

A. INTRODUCTION

This section considers the potential of the Proposed Action to affect architectural and archaeological resources on the project site and in the surrounding area. The project site is the East River Esplanade, a two-mile-long, City-owned public open space connecting Whitehall Ferry Terminal and Peter Minuit Plaza to the south to East River Park to the north.

The analysis concludes that any adverse effects on historic resources that are identified as the design process moves forward would be minimized or avoided to the maximum extent possible as set forth in a Programmatic Agreement (PA) to be developed between LMDC and the New York State Historic Preservation Officer (SHPO). A draft of the PA is included in this EIS as Appendix A.

Pre-inundation surfaces that may have been exploited in the pre-contact era are at depths greater than 6.6 feet below current street levels, which is deeper than the potential subsurface disturbance for the Proposed Action, except in the new ramp area north of the BMB to Vietnam Veterans Plaza. Given that the potential for survival of pre-contact resources in this small location is very low, and the time, expense, and danger involved in recovery are great, further investigation of potential pre-contact resources is not considered practical or reasonable. Based on the preliminary assessment disturbance report prepared by Historical Perspectives, Inc., there are a number of areas within the archaeological APE for which additional research will need to be conducted in order to fully understand documented disturbance and the potential for historic-period archaeological sensitivity to still exist. Thus, there is the potential that the project could have adverse effects on historic-period archaeological resources. To avoid this potential, Phase 1A(s) will be prepared, and based on the conclusions of the Phase 1A(s), and in consultation with SHPO and LPC, a suitable treatment plan would be devised for any areas of potential sensitivity. The preparation of any research not completed as part of the EIS, as well as the preparation of the treatment plan, would be part of the PA to be developed between LMDC and SHPO. The City will be a consulting party in the Section 106 process.

The project elements that would be located within the boundaries of the South Street Seaport Historic District and Extension are expected to be another subject of the PA (see above). Any adverse effects that are identified as the design process moves forward would be minimized or avoided to the maximum extent possible as set forth in the PA. As the design of the Proposed Action progresses, the New York City Economic Development Corporation (EDC), in conjunction with the City, will submit any project design elements that directly involve NYCL and NYCL-eligible properties to LPC for their review and comment.

The PA also would provide for consultation between LMDC and SHPO regarding the design of the proposed plaza in front of the Battery Maritime Building (BMB). If agreement on the design of the New Market Building site's redevelopment cannot be reached during consultation, it is possible that this redevelopment could have a significant adverse effect on historic resources.

The original granite East River bulkhead between Broad Street and Coenties Slip would be obscured by the new, independent structure to be created to carry the widened esplanade; however, the bulkhead structure itself would not be altered. In addition, the original granite bulkhead would remain visible at other locations within the project area. The minor, new attachments to the bulkhead that could be required at Pier 15, the New Market Pier, and Pier 42 would be constructed in a sensitive manner in order to remove as little of the remaining, original granite bulkhead material that still exists. The PA is expected to include the review of any project design elements that could affect the East River bulkhead.

In general, the Proposed Action would be expected to enhance the context of surrounding historic resources by improving and enhancing public open spaces with new amenities such as benches, planters, arbors, lighting, and brackets for attaching historic placards and viewfinders for sights of interest. The pavilions to be constructed beneath the FDR Drive would not compete visually with the structures in the surrounding area, because of their low scale and location beneath the viaduct structure, and would be sited so as not to obscure views to historic resources. Since some of the areas under the FDR Drive are currently used for parking, new, well-designed buildings would provide a more attractive context for surrounding historic resources than the existing uses. The removal of pier shed structures on Pier 42 to create a beach would be expected to enhance the visual context of the former Gouverneur Hospital and Gouverneur Hospital Dispensary buildings. The Proposed Action would not require any construction within 90 feet of the anchorages for the Brooklyn and Manhattan Bridges.

B. REGULATORY CONTEXT

Both the National Environmental Policy Act (NEPA) and the State Environmental Quality Review Act (SEQRA) require the consideration of potential impacts to historic resources. In addition, potential effects on historic resources are considered in conformance with Section 106 of the National Historic Preservation Act of 1966 (NHPA) and the New York State Historic Preservation Act of 1980 (SHPA). In addition, the New York City Landmarks Law and potential impacts to New York City Landmarks (NYCLs) and New York City Historic Districts (NYCHDs) have been considered.

NATIONAL HISTORIC PRESERVATION ACT (SECTION 106)

NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. This process, commonly referred to as Section 106 review, provides for review of any federally licensed, financed, or assisted undertaking. Because funds and approvals from a federal agency (the United States Department of Housing and Urban Development (HUD)) would be used to achieve the project, this assessment of historic resources was prepared pursuant to Section 106 of NHPA.

Section 106, as implemented by federal regulations appearing at 36 CFR Part 800, mandates that federal agencies take into account the effect of their actions on any properties listed on or determined eligible for listing on the National Register of Historic Places (NR) and afford the federal Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. Federal agencies, in consultation with the SHPO, as well as other consulting parties where appropriate, must determine whether a Proposed Action would have any effects on the characteristics of a site that qualify it for the State and National Registers of Historic Places (S/NR) and seek ways to avoid, minimize, or mitigate any adverse effects. The Section 106 process includes the following:

- All properties that may be affected by the project and that are included in or eligible for the NR must be identified in consultation with SHPO. If properties are found that may be eligible for the NR, but for which no determination has yet been made, the agency consults with SHPO to determine eligibility or ineligibility.
- If there are such properties, and there is a potential for effects, any potential adverse effects of the proposed project on each property must be evaluated, in consultation with SHPO, by applying the criteria of adverse effect (36 CFR § 800.5(a)).
- In general, a proposed project is deemed to have an adverse effect if it would diminish the characteristic of the property that qualifies it for inclusion in the NR.
- If the analysis indicates that the proposed project would have an adverse effect, ACHP is notified, and SHPO and other consulting parties are consulted to seek agreement on ways to avoid, minimize or mitigate effects. This mitigation is typically implemented through either a Memorandum of Agreement (MOA) or PA. ACHP may choose to participate in the consultation when there are substantial effects on important historic properties, when a case presents important questions of policy or interpretation, when there is a potential for procedural problems, or when there are issues of concern to Indian tribes or Native Hawaiian organizations. ACHP must be invited to participate when the federal agency sponsoring the project requests ACHP's involvement, when the project would have an adverse effect on a National Historic Landmark (NHL), or when a PA will be prepared.
- Programmatic Agreements may be used when effects on historic properties are similar and repetitive or are multi-state or regional in scope, when effects on historic properties cannot be fully determined prior to approval of an undertaking, or where other circumstances warrant a departure from the normal Section 106 process, among other reasons. In addition, the federal agency sponsoring the project may request an advisory opinion if it wishes.
- Execution of the MOA or PA and implementation of the terms therein satisfy the requirement of Section 106 that ACHP be given a reasonable opportunity to comment on the undertaking as well as demonstrates that the federal agency has taken into account the effects of the action.

The review under Section 106 can be conducted in coordination with analyses conducted for NEPA, and where consistent with the procedures set forth in 36 CFR Part 800, information developed for the NEPA environmental review may be used to meet the requirements of Section 106. The views of the public are essential to informed federal decision-making in the Section 106 process, and therefore, the public should be informed about, and given the opportunity to comment on, the project and its effects on historic properties. An agency may use its procedures for public involvement under NEPA if those procedures provide adequate opportunities for public involvement consistent with 36 CFR Part 800. In the case of the Proposed Action, LMDC is coordinating its Section 106 review with that of the other federal agencies carrying out Lower Manhattan recovery projects and using its NEPA review of the Proposed Action to provide additional opportunities for comment by the public, SHPO, ACHP, and a broad range of other parties.

In addition, Section 110 of NHPA addresses federal agencies' responsibility to preserve and use historic properties. Section 110(f) mandates additional protection for NHLs by requiring that federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect NHLs. Section 110(g) allows agencies to include costs of preservation as project costs. Further, Section 110(a)(2) requires, among other things, that an agency's procedures for compliance with Section 106: (1) be consistent with ACHP's regulations; and (2) provide a process for identification and evaluation of historic properties and

development and implementation of agreements about how adverse effects on historic properties will be considered.

STATE HISTORIC PRESERVATION ACT

SHPA closely resembles NHPA, and requires that state agencies consider the effect of their actions on properties listed on or determined eligible for listing on the State Register of Historic Places. Compliance with Section 106 satisfies the requirements of SHPA, set forth in Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law.

NEW YORK CITY LANDMARKS LAW

The New York City Landmarks Preservation Commission (LPC) designates historically significant properties in New York City as NYCLs and/or NYCHDs, following the criteria provided in the Local Laws of the City of New York, New York City Charter, Administrative Code, Title 25, Chapter 3. Properties designated as NYCLs or NYCHDs are protected under the New York City Landmarks Law, which requires LPC review and approval before any alterations or demolition can occur. Although the New York City Landmarks Law is not applicable to LMDC, potential impacts to NYCLs and NYCHDs have been considered.

C. METHODOLOGY

IDENTIFICATION OF HISTORIC PROPERTIES/STRUCTURES

First, a study area or Area of Potential Effect (APE) is defined based on the characteristics of the Proposed Action and the context in which it takes place. In general, potential effects on historic or architectural resources can include both direct physical effects (e.g., demolition, alteration, or damage from construction on nearby sites) and indirect, contextual effects, such as the isolation of a property from its surrounding environment, or the introduction of visual, audible, or atmospheric elements that are out of character with a property or that alter its setting.

Once the APE is defined, a list of officially recognized historic resources within the APE is compiled. This includes NHLs; other properties or districts listed on the S/NR or properties determined eligible for such listing; and NYCLs or NYCHDs, or properties pending such designation. A list of potential historic resources within the APE is also compiled. These are identified based on field surveys of the APE and, where available, information from historic societies or preservation organizations with knowledge of the area. Potential historic resources comprise properties that may be eligible for listing on the S/NR and/or designation as NYCLs.

The National Register Criteria for Evaluation are found in 36 CFR Part 60. Following these criteria, districts, sites, buildings, structures, and objects are eligible for the S/NR if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. are associated with the lives of significant persons in our past; or
- C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. have yielded, or may be likely to yield, information important in history or prehistory.

Properties that have been constructed within the last 50 years are ordinarily not eligible. Determinations of eligibility are made by SHPO. Generally, all properties that are listed on the NR are listed on the State Register, which has the same criteria for evaluation as the NR.

Buildings, properties, or objects are eligible for designation as a NYCL or NYCHD when a part is at least 30 years old. Landmarks have a special character or special historical or aesthetic interest or value as part of the development, heritage, or cultural characteristics of the city, state, or nation. There are four types of landmarks: individual, interior, historic district, and scenic.

Known historic resources as well as potential resources are identified and described below in section E, “Existing Conditions.”

ASSESSMENT OF POTENTIAL EFFECTS ON HISTORIC RESOURCES

Once the historic resources in the APE are identified, the effects of the project on those resources are assessed. As described above, project effects on known historic resources and those potential resources determined to meet eligibility criteria for listing on the NR identified in this section may include both physical and contextual effects. Direct effects could include physical destruction, damage, or alteration of a historic resource. In addition, visual effects, such as changes in the appearance of a historic resource or in its setting—including introduction of incompatible visual, audible, or atmospheric elements to a resource’s setting—are considered.

IDENTIFICATION OF THE AREA OF POTENTIAL EFFECT

ARCHAEOLOGICAL RESOURCES

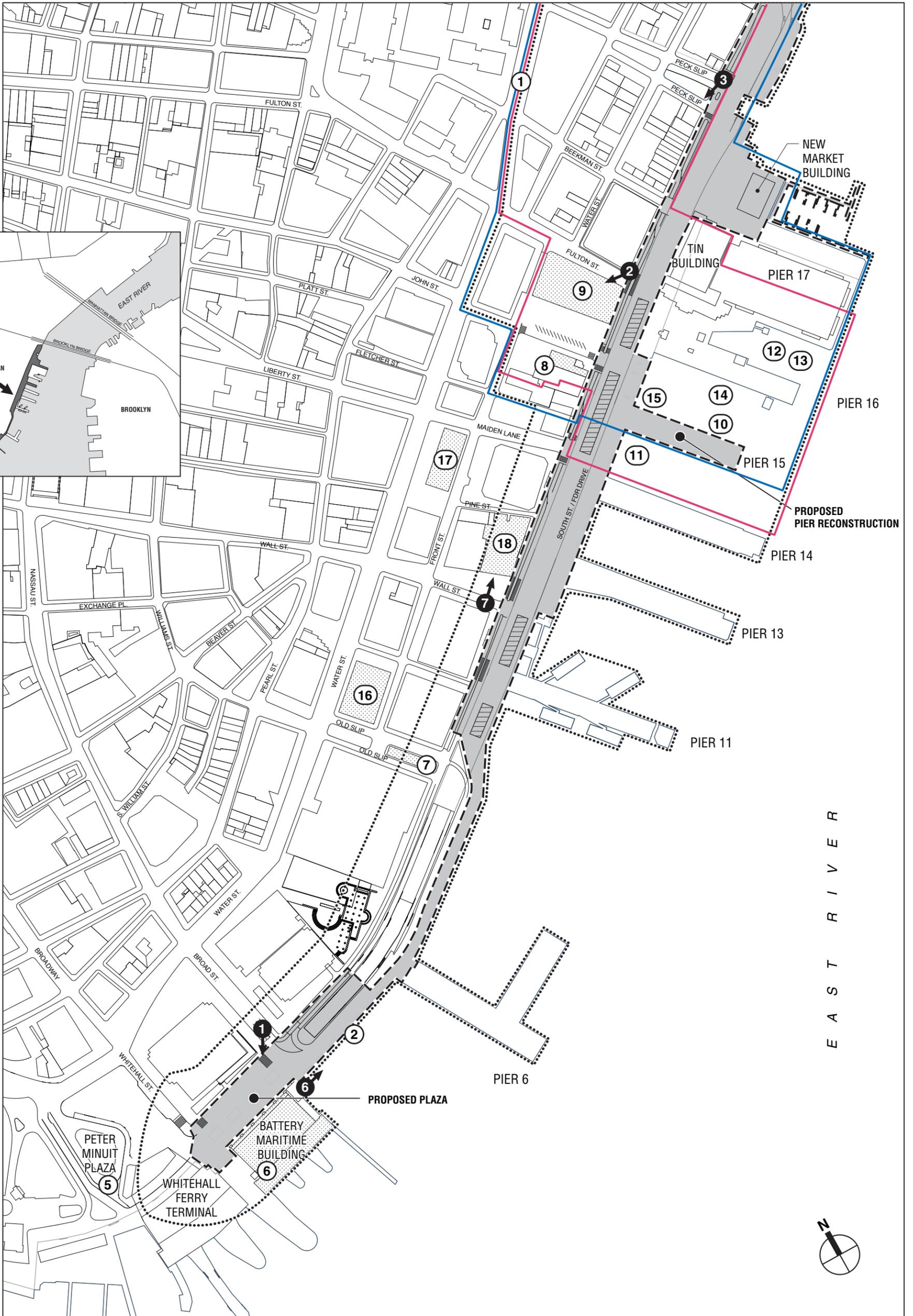
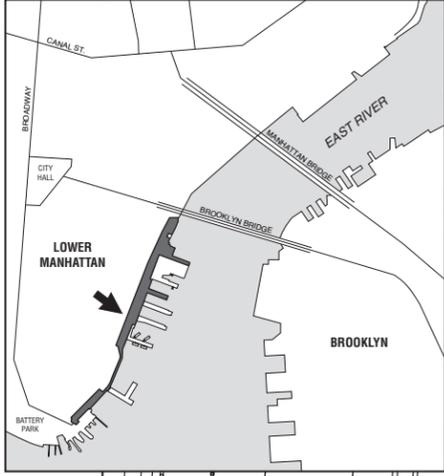
The APE for archaeological resources is the area of planned construction and disturbance on the project site (see Figures 6-1 through 6-3). The LPC and SHPO were contacted for their preliminary evaluation of the APE’s archaeological sensitivity. Based on this review, a preliminary assessment disturbance report for the APE was prepared by Historical Perspectives, Inc.

Archaeological resources are typically evaluated through a three-step process. The first step, Phase 1, consists of documentary research into the history of the site to determine the likelihood that archaeological resources may be present within the APE. Often, this step is divided into two phases: Phase 1A, which requires identifying areas that may contain archaeological resources, and Phase 1B, which involves subsurface testing to try to determine whether any resources are actually present. The second step, Phase 2, consists of more extensive subsurface investigations (if Phase 1B testing indicated that resources are present) and additional research to establish the age, integrity, and research potential of the resources, and whether they may be eligible for the Registers. The third step, Phase 3, is considered the mitigation phase. Mitigation may consist of either avoidance of the resource or data recovery in the form of a full-scale excavation and documentation.

ARCHITECTURAL RESOURCES

Based on potential effects due to on-site construction activities, and also to account for the project’s potential visual and/or contextual impacts, the APE for architectural resources was defined as the streetfront opposite the project site, as well as the full boundary of the South Street Seaport Historic District and Extension (see Figures 6-1 through 6-3). Within the APE, the architectural resources considered comprise properties listed on the S/NR or determined eligible for such listing, and NYCLs and NYCHDs or properties determined eligible for landmark status.

KEY MAP



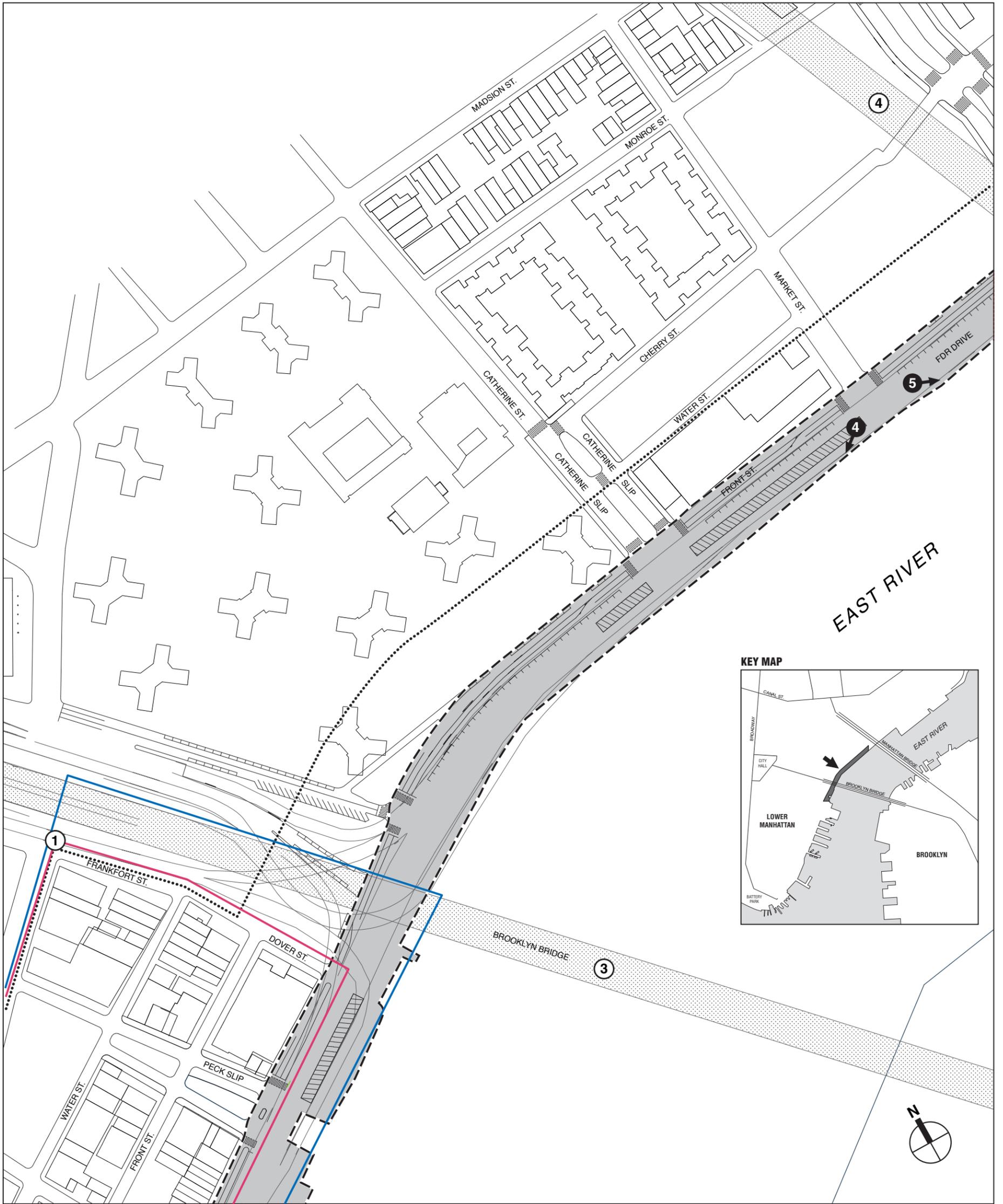
- Project Site
- Photo Reference Number and View Direction
- Architectural Resources
- Potential Locations of Pavilions
- Archaeological Resources APE
- Architectural Resources APE
- Known Architectural Resources
- NYCL Boundary
- S/NR-Listed Boundary

0 500 FEET
SCALE

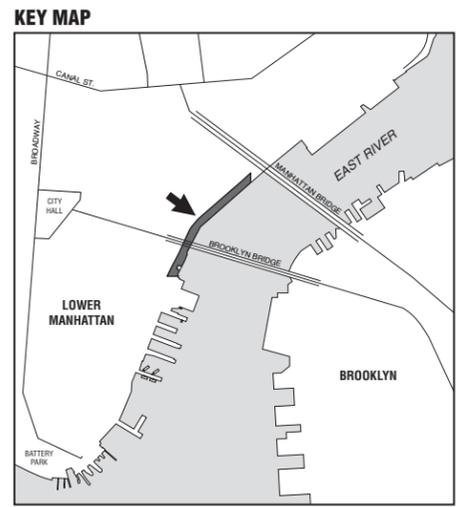


Historic Resources Reference Map

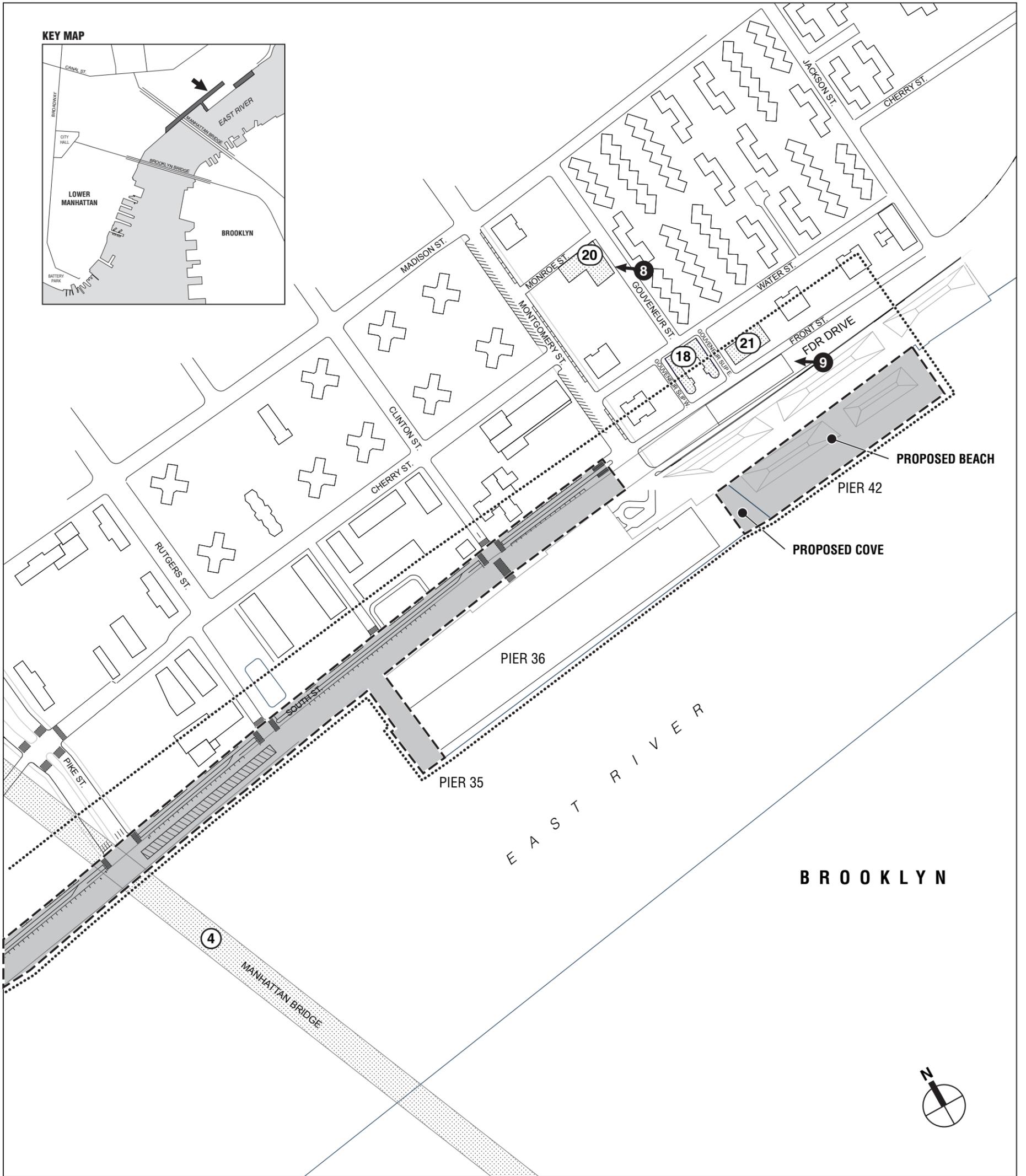
Figure 6-1



- Project Site
- 1 → Photo Reference Number and View Direction
- 5 Architectural Resources
- Potential Locations of Pavilions
- Archaeological Resources APE
- Architectural Resources APE
- Known Architectural Resources
- NYCL Boundary
- S/NR-Listed Boundary



Historic Resources Reference Map
Figure 6-2



- Project Site
- 1 Photo Reference Number and View Direction
- 5 Architectural Resources
- Potential Locations of Pavilions
- Archaeological Resources APE
- Architectural Resources APE
- Known Architectural Resources

0 500 FEET
SCALE



D. BACKGROUND HISTORY

The importance of the East River waterfront is reflected in the placement of the New Amsterdam settlement there in the 1600s. Its advantages included a gently sloping shoreline sheltered from strong winds, and an average depth of 50 feet, which was deep enough for 17th- to 18th-century ocean-going ships. Prior to the arrival of the first European traders in 1612, Lower Manhattan's East River shoreline ran roughly along Pearl Street. The Dutch located their earliest wharves along the East River; the intersection of Pearl and Broad Streets was approximately the site of the first wooden dock built by the Dutch in 1647. Ships were moored in the deep water off shore, and were unloaded into smaller boats which would ferry the cargo to shore.

The East River waterfront was the subject of extensive engineering campaigns beginning in the 17th century. The shoreline was ordered stabilized with wooden sheetpile seawalls during the 1650s. The Dongan Charter of 1686 effectively extended Manhattan 200 feet into the East River, and the Montgomerie Charter of 1730 extended the City's boundaries another 400 feet beyond the old low water mark from Whitehall to Corlears Hook. As commerce recovered from the British Occupation during the Revolution, the Outer Streets and Wharves Act of 1789 provided for the creation of South Street beyond the 1730 400-foot line. The East River waterfront was brought roughly to its current location at Front Street by about 1810.

New York and its East River piers thrived with maritime traffic in the 19th century, and South street—the “street of ships”—was the center of New York City's commercial life from the late 18th century through the mid 19th century. The stretch of waterfront from Catherine Slip to Corlears Hook was occupied by the shipbuilding industry during the War of 1812 and in the decade preceding it, and many of New York's privateers that harassed British sea-traffic during the war were constructed in local shipworks. In 1814, the Fulton Ferry connected South Street with Brooklyn and the farming community. In 1822, the Fulton Market opened after the City leased stands to fishmongers; gradually the fish market supplanted other functions in the area. The opening of the Erie Canal in 1825 provided further impetus to New York's commercial and physical expansion, and the New York State Barge Canal Terminal occupied Pier 6, where Erie Canal barges were moored. Starting ca. 1850, Catherine Ferry made regular passages between Catherine Slip and Main Street, Brooklyn. In the 1850s over 40 piers occupied the nearly 2-mile stretch of waterfront included in the project site. As ships gradually increased in size during the 19th century, however, commerce shifted to the Hudson, until almost all trade was along the Hudson River by the 20th century. The Brooklyn Bridge was built in 1867-83, and the Manhattan Bridge was built in 1910-15, creating competition for the East River ferry services.

The Great Fires of 1835 and 1845 destroyed much of the old building fabric in Lower Manhattan, and the reconstruction that followed heralded the stylistic prominence of the Greek Revival. By the outbreak of the Civil War in 1861, most of Lower Manhattan to the east of Broadway had been transformed into a bustling commercial district lined with warehouses, banks, and office buildings. The scale of these buildings remained modest, with the tower of Trinity church rising above all other structures. Following the Civil War, however, the wealth accumulated by New York's businesses was used to erect grander and more technologically advanced buildings, setting the stage for the innovative Lower Manhattan skyscrapers that would profoundly alter the nature of commercial architecture. Waves of construction culminated with the slender, soaring towers of the skyscrapers erected in the late 1920s and early 1930s that have come to define the Lower Manhattan skyline.

As commerce shifted to the Hudson River, the South Street piers became obsolete, and the area quickly declined. The East River waterfront entered a new phase of existence, as the site of a new arterial highway—East River Drive—planned to relieve the ever-increasing traffic congestion that followed the advent of the automobile. The grand opening of the Montgomery Street to Grand Street section of the East River Drive (now the FDR Drive) took place on May 17, 1940. The “Lung Blocks” (bounded by Monroe, Cherry, Catherine, and Market Streets), which were infamous for their high tuberculosis rates at the turn of the century, were cleared in 1933 for construction of Knickerbocker Village, one of the first federally-funded housing projects. Julius and Ethel Rosenberg, who were convicted of spying for the Soviet Union in 1951 and executed in 1953, were among those who came to inhabit the Knickerbocker Village apartments. The LaGuardia Houses and Governor Alfred E. Smith Houses, both public housing projects, were developed along the East River waterfront in the 1950s, and the Rutgers Houses were developed there in the 1960s.

The Battery Park Underpass (BPU) was built in 1950, and in 1954 the elevated FDR Drive structure was built from the BPU north to Jackson Street. The FDR Drive viaduct was designed to accommodate express traffic, while attempting to keep the number of supporting columns to a minimum so as not to interfere with local traffic on South and Marginal Streets. By the 1950s, the Fulton Fish Market was one of the few major maritime-related uses remaining in this area south of the East River Park.

As described in more detail in Chapter 1, “Project Description,” and Chapter 3, “Land Use, Zoning, and Public Policy,” in the second half of the 20th century a number of plans and proposals were put forward for Lower Manhattan and its East River waterfront. These include: in 1959, the creation of the Battery Park Urban Renewal Area, which led to the development of four large office buildings along Water Street; in the 1960s, the proposed development of the World Trade Center, originally planned to be located along the East River, and a City Planning Commission Plan for Lower Manhattan; and unrealized projects including Manhattan Landing (ca. 1972) and East River Landing, a pared-down version of Manhattan Landing (ca. 1984). The South Street Seaport area was redeveloped starting in 1972 with the adoption of the Special South Street Seaport District as a means of assuring the historic character of the area and regulating the transfer of development rights within the District. The Seaport has since developed into a major tourist destination that includes a relatively new retail building on Pier 17 and a historic ship museum across South Street.

E. EXISTING CONDITIONS

ARCHAEOLOGICAL RESOURCES¹

SITE HISTORY

The island of Manhattan lies within the Hudson Valley region and is considered to be part of the New England Upland Physiographic Province. The underlying geology is made up of gneiss and mica schist with heavy, intercalated beds of coarse grained, dolomitic marble and thinner layers of serpentine. The land surface in the metropolitan area was carved, scraped, and eroded by advancing and retreating glaciers during three known glacial periods. The release of meltwater

¹ This section summarizes the disturbance memo prepared by Historical Perspectives, Inc. in August 2006.

East River Waterfront Esplanade and Piers

during the final glacial retreat, ca. 12,500 years ago, resulted in the rapid rise of sea levels; as a result, Manhattan is marked by low hills and surrounded by estuaries and tidal straits, the remains of the channels of the Hudson, East, and Harlem Rivers, which were inundated by rising sea levels.

Historical development has altered many of the topographic features which once characterized pre-contact Manhattan, and the current East River shoreline bears little resemblance to its condition during the early 17th century, when European colonization commenced (see discussion above). An examination of the 1865 Viele map, which charts the original shoreline of Manhattan, shows the APE submerged beneath the waters of the East River, with the project site lying between approximately 54 feet (between Frankfort Street and Catherine Slip) and 550 feet offshore from the pre-fill/pre-bulkheading shoreline.

Bulkheading and filling begun during the 17th century had extended the shoreline to approximately its present location by the early 20th century. According to mid-19th century profiles of South Street, the then-existing street surface was between 2.1 and 8 feet above the high water mark. According to the current United States Geological Survey (USGS) topographic map, the tidal rise from mean low to mean high water in Upper New York Bay is 4.5 feet, indicating that modern, human-deposited fill extends at least 6.6 feet or more below 19th-century street levels. Furthermore, regrading and the continuous paving and resurfacing of South and Marginal Streets in the APE raised the surface of the project site an additional number of feet by the 1950s. During the construction of the South Street Viaduct in 1952, the 1836 cobblestone street surface was encountered on South Street at Clinton Street, within 4 feet of street level.

PRE-CONTACT ARCHAEOLOGICAL RESOURCES

There is no existing evidence of Native American occupation or exploitation of the APE, which was under water in the 17th century. As noted above, the APE was inundated during this period of occupation by rising sea levels caused by glacial meltwater. This process, along with tidal action and the effect of the East River currents, would make the survival of any shallowly-buried pre-contact resources unlikely. Pre-inundation surfaces which may have been exploited by pre-contact man are at depths greater than 6.6 feet below current street levels.

HISTORIC-PERIOD ARCHAEOLOGICAL RESOURCES

Below is a list of historic-period archaeological resources that could potentially exist within the APE.

- **Riverbottom Remains:** These resources include sunken vessels, discarded and lost cargo, and discarded material from shoreline activities.
- **Landfill Retaining Structures:** Devices for retaining fill, such as cribbing and bulkheads, have been a subject of archaeological investigation for many decades, and docks and wharves—some of which also functioned as landfill retainers—are known to have existed throughout the APE.
- **Landfill Deposits:** Landfill can contain artifactual material, particularly in the strata closest to the surface. Such archaeological evidence is important for documenting past lifeways, as well as for dating when and how fill was deposited. Because the superstructure was made of wood, these elements needed to be constantly submerged to prevent decay, and sections rising above the low-water mark required periodic rebuilding. Archaeologists have theorized two broad categories of fill strata: primary and secondary fill.

- Primary Fill: The first-deposited, and largest of the stratum, would be the landfill placed within the cribbing interstices. Few artifacts are to be expected in this stratum (aside from the support structure and clean fill itself, which are technically artifacts), because through time, decaying, artifact-rich garbage would compress unevenly, settle at varying rates, and cause instability. Although the activity is poorly documented, various references suggest that clean landfill material was generally obtained from regrading and construction projects in other parts of Manhattan.
- Secondary Fill: Secondary fill is utilized to cover the rough and rocky primary landfill, providing a working surface for construction. It contains less rock than primary landfill, and is where most of the artifacts recovered by excavations are found. This corresponds to recorded historical observations of the filling of waterlots by their owners.
- Piers and Wharfs: Prior to the construction of South Street, the APE was punctuated by numerous wharves, piers, and docks which, as landfill progressed, were incorporated into the made land. The project site could contain elements of these 18th- and 19th-century structures, as well as remains of the buildings associated with them.
- Land Transportation Elements: As the center of commerce, the South Street waterfront was the terminus for multiple horse-drawn trolley cars and omnibuses during the 19th century. The discovery of an undisturbed section of 1836 stone pavement at South and Clinton Streets (see above) indicates that track from these railway lines may still be present within the APE. The study of small sections of track rails can be useful in the study of technological adaptations and processes in the evolution of transportation and transportation systems.
- Wooden Water Mains: Prior to the introduction of Croton water in 1842, water was distributed in mains composed of hollowed-out logs, which were replaced with cast iron pipes and hydrants beginning in 1827. The Manhattan Company maintained numerous mains in Lower Manhattan during its existence from 1799 to 1842. The wooden mains were shallowly-buried so that they could be tapped by firemen in the course of their duties, and were most recently encountered within four feet of the surface in Coenties Slip, west of the APE. North of Rutgers Slip, South Street had not been filled before 1834; therefore, potential wooden mains could have been present in the APE from Whitehall to Rutgers Slip, but not north of Rutgers Slip.

RECORDED SUBSURFACE DISTURBANCE

Although many forms of subsurface disturbance have occurred within the APE, documented disturbance can be divided under the following major headings.

- Subway Tunnels: Current Sanborn maps record six subway tunnels passing beneath the APE: BMT tunnels at Broad and Whitehall Streets, the Clark Street Tunnel at Old Slip, and tunnels at Fulton Street and Rutgers Slip. These subaqueous tunnels, built by the shield tunneling method, were begun west of South Street and, by the time South Street was reached, were many feet below the current APE (for example, the Clark Street Tunnel shaft was begun on Front Street and is 54 feet below grade at South Street). Therefore, the construction of these tunnels would have had no impact on archaeological resources in the APE.
- Dredging: Dredging episodes, which would have taken place in pier channels and slips, would have impacted archaeological resources on the river bottom, and therefore below mean low water. Dredging activity was regularly recorded in Department of Docks annual reports during the 20th century.

East River Waterfront Esplanade and Piers

- **Pier Modernization and Reconstruction:** Piers were constantly updated and altered through time to meet the demands of larger vessels. A comparison of 19th and 20th century maps show major changes in the numbers and configuration of East River piers between 1891 and 1905, by which time they approximated the modern configuration. Some piers were removed, and their locations became channels between enlarged piers; others were simply enlarged and renumbered.
- **Utility Installation:** Numerous recorded and unrecorded utility lines, including sewer and water mains, exist beneath South and Marginal Streets. Because modern water mains, for example, are generally installed with 3½ to 4 feet of surface cover, underground utilities are the chief sources of subsurface disturbance in the APE. Disturbance is particularly extensive at junctions of multiple lines, particularly at street intersections and at piers. Schematic maps of current sewer and water lines were provided by the New York City Department of Environmental Protection (Amended Drainage Plan Series and Water Main Distribution Map). Detailed maps of utility placement, particularly of earlier lines, created by the Works Progress Administration (WPA) were provided by the New York City Department of Design and Construction.
- **Battery Park Underpass Construction:** The BPU links the South Street Viaduct with West Street via a tunnel beneath Battery Park. The entrance to the tunnel is midway between Whitehall Street and the line of former Moore Street. Contract plans appear to indicate that the area within the APE southwest of the approximate line of Moore Street (i.e., the area around the portal), was excavated using the cut-and-cover technique. Although the areal extent of excavation is not stated in the plans or profiles, they do record “bridging and decking” being placed over the tunnel itself, and “decking and supports” along current South and Marginal Streets in the APE.
- **South Street Viaduct Construction (1951-1954) and Reconstruction (1980s):** Numerous column footings for the original 90 spans of the South Street Viaduct were constructed in South and Marginal Streets. In the project area, disturbance from column footing construction extends approximately three feet or less around the existing columns. During a site inspection, it was observed that more than one type of viaduct column is present in the APE, suggesting that additional columns were added or earlier columns replaced during the 1980s reconstruction. The impact and significance of the construction of the additional columns are assumed to be similar to that caused by the original construction in the 1950s.

CONCLUSIONS

Based on the preliminary assessment disturbance report prepared by Historical Perspectives, Inc., there are a number of areas within the archaeological APE for which additional research will need to be conducted in order to fully understand documented disturbance and the potential for historic-period archaeological sensitivity to still exist. Therefore, the information provided below on disturbance and categories of potential archaeological resources within each segment of the APE could change as additional information is identified.

Proposed BMB Plaza

Categories of potential archaeological resources in this segment of the APE include landfill deposits and pier and wharf resources from the 18th and 19th centuries.

At the end of the 19th century, the portion of South Street within this segment of the APE was 71 to 78 feet wide, leaving the Marginal Street section of the streetbed (between Whitehall and Broad Streets) not completely filled in until after 1905. The chief subsurface disturbance in this area was the construction of the BPU and its portal. The portal is midway between Whitehall and the line of

former Moore Street, and the underpass continues past Whitehall Street. Plans show that approximately 100 feet west of Whitehall Street, the BPU is shallowly covered by bridging and decking, with the tunnel roof at 4'6" below the surface, indicating cut-and-cover excavation in this area and to the east, where the underpass meets the surface. The foundations and supports for the bridging and decking and the overpass extend approximately 20 feet below the current surface. This disturbance would be expected west of the line of Moore Street in South and Marginal Streets. In addition, the extreme depth below surface (more than 21 feet) of the current 8'x5' interceptor sewer line between the BPU portal and Broad Street indicates that it lies in or beneath this construction.

The remaining undisturbed portion of this segment of the APE is a ±67'x33' riverside section of Marginal Street. Within this area, the heads of the former Piers 3 and 4, along with their accompanying resources, may have been buried more or less intact during modern fill operations. There is a single 4" water line that runs approximately 9.5' east of the western edge of this area, and a connection from this main to a hydrant on the riverward edge of Marginal Street crosses through this location; however, these utilities are not expected to have affected the potential sensitivity of this segment.

New Ramp Area North of BMB to Vietnam Veterans Plaza

Categories of potential archaeological resources in this segment of the APE include landfill deposits and pier and wharf resources from the 18th and 19th centuries, land transportation elements, and wooden water mains. In addition, more deeply buried potential resources (between five and more than 27.5 feet below the current surface) include river bottom deposits, primary landfill, and landfill retaining structures.

At the end of the 19th century, the portion of South Street within this segment of the APE was 65 to 76 feet wide, leaving the present Marginal Street streetbed not filled in to the bulkhead until ca. 1905. Historical utility disturbance in this segment is concentrated in the landward (western) 15 feet of the South Street streetbed, in which WPA maps record a 4'x2'8" sewer line, 12" water line, 8" gas line, telephone lines (2'6" of cover), and electric ducts. More modern facilities in this area include 4'x5' and 7'6"x5' sewer lines leading to a junction 30 to 47 feet east of Broad Street. A second concentration of utilities is located east (riverward) from this junction, and connects with a now unused overflow chamber, which links eastward with the river shore, through the landward end of the former Pier 5. A 5'x8" sanitary interceptor sewer and 30" water main also pass through this part of the segment, occupying the eastern 25 feet of the segment, mainly affecting the location of the former Pier 5 (at the foot of and east of Broad Street). The remaining South Street portion of this segment contain a number of water mains: a 16" high pressure water main, a 12" water main, and a 30" water main, as well as 9 east-west connections crossing South Street, linking the mains to street hydrants. There are also 2 shallowly-buried electrical ducts. One section of Marginal Street (roughly 32'x18') has not been impacted by the recorded utility disturbance. Within this area, the head of former Pier 6, along with its accompanying resources, may have been buried more or less intact during modern fill operations.

Esplanade Area North of BMB to Old Slip

Categories of potential archaeological resources in this segment of the APE include landfill deposits from the 18th and 19th centuries, land transportation elements, and wooden water mains (for the South Street portion of this segment), and pier and wharf resources from the 18th and 19th centuries (for the riverward portion of the segment).

East River Waterfront Esplanade and Piers

Prior to post-1900 filling operations, the portion of South Street within this segment of the APE was 62 to 75 feet wide, leaving the Marginal Street section of the streetbed not yet filled in to the bulkhead. The South Street section of this segment near Broad Street hosts two 30" water lines, a 16" high pressure water line, and a 12" water line, all running parallel with South Street. The South Street section of this segment near the intersection of Old Slip hosts the following utilities running parallel to the street: a 30" water line, a 16" high pressure water line, and a 6" water connection to a hydrant on the landward side of South Street.

Current and historical utilities at the filled locations of former Piers 5 through 12, as well as the construction of subsequent piers and channels, would have impacted the remains of these former piers. There are two areas that may remain undisturbed by utilities, where the heads of piers may have been buried more or less intact during modern fill operations. These are a 43'x43' section of the former Pier 6 location, and a 51'x75' section of the former Pier 8 location.

Esplanade Area North of Old Slip to Pier 15

Categories of potential archaeological resources in this segment of the APE include landfill deposits from the 18th and 19th centuries, pier and wharf resources from the 19th century, 19th century land transportation elements, and wooden water mains.

Prior to post-1900 filling operations, the portion of South Street within this segment was 72 to 95 feet wide, leaving most of the Marginal Street section of the segment uncompleted. Sewer and water maps show that most of the buried utilities in South Street are in the landward 35 feet of the street. The remaining sections of South Street are relatively sparsely disturbed by utility installations; the chief disturbance is from a 16" high pressure water main that runs parallel with South Street the entire length of the segment, about 56 feet from the landward (western) side of the street. Although there are multiple connections to hydrants, with smaller water lines crossing the segment perpendicular to South Street, these are widely spaced (8 feet apart or more) in a large area. At the intersection of South Street and Maiden Lane, and at the head of present Pier 15, there is a greater concentration of utilities.

The portion of Marginal Street between Old Slip and Wall Street is also particularly free of utilities, with one 30" water main running parallel with the street from Old Slip to Wall Street, and a second water main running parallel to the street for the length of this segment. Additional utilities in this area that run perpendicular to Marginal Street are: a 6" water line, an 8" water line and manhole, and a 20" water line at and adjacent to the location of present Pier 11; and an electrical duct, manhole, <12" water line, and a water line with hydrant, in and adjacent to Wall Street.

Current and historical utilities at the filled locations of former Piers 15 through 19, as well as the construction of subsequent piers and channels, would have impacted the remains of these former piers. As no current or historical utilities are recorded at the filled location of former Piers 13 and 14, however, sections of these pier heads (approximately 28'x32' and 31'x36', respectively) may have survived buried in modern fill in Marginal Street. In addition, a 33'x85' section of the former Pier 19 may have survived buried in modern fill.

Pier 15

As described below, a Phase 1A will analyze the potential for riverbottom remains to exist in the in-water areas that would be affected by the proposed project, including Pier 15. Potential riverbottom deposits would have been disturbed by the relatively closely-spaced piles driven for the former Pier 15 structure.

New Market Building and New Market Pier

An irregularly shaped section of Marginal Street adjacent to the New Market Pier is included in this segment. Prior to post-1900 filling operations, this section of the streetbed had not been completely filled to the bulkhead. Current and historical utilities at the filled locations of former Piers 24 and 25, as well as the construction of subsequent piers and channels, would have impacted the remains of these former piers. Potential riverbottom deposits would have been disturbed by the relatively closely-spaced piles driven for the New Market Pier.

Esplanade Area North of Pier 15 to Montgomery Street

Categories of potential archaeological resources in this segment of the APE include 19th century landfill deposits, pier and wharf resources from the 19th century, 19th century land transportation elements, and wooden water mains.

Prior to post-1900 filling operations, the portion of South Street within this segment was generally between 66 and 137 feet wide. Much of the current Marginal Street and parts of current South Street had not been filled to the existing bulkhead. A number of sections of South and Marginal Streets within this segment of the APE have had minimal utility disturbance. Current and historical utilities at the filled locations of former Piers 20 through 22, Piers 26-30, Piers 33-38, and Piers 45, 46, 48, and 49, however, as well as the construction of subsequent piers and channels, may have impacted the remains of these former piers. Disturbance is less extensive at the filled locations of former Piers 31 (at the west side of the former James Slip) and 32.

Piers 35, 36, and 42

Potential riverbottom deposits would have been disturbed by the relatively closely-spaced piles driven for the structures of Piers 35, 36, and 42. As described below, however, no additional research will be conducted for Piers 35, 36, and 42, as it has been determined that these in-water areas would not be affected by the proposed project.

ARCHITECTURAL RESOURCES

Table 6-1 summarizes the architectural resources within the project site and study area.

PROJECT SITE

A portion of the project site lies within the boundaries of the **South Street Seaport Historic District and Extension** (NYCL, S/NR-listed). The South Street Seaport Historic District and Extension—which is roughly bounded by Dover and Water Streets, Maiden Lane, and the East River—contains the largest concentration of early 19th century commercial buildings in New York (see Photographs 2 and 3 of Figures 6-4 and 6-5). The historic district encompasses several individually-listed landmarks, including the Schermerhorn Row Block, which is described in detail below. The district also includes Greek Revival counting houses of the 1830s, most built with first stories of granite and post-and-lintel construction, with brick above. A few of the counting houses have stone fronts, such as the Hickson W. Field Store (see description below). By the second half of the 19th century, when the South Street area had lost its prominence in New York's commercial life, many buildings were converted for the wholesale Fulton Fish Market. In addition, a few new structures were built, including 116-119 South Street, which became the Meyers Hotel in 1881; 142-144 Beekman Street, a Romanesque Revival building designed by George B. Post in 1885 for fish dealers and ornamented with terra cotta fish



Battery Maritime Building 1



Schermerhorn Row Block within South Street Seaport Historic District and Extension 2

Architectural Resources in the Study Area



South Street Seaport Historic District and Extension, view of Peck Slip 3



Brooklyn Bridge 4

East River Waterfront Esplanade and Piers

keystones, a seashell cornice, and iron starfish tie-rods; and Richard Morris Hunt's 1873 red brick building with black brick decorative trim, at 231-23 Peck Slip.

Table 6-1
Architectural Resources within Project Site and Study Area

No.	Resource Name	Block/Lot	NHL	NYCL	NYCL-Eligible	S/NR-Listed	S/NR-Eligible
Project Site							
1	South Street Seaport Historic District and Extension	N/A		X		X	
2	East River Bulkhead	N/A					X
Study Area							
3	Brooklyn Bridge	N/A	X	X		X	
4	Manhattan Bridge	N/A			X [†]	X	
5	South Ferry Station, No. 1 Line	N/A					X
6	Battery Maritime Building	2/1		X		X	
7	First Precinct Police Station	34/37		X		X	
8	Hickson W. Field Store	72/7501		X		X	
9	Schermerhorn Row Block	N/A		X		X	
10	W.O. Decker	Pier 16				X	
11	Wavertree	Pier 17				X	
12	Ambrose	Pier 16	X			X	
13	Lettie G. Howard	Pier 16	X			X	
14	John A. Lynch	Pier 15				X	
15	Helen McAllister	Pier 16				X	
16	77 Water Street	33/1			X*		
17	88 Pine Street	38/17			X*		
18	Gouverneur Hospital	244/40				X	
19	American Sugar Refining Company	37/7501					X
20	University Neighborhood High School	259/44					X*
21	Gouverneur Hospital Dispensary	243/50			X*		X
Notes: See Figure 6-1 for reference. NHL = National Historic Landmark NYCL = New York City Landmark S/NR-listed = Listed on the State and National Registers of Historic Places S/NR-eligible=Determined eligible for listing on the State and National Registers of Historic Places *Identified by LPC in comment letters dated May 1, 2006 and September 12, 2006. †Previously identified as NYCL-eligible by LPC. •Within boundaries of South Street Seaport Historic District and Extension							

East River Bulkhead (S/NR-eligible)

The bulkhead along the East River waterfront from Whitehall Street to Jackson Street was originally constructed as part of a major seawall construction campaign that was conceived by the New York City Department of Docks under the leadership of George Brinton McClellan in the early 1870s. Like the S/NR-eligible bulkhead along the Hudson River waterfront between

Battery Place and West 59th Street, which was part of the same construction initiative, surviving portions of the original East River bulkhead structure are significant for their engineering and architectural qualities, for their role in the development of the New York City waterfront, and for their association with McClellan. A number of extensive alterations to the bulkhead compromise the historic integrity of certain sections of the wall; these sections do not contribute to the historic character of the structure.

The Department of Docks was created in 1870 as part of New York State's reorganization of New York City's charter, to redevelop Manhattan's waterfront on the Hudson and East Rivers. By that time, the City's commerce centered on its ports, and the need for a more developed method of maintaining and administering its waterfront infrastructure was clear. The State deeded all previously ungranted underwater shoreline property to the City, and the Department was authorized to acquire, rebuild, and regulate existing commercial waterfront. McClellan, well known as general-in-chief of the Union Army during the Civil War and as the Democratic presidential candidate in 1863, was installed as the first engineer-in-charge. He brought previous engineering experience to the position, having served as the chief engineer of the Illinois Central Railroad and president of the Ohio and Mississippi Railroad, as well as working on the development of steam-powered warships following the Civil War. Under McClellan, a plan emerged in 1871 that centered on the creation of a continuous monumental masonry bulkhead from the Battery to 61st Street along the Hudson River, and from the Battery to 51st Street along the East River.

McClellan prioritized Lower Manhattan, where commercial activities were most densely concentrated, below Grand Street on the east side, and below 11th Street on the west side. He proposed a cast-stone block bulkhead placed on a bed of piles; however, because the cast stone blocks were delayed in fabrication, granite blocks were used instead. Charles K. Graham, McClellan's successor, proposed a different fabrication method that promised to speed the progress of bulkhead construction and involved pouring concrete into a caisson on a pile foundation. This method was employed in some sections, chiefly along the Hudson River waterfront; however, the construction was criticized and abandoned as structurally unsound. Graham's successor, George Sears Greene, Jr., reinstated McClellan's block construction method to complete most of the bulkhead between the Battery and Grand Street along the East River during the 1880s. The bulkhead throughout the project area was most likely completed by the end of that decade, although annual reports of the Department of Docks indicate that the East River waterfront further north was not completed until the 1920s. In general form, the McClellan plan was followed until the last major Hudson River terminal was finished in 1936.

Choice of a quarry-faced bulkhead with concrete foundations likely reflects a widespread desire among New York's commercial leaders for a waterfront with the imposing character of European ports, commensurate with the City's growing international stature. The granite-faced masonry bulkheads built by the city until ca. 1920 were unique within the Port of New York; no commercial bulkheads in the region were ever finished in such a deliberately monumental manner. The City bulkheads were also perhaps the earliest American examples of granite seawalls placed on concrete bases, breaking a long tradition of bulkhead foundations made of various timber cribwork designs. The carefully built granite walls created a consistent surface to waterfront sections, reinforcing an aura of commercial prominence.

By the turn of the 20th century, the East River waterfront in Lower Manhattan had been transformed into an almost continuous masonry bulkhead constructed of a combination of cast stone and granite blocks on wood piles. Typically, the visible bulkhead above the water line

East River Waterfront Esplanade and Piers

consisted of rough-cut granite ashlar with a capping course of larger granite blocks with beveled upper edges surmounted by a simple squared timber “backing-log.” The granite walls were backed by mass concrete and originally included four courses of granite blocks laid as alternating headers and stretchers to an elevation of about 9.4 feet above mean low water. These blocks were typically 4 feet long and 2 feet wide. Additional courses were sometimes added as bulkheads settled. Above the facing blocks, a coping of 8-foot-long, 3-foot-thick granite blocks rose about 2.5 feet to street level. Twelve-inch-square timber “backing-logs,” bolted to the coping, rose above street level in most areas not covered by pier sheds, bulkhead sheds, or other structures. The backing logs helped prevent wheeled vehicles from rolling over the top of the bulkhead into the river. The waterfront was also characterized by an extensive system of wood piers numbering upwards of 32 between Battery Park and Pike Slip alone. None of the 19th century piers remain intact above water today.

All sections of the East River bulkhead within the project area have been altered to various degrees since their construction. On sections retaining the highest degree of integrity, such as the area between Broad Street and Coenties Slip, the only visible alteration has been the replacement of the “backing-log” with a new piece of timber that, rather than being laid atop the granite cap stone, has been bolted into the face of the cap stone. Furthermore, a substantial metal railing has been added atop the bulkhead for much of its length, the majority of which likely dates to the construction of the FDR Drive along the waterfront.

The following summary of the current conditions of sections of the bulkhead is based on a number of sources, including the archives of the South Street Seaport museum, Department of Docks annual reports, and a structural conditions survey completed in 1989 by TAMS on behalf of the New York State Department of Transportation. It should be noted that information found documenting the history of alterations to the bulkhead was not complete, and that certain sections of bulkhead are obscured or inaccessible and could not be viewed. Site visits were conducted in spring and summer 2006 to confirm current conditions.

- Whitehall Street to Broad Street: The bulkhead is obscured by the BMB. Information on the construction date and subsequent changes to the bulkhead in this area is not available.
- Broad Street to Coenties Slip: The granite bulkhead remains in good condition. The back-log has been replaced and a fence installed along top of bulkhead in the mid-20th century (see Photograph 6 of Figure 6-7).
- Coenties Slip to Old Slip: A new concrete wall barrier wall was constructed outboard of the bulkhead in 1952, and behind it there is a relieving platform on concrete pilings. This structure is visible from Old Slip. The current condition of the bulkhead behind this wall is unknown, although it does not appear to be intact in photographs taken during this construction.
- Old Slip to Wall Street: The granite bulkhead remains largely in good condition. Small portions of the wall surrounding Old Slip and south of Wall Street were removed and rebuilt in 1896-97. The bulkhead is not visible behind Pier 11.
- Wall Street to Pine Street: The granite bulkhead was removed and rebuilt in 1897. Currently faced in concrete, this section most likely received subsequent repairs.
- Pine Street to Fletcher Street (Pier 15): The original granite bulkhead appears to remain in good condition.
- Fletcher Street (Pier 15) to north side of Pier 17 complex (south of Peck Slip): This section of bulkhead is largely obscured by the extensive pier complex in this area, which was

- constructed in the late 20th century. Department of Docks annual reports indicate that portions of this section were constructed or rebuilt in 1892, 1894, 1905, and 1910.
- North side of Pier 17 complex (south of Peck Slip) to north side of Peck Slip: This section of the bulkhead was constructed in 1904.
 - Peck Slip to north of Brooklyn Bridge: This section of the bulkhead, most of which consists of a low masonry wall behind a rip-rap bank, appears to be largely intact.
 - North of Brooklyn Bridge to Market Street: This section of the bulkhead was rebuilt in 1890 after having been washed out by heavy tides. It appears to be constructed of masonry blocks; however, the upper courses are parged with cement, likely a 20th century repair.
 - Market Street to Pike Street: The granite bulkhead remains largely intact; however, numerous small areas within this section were extensively repaired in 1892-94. Furthermore, three areas measuring several feet in length have been replaced with concrete block seawall. It is unclear whether these sections were replaced in the 1890s campaign or were more recently constructed.
 - Pike Slip to Pier 35: The original granite bulkhead largely remains in good condition. A small area north of Rutgers Street was replaced in 1897.
 - Pier 35 to Pier 42: According to Department of Docks annual reports, this section of the bulkhead was constructed in 1910. The section of the bulkhead north of Montgomery Street was likely reconstructed ca. 1939 as the south end of East River Park, built partly on landfill under the leadership of Robert Moses. The bulkhead is currently not visible behind Piers 35, 36, and 42.

STUDY AREA

There are 20 architectural resources located within the project's study area. These are listed above in Table 6-1 and mapped on Figure 6-1.

South Street Seaport Historic District and Extension (NYCL, S/NR-listed)

The South Street Seaport Historic District and Extension is described above.

Brooklyn Bridge (NHL, S/NR-listed, NYCL)

The Brooklyn Bridge spans the East River between City Hall Park in Manhattan and Cadman Plaza in Brooklyn. The bridge is an instantly recognizable symbol of New York City, and has a strong visual impact on its surrounding neighborhoods. Construction of the steel suspension bridge was originally conceived in 1867 by John A. Roebling, a German immigrant engineer who invented wire cable and was an accomplished bridge builder. The Brooklyn Bridge was the first physical link between Brooklyn and Manhattan. It opened in 1883 and was the longest suspension bridge at the time of its completion, spanning 1,595.5 feet between towers. The bridge was described as the "new eighth wonder of the world" and is considered one of the greatest engineering feats of the 19th century. It is characterized by two massive granite-clad towers with Gothic arches and a network of steel cables and vertical wires (see Photograph 4 of Figure 6-5).

Manhattan Bridge (S/NR-listed, NYCL-eligible)

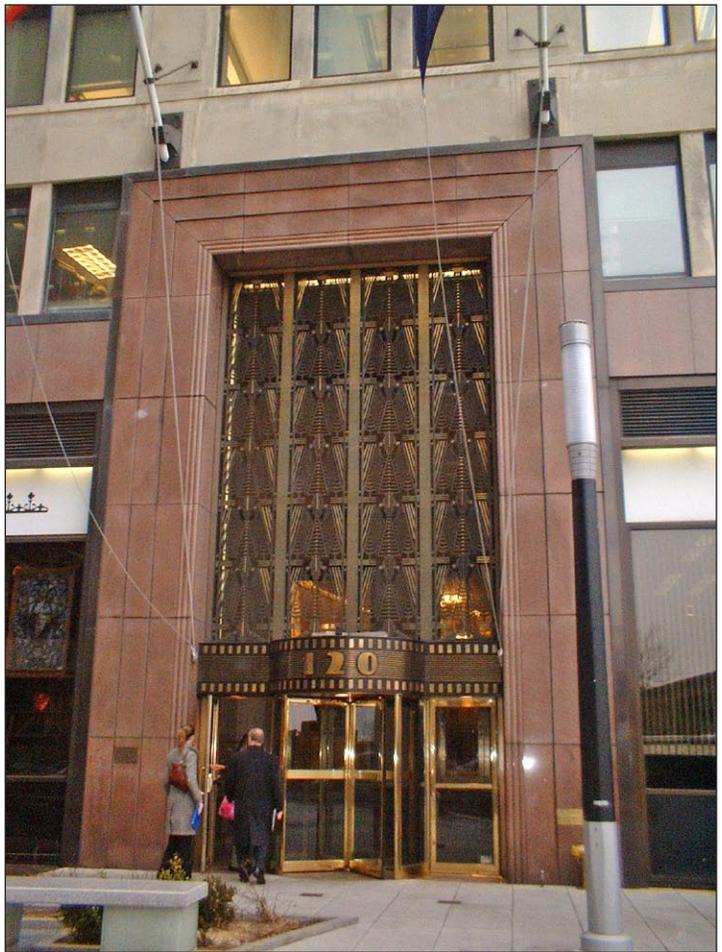
The Manhattan Bridge is a two-level, steel suspension bridge that spans the East River between Canal Street in Manhattan and Flatbush Avenue in Brooklyn (see Photograph 5 of Figure 6-6). The final design of the bridge was the result of the work of several engineers and architects. Early plans



Manhattan Bridge 5



East River Bulkhead 6



American Sugar Refining Company, 120 Wall Street 7

Potential Architectural Resources in the Study Area

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for the bridge were designed by R.S. Buck, but in 1903 plans for the bridge were revised by Gustav Lindenthal in collaboration with Henry Hornbostel. These plans were later rejected, and the final design for the bridge was developed by Leon Moisseiff in 1904. Carrere & Hastings replaced Hornbostel as architectural consultants, but retained much of Hornbostel's design for the towers and anchorages. The bridge opened in 1909. A grand arch and flanking colonnades designed by Carrere & Hastings is located at the bridge entrance on Canal Street in Manhattan and is a designated NYCL. The bridge is 6,855 feet long, with a main span of 1,470 feet.

South Ferry Station, No. 1 Line (S/NR-eligible)

South Ferry Station is a unique, two-track loop station. The outer loop platform was built in 1905 as part of the original Interborough Rapid Transit (IRT) line, and was served by this line until the IRT Seventh Avenue subway line reached South Ferry in 1918. The firm of Heins & LaFarge designed the station's ornamentation, which includes large "South Ferry" mosaic name panels at the platform level and terra-cotta plaques illustrating sailing ships. The inner platform has small "SF" tile mosaics. There are also rosettes around removed light fixtures and along the ceiling. A new ceramic tile art installation by Sandra Bloodworth, called South Sails, is located on the stairway landing and was installed in 1990.

Battery Maritime Building, 11 South Street (S/NR-listed, NYCL)

The BMB, formerly the Whitehall Ferry Terminal, is located at 11 South Street at the foot of Whitehall Street (see Photograph 1 of Figure 6-4). The ferry terminal was designed in a Beaux Arts style by Walker & Morris and built 1906-09. It originally served ferries connecting Manhattan with 39th Street in Brooklyn and now serves ferries running to Governors Island. It is the only survivor of the many historic ferry terminals that once lined New York's waterfront. The ferry terminal's false front has a raised porch with 40-foot columns. It was built with exposed steel and cast iron, with rivets, latticework, and stylized classical motifs, reminiscent of French Beaux-Arts exposition architecture. There are Guastavino tile vaults under the porch roof.

First Precinct Police Station, 100 Old Slip (S/NR-listed, NYCL)

The First Precinct Police Station was designed by Hunt & Hunt, the firm established by the sons of Richard Morris Hunt. The building—which now houses the New York City Police Museum—was closed in 1973 and stood vacant for many years until it was renovated by the New York City Department of General Services to house the New York City Landmarks Preservation Commission. The limestone building was constructed in 1909-11 and has the appearance of a rusticated Renaissance Revival palazzo. The arched openings, rustication, and cornice have been compared to those of the 15th century Palazzo Riccardi in Florence, Italy.

Hickson W. Field Store, 170-176 John Street (S/NR-listed [within South Street Seaport Historic District and Extension], NYCL)

The Hickson W. Field Store dates from 1840 and was expanded upward in 1981-82 by the firm of Buttrick, White & Burtis. The building is a rare surviving example of a Greek Revival warehouse with an all-granite front and a ground floor of post-and-lintel construction. The building type represents a form first introduced to New York in 1829 by Ithiel Town at his Tappan Store on Pearl Street (demolished). The Tappan Store became the model for the counting houses of the next decade, including the Hickson Field Store. At the time of its designation, the building housed the Baker, Carver & Morrell ship's chandlery.

Schermerhorn Row Block (S/NR-listed, NYCL)

The Schermerhorn Row Block comprises 2-18 Fulton Street, 189-195 Front Street, 159-171 John Street, and 91-92 South Street (see Photograph 2 of Figure 6-4). All of the buildings within this area were constructed between 1811 and 1849, as warehouses or counting houses for New York's rapidly expanding mercantile sector. The oldest buildings on the block are 191 and 193 Front Street, both probably erected ca. 1793 but redesigned in the 19th century. The principal developer on the block was Peter Schermerhorn, who was responsible for developing Schermerhorn Row, the four-story brick warehouses on Fulton Street and intersecting streets that were built in the Georgian-Federal style and were originally linked by distinctive sloping roofs with tall chimneys. Contemporaneous with the development of Schermerhorn Row was a group of six counting houses built on John Street, only one of which (165 John Street) survives. A.A. Low & Brothers' stone warehouse at 167-171 John Street (1849) represents the Greek Revival style buildings that began to appear in the 1830s throughout New York's business district. The brick warehouses located at the corner of Front and John Streets are simple, Greek Revival buildings constructed ca. 1835-36.

W.O. Decker, Pier 15 (S/NR-listed)

The W.O. Decker is a small harbor tugboat designed and built to move barges and berth vessels in Newtown Creek. It was built in 1930 by the Newtown Creek Towing Company. The tugboat has a single story deckhouse, elevated pilothouse, and a single smokestack amidships. It is built of wood throughout except for the smokestack, which is metal. It was originally powered by a steam engine; the steam engine was replaced with a diesel engine in 1947. It is reportedly the only wooden tugboat built for use in New York Harbor that is currently afloat in a largely original state. The W.O. Decker is still maintained in operating condition and is berthed at Pier 15 at the South Street Seaport.

Wavertree, Pier 15 (S/NR-listed)

The Wavertree represents the type of vessel that loaded and discharged cargo at the South Street piers in the period 1880-1910. The three-masted sailing ship was built in 1885 by Oswald, Mordaunt and Company of Southampton, England to transport jute from India to Europe. It was reduced to a storage hulk in 1911, converted to a sand barge in 1948, and has existed in a partially restored state since 1968. The hull of the ship is iron, the main deck is iron and steel, and the poop deck is wood over iron beams. There are three lowermasts in position. The fore and mizzen lowermasts are built of iron and are original, and the main lowermast is built of steel and is a restoration. The Wavertree made 41 major ocean passages in its 25 year career. It is considered to be one of the last 19th century, square-rigged, sailing merchant ships capable of being restored.

Ambrose Lightship, Pier 16 (NHL, S/NR-listed)

The Ambrose Lightship was constructed as U.S. Light Vessel No. 87 in 1907 by the New York Shipbuilding Corporation of Camden, New Jersey. It is a steel-hulled lightship, a vessel designed to display a fixed beacon to mark a navigational channel. It was placed into service off Coney Island in 1908, and was the first lightship assigned to mark Ambrose Channel, the gateway to New York Harbor for large passenger liners. Operated first by the U.S. Lighthouse Service and then by the U.S. Coast Guard, it was long a familiar landmark denoting the deepwater entrance to the Port of New York. In 1932, the ship was renamed the Relief and became a utility vessel stationed at St. George, Staten Island; in 1936, it was renamed yet again as the Scotland, and was stationed off

East River Waterfront Esplanade and Piers

Sandy Hook, New Jersey. The ship was decommissioned in 1965. The lightship's present appearance generally reflects its condition during the mid-1930s.

Lettie G. Howard, Pier 16 (NHL, S/NR-listed)

The Lettie G. Howard is the only substantially intact, surviving example of a Fredonia model schooner, once the standard fishing boat type of North American offshore fisheries. It was built in 1893 by Arthur D. Story in Essex, Massachusetts. The ship was employed initially on the Grand Banks, and later was used in fishing for red snapper in the Gulf of Mexico. Rebuilt with small changes in 1923-24 and renamed the Mystic C, the ship remained an active Atlantic Coast fishing vessel until 1966. The South Street Seaport Museum completed a restoration of the ship in 1968, including new masts, the removal of the engine and pilothouse installed in 1923-24, and the renewal of rotten structural members with in-kind materials. The ship became a static museum vessel in 1980 due to extensive dryrot.

John A. Lynch, Pier 16 (S/NR-listed)

The John A. Lynch is a steel-hulled, steam-powered New York ferry boat that was placed in service in 1925. Built by the Staten Island Shipbuilding Company, it is one of 16 ferry boats of its type that once operated on New York City crossings, and is the only one that still remains afloat. It is significant as a representative example of a double-ended New York harbor ferry of the early 20th century. At one time or another, it was used on nearly all of the city's ferry routes. It was used until 1970, when it was donated to the South Street Seaport Museum.

Helen McAllister, Pier 15 (S/NR-listed)

The Helen McAllister was built by the Burlee Drydock Company of Port Richmond, New York, as the steam harbor tugboat Admiral Dewey for the Berwind-White Coal Company. She was built in 1899-1900 and launched in 1900. The Admiral Dewey was employed for decades in transporting barges of coal across New York Harbor, as the Berwind-White Coal Company was a leading producer of bituminous coal and dominated the steamship bunkering business in New York and Philadelphia. Hundreds of similar tugs operated in New York Harbor at the turn of the century; however, only a handful of extant harbor tugs of this vintage remain in the greater New York metropolitan area. After being acquired by McAllister Towing and Transportation of New York in the early 1980s, the tugboat was renamed the Helen McAllister after the wife of McAllister Towing's president, James McAllister. It returned to New York from South Carolina in 1992 to participate in Operation Sail, was taken out of retirement, drydocked, and repaired for Operation Sail 2000, and was subsequently donated to the South Street Seaport Museum.

77 Water Street (NYCL-eligible)

77 Water Street is located on the east side of Water Street between Gouverneur Lane and Old Slip. It was built in 1970 and designed by Emery Roth and Sons in the International style. The building is a 26-story, glass- and aluminum-clad, rectangular shaft that rises uninterrupted from its site above narrow columns. The building's design is unusual for its attempt to make zoning plazas useful and entertaining; at street level, there is a replica of an old-fashioned candy store as well as "heat trees" (illuminated metal umbrellas). William Tarr, an artist, reconstructed a World War I aircraft on the roof. Ada Louise Huxtable, writing for the *New York Times* in 1970, called the building "a small gem...a sleek glass and aluminum 'skin' structure of considerable finesse."

88 Pine Street (NYCL-eligible)

88 Pine Street is located at the intersection of Pine and Water Streets. It was built in 1973 and designed by I.M. Pei and Partners, with James Ingo Freed as the chief designer, in the International style. The 32-story building is clad with white-painted aluminum in a simple, rectangular grid infilled with recessed, butt-jointed, 28-foot-wide glass panels intended to maximize the contrast between the solid of structure and the void of enclosure. The cladding was reportedly selected to stand out among other, darker towers in the area, as well as to complement historic sailing vessels moored at South Street Seaport.

Gouverneur Hospital (S/NR-listed)

The former Gouverneur Hospital is a red brick, Renaissance Revival style structure occupying the full block between Water and South Streets and Gouverneur Slips East and West. Its U-shaped design is composed of a central section on Water Street and two projecting wings that terminate in unusual curved ends and feature cantilevered metal balconies. It is the second Gouverneur Hospital to have stood on this site; the hospital was constructed in an east-to-west direction around the still-functioning older building, which was subsequently demolished. When it opened in 1901, the building was the most modern and best-equipped hospital in the city, and it served its constituency until 1961. It was designed by architect John Rochester Thomas, who introduced the use of the mansard roof to the city of Rochester, New York and is noted for his designs of many other public and institutional buildings in the eastern United States. The hospital's original hipped roof of terra cotta blocks covered with slate was replaced by an additional, fifth story in 1930. In addition, the original wing balconies were replaced with the current ones. Following its loss of accreditation in 1961, the hospital was used as a school for the developmentally disabled under the New York State Willowbrook Hospital system until 1978. The building was converted to a treatment center in 1997 under the design of Thanhauser & Esterson.

American Sugar Refining Company, 120 Wall Street (S/NR-eligible)

The 33-story former American Sugar Refining Company building was designed by Buchman & Kahn and constructed in 1931. The *WPA Guide to New York City* calls the building "uncompromising in its literal conformance to the setback ordinance." It is faced in white brick above a five-story limestone base, with fluted red granite on the ground floor. A metallic screen of diagonal themes surrounds the building's main entrance (see Photograph 7 of Figure 6-7). A bronze plaque on the building identifies the site as that of Murray's Wharf, where George Washington landed on April 23, 1789 on his way to Federal Hall for his inauguration as president.

University Neighborhood High School, 200 Monroe Street (S/NR-eligible)¹

University Neighborhood High School, formerly known as the Seward Park High School Annex or P.S. 31, is located at the southwest corner of Monroe and Gouverneur Streets. It was constructed in 1902 and designed by C.B.J. Snyder, Superintendent of School Buildings for the Board of Education of New York. The building has been used as a New York City Public School continuously since its opening. It is five stories in height, rectangular in form, and has a flat roof. The building is faced in light-colored brick and limestone on its Gouverneur and Monroe Street facades; the rear facades are covered with red-tinted stucco (see Photograph 8 of Figure 6-8).

¹ Identified as S/NR-eligible by LPC in a comment letter dated September 12, 2006.



University Neighborhood High School,
200 Monroe Street 8



Gouverneur Hospital Dispensary, 7 Gouverneur Slip 9

Potential Architectural Resources in the Study Area

East River Waterfront Esplanade and Piers

The main entrance to the building is located on Gouverneur Street, with two secondary entrances located on Monroe Street; each entrance is surrounded by a heavily-carved door head. Above the ground floor, there are two slightly projecting bays on the east side and three on the north side of the building. The building's original parapet appears to have been removed, and has been replaced with tan brick.

Gouverneur Hospital Dispensary, 7 Gouverneur Slip (S/NR-eligible, NYCL-eligible)

The former Gouverneur Hospital Dispensary is located at the northeast corner of Gouverneur Slip and Front Street. It was designed by McKim, Mead and White and built from 1914-17. The building was originally used as a dispensary for patients of the nearby Gouverneur Hospital; it also contained residences for nurses. The 7-story building is rectangular in form and is clad in red brick with stone ornament (see Photograph 9 of Figure 6-8). There are stone stringcourses beneath the bands of windows at the third, fifth, and seventh floors. The second-floor windows are arched and surrounded with a brick keystone pattern; the third floor windows have pedimented window heads. The corners of the building are accented with brick quoining. The building is topped with a denticulated cornice and a balustrade. The rear of the building, facing Water Street, is unornamented and surrounded by a chain link fence. In 1977, the building was converted to its current use, as housing for homeless individuals suffering from substance abuse.

F. THE FUTURE WITHOUT THE PROPOSED ACTION

Absent the Proposed Action, there would be no changes to land use on the project site, and thus no changes to the portions of the South Street Seaport Historic District and Extension and the East River bulkhead within that area. Pier 35 would remain standing and vacant, and a vacant pier shed would remain on Pier 42. Piers 35 and 42 would continue to be inaccessible to the public. The New Market Building would remain standing and vacant. The esplanade would remain in its current condition. The location for Pier 15 would continue to be marked by four pilings. The area beneath the elevated FDR Drive would remain unimproved and underutilized. The entrance to the BPU would remain directly in front of the BMB, and access to the building would be constrained by nearby traffic lanes. As in existing conditions, there would be continuing maintenance on the East River bulkhead.

In the surrounding area, a number of improvements to streetscapes, open spaces, and the BMB are planned or underway. EDC has issued a request for proposals for the reuse of the BMB, and it is currently contemplated that the building will be transformed into restaurants and a food market. Ferries to the planned Fresh Kills Park on Staten Island and to the redeveloped Governors Island could depart from the BMB. These uses would be expected to revitalize this recently-restored historic building. The East River Waterfront Access project includes improvements to Peck, Catherine, Rutgers, and Montgomery Slips and the upland portion of Pier 42 that are intended to improve pedestrian connections between the East River Waterfront and its neighboring Lower Manhattan areas. As part of this project, a new public open space designed to be contextually appropriate to the South Street Seaport Historic District and Extension will be created at Peck Slip. On Pier 17, an additional 25,000 square feet of retail space is expected to be added to the Tin Building. As the Tin Building is located within the S/NR-listed boundaries of the South Street Seaport Historic District and Extension, it too is expected to be designed to be contextually appropriate.

Other projects, such as Basketball City's plans to construct a recreational facility on a portion of Pier 36, and the redevelopment of Piers 13 and 14, would be expected to enhance the context of

the historic resources in their respective areas. The proposed Fulton Corridor Revitalization Program will include streetscape improvements, renovations to and the creation of new public open spaces, and incentives to spur private rehabilitation, renovation, and development of mixed-use properties along Fulton Street between Broadway and South Street. While most of the program elements are expected to be implemented after 2009, as they occur they will be expected to enhance the visual quality of these streets within and adjacent to the South Street Seaport Historic District and Extension. A residential tower designed by Santiago Calatrava has been proposed for 80 South Street, just south of the South Street Seaport Historic District and Extension. This thin, tall tower would be expected to be more comparable to and compatible with the high-rise development found throughout Lower Manhattan, rather than the low-scale buildings within the historic district. The proposed development of approximately 650 housing units on the site of the six-story New York Post building, which occupies an entire block bounded by Water, Catherine, South, and Market Streets, would change the context of the nearby S/NR-listed Two Bridges Historic District. East of the Manhattan Bridge, at South and Clinton Streets, up to approximately 250 units of infill housing are proposed within the Two Bridges Urban Renewal Area; this new development could potential enhance the context of the nearby former Gouverneur Hospital and Gouverneur Hospital Dispensary buildings and the University Neighborhood High School.

It is possible that resources within the study area identified above as NYCL-eligible or S/NR-eligible may be listed on the Registers or designated as a NYCL in the future.

Architectural resources that are listed on the National Register or that have been found eligible for listing are given a measure of protection from the effects of federally sponsored or assisted projects under Section 106 of the NHPA. Although preservation is not mandated, federal agencies must attempt to avoid adverse impacts on such resources through a notice, review, and consultation process. Properties listed on the State Register are similarly protected against impacts resulting from state-sponsored or state-assisted projects under the SHPA. Private property owners using private funds can, however, alter or demolish their properties without such a review process. Privately-owned sites that are NYCLs, within NYCHDs, or pending designation, are protected under the New York City Landmarks Law, which requires LPC review and approval before any alteration or demolition can occur.

G. PROBABLE IMPACTS OF THE PROPOSED ACTION

ARCHAEOLOGICAL RESOURCES

PRE-CONTACT ARCHAEOLOGICAL RESOURCES

Even if pre-contact resources have survived in the project area, the pre-inundation surfaces that may have been exploited in the pre-contact era are at depths greater than 6.6 feet below current street levels. Potential subsurface disturbance for the Proposed Action would be limited to five feet below the current surface, except in the new ramp area north of the BMB to Vietnam Veterans Plaza. Soil borings from this area indicate that the actual depth of the pre-inundation surface is between 21 and 27.5 feet below the present surface. Given that the potential for survival of pre-contact resources in this small location is very low, and the time, expense, and danger involved in recovery are great, further investigation of potential pre-contact resources is not considered practical or reasonable.

HISTORIC-PERIOD ARCHAEOLOGICAL RESOURCES

Based on the preliminary assessment disturbance report prepared by Historical Perspectives, Inc., there are a number of areas within the archaeological APE for which additional research will need to be conducted in order to fully understand documented disturbance and the potential for historic-period archaeological sensitivity to still exist. Thus, there is the potential that the project could have adverse effects on historic-period archaeological resources. Phase 1A(s) will be prepared for the APE, with the exception of two areas. The esplanade area that is outside of the pavilions would experience minimal disturbance (less than two feet in depth). South Street north of the Brooklyn Bridge would be repaved with the Proposed Action; however, this repaving would only affect the top one to two feet of the roadbed. Therefore, Phase 1A(s) will not be prepared for these areas. The Phase 1A will include an analysis of the potential for riverbottom remains to exist in the in-water areas that would be affected by the proposed project. These areas include: Pier 15, the proposed New Market Pier marina, and the widened esplanade between Broad Street and Old Slip, beyond the existing bulkhead, where new pile driving would be required; the end of the New Market Pier, where a breakwater could be constructed; and the area around the Wavertree, which could require dredging to move the ship to the reconstructed Pier 15.

To avoid the potential for adverse effects, based on the conclusions of the Phase 1A(s), and in consultation with SHPO and LPC, a suitable treatment plan would be devised for any areas of potential sensitivity. The treatment plan could include monitoring or field testing, depending on the nature of the potential resources identified and the extent of construction that would take place in specific locations. The preparation of any research not completed as part of the EIS, as well as the preparation of the treatment plan, would be part of the PA to be developed between LMDC and SHPO.

ARCHITECTURAL RESOURCES

PROJECT SITE

The East River bulkhead would be affected by the Proposed Action in the following areas:

- From Broad Street to Old Slip, the esplanade would be widened with a new, approximately 15- to 25-foot-wide structure built out over the water, beyond the existing bulkhead. The new esplanade area is expected to be an independent structure on pilings;
- The proposed reconstruction of Pier 15 would require new piles, as well as, presumably, minor alterations for attachments to the bulkhead;
- At the east end of Pier 36, a cove would be created, entailing the removal of a portion of the pier structure to the bulkhead line; and
- Pier 42 and the New Market Building pier would be reinforced.

As noted above, the original granite bulkhead remains in good condition from Broad Street to Coenties Slip. This area would be obscured by the new, independent structure carrying the widened esplanade; however, the bulkhead structure itself would not be altered. In addition, the original granite bulkhead would remain visible at other locations within the project area. From Coenties Slip to Old Slip, the bulkhead may be in very poor condition behind the concrete wall which was built in the mid-20th century.

The bulkhead at Pier 15 and the New Market Building Pier was constructed or rebuilt in 1892, 1894, 1905, and 1910. The bulkhead is already largely obscured by the pier complex in this area; therefore, no visual access would be lost by the development of the Proposed Action. The minor, new attachments to the bulkhead that could be required at Pier 15 and the New Market Building Pier would be constructed in a sensitive manner in order to remove as little of remaining, original granite construction that still exists. According to Department of Docks annual reports, the section of bulkhead including Piers 35 to 42 was constructed in 1910; however, the section of the bulkhead north of Montgomery Street (which includes Piers 36 and 42) was likely reconstructed ca. 1939 as the south end of East River Park. The bulkhead is currently not visible behind the piers, and therefore no visual access would be lost by the development of the Proposed Action. Rather, at Pier 36, the creation of a cove would allow for visual access to the bulkhead. It is possible that the reinforcement of Pier 42 would not require any changes to the bulkhead in this area; however, if necessary, the new attachments would be constructed in a sensitive manner in order to remove as little as possible of the remaining, original granite construction that still exists. The PA is expected to include the review of any project design elements that could affect the East River bulkhead.

The project elements that would be located within the boundaries of the South Street Seaport Historic District and Extension—including the reconstruction of Pier 15 and the New Market Building pier, the redevelopment of the New Market Building site, and the creation of pavilions between Maiden Lane and Fulton Street and between Peck Slip and Dover Street—are expected to be the subject of a PA between LMDC and SHPO. The PA will help to ensure that any adverse effects are assessed as the design process moves forward. Any adverse effects that are identified would be minimized or avoided to the maximum extent possible as set forth in the PA. If agreement on the design of the New Market Building site's redevelopment cannot be reached during consultation, however, it is possible that this redevelopment could have a significant adverse effect on historic resources. As the design of the Proposed Action progresses, EDC, in conjunction with the City, will submit any project design elements that directly involve NYCL and NYCL-eligible properties to LPC for their review and comment.

As described above, the project site includes a portion of the South Street Seaport Historic District and Extension. The project site is also located within 90 feet of a number of other architectural resources, including the BMB, the former First Precinct Police Station, and the American Sugar Refining Company building. To avoid physical damage to these architectural resources, a construction protection plan would be developed in consultation with the SHPO and LPC. With this measure in place, it is not expected that there would be any adverse physical impacts to architectural resources.

STUDY AREA

The PA would also provide for consultation between LMDC and SHPO regarding the design of the proposed plaza in front of the BMB. Any adverse effects that are identified in relation to this design would be minimized or avoided to the maximum extent possible, as set forth in the PA.

For Section 106 purposes, the PA will help to ensure that any potential adverse effects of the project on architectural or archaeological resources are assessed as the design process moves forward. Any adverse effects that are identified would be minimized or avoided to the maximum extent possible as set forth in the PA.

In general, the Proposed Action would be expected to enhance the context of surrounding historic resources by improving and enhancing public open spaces with new amenities such as

East River Waterfront Esplanade and Piers

benches, planters, arbors, lighting, and brackets for attaching historic placards and viewfinders for sights of interest. The pavilions to be constructed beneath the FDR Drive would not compete visually with the structures in the surrounding area, because of their low scale and location beneath the viaduct structure, and would be sited so as not to obscure views to historic resources. Since some of the areas under the FDR Drive are currently used for parking, new, well-designed buildings would provide a more attractive context for surrounding historic resources than the existing uses. The removal of bus parking along South Street and under the FDR Drive would make the area more visually appealing. The removal of pier shed structures on Pier 42 to create a beach would be expected to enhance the visual context of the former Gouverneur Hospital and Gouverneur Hospital Dispensary buildings. The narrowing of South Street between Old Slip and Montgomery Street would not have any significant impacts or adverse effects on architectural resources. The Proposed Action would not require any construction within 90 feet of the anchorages for the Brooklyn and Manhattan Bridges. *