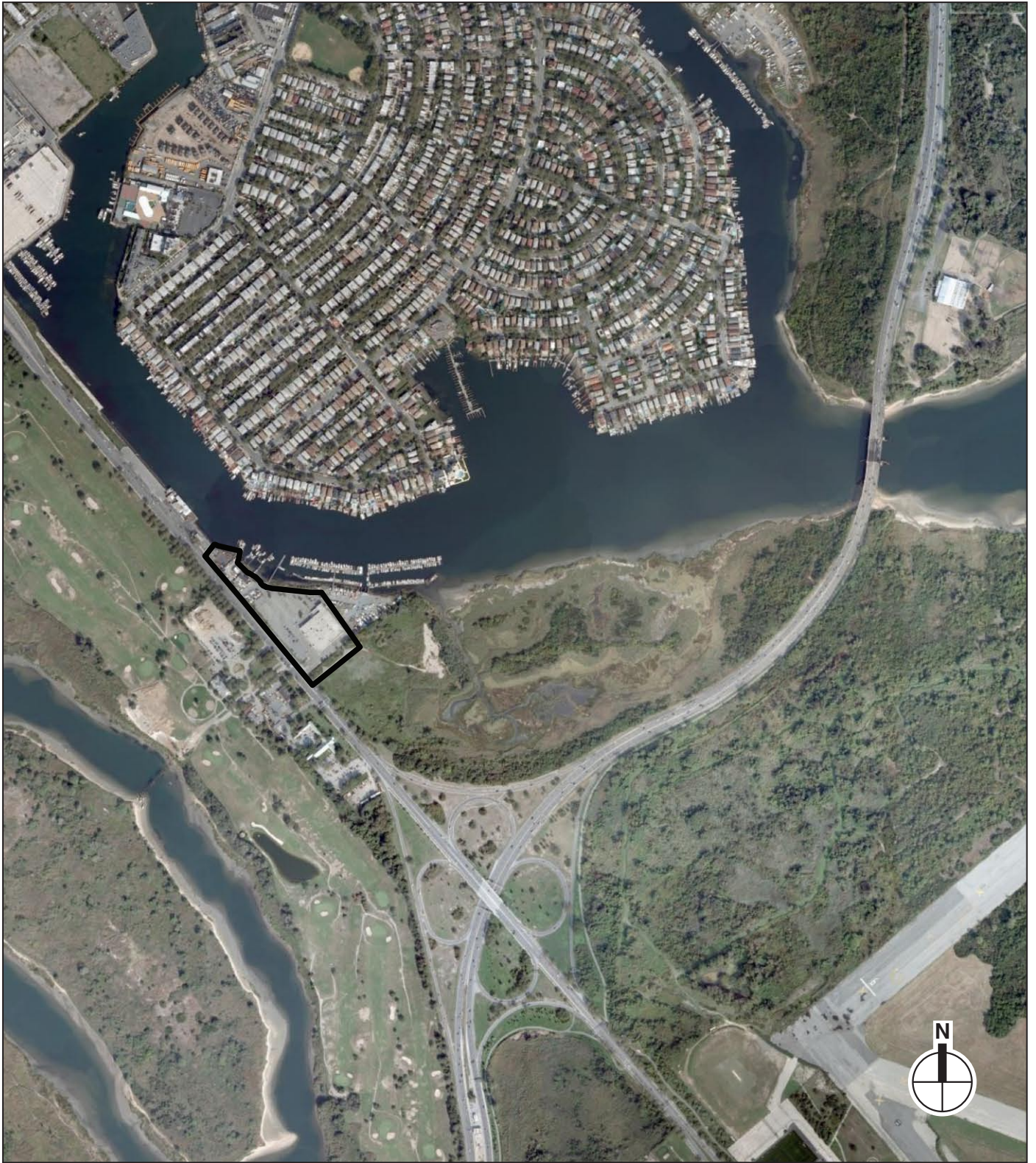


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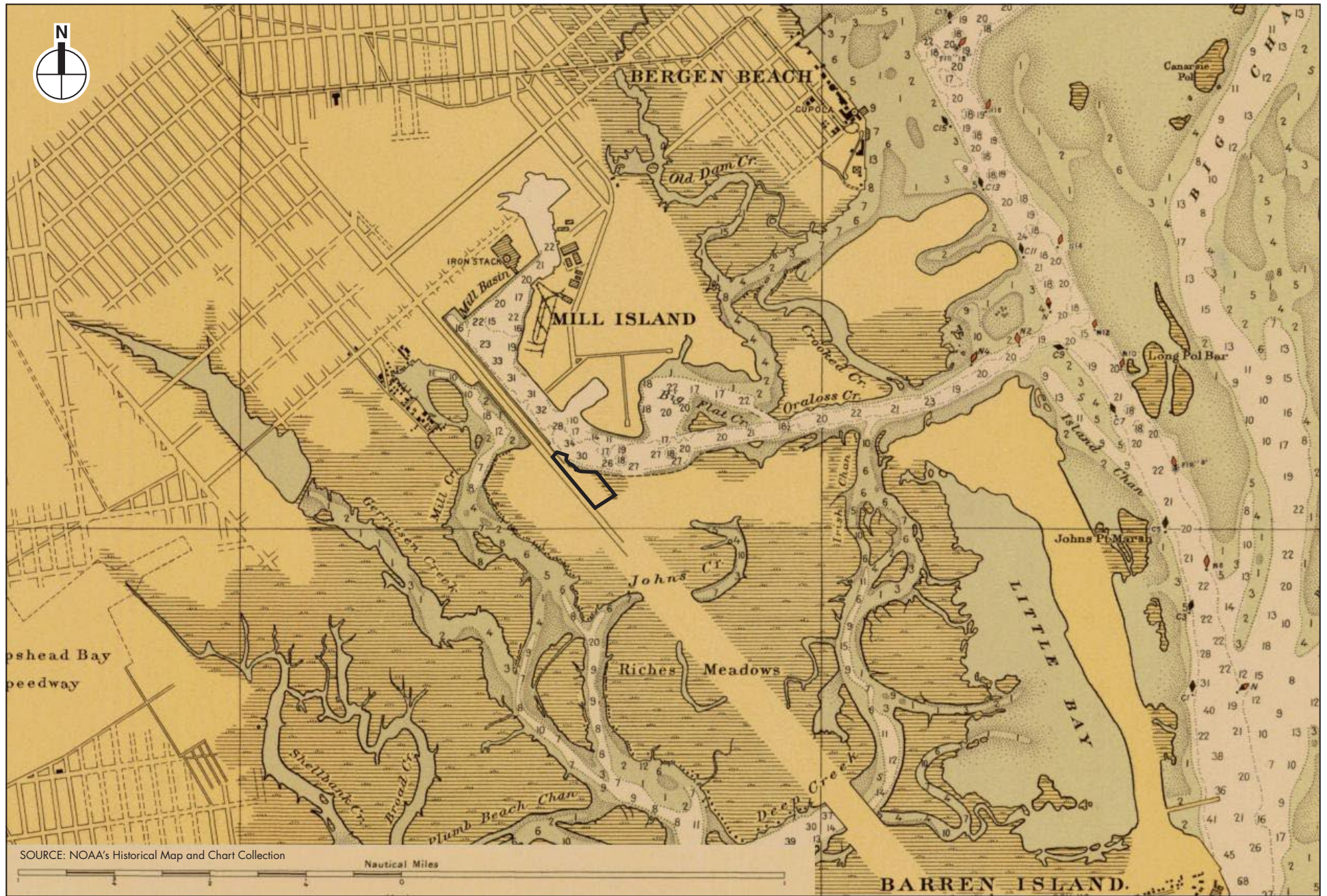
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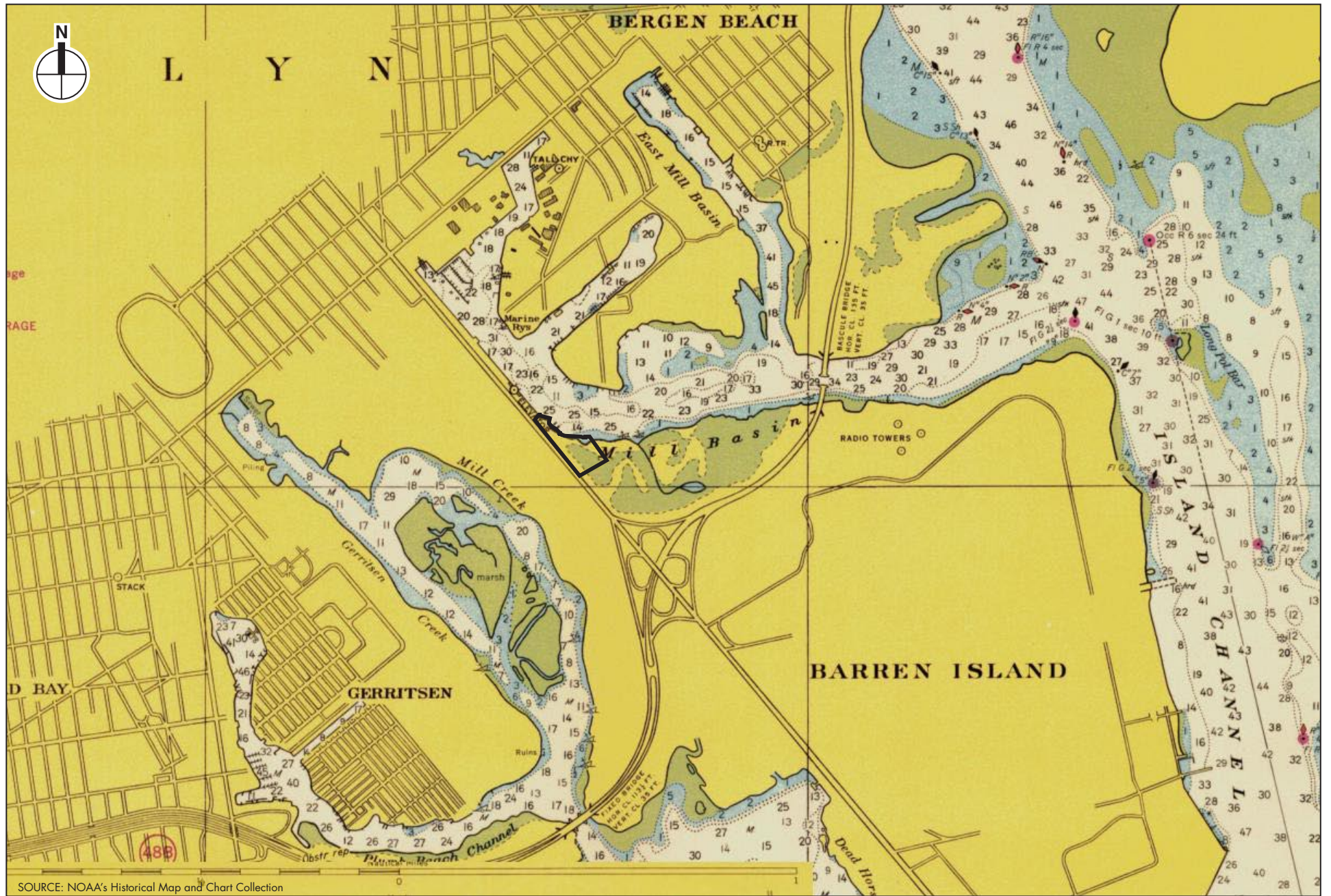
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Project Site  
**MILL BASIN** PROJECTS

Nautical Chart, 1924  
**Figure 7**



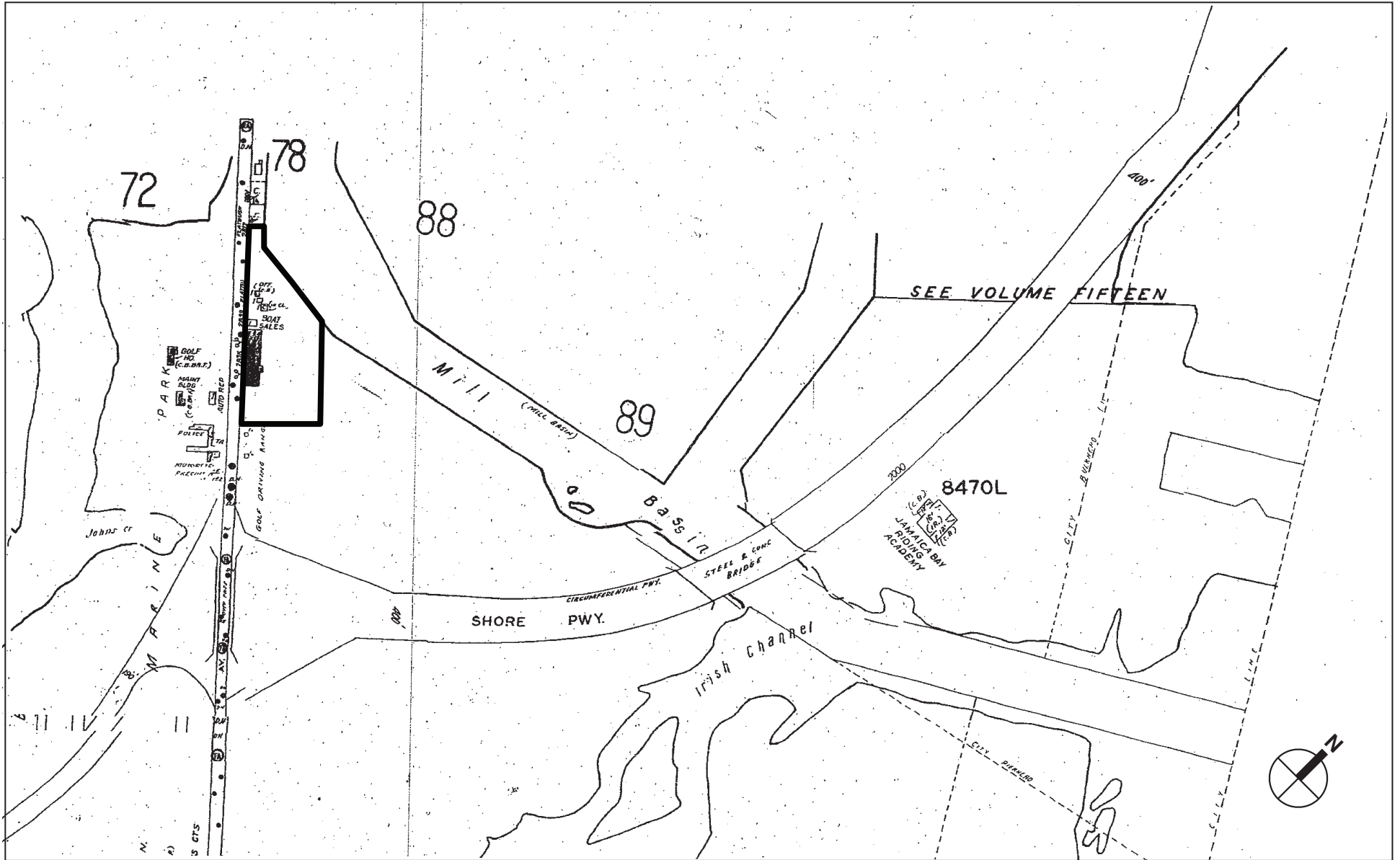
SOURCE: NOAA's Historical Map and Chart Collection

Project Site

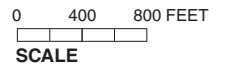
**MILL BASIN PROJECTS**

Nautical Chart, 1954

**Figure 8**



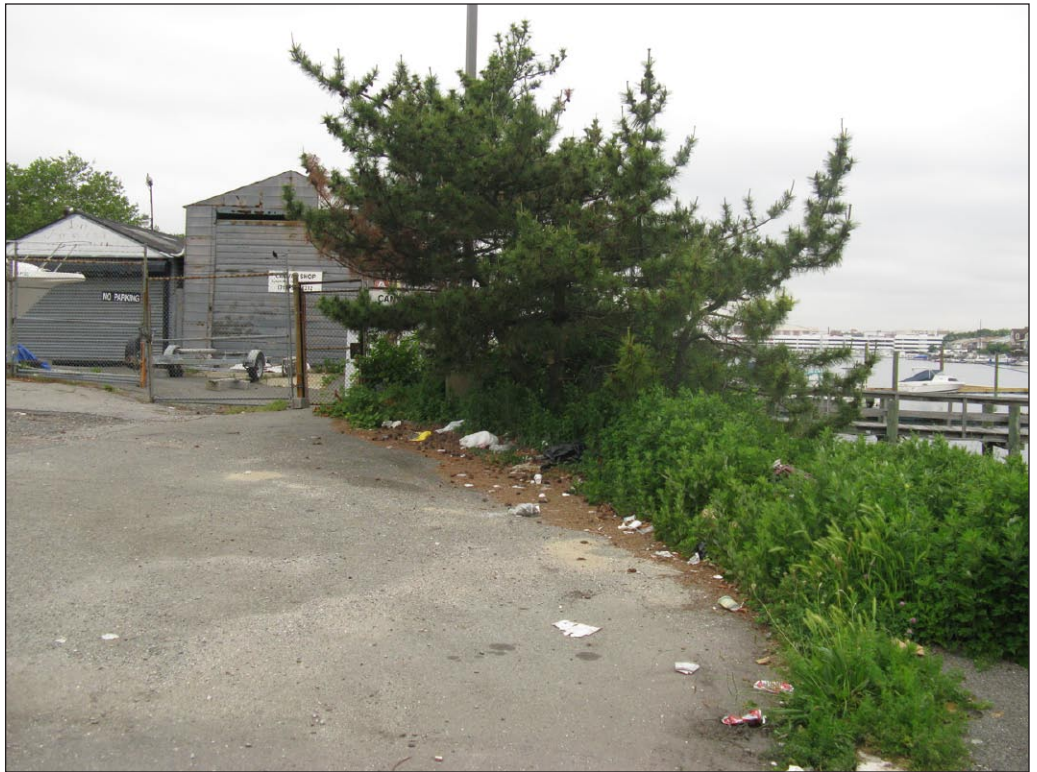
 Project Site



Photographs



Looking northwest from Lot 100 at the existing Toys 'R' Us 1



Looking north from Lot 125 towards Lot 175, showing the structures associated with the Sea Traveler's Marina and the Mill Basin waterfront 2





The Sea Traveler's Marina on Lot 175 **3**



The paved path at the northern side of the development parcel, looking west towards Flatbush Avenue **4**