

# Hudson-Raritan Estuary, Liberty State Park

## Ecosystem Restoration

### Appendix C

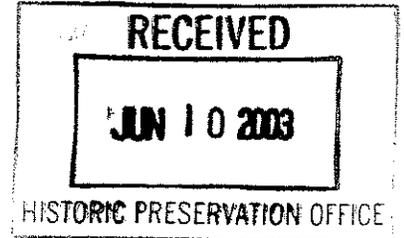
## Cultural Resources



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
NEW YORK DISTRICT, CORPS OF ENGINEERS  
JACOB K. JAVITS FEDERAL BUILDING  
NEW YORK, N.Y. 10278-0090

June 3, 2003



ATTN: LYNN R2KOS

Environmental Assessment Section  
Environmental Analysis Branch

Ms. Dorothy P. Guzzo  
Deputy Chief Historic Preservation Officer  
Historic Preservation Office  
New Jersey Department of Environmental Protection  
CN 404  
Trenton, New Jersey 08625

HPO-F2003-230  
03-1922-10F

Dear Ms. Guzzo:

The New York District, U.S. Army Corps of Engineers (Corps), is proceeding with studies in connection with the Hudson-Raritan Estuary Ecosystem Restoration Project. Thirteen locations throughout the estuary have been identified as possible sites for restoration. At this time, one site, in Liberty State Park (LSP), Jersey City, Hudson County, is being studied in further detail (Enclosure 1). The draft cultural resources report for this location, entitled, "Phase IA Cultural Resources Investigation of the Hudson-Raritan Estuary Ecosystem Restoration Project, Liberty State Park, Hudson County, New Jersey," by Panamerican Consultants, Inc. is enclosed for your review (Enclosure 2).

Presently, just conceptual plans exist for the proposed restoration project. The study area is within a 251-acre parcel that extends from east-west from Freedom Way to Phillip Drive and north-south from Audrey Zapp Drive to Thomas McGovern Drive (Enclosure 3). The enclosed conceptual plan includes the creation of fresh water wetlands, salt marsh, a tidal creek, upland forest/scrub/shrub/grassland and the creation of a berm from on-site material. Much of this work would entail shallow excavation or filling. The deepest excavation is associated with the proposed salt marsh and tidal creek where excavation may go as deep as approximately two feet below mean low water. Please note that the graphics in the draft cultural resources report do not depict the proposed tidal creek that would connect the restoration area to the North Cove. The final document will include this feature.

The area proposed for wetland restoration was once open water. An analysis of soil borings, undertaken by archaeologists at the time LSP was being created, suggests that the potential for buried Late Pleistocene/Early Holocene deposits is high in certain areas within LSP as a whole (Historic Conservation and Interpretation, Inc. 1977 [HCI]). Near the project area traces of peat were found at approximately 43 feet below mean sea level (MSL). Wood, wood fiber and peat on bedrock were found between 94 and 101 feet below MSL. Work in connection with the restoration project is not anticipated to reach these depths. Shallower deposits (11 - 13 feet below MSL) were found to the south of the project area where bedrock rises rapidly. It is unlikely that any deposits would be encountered in the current project area. The sensitivity for prehistoric resources within the project area is low as the location consists entirely of man-made land and no work is anticipated to reach depths determined sensitive for paleo-environmental data. Work along the western edge of the project area, which was once the Communipaw shoreline and is therefore sensitive for prehistoric and early historic resources, will not include excavation.

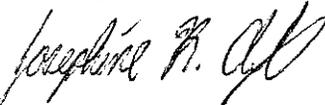
Land at LSP was created over a period of six decades spanning the late 19<sup>th</sup> and early 20<sup>th</sup> centuries to hold the vast rail yards that developed along the Jersey City waterfront. HCI included a projection of shoreline changes in their 1977 report which indicates that land filling in the project area was completed by 1916 (Enclosure 4). Associated with the various fill episodes are likely to be timber cribbing and other construction methods used to retain fill. Late 19<sup>th</sup> and early 20<sup>th</sup> century cribbing has been recorded throughout the New York and New Jersey Harbor. The filling episodes were documented as they occurred and this data was included as an appendix to the HCI report (Enclosure 5). Most of the retaining structures were earthen. It should also be noted that Morris Canal boats were deliberately sunk in 1900 to form a fill retaining structure and may be present beneath the fill. Documentary evidence suggests that these boats are located to the east of the project area, on the opposite side of Freedom Way.

Railroad use within the project area was limited to rails, no longer present, and ancillary structures such as signals and livestock pens. The few remnants of these structures that remain on the property are deteriorated and are not considered eligible for the National Register of Historic Places.

The landscape on the whole was altered considerably with the construction of LSP. Within the park, little evidence remains of the once expansive rail yards. The proposed restoration project is within sight of the Statue of Liberty Ellis Island National Monument and the NRHP listed Central Railroad of New Jersey Terminal. It is not anticipated that the creation of new wetlands and habitat will have an effect on these important historic sites.

It is the Corps' opinion is that the restoration work at Liberty State Park will have no effect upon cultural resources if project plans remain as proposed. If excavation is determined necessary in the vicinity of the former Communipaw shoreline than subsurface work may be required. We will continue to coordinate with your office as the project proceeds. Please review the enclosed document and provide comments. If you or your staff require additional information or have any questions, please contact Lynn Rakos, Project Archaeologist, at (212) 264-0229.

Sincerely,

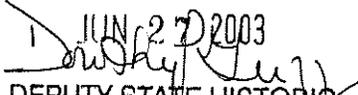
  
Leonard Houston  
Chief, Environmental Analysis Branch

Enclosures

CF (w/ enclosures)  
Timpinero, LSP

Historic Conservation and Interpretation, Inc.  
1977 Cultural Resource Reconnaissance Liberty State Park

**CONCUR**

JUN 27 2003  
  
DEPUTY STATE HISTORIC  
PRESERVATION OFFICER



Contract No. DACW51-01-D-0018  
Work Order No. 0009

**U.S. Army Corps  
of Engineers**  
New York District

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**PHASE IA CULTURAL RESOURCES INVESTIGATION OF  
THE HUDSON-RARITAN ESTUARY ECOSYSTEM  
RESTORATION PROJECT, LIBERTY STATE PARK,  
JERSEY CITY, HUDSON COUNTY, NEW JERSEY**

***FINAL REPORT***

July 2003

Panamerican Consultants, Inc.  
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**PREPARED FOR:**

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**UNDER CONTRACT TO:**

Environmental Analysis Branch  
Environmental Assessment Section  
U.S. Department of the Army  
New York District, Corps of Engineers  
26 Federal Plaza  
New York, NY 10278-0090

# **FINAL REPORT**

## **PHASE IA CULTURAL RESOURCES INVESTIGATION OF THE HUDSON-RARITAN ESTUARY ECOSYSTEM RESTORATION PROJECT, LIBERTY STATE PARK, JERSEY CITY, HUDSON COUNTY, NEW JERSEY**

**Contract No. DACW 51-01-D-0018  
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**July 2003**

## Management Summary

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**Project Name.** Phase IA Cultural Resources Investigation for the Hudson-Raritan Estuary Ecosystem Restoration Project, Liberty State Park, Jersey City, Hudson County, New Jersey.

**Project Background.** Panamerican Consultants, Inc. (PCI) was contracted by Northern Ecological Associates, Inc. to conduct a reconnaissance level survey of the Liberty State Park project area for the U.S. Army Corps of Engineers, New York District (USACE). As part of the Hudson-Raritan Estuary Ecosystem Restoration Project, the USACE is examining Liberty State Park as one of thirteen areas for possible restoration from a degraded environment.

**Project Location and Environmental Setting.** Liberty State Park is located on the west shore of the Upper Bay of New York Harbor in Jersey City, Hudson County, New Jersey. Liberty State Park is a 1,121-acre area that includes nearly 600 acres of upland and 523 acres within a tidal zone. Adjacent attractions including the Statue of Liberty and Ellis Island draw over four million visitors to the park each year. Liberty State Park is former coastal marshland that has been filled in with refuse and construction debris in order to construct a large rail yard.

The Area of Potential Effect (APE) comprises 251 acres of overgrown terrain in the center of the park encompassed by Phillip Street, Thomas McGovern Drive, Freedom Way and Audrey Zapp Drive. Nearly the entire perimeter of the APE is surrounded by a chain link fence. Elevations do not exceed 3 m (10 ft) above mean sea level.

**Purpose and Goals.** The proposed ecosystem restoration includes the development and enhancement of coastal upland woodlands and grasslands, the enhancement of freshwater wetlands, the restoration of tidal wetlands, and the preservation of a unique “moss mat community” (USACE 2002:2). The Phase IA cultural resource investigation was conducted to assess the potential for encountering cultural resources (i.e., archaeological sensitivity) within the APE.

**Regulatory Basis.** USACE, as a federal agency, has management responsibilities concerning the protection and preservation of cultural resources on land it controls or uses. Federal statutes require USACE to identify and evaluate significant cultural resources on these properties, and include: National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 *et. seq.*) through 1992 (which includes Section 106 compliance); the Advisory Council on Historic Preservation Guidelines for the Protection of Cultural and Historic Properties (36 CFR Part 800); as well as Army Regulation (AR) 200-4 “Cultural Resources Management.”

**Cultural Resources Survey Work Completed.** Background research and field inspection were conducted for the project area as part of the Phase IA investigation. Background research included a review of historic documents, previous research reports, a site file check, and historic map analysis. Repositories visited include the New York Public Library, General Research, Local History and Genealogy, and Map Divisions; New York City Landmarks Preservation Commission; New Jersey Historic Preservation Office (HPO); and the U.S. Army Corps of Engineers New York District. Field investigations included walkover reconnaissance and photographic documentation.

**Survey Results.** Historic maps and literature show the entire APE to be made land for use by the Central Railroad of New Jersey (CRRNJ). The project area was formerly tidal marsh that was filled between the 1860s and 1919. Maps of the 1870s illustrate the shoreline at Phillip Street, which forms the western boundary of the APE. Therefore, the archaeological sensitivity for

prehistoric cultural resources within the APE is limited to submerged Late Pleistocene/Early Holocene deposits. These would be located beneath the landfill and also beneath underlying organic bay silts and peat that accumulated after inundation of the area by rising sea levels.

Few structures other than railroad tracks formerly existed within the project area. The most prominent structures were the Central Union stockyards formerly located near the center of the project area. The stock yards consisted of a series of structures situated on a long, narrow open platform. The structures appear to have been receiving pens including sheep and hog sheds, cattle pens, and a hay barn. CRRNJ's Marine Repair Yard, comprised of small shops for blacksmiths and carpenters, is also depicted near the northern end of the APE.

Most of the APE is overgrown with a mix of deciduous and coniferous trees, sparse and dense brush, open grassland, and low wet areas with stands of *Phragmites*. Piles of railroad ties are scattered across the north, central and west portions of the APE. Modern debris has been dumped across the APE, including building materials, garbage, a metal trailer, and push-piles of rubble. Push-pile berms are present and dirty fill was visible at some exposed locations. Approximately 24 acres in the southwest corner of the APE is covered by a landfill surrounded by a chain-link fence.

Remnants of the former rail yard are present within the Liberty State Park APE that include: two 3-by-5-ft concrete drain openings, burned remains of a wood structure, the base of a former tower, two cast concrete "telephone" booths, and partially *in situ* railroad ties/track bed.

**Conclusions and Recommendations.** The archaeological sensitivity for prehistoric cultural resources within the APE is very low. Documentary and field research results show the APE to be made land. Therefore, the sensitivity for prehistoric remains in the APE is limited to submerged Late Pleistocene/Early Holocene deposits located beneath the landfill and underlying natural sediment. A previous investigation (Rutsch and Leo 1979) of more sensitive locations just west of the APE did not find evidence of any shell midden or other prehistoric deposits. Further investigation will not likely yield prehistoric cultural resources.

Landfill in the northern portion of the APE could contain artifacts from mid-nineteenth-century landfill deposits, as well as landfill-retaining structures such as wooden cribbing. Landfill in the southwestern portion of the APE could contain later artifacts as well as early twentieth-century landfill-retaining cribbing. However, artifacts found in the landfill will likely not be considered cultural resources due to the lack of context and ambiguous point of origin. The cribbing used to retain the fill also has limited research importance. Canal boats, deliberately sunk as part of the landfilling process, may be present beneath the fill, although Rutsch et al. (1977:332) depict the canal boats sunk east of the APE.

Remains associated with the former rail yard do not appear to be cultural resources. A burned wooden structure appears to be the remains of a small, twentieth century railyard outbuilding. There is no structural integrity and the construction materials are modern. Further investigation of these features will not likely yield information involving the history of the rail yard or the project area in general.

In summary, the proposed ecosystem restoration project will have no impact on cultural resources as none were identified during this Phase IA cultural resource investigation. No further investigations are recommended for the APE at Liberty State Park.

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## Acknowledgments

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Panamerican Consultants, Inc. wishes to thank Ms. Lynn Rakos, archaeologist at the New York District Office of the U.S. Army Corps of Engineers for her assistance throughout this investigation. We would also like to thank Mr. Michael Timpanero, Liberty State Park Historian, for his assistance with this investigation and the Liberty State Park Police for granting us access to the project area. Finally, we want to thank Dr. David Turkon and Mr. Thomas Turkon for sharing their knowledge of railyard features.

# 1.0 Introduction

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Panamerican Consultants, Inc. (PCI) was contracted by Northern Ecological Associates, Inc. to conduct a reconnaissance level survey of the Liberty State Park project area in Jersey City, Hudson County, New Jersey (Figure 1.1) for the U.S. Army Corps of Engineers, New York District (USACE). The Area of Potential Effect (APE) is a roughly 251-acre parcel of land in the center of Liberty State Park encompassed by Phillip Street, Thomas McGovern Drive, Freedom Way and Audrey Zapp Drive. As part of the Hudson-Raritan Estuary Ecosystem Restoration Project, the USACE is examining Liberty State Park as one of thirteen areas for possible restoration from a degraded environment. This location is being studied to identify and inventory water resources and sediment quality problems related to the enhancement and creation of aquatic, wetland, and adjacent upland habitats (USACE 2002:1). USACE is planning to develop and enhance coastal upland woodlands and grasslands, and freshwater wetlands; restore tidal wetlands; and preserve a unique "moss mat community" (USACE 2002:2).

The purpose of this Phase IA cultural resources investigation is to assess the potential for encountering cultural resources (i.e., archaeological sensitivity) within the APE. This investigation includes documentary and background research, historic map analysis, a site file check, and walkover reconnaissance. The field investigation was conducted during the week of December 8, 2002. Dr. Michael A. Cinquino served as Project Director. Mr. Robert J. Hanley, M.A., served as Principal Investigator and Project Archeologist. Ms. Stacy Weber, M.A., served as Historian. Mr. Daniel M. Cadzow served as Field Director. Mr. Arnold Pickman served as Research Historian. Ms. Lynn Rakos, USACE Project Archaeologist, was the technical point of contact between PCI and USACE.

This investigation was conducted in compliance with the National Historic Preservation Act as amended through 1992, the National Environmental Policy Act of 1969, Archeological Resources Protection Act of 1979 (18 CFR 1312, 32 CFR 229, 36 CFR 296, and 43 CFR 7), Archeological and Historic Preservation Act of 1974 (Public Law 93-291; 16USC 469-469c), Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601), Curation of Federally-Owned and Administered Collections, September 12, 1990 (36 CFR 79) and the Advisory Council Procedures for the Protection of Historic and Cultural Properties (36 CFR Part 800) as well as Army Regulation (AR) 200-4 "Cultural Resources Management." The survey also complied with New Jersey Historic Preservation Office (New Jersey HPO) guidelines for preparing cultural resource reports.

Project materials (e.g., photograph negatives, field notes) will be held at PCI's Buffalo Office until completion of the project and submitted to USACE upon acceptance of the final report.

## 2.0 Research Design

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### 2.1 OBJECTIVES

The Phase IA cultural resources investigation is designed to determine the presence or absence of cultural resources within the Area of Potential Effect (APE) by conducting field inspection and historic, architectural and map research. Impacts on cultural resources that could result from the proposed ecosystem restoration are also assessed as part of this investigation. Cultural remains, if present, are considered a cultural resource when they exhibit the appropriate qualities required for National Register of Historic Places (NRHP) eligibility. The Criteria of Evaluation (36 CFR 60) as outlined in the National Park Service Publication: "Guidelines for Local Surveys: A Basis for Preservation Planning" (National Register Bulletin 15) include:

Criterion A: (Event) Properties that are associated with events that have made a significant contribution to the broad patterns of our history; or

Criterion B: (Person) Properties that are associated with the lives of persons significant in our past; or

Criterion C: (Design/Construction) Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

Criterion D: (Information Potential) Properties that have yielded, or may be likely to yield, information important in prehistory or history (NPS Bulletin 15, referencing 36 CFR Part 60).

For a cultural resource to be considered eligible for listing in the National Register it must be evaluated within its historic context and shown to be significant for one or more of the four criteria listed above. The cultural property (e.g., archaeological site, historic structure or landscape) must also retain the historic integrity of those features necessary to convey its significance. The information likely to be recovered from the cultural resource must confirm, refute, or supplement, in an important way, existing information. A property is not eligible if it cannot be related to a particular time period or cultural group and thereby lacks any historic context to evaluate the importance of the information to be collected (NPS Bulletin 15, pp. 3, 22).

Integrity is defined as *the ability of a property to convey its significance* (NPS Bulletin 15, p. 44). To merit eligibility, a property must be significant and must also have integrity. Seven aspects of integrity recognized by the National Register are location, design, setting, materials, workmanship, feeling, and association. (For a more detailed description of each aspect see NPS Bulletin 15, pp. 44-45.)

### 2.2 PROPERTIES INVESTIGATED AND RECORDED

Liberty State Park is a 1,121-acre area that includes nearly 600 acres of upland and 523 acres within a tidal zone (see Figure 1.1) (USACE 2002:2). The Area of Potential Effect (APE) comprises 251 acres of overgrown terrain in the center of the park encompassed by Phillip

Street, Thomas McGovern Drive, Freedom Way and Audrey Zapp Drive (see Figure 1.1). Background research was conducted for the entire park, but the focus of the research was on the history of the APE. Field reconnaissance was conducted within the APE.

## **2.3 METHODS TO ADDRESS THE RESEARCH OBJECTIVES**

**2.3.1 Background Research.** Review of historic documents provides information on former and present environmental conditions and setting. This information is critical for the proper assessment of archaeological sensitivity, particularly for judging the likelihood of prehistoric archaeological remains. Background research included a review of historic documents, environmental studies, and previous research reports appropriate for the project area. Repositories visited include the New York Public Library, General Research, Local History and Genealogy, and Map Divisions; New York City Landmarks Preservation Commission; New Jersey Historic Preservation Office (HPO); and the U.S. Army Corps of Engineers, New York District.

The review of reports from previous investigations such as cultural resource management reports is also an important part of the background research conducted. Information from such sources includes various methodological approaches, interpretations, and recommendations regarding properties in or adjacent to the Liberty State Park project area.

**2.3.2 Field Methods.** Walkover reconnaissance was conducted to identify any exposed cultural resources. The degree of soil disturbance (e.g., fill deposition, soil stripping, development) is also assessed during reconnaissance. Greater impacts reduce the likelihood of intact cultural deposits, thus reducing the archaeological sensitivity at disturbed locations. Archaeological sensitivity is also assessed by comparing background results with field observations. Map documented landscapes are compared with field observations to help determine the degree of modifications (i.e., potential disturbance).

Photographs were taken to document the APE including pertinent views of cultural features, environmental setting and disturbances affecting archaeological sensitivity. Black and white print film and color slide film were used for photographic documentation per the Scope of Work (USACE 2002:8). A Garmin® GPS unit was used to record the UTM (North American Datum [NAD] 83) coordinates of photographs, and physical and cultural features.

**2.3.3 Problems or Biases Encountered.** No serious problems or biases were encountered during the investigation. Although snow was present during the field investigation, it did not greatly impede visual reconnaissance or accessibility. Satellite positioning accuracy was estimated by averaging readings at each location. Accuracy estimates are termed “Figure of Merit (FOM)” in Table 4.1.

## 3.0 Background Research

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### 3.1 PHYSICAL SETTING

Liberty State Park is located within an urban setting characterized by industrial, commercial, and residential properties situated along the west bank of the Hudson River in Jersey City, Hudson County, New Jersey (see Figure 1.1). Elevations in the project area do not typically exceed 3 m (10 ft) above mean sea level (amsl). The Statue of Liberty, Ellis Island, the Central Railroad of New Jersey Terminal, and Downtown Manhattan are in the view shed of the APE to the east and northeast. Liberty Science Center is located to the northwest and Morris Canal Basin (including Liberty Landing Marina) is north of the APE. Commercial structures (e.g., warehouses) border the APE on its south side and the New Jersey Turnpike is located to the west.

The project area is made land entirely comprised of fill and debris deposited between the 1860s and 1919 for use as a large rail yard. Prior to filling, it was a tidal marsh on the fringe of the Upper Bay of New York Harbor. Liberty State Park is located at the south end of the ridge in the Newark Basin along the east edge of the Piedmont Physiographic Province. Bedrock deep beneath the project area is Triassic-Jurassic sedimentary formation (Stansfield 1998:14).

The U.S. Department of Agriculture (USDA) Soil Conservation Service has not produced a Soil Survey Report of Hudson County; a preliminary mapping based on field observation was conducted by Lueder et al. (1952). In general, natural soils in the vicinity of the project area were derived from stratified drift and wash from glacial till. More specifically, the project area would have been inundated alluvium and muck prior to landfill creation.

### 3.2 PALEOENVIRONMENT

The deglaciation of North America began about 18,000 years ago (Pielou 1991). Although models of the deglaciation differ, and do not always accommodate the radiocarbon chronology derived from floral remains and Pleistocene fauna, radiocarbon dates indicate the likelihood that the glacial ice had disappeared between 13,000 and 16,000 years ago (Funk 1993:43-44; Marshall 1982:17). A mix of tundra and coniferous and deciduous forest persisted in the vicinity of the project area until about 14,000 years ago. This biome provided important habitats for large mammals and other game significant to human subsistence. Pleistocene megafauna roamed the northeastern United States, and included such species as mammoth, mastodon, great beaver, fossil bear, and moose-elk. Other northeastern varieties of these species adapted to the new environment and included fossil peccary, fox, seal, white-tailed deer, wolf, caribou, moose, elk, and bison (Marshall 1982:17-18; Funk 1972:11, 1976: 208-210; Ritchie 1980:10-11; Salwen 1975). With deglaciation, the megafauna declined in population to be replaced by more temperate species that migrated into the area.

Following the Pleistocene era, environmental conditions ameliorated leading to the reforestation of the northeast and the gradual emergence of relatively modern types of forest about 10,000 years ago. By 8,500 years ago the world's temperature had warmed sufficiently for a variety of deciduous tree species to become abundant (Funk 1976:209-210; Marshall 1982: 21; Kraft and Mounier 1982:60).

### 3.3 CULTURAL BACKGROUND

**3.3.1 Prehistoric Overview.** The prehistory of northeastern North America is marked by three major periods spanning about 12,500 years. The earliest of these periods is the Paleo-Indian which lasted from 11,000 to 8000 BC. Paleo-Indians lived in seasonal camps near fresh water sources and at lithic workshops. They subsisted by hunting and gathering. The Paleo-Indian was followed by the Archaic period which lasted from 8000 to 1000 BC and was characterized by seasonally occupied campsites and later by seasonal villages. The Archaic subsistence system was hunting and gathering and possibly incipient horticulture toward the end of the period. After 1000 BC, Native Americans of the Woodland period lived in seasonally occupied villages and campsites and subsisted by hunting, gathering, and by AD 1000, horticulture. It was during this period that ceramics were first made in northeastern North America. These periods are described in more detail below.

**Paleo-Indian Period.** Paleo-Indian cultures were adapted to a late-Pleistocene tundra or park tundra environment. Paleo-Indians were highly mobile people whose search for food took them over long distances. The emergence of oak stands and resultant increase in resource availability allowed greater human population density toward the end of the period. Pleistocene megafauna including mammoth, mastodon, great beaver, fossil bear, and northern species like fox, seal, moose and caribou roamed the northeast. A variety of other species like fossil peccary, white tailed deer, elk, bison and horse had also adapted to the northeast.

In addition to hunting, Paleo-Indians had fish and plant foods available to them. Pollen analysis of samples from the Shawnee-Minisink site near the Delaware Water Gap has revealed the presence of many edible plants. Carbonized seeds were recovered by flotation. Some of the plants identified by these means included Goose foot (*Chenopodium* sp.), ground cherry, black berry, hawthorn plum, pokeweed, pigweed (*Amaranthus* sp.), smart weed (*Polygonum* sp.), wild lettuce, grape, hackberry, and meadow grass (Kraft 1986:41).

Early Paleo-Indian chipped stone artifacts include fluted points which are thin, lanceolate-shaped bifacial implements fluted down the center for hafting, unifacial end and side scrapers, utilized flakes, and waste flakes (Marshall 1982:13). Fluted points gradually decreased in size as larger game animals moved north or became extinct (Kraft 1986:47). Fluted points were eventually replaced in the late Paleo-Indian period (8000-6000 BC) with unfluted triangular points, stemmed points and Plano points. The last are lanceolate-shaped points without flutes.

**Archaic Period.** According to Kraft (1986), the transition from Paleo-Indian to Early Archaic is not clearly indicated in the Middle Atlantic region. The Archaic period developed out of the late Paleo-Indian period, probably as a product of changes in the environment. For the northeast, this period is divided into Early Archaic, Middle Archaic, Late Archaic, and Terminal Archaic (Kraft and Mounier 1982).

The Early Archaic began around 8000 BC and continued until 6000 BC, when the modern temperate environments began to develop. During the Early Archaic, the hills and mountains were overgrown with pine, hemlock and oak while forests in the coastal areas were chestnut and oak (Kraft and Mounier 1982:59). The retreating glacier caused a rise in sea levels forcing people to move inland. People lived in small territorial bands that hunted, fished, and gathered plant foods. With the exception of the dog, they had no domestic animals (Kraft 1986:51).

Lifeways were similar to those of the Paleo-Indian Period; but, there were modifications in technology related to gradual environmental changes (Kraft 1986:51). The people of the Early Archaic period subsisted on elk, deer, bear, beaver, turkey, migratory waterfowl, fish, shellfish, turtles, frogs (Kraft and Mounier 1982:65), as well as berries, roots, tubers, eggs, and nuts (Kraft 1986:51). They probably moved when food supplies dwindled. The small encampments close to rivers or ponds that are typical of Early Archaic sites reflect this mobility (Kraft and Mounier 1982:76). The Early Archaic tool kit consisted of stemmed and notched projectile points, bifurcate-base points, knives, scrapers, choppers, as well as wood and bone-working tools such as hammerstones and drills (Kraft and Mounier 1982:65). During this period, settlements in the vicinity of the project area were riverine/coastal encampments of small, highly mobile bands. In these areas, Archaic peoples exploited the local floral and faunal resources, including shellfish, deer, and small animals. The location of sites is directly related to resource availability.

The Middle Archaic period lasted from 6000 to 4000 BC. The environment was changing from the glacial environment to the modern temperate climate. By 5000 BC, the climate was warm and moist; as water levels continued to rise, groups moved further inland. Oak, chestnut, beech, and elm dominated the landscape causing animal populations to increase because of the abundance of mast foods in the forests. People of the Middle Archaic subsisted on chestnuts, acorns, and fish, as well as game. Heavy woodworking tools, along with net sinkers, and fish remains found on archaeological sites suggest a riverine adaptation. There are more and larger sites for this period, which signifies increased sedentism. Quarry sites are also found. Artifacts made of argillite, shale, and quartzite suggest an expansion of communication, transportation, and exchange. Territories were controlled by the bands and sites were located within these territories, and occupied seasonally (Kraft and Mounier 1982:71-83; Kraft 1986:73).

People began to develop woodworking tools during the Middle Archaic using coarse-grained stones and river cobbles as raw materials. These were commonly available in large sizes and allowed tool makers to reserve high quality lithic materials for finely flaked tools. In order to work these coarse-grained rocks, new shaping techniques had to be developed. The primary technique was pecking and grinding which shaped axes, adzes, gouges, choppers and other woodworking or rough-stone tools. These heavy woodworking tools may have been used for canoe building (Kraft and Mounier 1982:71-83; Kraft 1986:73). The Middle Archaic tool kit also included anvil stones, choppers, net sinkers, and an array of projectile points.

During the Late Archaic (4000-1000 BC) hunting, fishing, and gathering were still the principal daily activities. The temperate environment had developed by 5000 BC, and was a deciduous forest biome, with oak, chestnut, and hickory. Deer and turkey would have been available as meat resources, but, during the Late Archaic, there was a greater emphasis placed on lower links in the food chain, including small game, shellfish, nuts and wild cereal grains like *Chenopodium*. This shift in subsistence strategies, related to the emerging temperate environment, made higher population densities possible (Kraft and Mounier 1982:71-83; Kraft 1986:73).

As population increased, camps became larger and more numerous. Principal settlements were located near major rivers. People lived in bands, with well-defined territories (Kraft and Mounier 1982:71-83; Kraft 1986:73). By about 2500 BC, there was a center-based wandering system of subsistence and settlement, with a riverine focus. The exploitation of resources included a wide range of habitats. They moved seasonally to acquire particular resources in a new area or when resources dwindled. Groups probably congregated occasionally for exchange

and socialization. Houses of this period may have been circular and oval measuring 11 to 20 m (36 to 66 feet) in diameter with overlapping entranceways. One such house pattern was found at the Wapanucket #6 site in Massachusetts.

Heavy grinding implements like mullers, mortars and pestles provided new means of preparing food from seeds, nuts, dried berries and meat (Kraft and Mounier 1982:71-83; Kraft 1986:73). These tools were made of sedimentary and metamorphic rocks like sandstone and argillite. Other implements used were bifacial, chipped stone knives, semilunar knives which were often made of slate, the atlatl or spear thrower, bolas, and plummets. Long, narrow stemmed or narrow, weakly notched projectile points like Poplar Island, Bare Island, Lackawaxen stemmed, and Normanskill were characteristic of the Piedmont Tradition (also known as the Small Stemmed Tradition) which originated in the Southeast (Kraft 1986:73). These projectile points were seldom reworked into scrapers, drills and graters because of their size and shape. Another innovation was steatite or soapstone pots which made cooking and food preparation easier.

The Late Archaic of northern New Jersey was formed by influences from the Piedmont Archaic in southern New Jersey, Virginia, and North and South Carolina, and the northern Archaic of New England. From the south, the main cultural traditions which affected the northern New Jersey are the Small Stemmed Point Tradition, and the Susquehanna Tradition. The Small Stemmed Point Tradition occurs from Virginia to southern New England, and is represented by small, slender, stemmed points and small triangular points, as well as, ground stone woodworking tools, such as gouges and adzes, atlatl weights, knives, scrapers, mullers, pestles, choppers, and hematite or graphite paintstones (Kraft and Mounier 1982:71-83; Kraft 1986:73).

Nut-bearing trees like oak, hickory, chestnut, and beech dominated the eastern forests during the Terminal Archaic (2000-1000 bc). Sea levels continued to rise, causing increased salinity in estuaries, including the lower Hudson river (Kraft 1986; Snow 1980). People subsisted on deer, black bears, small mammals, wild turkeys, pigeons, shellfish, fruits, roots, nuts, and fish.

The Susquehanna Tradition emerged in the Late Archaic around 2500 BC and is typified by broad stemmed and notched points, and "fish-tail" points (Kraft 1986:84). This tradition may have diffused from Georgia, northward along the Atlantic coast, into southern New Jersey, and north to Maine. It lasted until 1000 BC. Projectile points include the Brewerton, Vosburg, and Beekman Triangle types (Kraft and Mounier 1982:69).

Archaeologists have identified a Terminal Archaic subperiod for northern New Jersey, which lasted from about 1500 to 1000 BC. Marking this transitional period between the Archaic and the Woodland are changes in the forms and characteristics of the spearpoint. New points which are broader, thinner, and skillfully worked may have originated in the southern Piedmont area. At the same time, soapstone or steatite bowls were also used. People of this time inhabited the riverine areas of northern New Jersey, and cremated their dead. By the end of this subperiod, pottery was made and used in northern New Jersey. Called Marcey Creek Plain, these pots were made with fragments of steatite bowls for the temper (Kraft and Mounier 1982:69-71).

**Woodland Period.** The Woodland period is marked by the presence of pottery. Pottery is significant because it improves the efficiency of food preparation and storage (Curtin 1992:6). In addition to the manufacture of pottery, the Woodland period also had agriculture, more elaborate rituals, and increased sedentism. This period is normally divided into early, middle, and

late subperiods, dating between 1000 BC to AD 1650 (Williams and Thomas 1982:107). However, for New Jersey, there is little difference between the early and late subperiods, especially up to AD 1000.

In the Middle Atlantic Region, the transition from the Archaic period to the Woodland period was gradual. Artifact types and cultural traditions of the Archaic continued to be used in the Early Woodland of New Jersey (Williams and Thomas 1982:108). The change to the Middle Woodland period, in New Jersey, was likewise gradual. This period is largely defined by new ceramic types and different lithic and bone tools. Along the coast, the economic base emphasized shellfish, in addition to small-scale agriculture. Mortuary practices varied considerably, and there was greater use of exotic materials as grave goods. Sedentism appears to have increased (Williams and Thomas 1982:108-109).

There is a great deal of variety in the Early and Middle Woodland within New Jersey. This variation follows geographic and environmental patterns. Therefore, the remainder of the discussion on the prehistoric period of the survey area is restricted to the coastal area of southern New Jersey (Williams and Thomas 1982:117). Characteristics of the Early/Middle Woodland period, from 1000 BC to AD 1000, include a wandering, central-based settlement system. Base camps were large and occupied intensively. There were also seasonal and transient procurement campsites. The economic base emphasized natural resources, such as fish, shellfish, nuts, and deer. On a seasonal basis, coastal people congregated at the inland parts of estuaries, to harvest anadromous fish. Mortuary practices were elaborated upon, and included grave furnishings. Technological changes included ceramics, lithic objects made of exotic materials, and shell ornaments. The exotic materials and the complex socio-religious system signify exchange between distant groups (Williams and Thomas 1982:121). Settlement along the coast most likely occurred near the resources available in estuaries and tidal marshes such as the original state of the project area. Subsistence would emphasize shellfish, crabs, and ocean fish.

During the Late Woodland period, subsistence shifted emphasis from gathering wild foods to growing domesticated plants. "The earliest documented cultigen in the Upper Delaware Valley is *Cucurbita* at AD 1060 +60" (Fischler and French 1991:160). Corn horticulture developed sometime between AD 500 and 1000, made possible by the use of Northern Flint corn, which is a cold-resistant strain. Northern Flint Corn diffused broadly after its first appearance, probably in the Midwest (Fritz 1990).

Along with corn horticulture came settled village life, population growth, an enriched religious and ceremonial life, and warfare among some cultures, such as the Iroquois in New York. Unlike earlier Woodland cultures, there were no separate cemeteries and cremation was no longer practiced. People of the Late Woodland buried their dead flexed in bark-lined graves.

In northern New Jersey, the first major phase of the Late Woodland Period is the Pahaquarra/Owasco phase which dates to AD 1000-1350. Ceramics of this phase were collarless pots with cord-marked bodies and cord-impressed rims (Kraft 1986:120). Specifically, these included Sackett Corded, Overpeck Incised, Bowmans Brook Incised, and Clemson Island (Fischler and French 1991:157). Dwellings of this period were most often round-ended long houses with the doorway on one side (Kraft and Mounier 1982b:146). Deep storage pits are found at the ends. The houses ranged from 5.5 to 18.3 m (18 to 60 ft) long and up to 6.1 m (20 ft) wide. Levanna points are found in high frequencies on Late Woodland Pahaquarra sites. Other stone tools include cobble flakes that could be used for a variety of purposes, flake knives,

and hammer and anvil stones (Kraft and Mounier 1982b:148).

In addition to hunting, gathering and gardening, Pahaquarra people spent a lot of time fishing and gathering shellfish which were then smoked in hearths or dried on stone platforms (Kraft and Mounier 1982b:151). Around AD 1350-1650, ceramics having well-defined collars with incised linear geometric designs identify the Minisink phase of the Proto-Munsee people (Kraft 1986:120). Minisink longhouses were virtually the same as those of the Pahaquarra/Owasco culture. A wide variety of implements have been found on these later Woodland sites. These include tools for hunting, butchering, hide preparation, fishing, plant processing, cooking, woodworking, and domestic activities (Kraft and Mounier 1982b:154-155).

**Contact Period.** The Munsee and Unami were loosely linked subgroups of Algonquian Delaware or Lenni Lenape Indians who inhabited the area that would become New Jersey at the time of the arrival of Europeans. The traditional dividing line between these subcultures was the Raritan River. The native groups north of the Raritan River, including those of the New Jersey Highlands and the lower Hudson River valley spoke Munsee dialects, while those south of the Raritan River, including the Delaware River valley and Eastern Pennsylvania spoke Unami dialects. Although occupying the mountainous region of northern New Jersey-southern New York, the Minisink Delaware maintained an extensive network of trails through the mountains in order to reach the rich shellfish areas along the Atlantic Ocean (Goddard 1978:213-216, 222; Williams and Kardas 1982:186, 189-190; Kraft and Mounier 1982b:139-141; Kraft 1975:13).

**3.3.2. Historic Overview.** Jersey City, a historically significant port of entry and manufacturing center, is situated on a peninsula formed by the Hudson and Hackensack Rivers and Upper New York Bay. Located just across the Hudson River from the island of Manhattan, Jersey City is considered the first permanent European settlement in the state (Jersey City Online 2002). In 1623, following Henry Hudson's voyage for the Dutch East India Company, the area became part of the Dutch province of New Netherland. The trading company introduced the patroon system into the region, selling large tracts of land to wealthy "patroons," who in turn pledged to attract at least fifty permanent settlers to the colony (Stansfield 1998). In 1629, a patroon named Michael Pauw received a grant to plant a Dutch colony on the west side of the Hudson River. Pauw's grant, which eventually became the district of Pavonia, is the earliest known conveyance for what would later become Jersey City (Grundy and Caroselli 1970; Kardas and Larrabee 1978).

The patroon system, which essentially relegated settlers to the role of serfs, attracted few emigrants from the mother country and proved an ineffective colonization strategy for the Dutch (Stansfield 1998). By the mid-seventeenth century, all of New Netherland could boast only a handful of settlers whose small numbers left them vulnerable to Indian attacks as well as the land grabs and territorial counterclaims of other colonial powers. This held true for the district of Pavonia, which ran along the west bank of the Hudson River approximately between Harsimus Cove on the north and Caven Point on the south. By the late 1630s, Pavonia contained three tiny Dutch settlements within the boundaries of present-day Jersey City. These included the settlements of Harsimus, a lowland area near the present Harsimus Cove, Paulus Hook, a "noticeable promontory of high land" where Jersey City was later founded, and Communipaw, an area of relatively high land on the north side of New York Bay (Kardas and Larrabee 1978). These settlements consisted largely of scattered farms known as "bouweries" that extended along the length of the Hudson shoreline (Rutsch et al. 1977).

Despite more than a decade of relatively peaceful relations with the local Indians, unrest broke out in the early 1640s and escalated into the Dutch-Indian War of 1643-1645. Due in large measure to the poor leadership of Director-General William Kieft, the conflict quickly resulted in the destruction of most of the early Dutch farms within the colony of Pavonia (Kardas and Larrabee 1978). In the late 1640s, the Dutch made another attempt to settle the west side of the Hudson under the leadership of a new director-general, Peter Stuyvesant. After negotiating peace with local Indians, Stuyvesant established a community known as Bergen in the interior portion of the peninsula, to the west of the original settlements. Observing his predecessor's difficulty in defending the widely-scattered farmsteads of the earlier settlements, Stuyvesant ordered the village to be enclosed and fortified against attack. As an added protection, the director-general purchased most of what is now Hudson County from the Hackensacks in 1658 (Grundy and Caroselli 1970; Kardas and Larrabee 1978).

The palisaded village of Bergen, which was laid out around Bergen Square on top of a high ridge, ran north from present-day Vroom Street with a central roadway following the current Bergen Avenue right-of-way. This settlement fared better than the previous colony, boasting a municipal court, legislature, school and church by the early 1660s (Jersey City Online n.d.). Around the same time, Bergen was joined on the west bank by a second new Dutch settlement known as Communipaw. The site of the new village fronted on New York Bay and consisted of a parcel of land approximately 200 feet wide by 600 feet long, running south from the present Communipaw Avenue (Kelly et al. 1960). It was separated from the bay on the east by an area of marshland known as Communipaw Cove. Together, the villages of Bergen and Communipaw were intended to replace the original European settlements destroyed in the Dutch-Indian War, although many of the shoreline bouweries were eventually reestablished (Kardas and Larrabee 1978).

All in all, Dutch colonial ambitions in the New World proved short-lived. In 1664, the Dutch lost their American colonies altogether when, drawing on land claims made by the Cabots in 1497 and 1498, Charles II of England dispatched ships and soldiers to the New World to seize possession of the colony. Realizing their inability to oppose British military might, Dutch leaders quickly conceded to the king's demands and the former province of New Netherland surrendered its allegiance to British control (Doherty 1986). New Netherland became the English proprietary colony of New Jersey, divided into the provinces of East and West Jersey under the governance of Sir George Carteret and John Lord Berkeley respectively (Pennington & Fraser 1997). In 1683, New Jersey was divided into four counties, and the Dutch villages of Bergen and Communipaw became part of a larger township called Bergen, one of three townships located in the East Jersey county of the same name (Grundy and Caroselli 1970).

Following the establishment of English rule, life on the west bank of the Hudson remained relatively unchanged for almost two centuries (Kardas and Larrabee 1978). Carteret granted a new charter to the township of Bergen, guaranteeing its inhabitants the continuation of all rights and privileges previously enjoyed under Dutch rule (Grundy and Caroselli 1970). Now removed from the "front line of European expansion," descendants of the original Dutch settlers continued to farm the fertile highlands and collect oysters from the mud flats in the quiet, rural communities of Bergen County. The only sign of coming change was the area's gradual emergence as a transportation hub and transshipment point between a growing Manhattan community and new settlements to the west (Kardas and Larrabee 1978). Several important roads were already established by the late seventeenth century, including a road running northwest from Communipaw to Bergen along the route of modern Communipaw Avenue. Another road ran from

Paulus Hook to Bergen. More importantly, the settlers began supplying ferry service to Manhattan from several points on the peninsula, including Communipaw Cove (Kardas and Larrabee 1978).

The first community to bear the name Jersey City emerged in the location of the original west shore settlement of Paulus Hook, located between Harsimus Cove on the north and Communipaw on the south. Abraham Isaacsen Planck initially purchased this waterfront acreage in 1638 for 550 guilders from the Dutch West India Company, an offshoot of the original Dutch East India Company. Planck established a small settlement on this land, using a portion of it as a tobacco plantation and the remainder for farming and dairy purposes (Rutsch et al. 1977; Marrin 2002). Following Planck's proprietorship, title to the land passed through the hands of several owners until 1804, when a group of investors led by three New York lawyers purchased the parcel and formed The Associates of the Jersey Company, which oversaw the affairs of the community for the next fifteen years. Jersey City took its initial step toward becoming an independent municipality in 1820, when the New Jersey state legislature granted the community a municipal charter and it was incorporated for the first time (Grundy and Caroselli 1970).

From the beginning, Jersey City's waterfront played a vital role in its commercial and industrial development. Oystering and shad fishing, both conducted in the mud flats of Communipaw Cove, represented one of the area's earliest and most important industries, until the arrival of the railroads and manufacturing in the nineteenth century polluted and destroyed both the cove and its adjacent waterways (Rutsch et al. 1977). The establishment of an extensive ferry service between Communipaw Cove and the island of Manhattan was another hallmark of Jersey City's early commercial growth. The first ferry service was established by William Jansen around 1661, operating from a landing at the foot of present-day Communipaw Avenue on what was the original south cove shoreline (Rutsch et al. 1977; Kardas and Larrabee 1978). By 1764, Jansen's Ferry had significant competition from the newly established Paulus Hook Ferry, which operated from the foot of Grand Street as part of a stage route between New York and Philadelphia. Both enterprises provided service via rowboats and small, decked sail-boats known as periaugers. In 1812, investor and entrepreneur Robert Fulton established a drydock in Paulus Hook and soon began providing ferry service to and from Manhattan Island via steamboat. Over time the ferry industry and the hostelry business that accompanied it contributed greatly to Jersey City's role as the focal point of transportation between major industrial cities in the northeast (Rutsch et al. 1977).

The simultaneous arrival of the railroads and the Morris Canal in the 1830s solidified the city's vital role in the regional economy for the next one hundred years (Jersey City Online n.d.). The Morris Canal and Banking Company, initially authorized by the state legislature to build a waterway from Phillipsburg to Newark, broke ground for the Morris Canal in 1824. Just four years later, the company had already received permission to extend the canal to Jersey City in order to create a tidewater outlet immediately adjacent to New York City. By 1838, the completed canal provided the city's iron industry with direct access to the coal mines of eastern Pennsylvania as well as important iron markets in the northeast (Rutsch et al. 1977). Meanwhile, numerous railroad lines jockeyed for position along the Hudson's west bank, competing for access to the increasingly important New York Harbor and shipping facilities of Manhattan. By the mid-nineteenth century, the area was known for its network of rail terminals, which included the Erie, Pennsylvania, Lehigh Valley, and Jersey Central Railroads.

The city's extensive waterfront, effective transportation network, and easy access to fuel from Pennsylvania coal mines led logically to the rapid growth of the city's industrial and commercial prowess. Important early enterprises included Dummer's Glasshouse, a waterfront industry established in 1824 just south of the present-day Morris Canal Basin, and the Jersey City Pottery Works, opened on Warren Street in 1825 (Rutsch et al. 1977). The year 1845 marked the beginning of Jersey City's steel industry with the establishment of the Atlas Foundry, followed by the North Point Foundry and Machine Works in 1848 and the Adirondack Steel Works in 1849 (Rutsch et al. 1977). Other well known companies eventually made their home in Jersey City, including American Can, Emerson Radio, Colgate, and Dixon Ticonderoga (Jersey City Online n.d.).

The city's population kept pace with the growth of industrial enterprise, jumping from a mere thirteen in 1802 to 1,025 in 1829 and 2,084 in 1837. Finally, in 1838, Jersey City separated completely from the township of Bergen and formed an independent municipal government (Grundy and Caroselli 1970; Rutsch et al. 1977). Having achieved a greater measure of independence, city officials made a concerted effort to correct some of the city's problems and to undertake several public improvement projects. Streets were graded and filled, and sunken lots filled with stagnant water were eliminated (Rutsch et al. 1977). Over the next two years, Jersey City attracted another one thousand new residents to become the fastest growing municipality in the newly formed Hudson County. Within thirty years the city had outpaced the growth of neighboring communities such as Bergen and Hudson City, who voted in 1870 to consolidate with the city into one large urban area. Nearby Greenville joined the merger three years later (Grundy and Caroselli 1970).

It was the presence of the railroads, however, that determined the destiny of the Jersey City shoreline, especially the project area, throughout the nineteenth and much of the twentieth century, bringing first prosperity and ultimately decline to the waterfront community. By the mid-nineteenth century, railroads in the northeast were vying for terminal space on the Jersey City shore. The city's extensive waterfront, its proximity to the New York shipping industry, its established ferry service, and its considerable real estate values, especially when compared to the prohibitive cost of land in Manhattan, contributed to its appeal. The Jersey Railroad & Transit Company arrived first in 1853, followed quickly by the Lake Erie Railroad later that year, the Morris and Essex line in 1855, and finally the Central Railroad Company of New Jersey in 1860. By 1875, fourteen rail lines terminated in Jersey City (whereas only three in New York City). Railroads eventually owned and controlled 98% of the Jersey City waterfront (Rutsch et al. 1977). Unfortunately, this external control of the city's waterfront led to an irreversible economic interdependence between the city and the railroads. With its economic health inextricably tied to the success of the railroads, the city's prosperity lasted only as long as that of its railroad-marine terminal development (Kardas & Larrabee 1978).

Anderson (1984) and Carleton (1976) record that the Central Railroad of New Jersey (CRRNJ) terminal was constructed on a large pier, built on landfill extending outward from the shoreline south of the Morris Canal basin. Jersey City's Communipaw/South Cove area was shaped, both literally and figuratively, by the CRRNJ, which occupied this area during the second half of the nineteenth and first half of the twentieth centuries. Arriving late to the game in 1860, the CRRNJ was relegated to the mud flats of Communipaw Cove for its terminal construction, as all the desirable waterfront land had already been claimed by other lines (Rutsch et al. 1977). This portion of the shore extended from south of the Morris Canal Big Basin, newly completed in 1859, to the Black Tom Pier area. Since the shoreline at this location consisted almost entirely

of unusable marshland, CRRNJ's plans for development included the filling of almost the entire Communipaw Cove in order to create the necessary buildable area. The process began in the 1860s at the northern edge of the railroad's property, where the company placed 20,000 cubic yards of refuse from New York City to create the long pier on which their terminal was then erected. This was followed by a second placement of fill around 1880 to create a set of piers near the Black Tom area at the southern edge of the property. Over time the space between the two projecting masses on the north and south was filled in until, by 1910, the Central Railroad of New Jersey had created about 475 acres of made-land, the present-day shoreline of Liberty State Park (Rutsch et al. 1977; Kardas and Larrabee 1978) including the entire APE.

The filling of the shoreline drastically and permanently changed the character of the Communipaw Cove area of Jersey City. While development and filling had taken place on other parts of the Jersey City shore, including Paulus Hook to the north and Caven Point to the south, the cove itself had remained relatively unchanged. For more than two centuries, Communipaw had existed as a pleasant rural area and by mid-nineteenth century remained one of the few places to retain traces of the city's Dutch heritage (Rutsch et al. 1977). By the turn of the nineteenth century, however, what had been a quiet waterfront farming village became the peninsula's first inland settlement on the west side of the immense railroad yards that now lined New York Harbor's west shore (Rutsch and Leo 1979).

Toward the end of the nineteenth century, the CRRNJ had for the most part become the dominant railroad line in Jersey City. It enjoyed immense prosperity during this time, leasing trackage to and finally absorbing many of the smaller lines as it established its pre-eminence in the regional coal trade. The former Communipaw Cove became a maze of railroad lines and spurs running to the company's numerous docks and freight piers, which extended tentacle-like out into the busy New York Harbor (Rutsch et al. 1977). The company's property also held a number of rail-related structures over the course of its existence in Jersey City. During the half-century between 1860 and 1910, the CRRNJ complex increased in both size and sophistication from the two-building operation of its early days to the more elaborate physical plant of its later years. Following its extensive expansion program in 1912, the line boasted an enlarged train yard as well as numerous support buildings, including a new engine terminal, Bush-type train shed, and ferry house. The company also expanded its striking Romanesque-style depot in order to accommodate its growing passenger business, which by 1914 was estimated to carry between 30,000 and 50,000 people daily. The terminal still stands and is a popular attraction of Jersey City's Liberty State Park (Rutsch et al. 1977; Liberty State Park n.d.).

New York Harbor's decline in importance in the early decades of the twentieth century would eventually catch up with Jersey City's waterfront rail network, although it took nearly two decades for the full effects of the decline to be felt. Among the reasons for the decline, the most obvious was the "motor-revolution" of the mid-1920s, which forced railroads to compete with the cheaper, faster and more-efficient trucking industry. By 1927, the completed Holland Tunnel under the New York Harbor, allowed merchants to forego the inconvenience of railroad-marine transfer altogether. Moreover, transit on the harbor had become congested and inefficient due in large part to the massive duplication of facilities constructed over the years by numerous competing railroad lines (Rutsch et al. 1977). The waterfront enjoyed temporary spurts of renewed activity during the two world wars. During World War I, the southern area of the park served as a munitions depot and was the site of the famous Black Tom pier explosion, believed to be an act of German sabotage (Balkhage and Hahling 1964). By 1947, however, Jersey City's waterfront facilities were dilapidated and largely obsolete (Rutsch et al. 1977).

By the mid-twentieth century, only three major railroad lines remained in Jersey City - the CRRNJ, the Lehigh Valley, and the Erie-Lackawanna. Beginning in the 1940s, these lines began releasing or abandoning unused or outdated facilities. Between 1940 and 1960, as railroad traffic continued to decline, these companies released, sold, or abandoned more than 1000 acres of waterfront, most of which was assumed by the city to the distress of local officials. The CRRNJ filed for bankruptcy in 1967 (Rutsch et al. 1977).

In the 1970s, CRRNJ's former property in the Communipaw Cove area between the Morris Canal Basin and the Black Tom Pier was proposed for an extensive urban waterfront park. Using Green Acre Bond Funds and Land and Water Conservation funds, the Department of Environmental Conservation and the U.S. Army Corps of Engineers undertook an extensive harbor clean-up project in the cove area. The first segment of the park, located at the southern end of the cove, was opened to the public in 1976, in time for the nation's bicentennial celebration. Since then, more than 100 acres of parkland have been developed and include picnic areas, trails, and natural areas (Liberty State Park n.d.). The APE remains in the interior, still-undeveloped portion of the park.

**Historic Map Analysis.** The following maps were reviewed for the present study: an 1845 U.S. Coast Survey; William Wood's 1855 *Map of Jersey City, Hoboken and Hudson Cities*; the 1873 Hopkins *Atlas of the State of New Jersey and the City of Newark*; an 1881 Corps of Engineers *Chart of An Examination of New Jersey Flats From Docks of Central Railroad of New Jersey to Constable Point*; an 1896 U.S. Coast and Geodetic Survey of the Hudson and East Rivers; an 1896 Sanborn Fire Insurance Map; a 1908 Hopkins *Atlas of Hudson County*; Hopkins' 1919 *Plat Book of Jersey City and Bayonne, Hudson County, New Jersey*; a 1944 U.S. Coast and Geodetic Survey; and a 1955 U.S. Geological Survey.

The earliest available map of the project area is an 1845 coast survey showing the part of New Jersey lying between the Hudson and Hackensack Rivers (Figure 3.1). This map confirms local historian J. Owen Grundy's assertion that the towns of Bergen and Communipaw, now part of Jersey City, retained their quiet, rural character until well into the nineteenth century (Grundy & Caroselli 1970). The region is shown to consist mainly of large, agricultural settlements, especially in the inland areas. The project area is situated in the yet-unfilled Communipaw Cove. The area is labeled with the words "Stones Mud," perhaps indicating the shallow, marshy quality of the cove in this area. The village of Paulus Hook has been laid out in a grid pattern surrounding a central square, shown on later maps to be the intersection of Washington and Grand Streets. The Morris Canal is shown running north along the shore line and then turning northeast to terminate in Paulus Hook at a rectangular basin located west of Washington Street.

William Wood's 1855 *Map of Jersey City, Hoboken and Hudson Cities* shows a considerable increase in development in the Jersey City area (Figure 3.2). As the map indicates, the north end of Communipaw Cove has been filled to create a relatively straight northern shoreline. Additional streets have been added to the south and east sides of the now squared-off Paulus Hook, including Atlantic Street, which runs north-south along the harbor, and Park and Ocean Streets, which run east-west along the northern edge of the cove. The APE remains in the undeveloped portion of the cove. Phillip Street is shown along the original shoreline, adjacent to the western boundary of the APE, and is intersected by Communipaw Avenue. The Communipaw Ferry pier extends out into the cove from the foot of Communipaw Avenue. The map shows a number of small structures, possibly residences, on the west side of Phillip Street, south of Communipaw Avenue. North of Communipaw Avenue are several larger structures.



**Figure 3.1. Coast Survey of the New York Harbor showing the approximate location of the project area in 1845. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (U.S. Coast Survey 1845)**

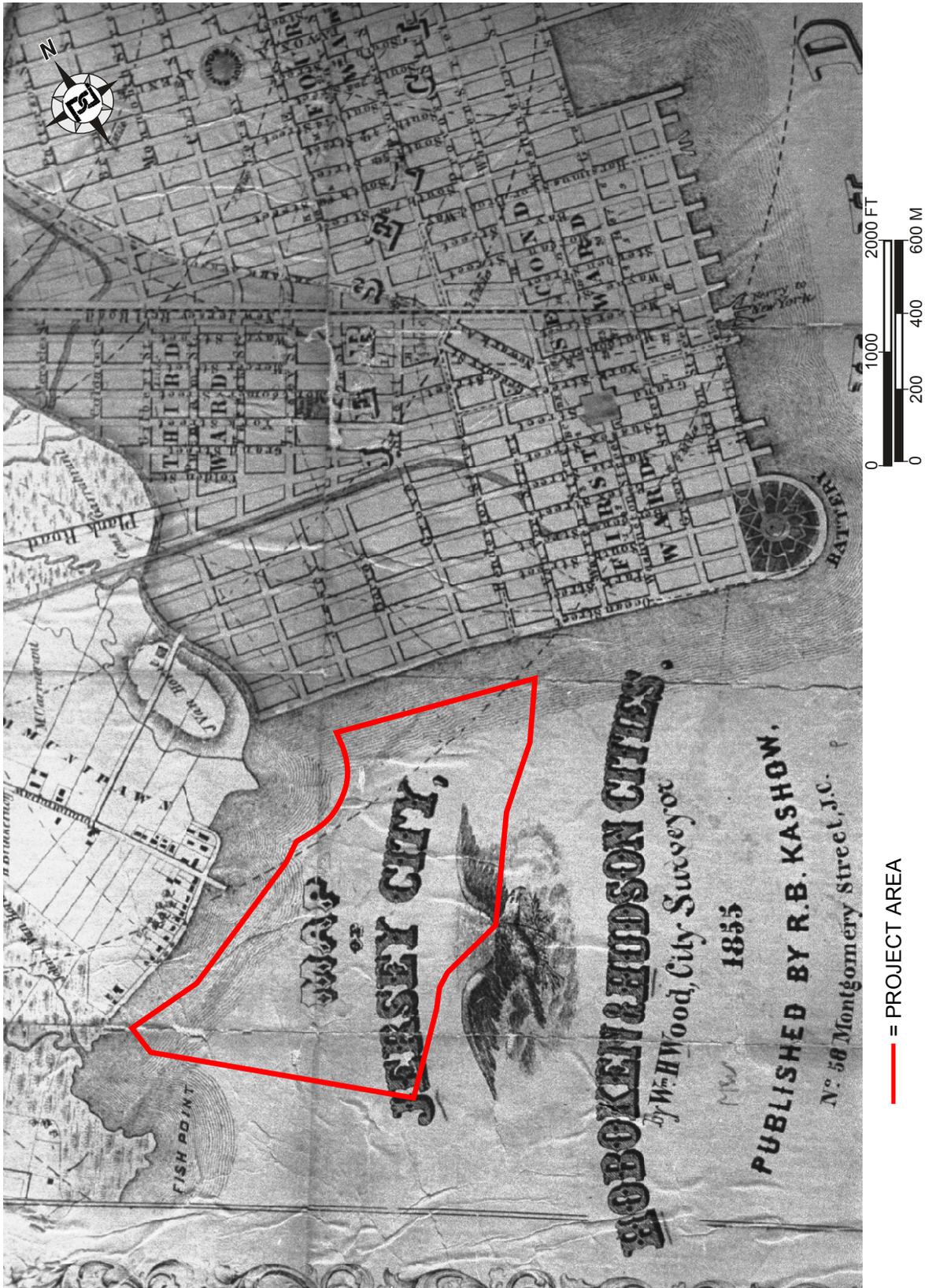


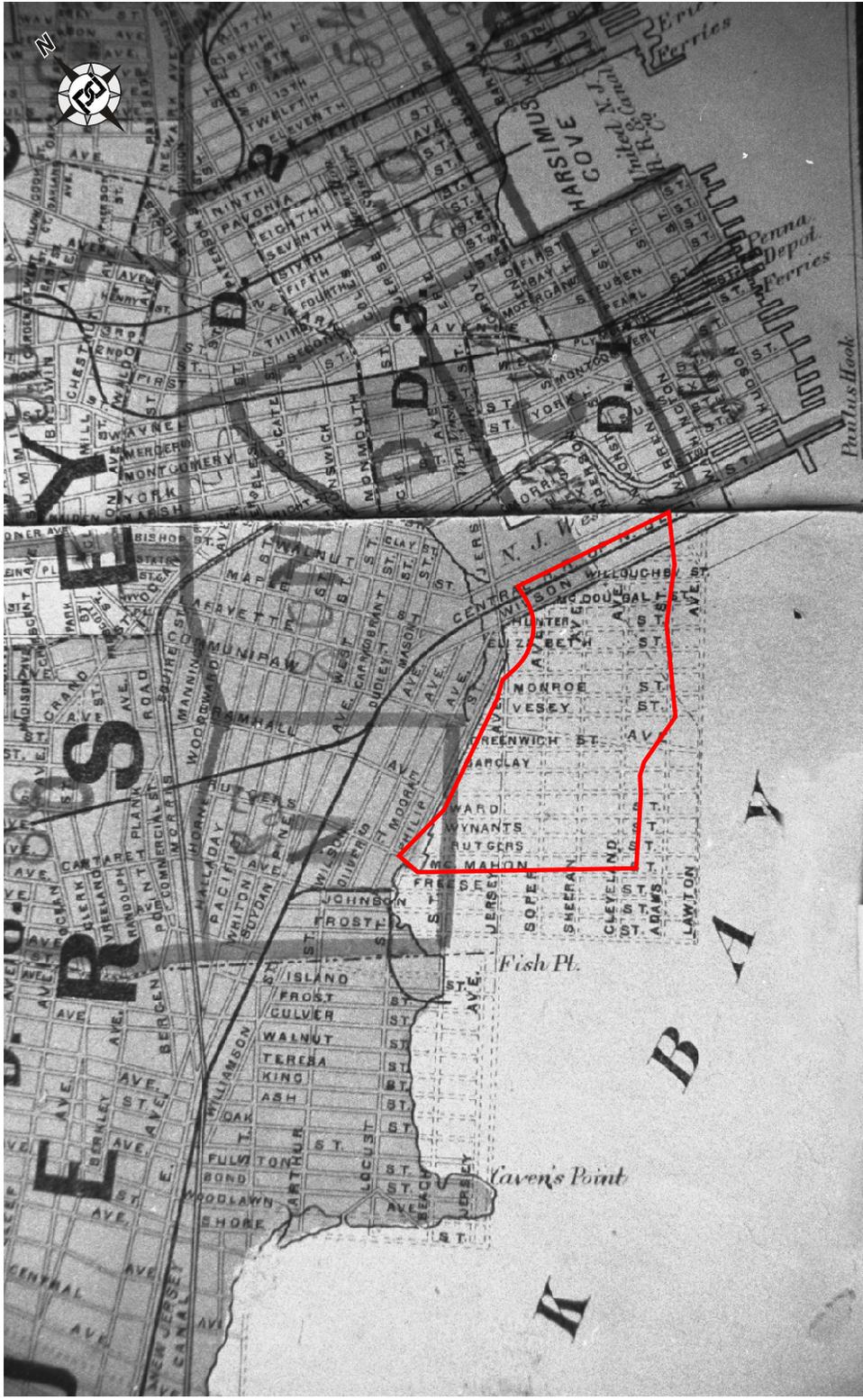
Figure 3.2. The approximate location of the project area in 1855. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Wood 1855).

Hopkins' 1873 *Combined Atlas of the State of New Jersey and the City of Newark* portrays the planned filling of Communipaw Cove from south of Paulus Hook to Caven's Point (Figure 3.3). Since 1855, some additional filling has already taken place on the north side of the cove. Wilson Avenue now defines the southern edge of Paulus Hook. Just north of Wilson Avenue, tracks belonging to the Central Railroad of New Jersey are shown running as far east as Washington Street. While the APE remains in an undeveloped portion of the cove, planned development in this location includes a continuation of the surrounding street grid.

Dripps' 1879 *Map of Jersey City, Hoboken and Hudson Cities* shows planned development similar to the 1873 Hopkins map (Figure 3.4). New streets, as well as the extension of existing streets, are shown to be planned for the approximate location of the APE. In addition, this map also indicates the completion of a new basin for the Morris Canal. Located between Ragun Street on the north and Walnut Avenue on the south, the waterway stretches east from present-day Jersey Avenue to open into a wider basin just north of Hudson Street. Just south of Walnut Avenue, the Central Railroad of New Jersey has continued its filling of the cove in order to create the pier on which it would eventually build its terminal. This pier is located just north of the present APE. The APE continues to be shown as undeveloped marshland.

An 1881 U.S. Army Corps of Engineers map of the shoreline shows the beginning of the nearly complete control railroad companies would eventually exercise over the Jersey City shoreline (Figure 3.5). None of the planned developments shown on the previous map have been carried out. The Central Railroad of New Jersey has extended its control of the shoreline southward, filling more of the cove to create additional small piers to the south of its terminal pier. An 1896 U.S. Coast and Geodetic Survey of the Jersey City shoreline shows continued development within the APE south of the main pier (Figure 3.6). The original CRRNJ depot and terminal, east of the APE, is indicated as a T-plan structure located at the eastern end of the main pier. Several tracks connected to the rear of the structure indicate that this wing most likely consisted of a train shed. The Communipaw Ferry to Manhattan is located on the east side of the depot. Several of the smaller piers south of the depot contain tracks extending out into the cove, most likely part of the system of transfer or float bridges that carried freight across New York Harbor to Manhattan.

The 1896 Sanborn Fire Insurance Map provides a detailed picture of Phillip Street, which hugged the original shoreline of Communipaw Cove before it was partially relocated in the early twentieth century (Figures 3.7a - 3.7c). Except for its westernmost section, this street delineates the approximate western boundary of the current APE. It is bisected by Communipaw Avenue, which originally terminated at the cove shoreline. The map shows Phillip Street to be much more developed to the west of Communipaw Avenue than to the east. To the north, an L-shaped section of made-land juts out into the bay just south of the intersection of Phillip Street and Jersey Avenue. Several small structures are shown here, including a two-story building labeled "J.C. Yacht Club." Several other small, two-story structures are shown on the north side of the street. Just east of Communipaw Avenue, six subdivided lots are shown. None of the lots contain structures. To the west of Communipaw Avenue, numerous structures line the north side of Phillip Street. These structures appear to be mostly rectangular frame structures ranging from one to three stories in height. Within the APE, a branch of the CRRNJ parallels Phillip Street on its south side. As drawn, this map implies the tracks ran on a trestle over open water, as they are shown south of the existing shoreline. The track eventually turns inland, truncating Phillip Street and intersecting the National Docks Railway.

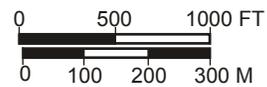


— = PROJECT AREA

Figure 3.3. The approximate location of the project area in 1873. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Hopkins 1873).



— = PROJECT AREA



**Figure 3.4. Map of Jersey City showing the approximate location of the project area in 1879. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Dripps 1879).**

*Liberty State Park Phase IA*

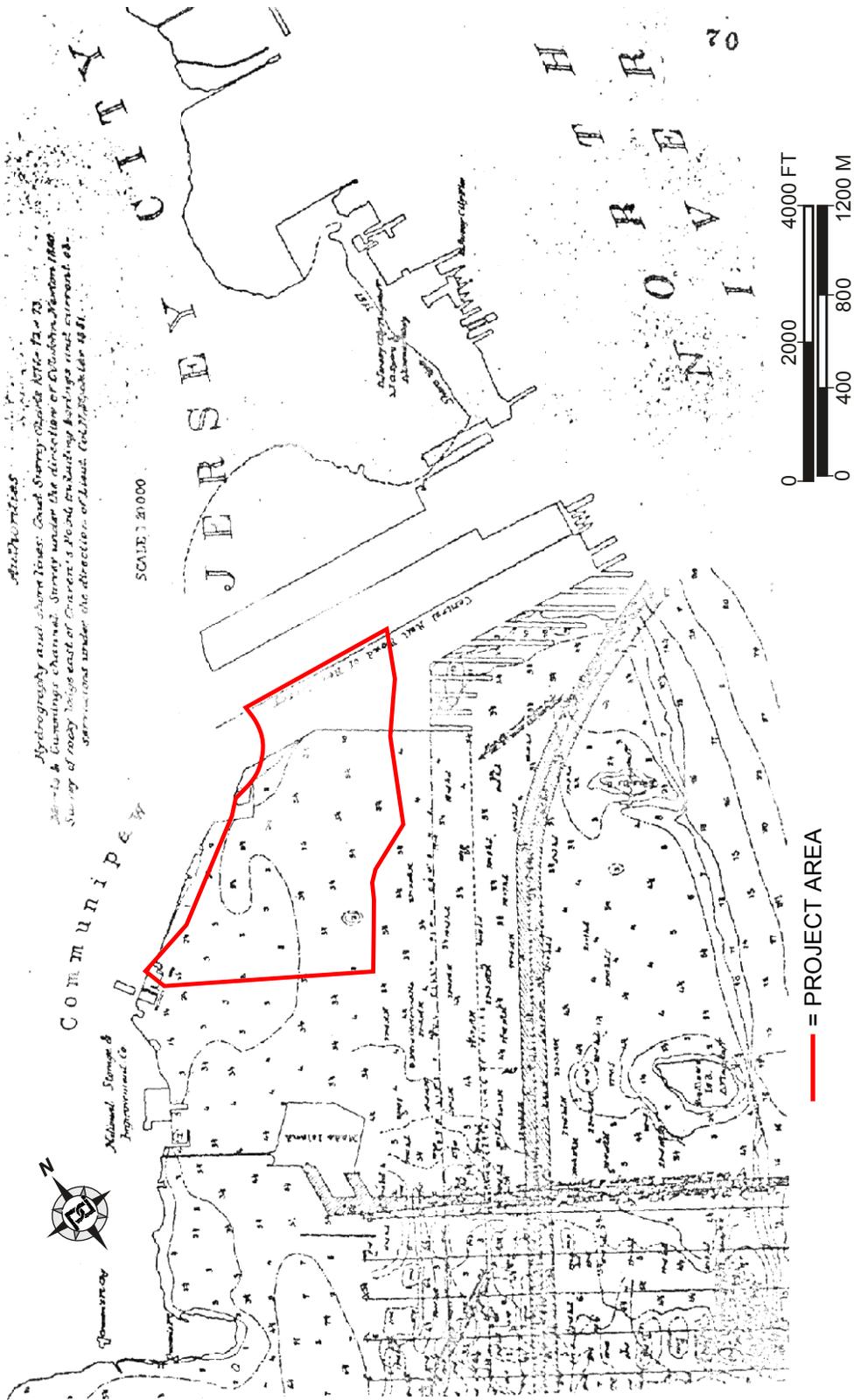
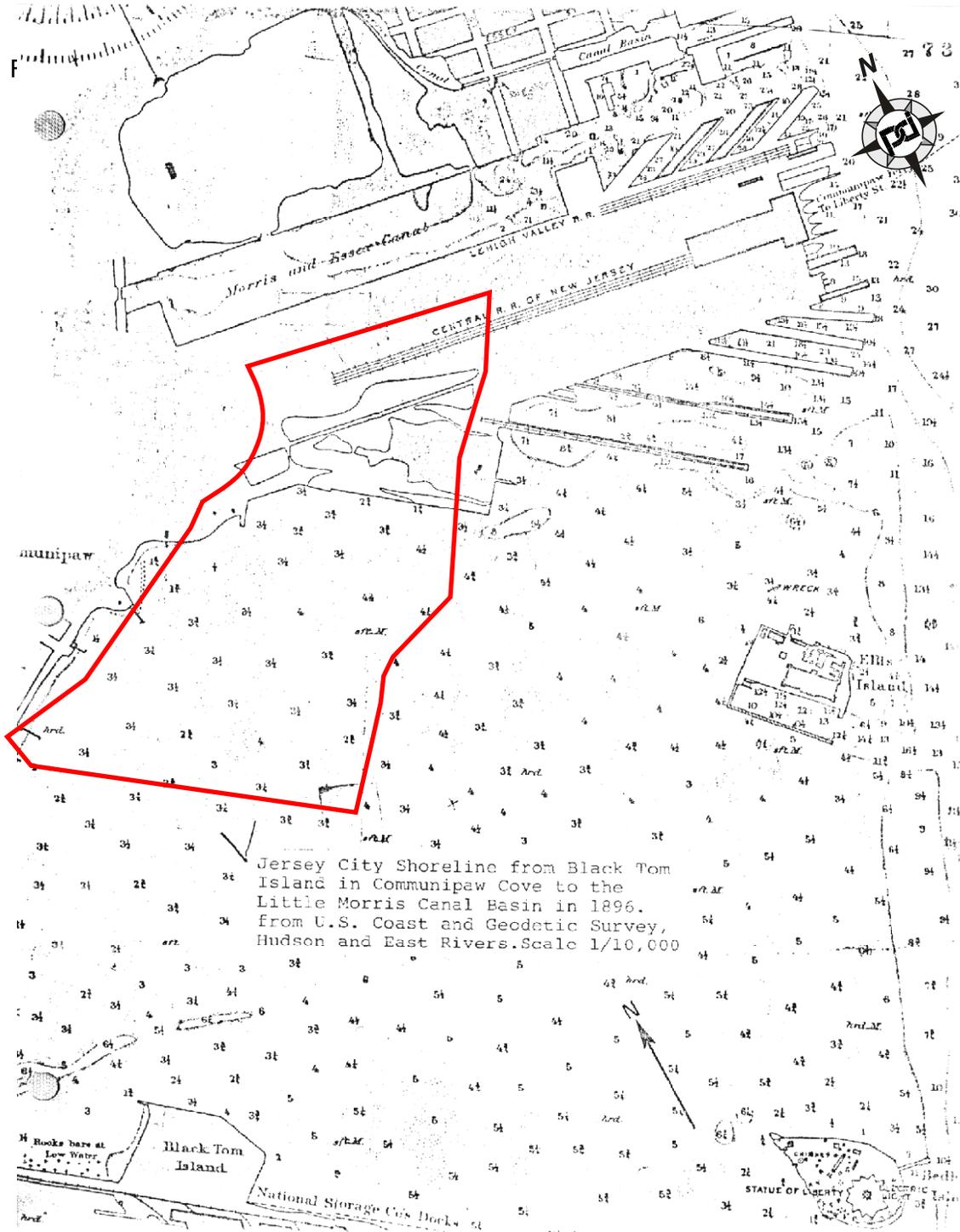
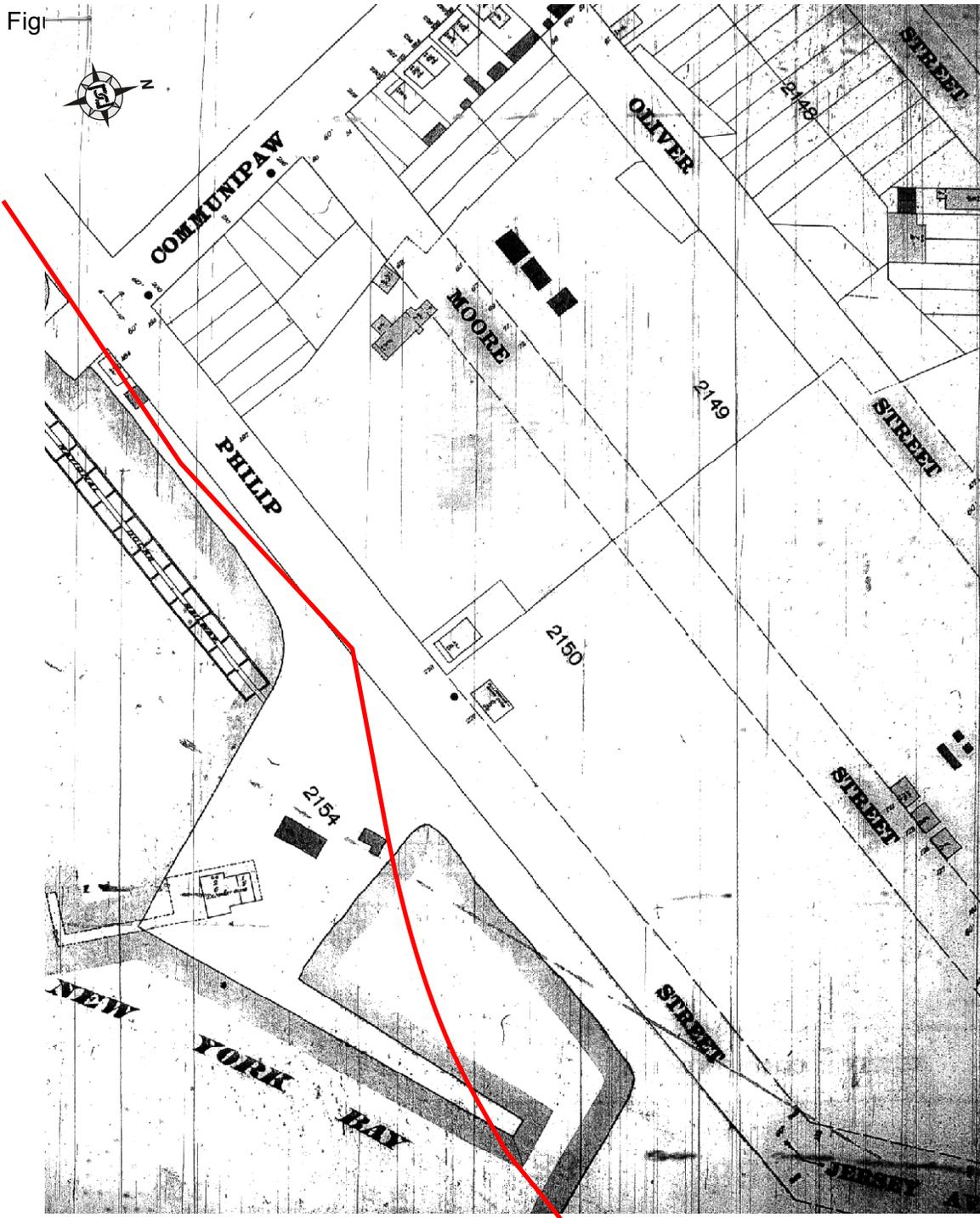


Figure 3.5. U.S. Corps of Engineers map showing the approximate location of the project area in 1881. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (USACE 1881).

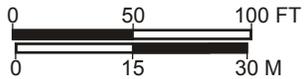


**Figure 3.6. The approximate location of the project area in 1896. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (U.S. Coast and Geodetic Survey 1896).**

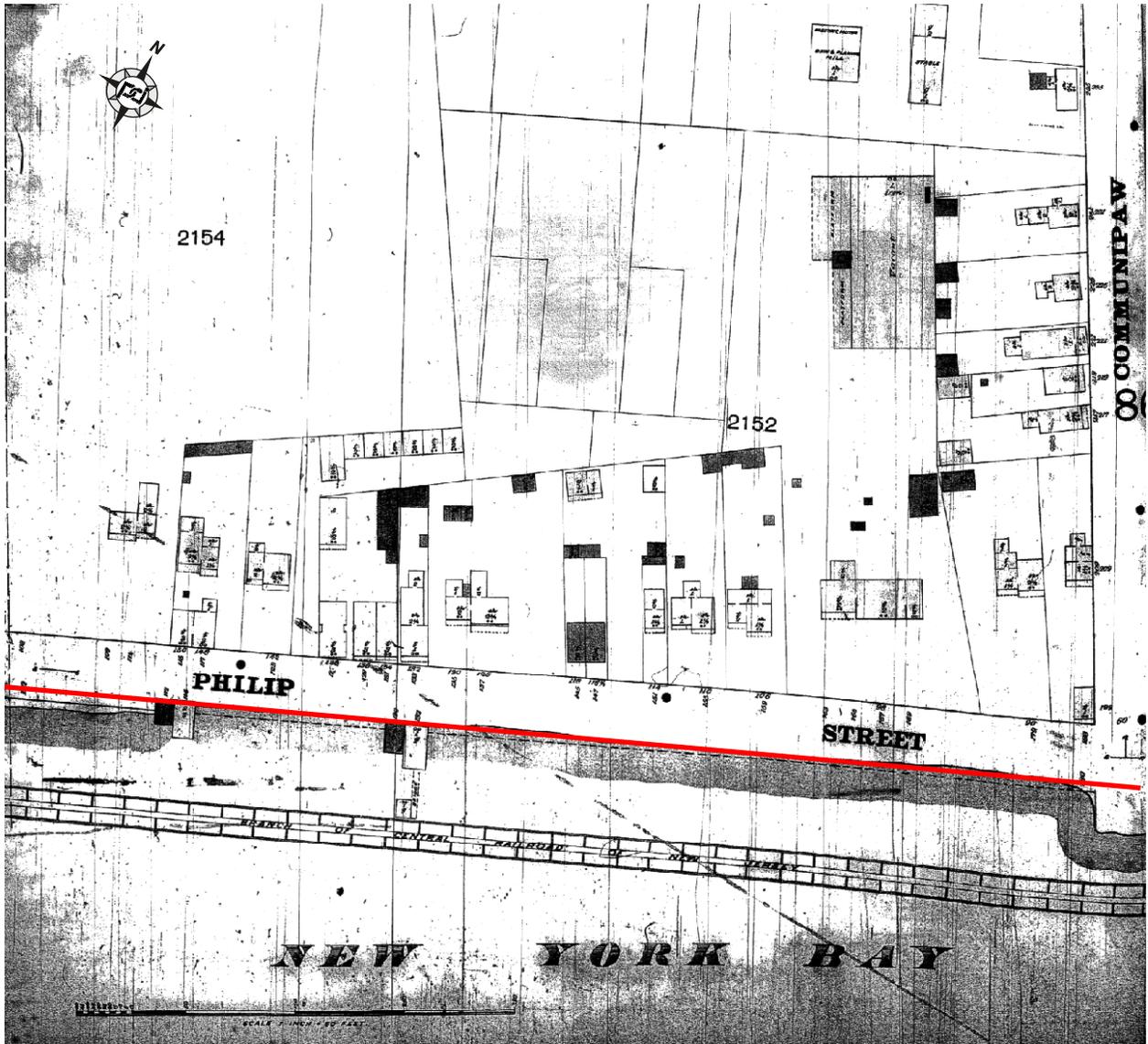
*Liberty State Park Phase IA*



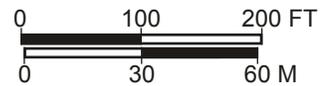
— = PROJECT AREA



**Figure 3.7a. Phillip Street south of Communipaw Avenue, APE includes area south of Phillip Street. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Sanborn Map Co.1896).**

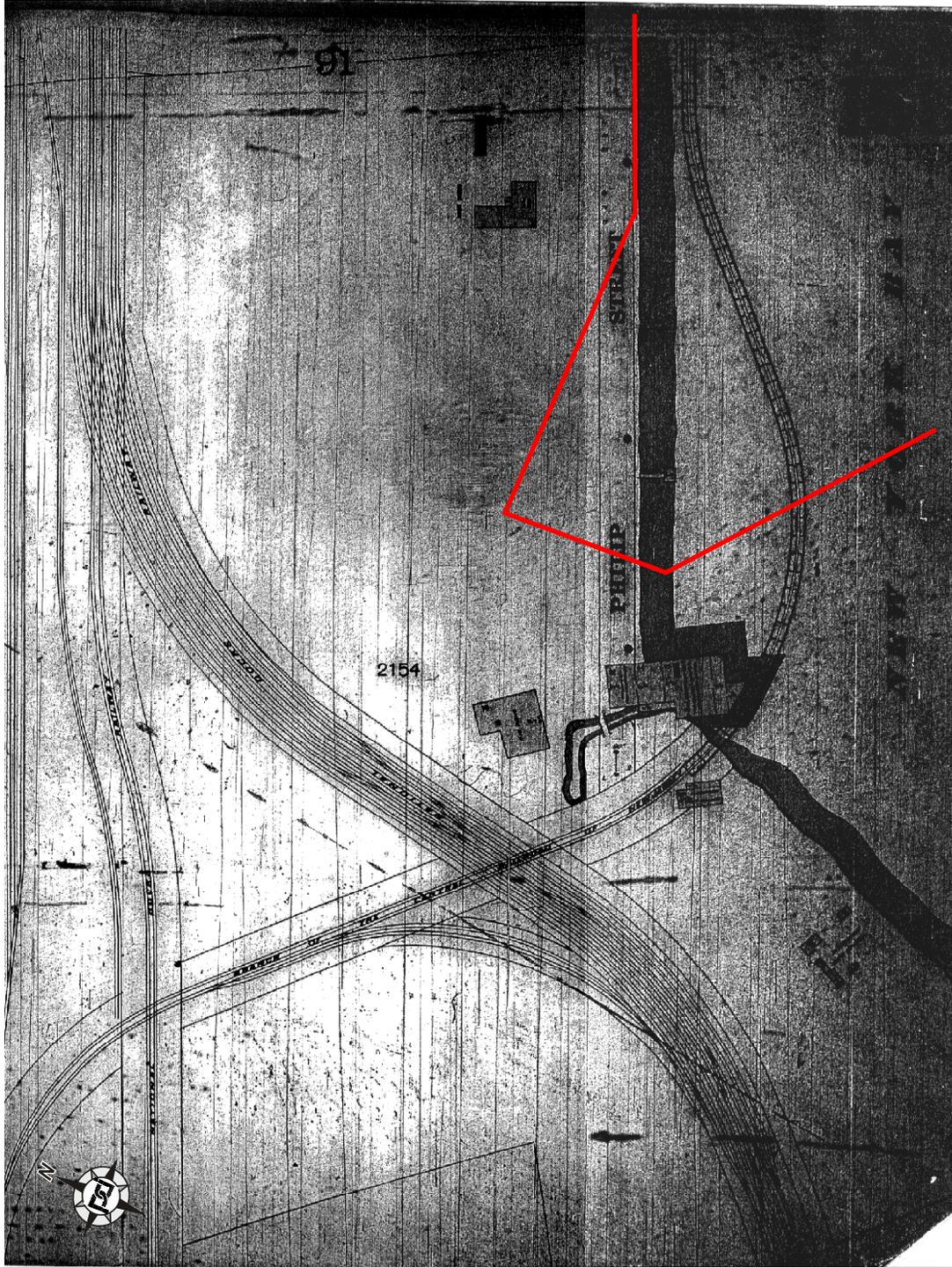


— = PROJECT AREA



**Figure 3.7b. Phillip Street just south of Communipaw Avenue in 1896, APE includes area south of Phillip Street. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Sanborn Map Co. 1896).**

*Liberty State Park Phase IA*



— = PROJECT AREA

Figure 3.7c. Fire Insurance Map showing the southernmost section of Philip Street, APE in lower right corner. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Sanborn Map Co. 1896).

Continued development in the North Cove area is shown on the 1908 Hopkins' Atlas map of Hudson County (Figure 3.8). Additional filling has been accomplished in Communipaw Cove, south of CRRNJ's main pier. This area makes up the northern portion of the APE, south of Audrey Zapp drive. CRRNJ Piers 1 through 10 have been completed and extend east from the developing shoreline. The central portion of the project area remains in an undeveloped portion of the cove. In this area, Phillip Street continues to define the shoreline. However, this map also shows a proposed realignment of the westernmost section of the street, which will turn slightly southwest to travel inland. This proposed relocation provides a visible boundary for the current APE, which is bounded by present-day Phillip Street to the north and Burma Road to the west. The Phillip Street branch of the CRRNJ continues to run east of Phillip Street, presumably on a trestle. South of the project area, some filling around Black Tom Island is also evident. The pier is shown to be occupied by the National Storage Co. and National Docks.

With the exception of the Phillip Street vicinity, few structures other than railroad tracks existed within the project area. The most prominent structures were perhaps the Central Union Stockyards, located below Pier 15 in approximately the center of the project area. These structures are shown in detail on the 1911 Sanborn Fire Insurance Map (Figure 3.9). The stock yards consist of a series of structures situated on a long, narrow open platform. The structures appear to be mostly one-story rectangular frame buildings and include a sheep and hog shed, cattle pens, and a hay barn. A row of receiving pens lines the stock yards along the south side of the platform. This map also shows CRRNJ's Marine Repair Yard near the northern end of the APE. This small complex of buildings consists of a small complex of shops including blacksmith and carpenter shops.

By 1919, all the landfilling within the APE has been completed, as is evident on the Hopkins Atlas map of Hudson County (Figure 3.10). The entire project area is owned by the Central Railroad of New Jersey, although only the northern portion is developed with multiple railroad tracks and spurs. The Central Union Stockyards remain in the same location south of Pier 15.

A 1944 U.S. Coast and Geodetic Survey of the Communipaw Cove area shows that the CRRNJ has developed approximately half of its land holdings in the filled cove (Figure 3.11). Numerous east-west-oriented railroad tracks run to and from nearly twenty piers that extend east from the man-made shoreline at the northern and southern ends of the APE. A 1955 U.S. Geological Survey shows a similar pattern of land use (Figure 3.12). This map also indicates that a sewage disposal plant has been placed on the west side of the APE, east of Phillip Street, although its exact location is obscured by numerous rail lines that run through this area.

### **3.4 REVIEW OF KNOWN SITES AND PREVIOUS RESEARCH**

A review of known prehistoric sites within the vicinity of the Liberty State Park project area as listed by the New Jersey State Historic Preservation Office was conducted by Arnold Pickman. No sites have been recorded within the APE. Rutsch et al. (1977:14-18) compiled a list of reported prehistoric sites on the New York Bay side of Jersey City (see also Kardas and Larrabee 1978: 25). Two known sites were along the shoreline near the project area. One was to the north at Paulus Hook. The other was a village and trading station at the site of the later colonial settlement of Communipaw. According to Rutsch, the exact locations of these sites are not known. The possible presence in the project area of cultural resources associated with known

Figure 3.8

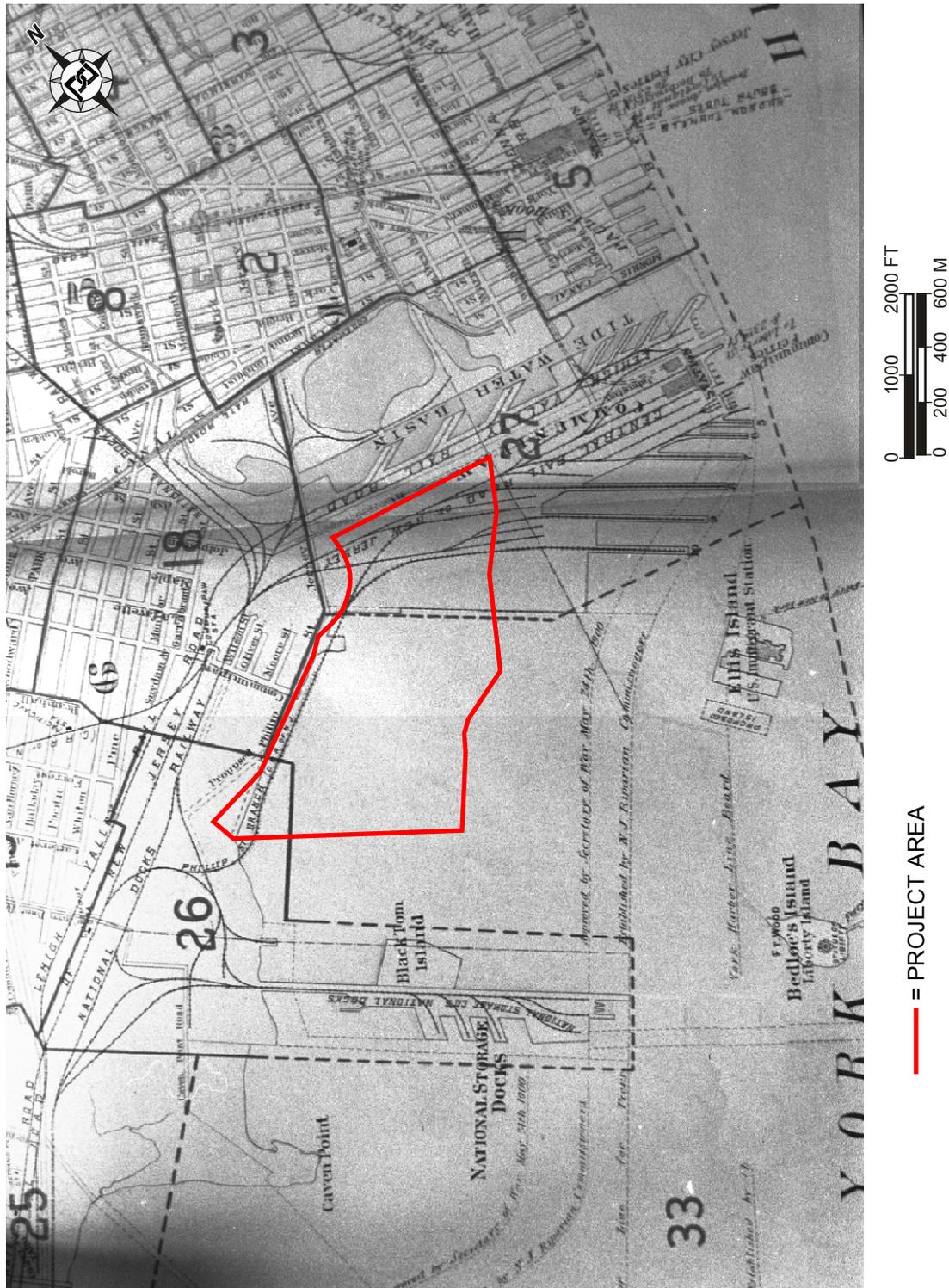


Figure 3.8. The Communipaw Cove area showing the approximate location of the project area in 1908. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Hopkins 1908).

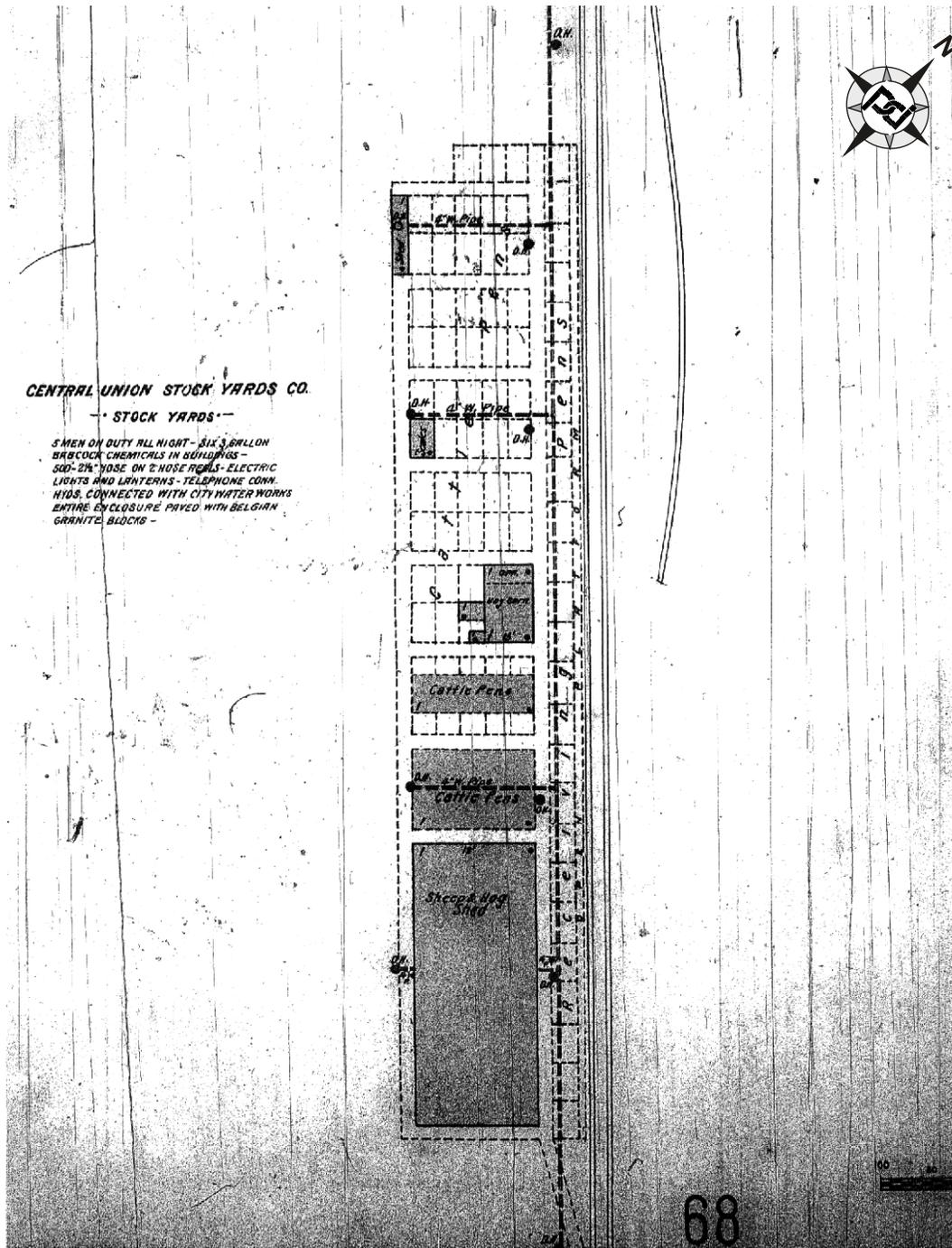
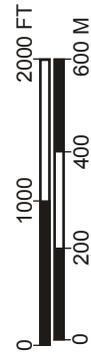
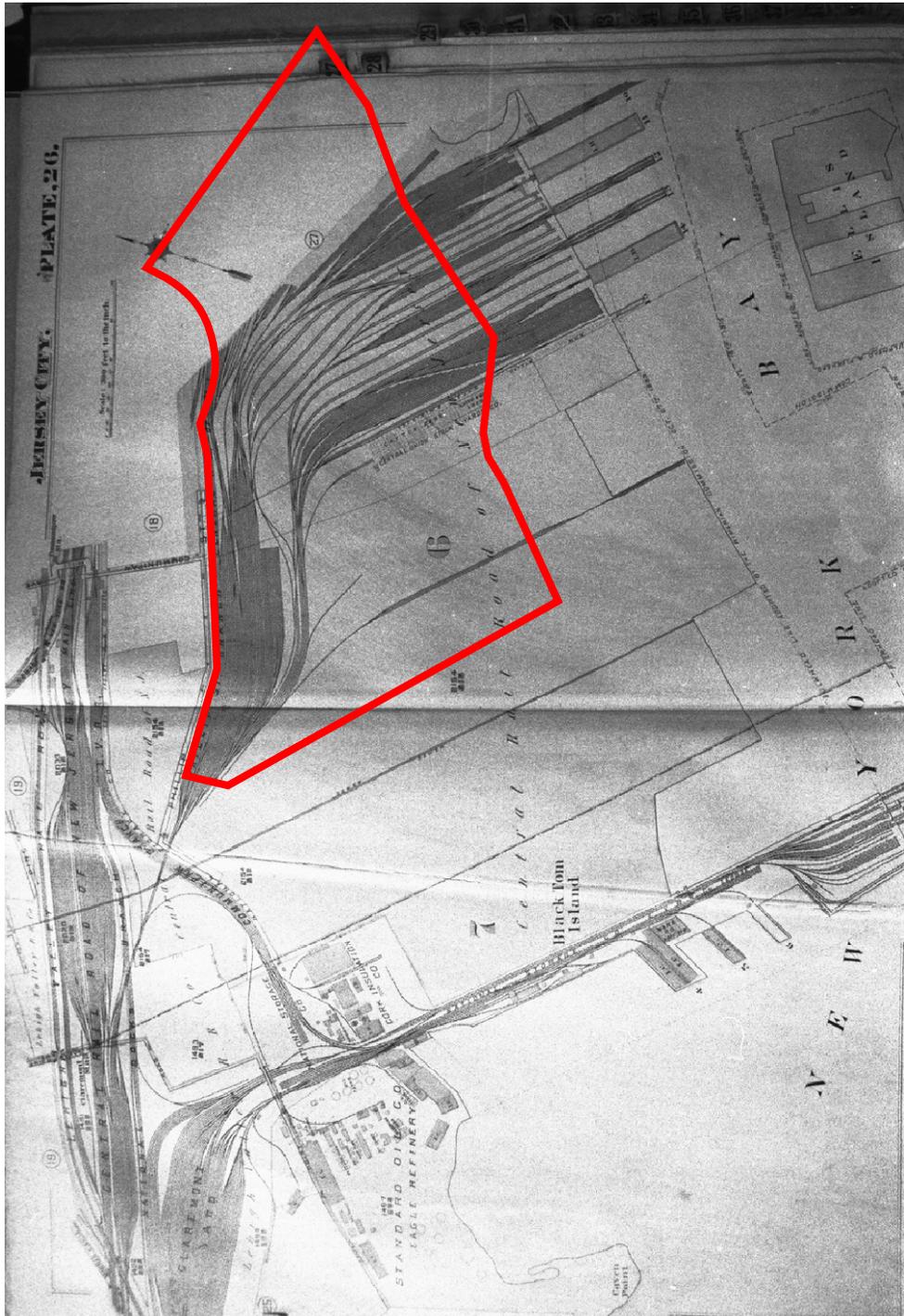


Figure 3.9. Detail of Fire Insurance map showing the Central Union Stock Yards Co. in 1911. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Sanborn Map Co. 1911).

Figure 3.10



— = APPROXIMATE PROJECT AREA LIMITS

Figure 3.10. Communipaw Cove showing the approximate location of the project area in 1919. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (Hopkins 1919).

Figure 3.1

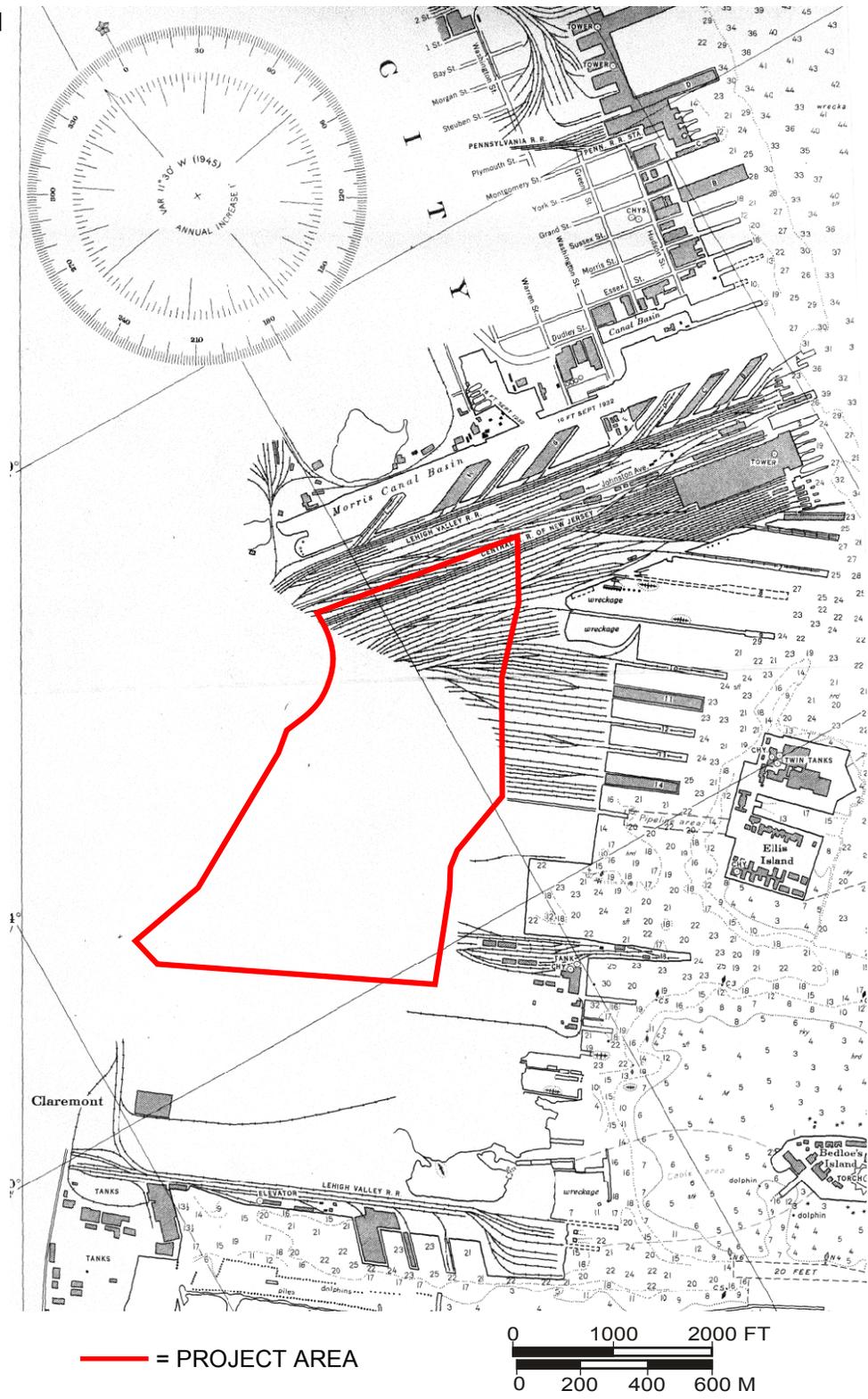
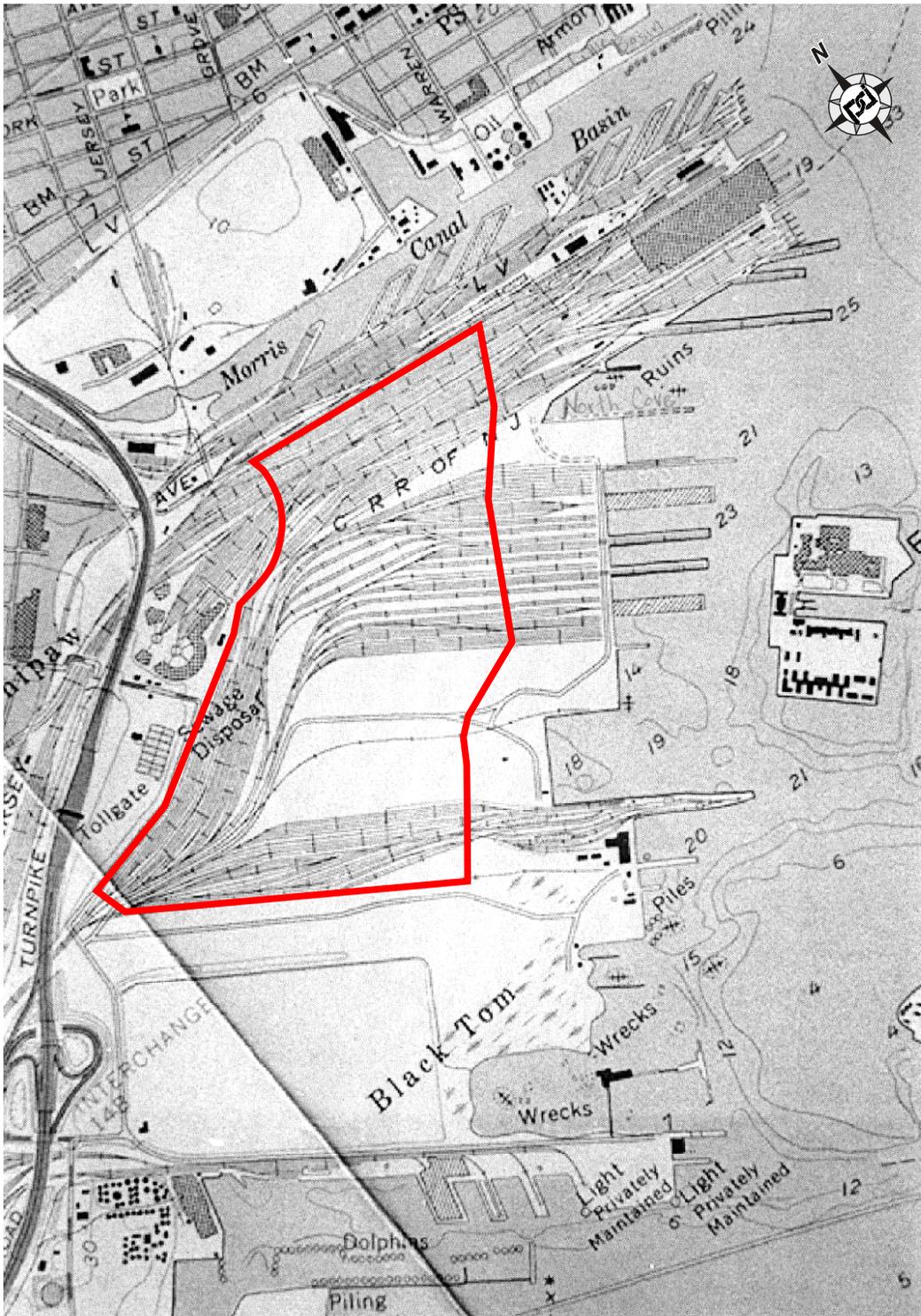
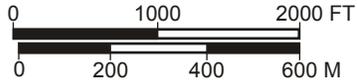


Figure 3.11. A U.S. Coast Survey of Communipaw Cove showing the approximate location of the project area in 1944. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (U.S Coast and Geodetic Survey 1944).



— = PROJECT AREA



**Figure 3.12. A U.S. Geological Survey showing the approximate location of the project area in 1955. Liberty State Park Ecosystem Restoration, Hudson County, New Jersey (U.S. Geological Survey 1955).**

prehistoric sites depends on the location of the pre-landfilling shoreline west of the present Liberty Park boundaries. Maps dating to the 1870s (Beers 1873; Dripps 1879) make it clear that at that time the shoreline was at Phillip Street, which forms the western boundary of the USACE Liberty Park project area. Phillip Street represented a southern continuation, at an angle, of Jersey Street, which is shown north of the APE on the mid-nineteenth century maps.

These sites may have been located between Communipaw and Mill Creeks or on Jan de Lacher's Hook, east of the Morris Canal basin. Rutsch and Leo (1979:12) state that the shoreline of the Communipaw settlement was approximately at the location of Phillip Street. If the Communipaw site was at the present location of Phillip Street it is possible that occupants of the settlement may have disposed of refuse in the adjacent marshland. Such deposits could extend into the present project area. Mid-nineteenth century maps detail the street grid north of Paulus Hook prior to landfilling of the shoreline (see Figures 3.1 and 3.2) USCS 1845, Sidney 1849; Wood 1855 and NJGS 1860). According to these maps, the original shoreline may have been somewhat west of the present location of Phillip Street.

A prehistoric site (28-HD-15) was identified between Communipaw and Forrest Avenues, and between Whiton and Whitelaw, some 2,000 feet west of Phillip Street. This location may not have been the Communipaw village site however, and may represent another, more inland site. If it does represent the Communipaw site, it would also suggest that at least some landfilling occurred between the original shoreline and the location of Phillip Street. This interpretation is not consistent with reported results of backhoe tests conducted by Rutsch and Leo (1979).

Rutsch et al. (1977) also proposed archaeological sensitivity for drowned prehistoric sites. These would be located beneath the landfill and also beneath underlying organic bay silts and peat that accumulated after inundation of the area now within Liberty Park by rising sea levels. Possible site locations would be on high ground near the ancestral channels of Communipaw and Mill Creeks. Kardas and Larrabee (1978:17) mention approximately 100 USACE borings were taken from the Liberty Park area. Rutsch et al. (1977:9-10) apparently looked at some of the available boring logs as well as profiles derived from them. It is possible that the pre-inundation topography and physiography could be more completely reconstructed from these data. Such an effort is beyond the scope of the present study. Likely areas attractive to prehistoric peoples could be identified and archaeological borings examined for the presence of shell midden deposits or other indications of prehistoric activity.

**Previous Surveys.** The New Jersey State Historic Preservation Office lists six surveys that have been conducted in or adjacent to the Liberty State Park project area. They include:

Brouwer, Norman

1977 Survey of Cultural Resources in the Form of Derelict Ships and Boats, Priority Area 3 of Liberty State Park, New York Harbor Collection and Removal of Drift Project. Report on File U.S. Army Corps of Engineers, New York District.

Githens, Herbert and Edward S. Rutsch

1978 Emergency Investigative Survey, Various Shore Structures, Drift Removal Project Areas III-IV, Liberty State Park, Jersey City, Hudson County, N.J. Newton: Historic Conservation and Interpretation, Inc. Report on File, New Jersey Historic Preservation Office.

Kardas, S. and E. Larrabee

1978 Cultural Resource Reconnaissance, Jersey City Reach, New York harbor Collection & Removal of Drift Project. Historic Sites Research. Conducted for New York District, U.S. Army Corps of Engineers Report on file, New Jersey Historic Preservation Office.

1979 Cultural Resource Survey, Exchange Place and Pavonia Avenue Ferries, Jersey City, New Jersey. Historic Sites Research. Conducted for New York District, U.S. Army Corps of Engineers Report on file, New Jersey Historic Preservation Office.

Rutsch, Edward S., and Ralph J. Leo, Jr.

1979 Stage IB Cultural Resource Survey for the Hudson County Sewerage Authority, 201 Wastewater Facility Plan—District I, Jersey City, North Bergen, Secaucus, and Kearny, Hudson County. Newton: Historic Conservation and Interpretation, Inc. Report on File, New Jersey Historic Preservation Office.

Rutsch, Edward, Susan Kardas, Edward Larrabee, Ralph Leo, Brian Morell, James Lally, Barbara Kalata, and Herb Githens

1977 Cultural Resources Reconnaissance, Liberty State Park. Report on File U.S. Army Corps of Engineers, New York District. Prepared by Historic Conservation and Interpretation, Inc.

Rutsch et al. (1977) conducted a background and literature search of Liberty State Park for the development of the park and for the Army Corps of Engineers' New York Harbor Drift Removal Plan. The authors discuss the extensive modifications that have occurred historically at the location of Liberty State Park. Prehistoric occupations were addressed to a lesser extent.

Kardas and Larrabee (1978, 1979) conducted surveys of the areas south and north of Liberty Park, including testing of landfill and landfill retaining structures north of the project area. The other surveys include Rutsch and Leo's (1979) report summarizing their Phase IB subsurface tests within and adjacent to the project area; Brouwer's (1977) report on shipwrecks along North Cove; and Githens and Rutsch's (1978) discussion of landfilling and piers in North Cove.

## 4.0 Investigation Results

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### 4.1 ARCHEOLOGICAL SENSITIVITY ASSESSMENT

Historic maps and literary sources show the entire APE to be made land for use by the Central Railroad of New Jersey (CRRNJ). Originally, the project area was tidal marsh and shallow open water, but it was filled in between the 1860s and 1919 (see Figures 3.3 and 3.4). Therefore, the archaeological sensitivity for prehistoric cultural resources within the APE is limited to submerged Late Pleistocene/Early Holocene deposits. These would be located beneath the landfill and also beneath underlying organic bay silts and peat that accumulated after inundation of the area by rising sea levels.

With the exception of the Phillip Street vicinity, few structures other than railroad tracks formerly existed within the project area. The most prominent structures were perhaps the Central Union stockyards, located below Pier 15 in approximately the center of the project area (see Figure 3.9). The stockyards consisted of a series of structures situated on a long, narrow open platform. The structures appear to have been mostly one-story, rectangular-frame buildings and included sheep and hog sheds, cattle pens, and a hay barn. A row of receiving pens lined the stockyards along the south side of the platform. CRRNJ's Marine Repair Yard was near the northern end of the APE. This small complex of buildings consisted of small shops for blacksmiths and carpenters.

The CRRNJ terminal, listed on the National Register of Historic Places, is located north and east of the project APE (discussed at length by Parrot 1975 and Rutsch 1977) and will not be impacted by the proposed ecosystem restoration activities. Also, ecosystem restoration in the APE will cause no visual impact to surrounding historic properties (e.g., Statue of Liberty, Ellis Island, CRRNJ Terminal) because it will only enhance the setting already created with the inauguration of Liberty State Park.

### 4.1 FIELD RECONNAISSANCE

Most of the APE is enclosed by a chain-link fence and is overgrown with a mix of deciduous and coniferous trees, sparse and dense brush, open grassland, and low wet areas with stands of *Phragmites* (Figures 4.1 through 4.5). A nearly 50-acre rectangular-shaped area along the eastern side of the APE is low, wet and covered by *Phragmites* (Figures 4.6 and 4.7). Piles of railroad ties are scattered across the north, central and west portions of the APE (Figure 4.8). Modern debris has been dumped across the APE and includes building materials (e.g., chimney blocks, cement), garbage (e.g., ceramic sink, television, car tires), a metal trailer, and push-piles of rubble (e.g., concrete, asphalt) (Figures 4.9 through 4.13). Two approximately 125-meter (410-foot) long parallel berms are present in the south-central portion of the APE (Figure 4.14; see Figure 4.7). Water-filled borrow pits are adjacent to the berms. Dirty fill (e.g., slag, brick, coal, glass, mortar) was visible at some exposed locations (e.g., the base of some tree falls) (Figures 4.15 and 4.16). Approximately 24 acres in the southwest corner of the APE are covered by a landfill surrounded by a chain-link fence. A partially paved trail nearly bisects the project area in a northwest/southeast orientation (see Figure 4.3). It may be the remains of road shown on the 1955 USGS map. Table 4.1 presents UTM coordinate data for physical and cultural features.

**Table 4.1 GPS Provenience Log**

GPS #	UTM Coordinates (NAD 83)	FOM*	Description
01	18 T 580215 4506127	14	photograph location (Figure 4.3)
02	18 T 579779 4506412	14	push-piles near the center of the APE (Figure 4.9)
03	18 T 579838 4506423	14	location of toppled concrete "phone booth" (Figure 4.21)
04	18 T 579765 4506498	22	location of a drainage opening (Figure 4.17)
05	18 T 579781 4506528	24	fill exposed at the base of a tree fall (Figure 4.15)
06	18 T 579821 4506563	26	pile of railroad ties amid young deciduous vegetation (Figure 4.8)
07	18 T 580269 4506604	44	vegetation in the north-northeast portion of the APE**
08	18 T 580260 4506646	21	piles of cut and drilled granite and concrete (Figure 4.10)
09	18 T 580161 4506637	26	piles of dumped concrete chimney blocks
10	18 T 580212 4506695	16	burned wooden structural remains (Figure 4.19)
11	18 T 580331 4506766	16	metal trailer next to a utility pole
12	18 T 580193 4506826	15	rectangular depression
13	18 T 580035 4506717	16	tower base (Figure 4.20)
14	18 T 579730 4506541	26	location of a drainage opening (Figure 4.18)
15	18 T 579719 4506552	26	broken "phone booth"
16	18 T 579674 4506521	22	<i>in situ</i> railroad ties
17	18 T 579656 4506508	22	<i>in situ</i> railroad ties
18	18 T 579514 4506462	22	photograph location of the vegetation in the western part of the APE (Figure 4.2)
19	18 T 579458 4506400	15	fenced land fill
20	18 T 579710 4506307	21	modern garbage tire dump (Figure 4.11)
21	18 T 579775 4506305	22	modern garbage including sink, TV, tires (Figure 4.12)
22	18 T 579812 4506296	22	push-piles of rubble fill (Figure 4.13)
23	18 T 580008 4506205	20	push-piles of rubble fill including concrete
24	18 T 580577 4506817	16	photograph location of the northeast portion of the APE (Figure 4.6)

25	18 T 580864 4506891	14	NE corner of the APE
26	18 T 579914 4505767	15	SE corner of the APE
27	18 T 579771 4506086	22	push-piles in the southeast portion of the APE (Figure 4.14)
28	18 T 579663 4506150	24	n/a**
29	18 T 579607 4506133	22	<i>in situ</i> railroad ties and cinder and gravel fill in the south-central part of the APE (Figure 4.22)
30	18 T 579720 4506042	15	photograph location of vegetation in the southern portion of the APE**
31	18 T 579834 4505866	14	standing water along the southern edge of the APE (Figure 4.4)
32	18 T 578996 4506355	-	photograph location from the NJTP**

\*FOM = Figure of Merit is the estimated GPS accuracy (in feet) from averaged readings.

\*\* = Photograph not presented in this report

Cultural features were present within the Liberty State Park APE that appear to be remnants of the former rail yard:

- Two 0.9-by-1.5-m (3-by-5-ft) concrete drain openings with iron rims are located 56.4 m (185 ft) apart in the west central portion of the APE (Figures 4.17 and 4.18; see Figure 4.7). Both were partially filled with water. An arched drain conduit was partially exposed in the westernmost opening.
- The burned and collapsed remains of a wooden structure are present in the north-central part of the APE (Figure 4.19; see Figure 4.7). It appears to have been a one-story structure approximately 3.6-by-5.5-m (12-by-18 ft) in size. Wire nails, tongue-in-groove siding, tin stove pipe, tar-covered roll roofing, and metal-encased electrical conduits were found among the burnt wood debris. No subsurface foundation was visible.
- The base of a former tower was identified in the northwest part of the APE (see Figure 4.7). It consists of four concrete footings spaced 3 m (10 ft) apart. Each footing is 0.6-by-0.6 m (2-by-2 ft) and has the partial remains of steel super structure attached on top (Figure 4.20).
- Two cast concrete booths were found 175 m (574 ft) apart in the west-central part of the APE (see Figure 4.7). An *in situ* utility pole base located next to the eastern booth suggests that the booths may have been used to house communications equipment. The easternmost booth is toppled and empty. It is hexagonal in shape with one side open (Figure 4.21). The westernmost booth is broken into many pieces. These “phone booths” were probably used by brakemen and conductors for communications with the yard managers (personal communication, Dr. David Turkon and Dr. Thomas Turkon).
- *In situ* railroad ties were found at three locations in the APE (Figure 4.22; see Figure 4.7). In the west-central part of the APE, the track bed has a northeast/southwest orientation. The track bed has a northwest/southeast orientation in the south-central part of the APE.

## 5.0 Conclusions and Recommendations

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The archaeological sensitivity for prehistoric cultural resources within the APE is very low. Documentary and field research results show the APE to be made land. Therefore, the sensitivity for prehistoric remains in the APE is limited to submerged Late Pleistocene/Early Holocene deposits located beneath the landfill and underlying natural sediment. A previous investigation (Rutsch and Leo 1979) of more sensitive locations just west of the APE did not find evidence of any shell midden or other prehistoric deposits. Further investigation will not likely yield prehistoric cultural resources.

The northern portion of the APE could contain artifacts from mid-nineteenth-century landfill deposits, as well as landfill-retaining structures such as wooden cribbing. The southwestern portion of the APE could contain later artifacts (see Rutsch and Leo 1979) as well as early twentieth-century landfill-retaining cribbing. However, artifacts found in the landfill will likely not be considered cultural resources due to the lack of context and ambiguous point of origin. The cribbing used to retain the fill also has limited research importance. A detailed account of the filling process conducted at Liberty State Park is presented in Rutsch et al. 1977: Appendix A which also includes a profile illustration of the cribbing and a plan view “progress map” of the dredging and filling process. Therefore, further investigation will not likely yield additional significant historic information. Canal boats, deliberately sunk as part of the filling process, may be present beneath the fill. Rutsch et al. (1977:332), however, depict the sunken canal boats east of Freedom Way, outside the APE.

Remains associated with the former rail yard were identified during field reconnaissance:

- A burned wooden structure in the north-central part of the APE appears to be the remains of a small rail yard outbuilding. No structures were shown at this location on historic maps, only railroad tracks. The only structures shown in the APE on historic maps were wood-frame cattle pens and sheds documented over 1,000 ft to the south of the structural ruins. Inspection of the map-documented location of the pens and sheds found no evidence of remains. The ruins have no historic integrity. Further investigation (i.e., subsurface shovel testing) at the structure ruins or the map documented structure locations will not likely yield information important in prehistory or history. The presence of cultural resources is unlikely within the dense fill of the track beds that once covered the project area.
- The two concrete drain openings and two cast concrete “phone” booths in the west-central part of the APE were most likely ancillary components of the former rail yard. These elements are not cultural resources. The drain openings are *in situ* and evidence of subsurface drain system remains. However, further investigation will not likely not yield historically significant information. The cast concrete “phone” booths have no historic integrity. One is empty, toppled and has one adjacent associated feature—a broken utility pole. The second booth is in pieces scattered across a small area with no associated features.
- The base of a former tower located in the northwest part of the APE is in all likelihood associated with the former rail yard. Only footings remain that do not qualify to be considered a cultural resource due to lack of integrity. This feature does not meet, or potentially meet NRHP criteria.

- The railroad ties found *in situ* at three locations in the APE are unremarkable remnant elements of the former rail yard. They are incomplete (i.e., have no rails, only small sections are present) and are not considered a cultural resource.

Although the project area has a rich history, no historically significant elements remain. The proposed ecosystem restoration project will have no impact on cultural resources as none were identified during this Phase IA cultural resource investigation. No further investigations are recommended within the ecosystem restoration APE at Liberty State Park.

## 6.0 References

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Anderson, Elaine

1985 *The Central Railroad of New Jersey's First 100 Years, 1849-1949: A Historical Survey*. Center for Canal History and Technology

Balkhage, H.R. , and A.A. Hahling

1964 The Black Tom Explosion. Originally published in *The American Legion Magazine* (August). Online at [http://www.jerseycityonline.com/black\\_tom\\_explosion.htm](http://www.jerseycityonline.com/black_tom_explosion.htm)

Beers, Frederick W.

1873 *Atlas of Hudson County, New Jersey*. Beers, Comstock & Cline, New York.

Brouwer, Norman

1977 Survey of Cultural Resources in the Form of Derelict Ships and Boats, Priority Area 3 of Liberty State Park, New York Harbor Collection and Removal of Drift Project. Report on File U.S. Army Corps of Engineers, New York District.

Carleton, Paul

1976 *The Jersey Central Story*. D. Carleton Railbooks, Rivervale, New Jersey.

Curtin, Edward V.

1992 Prehistory of Eastern New York. Ms. on file, Department of Sociology, Anthropology, and Social Work, Skidmore College, Saratoga Springs, NY.

Corps of Engineers

1881 *Chart of An Examination of New Jersey Flats From Docks of Cent. R. R. Of N.J. to Constables Point*.

Doherty, Joan F.

1986 *Hudson County: The Left Bank*. Windsor Publications, Inc.

Douglas, L.F.

1941 Topographical Map of Jersey City. (Partial photostat in collection of the New York Public Library, Map Division.)

Dripps, M.

1867 Plan of New York City, from the Battery to Spuyten Duyvill. M. Dripps, New York.

1879 Map of Jersey City and Hoboken, Hudson County, N.J.

Fischler, B.R., and J.W. French

1991 The Middle Woodland to Late Woodland Transition in the Upper Delaware Valley: New Information from the Smithfield Beach Site. In *The People of Minisink: Papers from the 1989 Delaware Water Gap Symposium*, edited by D.G. Orr and D.V. Campana, pp. 145-174. National Park Service, Mid-Atlantic Region, Philadelphia.

Fritz, Gayle

1990 Multiple Pathways to Farming in Precontact Eastern North America. *Journal of World Prehistory* 4:387-435.

Funk, Robert E.

1972 Early Man in the Northeast and the Late Glacial Environment. *Man in the Northeast* 4:7-42.

1976 *Recent Contributions to Hudson Valley Prehistory*. New York State Museum Memoir 22, Albany.

1993 *Archaeological Investigations in the Upper Susquehanna Valley, New York State, Volume 1*. Persimmon Press, Buffalo.

Githens, Herbert and Edward S. Rutsch

1978 *Emergency Investigative Survey, Various Shore Structures, Drift Removal Project Areas III-IV, Liberty State Park, Jersey City, Hudson County, N.J.* Historic Conservation and Interpretation, Inc., Newton. Report on File, New Jersey Historic Preservation Office.

Goddard, Ives

1978 Delaware. In *Northeast*, edited by Bruce G. Trigger, pp. 213-239. Handbook of North American Indians, vol 15, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Grundy, J. Owen and Louis B. Caroselli.

1970 "History of Forms of Government From Early Dutch Days to the Present Time." Available on World Wide Web at [http://www.jerseycityonline.com/jc\\_history.htm](http://www.jerseycityonline.com/jc_history.htm).

Hammond, C. S.

1912 *Map of Jersey City & Hoboken, New Jersey*. New York: C.S. Hammond, Publishers.

Hopkins, G. M.

1873 *Combined Atlas of the State of New Jersey and the City of Newark*. G.M. Hopkins & Co., Philadelphia.

1908 *Atlas of Hudson County, New Jersey, Vol I (Jersey City)*. G.M. Hopkins & Co., Philadelphia.

1919 *Plat Book of Jersey City and Bayonne, Hudson County, N.J., Vol I*. G.M. Hopkins & Co., Philadelphia.

1928 *Plat Book of Jersey City, Hudson County, N.J., Vol I*. G.M. Hopkins & Co., Philadelphia.

Jersey City Online

n.d. "Jersey City: America's Golden Door."

Online at [http://www.jerseycityonline.com/history/jc\\_history.htm](http://www.jerseycityonline.com/history/jc_history.htm).

Kardas, S. and E. Larrabee

1978 *Cultural Resource Reconnaissance, Jersey City Reach, New York harbor Collection & Removal of Drift Project. Historic Sites Research.* Conducted for New York District, U.S. Army Corps of Engineers Report on file, New Jersey Historic Preservation Office.

1979 *Cultural Resource Survey, Exchange Place and Pavonia Avenue Ferries, Jersey City, New Jersey. Historic Sites Research.* Conducted for New York District, U.S. Army Corps of Engineers Report on file, New Jersey Historic Preservation Office.

Kelly, John M., Rita M. Murphy and William J. Roehrenbeck

1960 *Jersey City Tercentenary, 1660-1960: Program and Historical Souvenir.* Jersey City Tercentenary Committee, Jersey City.

Kraft, Herbert

1986 *The Lenape: Archaeology, History, and Ethnology.* The New Jersey Historical Society, Newark.

Kraft, Herbert C., and Ronald A. Mounier

1982 The Archaic Period in New Jersey (ca. 8000 BC-1000 BC). In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 52-102. Office of Cultural and Environmental Services, Department of Environmental Protection, Trenton.

Liberty State Park

n.d. "History of Liberty State Park". Online at <http://libertystatepark.com/history.htm>.

Lueder, Donald R., George H. Ober, William W. Homan and Franklyn C. Rogers

1952 *Engineering Soil Survey of New Jersey, Report Number 4: Hudson County.* New Jersey Joint Highway Research Project. Rutgers University, New Brunswick, New Jersey.

Marrin, Richard B.

2002 "Jersey City's Hook: Part 1." San Francisco Bay Crossings.com. Online at [http://www.baycrossings.com/Archives/2002/05\\_June/ny\\_harbor\\_history.htm](http://www.baycrossings.com/Archives/2002/05_June/ny_harbor_history.htm)

Marshall, Sydne B.

1982 Aboriginal Settlement in New Jersey During the Paleo-Indian Cultural Period, ca..10,000 BC-6000 BC. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 10-51. Office of Cultural and Environmental Services, Department of Environmental Protection, Trenton.

National Park Service

1985 *Guidelines for Local Surveys: A Basis for Preservation Planning.* National Register Bulletin 24. U.S. Dept. of the Interior, Washington, DC.

New Jersey Geological Survey

1869 Topographical Map of the State of New Jersey. From the State Geological Survey by G. Morgan Hopkins

New York Department of Docks and Ferries.

1911 Map of a Portion of the Borough of Manhattan and the Adjacent New Jersey Shore with Railroad Lines and Terminals. In *Annual Report 1911*.

Parrot, Charles

1975 *National Register of Historic Places, Inventory-Nomination Form, Central Railroad of New Jersey, Jersey City Central Railroad Terminal*. In historic site file folder, Hudson County, Central Railroad of New Jersey. New Jersey Historic Preservation Office.

Pennington, Charles R. And Marilyn R. Frasier

1997 *Stage IA Cultural Resources Survey, Combined Sewer Overflow Planning Study, Town of Harrison, Hudson County, New Jersey*. Prepared by Richard Grubb and Associates, Inc. Prepared for Killam Associates, Inc. On file at New Jersey HPO.

Pielou, E. C.

1991 *After the Ice Age: The Return of Life to Glaciated North America*. The University of Chicago Press, Chicago.

Rand-McNally

1904 Rand-McNally New Map of Jersey City, Hoboken & Bayonne.

Ritchie, William, A.

1980 *The Archaeology of New York State*. Revised Edition. Harbor Hill Books: Harrison, NY.

Rutsch, Edward S., and Ralph J. Leo, Jr.

1979 Stage IB Cultural Resource Survey for the Hudson County Sewerage Authority, 201 Wastewater Facility Plan -- District I, Jersey City, North Bergen, Secaucus, and Kearny, Hudson County. Newton: Historic Conservation and Interpretation, Inc. Report on File, New Jersey Historic Preservation Office.

Rutsch, Edward, Susan Kardas, Edward Larrabee, Ralph Leo, Brian Morell, James Lally, Barbara Kalata, and Herb Githens

1977 *Cultural Resources Reconnaissance, Liberty State Park*. Report on File U.S. Army Corps of Engineers, New York District. Prepared by Historic Conservation and Interpretation, Inc.

Salwen, Bert

1975 Post Glacial Environments and Cultural Change in the Hudson River Basin. *Man in the Northeast* 10:43-70.

Sanborn Map Company

1896 *Insurance Maps of Hudson County, New Jersey*. Vol. 6.

1911 *Insurance Maps of Hudson County, New Jersey*. Vol. 6.

1922 *Pier Map of New York Harbor*.

- Sidney, J.C.  
1849 Sidney's Map of 12 Miles Around New York.
- Snow, Dean R.  
1980 *The Archaeology of New England*. Academic Press, New York.
- Stansfield, Charles A., Jr.  
1998 *A Geography of New Jersey: The City in the Garden*. 2nd Edition. Rutgers University Press, New Brunswick, NJ.
- United States Army Corps of Engineers, New York District (USACE)  
2002 *Scope of Work and Request for Cost Proposal, Cultural Resources Documentary Study of Two Priority Sites for the Hudson-Raritan Estuary Ecosystem Restoration Project, Liberty State Park, Jersey City, Hudson County, New Jersey, and Sherman Creek, New York County, New York*.
- United States Coast Survey  
1845 New York Bay and Harbor and the Environs.
- United States Coast and Geodetic Survey  
1896 Hudson and East Rivers.  
  
1944 United States - East Coast, New York and New Jersey, Hudson and East Rivers from West 67th Street to Blackwells Island. Chart #745. March 1944
- United States Geological Survey  
1955 [1981] *Jersey City, New Jersey Topographic Quadrangle*.
- Williams, Lorraine E., and Susan Kardas  
1982 Contact Between Europeans and the Delaware Indians of New Jersey. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp.185-198. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.
- Williams, Lorraine E., and Ronald A. Thomas  
1982 The Early/Middle Woodland Period in New Jersey: ca. 1000 B.C.-A.D. 1000. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp.103-138. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.
- Wilson, Betty  
1979 Liberty State Park: A Status Report. *Jersey Coast*. June: (11) 5-6. New Jersey Department of Environmental Protection. Copy in Hudson County, CRRNJ file, NJSHPO historic sites files.
- Wood, William H.  
1855 *Map of Jersey City, Hoboken and Hudson Cities*. R. B. Kashow, Jersey City.

**Appendix A**  
**INTERIM REPORT**

# **PCI** BUFFALO • TUSCALOOSA • MEMPHIS • TAMPA

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January 9, 2003

Ms. Lynn Rakos  
Environmental Analysis Branch  
U.S. Army Corps of Engineers, New York District  
26 Federal Plaza  
New York, New York 10278-0090

Subject: Phase IA Cultural Resource Surveys of Two Priority Sites for the Hudson-Raritan Estuary Ecosystem Restoration Project: Liberty State Park, Jersey City, Hudson County, New Jersey; and Sherman Creek, New York County, New York (Contract #DACW51-01-D-0018, Work Order #0009)

Dear Ms. Rakos:

Panamerican Consultants, Inc. (Panamerican) is pleased to submit this interim report for the above referenced project on behalf of Northern Ecological Associates (NEA), Portland, Maine. The New York District, U.S. Army Corps of Engineers (USACE), is conducting a study to identify and inventory water resources and sediment quality-related problems and needs in the Hudson-Raritan Estuary (USACE 2002). As part of the project, USACE is presently looking at two locations for creating and or enhancing aquatic, wetland and adjacent upland habitats. These locations include 251 acres in Liberty State Park, Jersey City, Hudson County, New Jersey; and a small embayment of the Harlem River at Sherman Creek in northern Manhattan, New York County, New York (Figures 1 and 2). Panamerican conducted Phase IA background research and field reconnaissance at both of these locations to determine the potential for encountering cultural resources. The preliminary investigation results for both locations are presented in this interim report. Separate draft and final reports will be prepared for each location to facilitate review by separate state agencies (e.g., New Jersey Historic Preservation Office and New York State Office of Parks, Recreation and Historic Preservation).

The Panamerican investigative team consisted of: Project Director Dr. Michael A. Cinquino, RPA; Principal Investigator Mr. Robert J. Hanley, M.A., RPA; Field Director Mr. Daniel M. Cadzow; and Project Historians Ms. Stacy L. Weber, M.A., and Mr. Arnold Pickman, M.A., RPA. Documentary and background research was conducted at the: New York Public Library, General Research, Local History and Genealogy, and Map Divisions; New Jersey State Historic Preservation Office, Trenton; New York City Landmarks Preservation Commission; New York State Office of Parks, Recreation and Historic Preservation, Field Service Bureau, Albany; and, the U.S. Army Corps of Engineers New York District.

The field investigation was conducted between December 9 and 13, 2002. Investigation at each location included pedestrian/walkover reconnaissance, photographic documentation, and satellite positioning (GPS). The pedestrian survey was conducted to identify cultural features and environmental conditions (e.g., surface visibility, slope, vegetation, soil disturbance, standing water) at each location. A Garmin® GPS unit was used to record the UTM (North American Datum [NAD] 83) coordinates of photograph locations and cultural features.

## Results

*Liberty State Park.* The Area of Potential Effect (APE) in Liberty State Park included 251 acres of former rail yard in the center of the park. This area is encompassed by Phillip Street, Thomas McGovern Drive, Freedom Way and Audrey Zapp Drive. Historic maps and literary sources show the entire APE to be made land for use by the Central Railroad of New Jersey (Jersey Central). Originally, the project area was tidal marsh, but it was filled between the 1860s and 1919. Maps dating to the 1870s (Beers 1873; Dripps 1879) revealed the shoreline at Philip Street, which forms the western boundary of the APE. Therefore, the archaeological sensitivity for prehistoric cultural resources within the APE is limited to submerged Late Pleistocene/Early Holocene deposits. These would be located beneath the landfill and also beneath underlying organic bay silts and peat that accumulated after inundation of the area by rising sea levels.

With the exception of the Phillip Street vicinity, few structures other than railroad tracks formerly existed within the project area. The most prominent structures were perhaps the Central Union stockyards, located below Pier 15 in approximately the center of the project area (Sanborn 1911). The stock yards consisted of a series of structures situated on a long, narrow open platform. The structures appear to have been mostly one-story, rectangular-frame buildings and included sheep and hog sheds, cattle pens, and a hay barn. A row of receiving pens lined the stockyards along the south side of the platform. The map also showed Jersey Central's Marine Repair Yard near the northern end of the APE. This small complex of buildings consisted of a small shops for blacksmiths and carpenters.

Most of the APE is now enclosed by a chain-link fence and is overgrown with a mix of deciduous and coniferous trees, sparse and dense brush, open grassland, and low wet areas with stands of *Phragmites*. Piles of railroad ties are scattered across the north, central and west portions of the APE. Modern debris has been dumped across the APE, and included building materials (e.g., chimney blocks, cement), garbage (e.g., ceramic sink, television, car tires), a metal trailer, and push-piles of rubble (e.g., concrete, asphalt). Two approximately 410-foot (125-meter) long parallel berms are present in the south-central portion of the APE. Water-filled borrow pits are adjacent to the berms. Dirty fill (e.g., slag, brick, coal, glass, mortar) was visible at some exposed locations (e.g., the base of some tree falls). Approximately 24 acres in the southwest corner of the APE is covered by a landfill surrounded by a chain-link fence. The 1955 U.S. Geological Survey (USGS) map indicated that a sewage disposal plant was located in this general area. A partially paved trail nearly bisects the project area in a northwest/southeast orientation. It may be the remains of road shown on the 1955 USGS map.

Cultural features were present within the Liberty State Park APE that appear to be remnants of the former rail yard. These include:

- Two 3-by-5-ft concrete drain openings with iron rims are located in the west central portion of the APE. Both were partially filled with water. An arched drain conduit was partially exposed in the westernmost opening.
- The burned remains of a wood structure are present in the north-central part of the APE. It appears to have been a one-story structure approximately 12-by-18 ft in size. Wire nails, tongue-in-groove siding, tin stove pipe, tar-covered roll roofing, and metal-encased

electrical conduits were found among the burnt wood debris. No subsurface foundation was visible.

- The base of a former tower was identified in the northwest part of the APE. It consists of four concrete footings spaced 10 ft apart. Each footing is 2-by-2 ft and has the partial remains of steel super structure attached on top.
- Two cast concrete booths were found in the west-central part of the APE. An *in situ* utility pole base located next to one of the booths indicates that the booths were used to house communications equipment (i.e., telephone booths). Both booths are empty and lying on their sides.
- *In situ* railroad ties were found at two locations in the APE. In the west-central part of the APE, the track bed has a northeast/southwest orientation. The track bed has a northwest/southeast orientation in the south-central part of the APE.

*Sherman Creek.* The Sherman Creek project area is approximately 6½ acres bounded by 10<sup>th</sup> Avenue to the west, a former Consolidated-Edison power-plant facility the north (Academy Street), Harlem River to the east, and Marginal Street to the south. Approximately 4 acres of the APE is a tidal mud flat that includes the remains of Sherman Creek. The remaining 2½ acres are sloped fill upland located primarily along the south and west sides of the APE.

Background research results show this location to be very sensitive for cultural resources, barring soil disturbances. Several prehistoric sites were identified in northern Manhattan in nineteenth century and early twentieth century (Bolton 1924, 1934; Skinner 1961; Geismar 1984). During the Revolutionary War, the British landed troops on the south shore of Sherman Creek within the APE. They consequently established Fort George atop Laurel Hill (just south of the APE) and a rope-drawn ferry (Holland's Ferry) and camp on the hook adjacent to the north shore of Sherman Creek (north of the APE) (Bolton 1924:170, 1916:185-186). The British Headquarters map of 1782 also showed another camp (two buildings) on the south side of the creek below Fort George and immediately adjacent to the Sherman Creek marshes adjacent to the APE. Surface indications of the Holland Ferry camp were observed and a brick floor and a human skeleton were uncovered during excavations in the late nineteenth and early twentieth centuries (Bolton 1916:186-195, 1924:170).

Maps examined dating from 1815 through 1885 did not depict structures within the project area. Historic maps (Dripps 1867; Sanborn 1893; Bromley and Bromley 1897) showed a building west of the APE, on the south bank of the creek immediately west of 10<sup>th</sup> Avenue. This was also the approximate location of a structure identified as "Durando's Hotel" on the 1900 and 1913 Sanborn maps. Piers and boat houses were shown within the location of the APE on maps through the twentieth century. Boat wrecks are apparent on aerial maps as recent as 1998. However, older historic maps (e.g., USCGS 1902, 1908) did not identify wrecks in the Sherman Creek project area.

Field investigation of the Sherman Creek project area was conducted at low tide. The central portion of the APE was exposed open tidal mud flat with modern garbage and abandoned boat remains scattered across it. A small channel connects the Harlem River to a storm drain opening in a bulkhead that runs along the north edge of the APE. The bulkhead is a corrugated metal barrier parallel and adjacent to the former Academy Street and Con Ed generating plant

(currently a fenced parking area). Brick pavement, presumably remnants of Academy Street, are also present. The dilapidated remains of a docking area are present along the north shore of Sherman Creek at the Harlem River.

The western edge of the APE is a fenced lot that contains a former gas station and asphalt lot adjacent to, and level with, 10<sup>th</sup> Street. The lot is currently used by the New York City Parks Department. Marginal Street, the southern project area boundary, is essentially a driveway and parking area for Public School No. 5. The southern edge of the APE, between Marginal Street and the Sherman Creek tidal mud flat, is mostly sloped and has been created by the deposition of large amounts of fill. It is overgrown with mature deciduous trees, brush, and vines (e.g., wild grape, poison ivy). The top of the slope has some bank stabilization elements including cut stone slabs and horizontally placed steel street light polls. *Phragmites* are located on the fringe of the mud flat at the base of the slope.

Cultural features were present within the Sherman Creek APE that appear to be remnants of twentieth century marina activities. These include:

- Wooden pier or mooring piles that protrude from the mud flat along the southeast and southwest sections of the shore.
- Metal rails, presumably used as a boat launch and wood piles are located in the mud flat in the southwest corner of the APE. A dilapidated steel and wood staircase connects this location to the high ground. A partially obscured 10-by-17-ft poured concrete base is located on the high ground above the stairs.
- The remains of abandoned boats are scattered across the tidal mud flat. The City of New York recently removed debris down to the water line and abandoned vessels were cut to the mud line (USACE 2002:2-3).

## Preliminary Conclusions and Recommendations

*Liberty State Park.* The archaeological sensitivity for prehistoric cultural resources within the APE is very low. Documentary and field research results show the APE to be made land. Therefore, the sensitivity for prehistoric remains in the APE is limited to submerged Late Pleistocene/Early Holocene deposits located beneath the landfill and underlying natural sediment. A previous investigation (Rutsch and Leo 1979) of more sensitive locations just west of the APE did not find evidence of any shell midden or other prehistoric deposits. Further investigation will not likely yield prehistoric cultural resources.

Landfill in the northern portion of the APE could contain artifacts from mid-nineteenth-century landfill deposits, as well as landfill-retaining structures such as wooden cribbing. Landfill in the southwestern portion of the APE could contain later artifacts (see Rutsch and Leo 1979) as well as early twentieth-century landfill-retaining cribbing. However, artifacts found in the landfill will likely not be considered cultural resources due to the lack of context and ambiguous point of origin. The cribbing used to retain the fill also has limited research importance. Canal boats, deliberately sunk as part of the landfilling process, may be present beneath the fill. However, Rutsch et al. (1977:332) depicts the canal boats sunk east of Freedom Way (i.e., east of the project area).

Remains associated with the former rail yard were identified during field reconnaissance. They include:

- A burned wood structure in the north-central part of the APE appears to be the remains of a small rail yard outbuilding of twentieth century (i.e., building materials) origin. No structures were shown at this location on historic maps, only railroad tracks. The only structures shown in the APE on historic maps were wood-frame cattle pens and sheds documented over 1,000 ft to the south of the structural ruins. Inspection of the map-documented location of the pens and sheds found no evidence of remains. Further investigation of the structure ruins or at the map-documented structure locations will likely not provide information required for assessing historic significance.
- The two concrete drain openings and two cast concrete “phone” booths in the west-central part of the APE were most likely ancillary components of the former rail yard. These elements are not cultural resources. Further investigation will likely not provide information involving the history of the project area.
- The base of a former tower located in the northwest part of the APE is in all likelihood associated with the former rail yard. Only footings remain and further investigation will likely not yield historic information.
- The railroad ties found *in situ* at two locations in the APE are unremarkable remnant elements of the former rail yard. They are incomplete (i.e., have no rails, only small sections are present) and are not considered a cultural resource.

The proposed ecosystem restoration project will have no impact on cultural resources as none were identified during this Phase IA cultural resource investigation. No further investigations are recommended at the Liberty State Park project area.

*Sherman Creek.* The archaeological sensitivity for prehistoric and historic cultural resources within the APE is very low due to substantial historic and modern landscape modifications. The majority of the APE (approximately two thirds [4-acres]) is tidal mud flat that has been historically inundated and has been dredged and utilized throughout the twentieth century. Remains found across the tidal mud flat do not appear to be cultural resources. They are badly damaged remnants of twentieth-century marina activities and include: wooden mooring piles, boat launch remains, and pieces of abandoned boats. Modern garbage also has been dumped across this area.

The rest of the APE (approximately 2½ acres) is sloped upland created by fill deposition. The south and west sides of the APE consist of large amounts of fill dumped into the Sherman Creek embayment. These portions of the APE were historically low and wet as part of a larger embayment and a more extensive creek. Therefore, the likelihood for the presence of cultural resources is low. Also, proposed ecosystem restoration between the tidal mud flat and Marginal Street will involve creation of additional upland (Bob Will, personal communication 2002). This reduces the threat of impacting deeply buried cultural resources, if at all present.

The northern edge of the APE (adjacent to former Academy Street) has been altered by construction of the former Con Ed power generating plant with an associated bulkhead and boat docking area. Two large storm sewer (presumably) outlets also drain into the Sherman Creek

embayment along the bulkhead. Proposed ecosystem restoration in this area involves the removal of the bulkhead to cut back the creek edge and create slope (Bob Will, personal communication 2002). This portion of the APE is sensitive for cultural resources associated with the Revolutionary War Holland's Ferry camp. Remains were uncovered by street grading for the construction of 201<sup>st</sup> Street and 9<sup>th</sup> Avenue in 1894, and when the power plant on the north side of Academy Street was constructed circa 1904 (Bolton 1924:170, 1916:187). However, Bolton noted that most of the camp refuse was found on the Harlem River shore and "very few objects were found on the north shore of Sherman's Bay" (1916:188).

Construction of the Con Ed facility most likely destroyed any formerly intact archaeological deposits. It is possible, but unlikely, that the construction could have also sealed deposits beneath added fill. It is uncertain how far the planned cutting back of the creek bank in this area would extend past the bulkhead. It is possible, but not likely, that this work will impact any surviving deposits. Based on preliminary investigation results, further investigation of the Sherman Creek project area is not recommended.

If you have any questions or require additional information, please do not hesitate to contact me or Dr. Michael Cinquino at your earliest convenience.

Sincerely,

Robert J. Hanley, M.A., RPA  
Senior Archaeologist  
Panamerican Consultants, Inc.

## References Cited

### Beers

1873 *Atlas of Hudson County, New Jersey.*

### Bolton, Reginald Pelham

1916 *Relics of the Revolution.* Self-published, New York.

1924 *Washington Heights: Its Eventful Past.* Dyckman Institute, New York.

1934 *Indian Life of Long Ago in the City of New York.* Joseph Graham, New York.

### Bromley, George Washington, and Walter Scott Bromley

1897 *Atlas of the City of New York, Manhattan Island.* G.W. Bromley and Co., New York.

### Dripps, Matthew

1867 *Plan of New York City, from the Battery to Spuyten Duyvill.* M. Dripps, New York.

1879 *Map of Jersey City and Hoboken, Hudson County, N.J.* M. Dripps, New York.

### Geismar, Joan

1984 *An Evaluation of the Archaeological Potential of the Community Hospital Site, New York, NY.* Report on File at New York City Landmarks Preservation Commission (CEQR No. 88-194-M0).

### Rutsch, Edward S., and Ralph J. Leo, Jr.

1979 *Stage IB Cultural Resource Survey for the Hudson County Sewerage Authority, 201 Wastewater Facility Plan—District I, Jersey City, North Bergen, Secaucus, and Kearny, Hudson County.* Historic Conservation and Interpretation, Inc., Newton, NJ. Report on File New Jersey Historic Preservation Office, Trenton.

### Rutsch, Edward S., Susan Kardas, Edward Larrabee, Ralph Leo, Brian Morrell, James Lally, Barbara Kalata, and Herb Githens

1977 *Cultural Resources Reconnaissance Liberty State Park.* Historic Conservation and Interpretation, Inc., Paterson, NJ.

### Sanborn

1893 *Insurance Maps of the City of New York.*

1900 *Insurance Maps of the City of New York.* Vol. 12. Sanborn-Perris Map Company, New York.

1911 *Insurance Maps of Hudson County, New Jersey.* Vol. 6. Sanborn Map Company, New York.

1913 *Insurance Maps of the City of New York.*

### Skinner, Alanson

1961 *The Indians of Manhattan Island and Vicinity*. Ira J Freidman, Inc., Port Washington, NY.  
[Reprint - Originally Published 1909].

United States Coast and Geodetic Survey (USCGS)

1902 *Hudson River, New York to Haverstraw*. U.S. Coast and Geodetic Survey, Washington, D.C.

1908 *Harlem River, New York*. U.S. Coast and Geodetic Survey, Washington, D.C.

United States Geological Survey

1955 *Central Park, New York Quadrangle*. 7.5 Minute series. U.S. Geological Survey, Washington, D.C.

1955 *Jersey City, New Jersey Quadrangle*. 7.5 Minute series. U.S. Geological Survey, Washington, D.C.

USACE

2002 *Scope of Work and Request for Cost Proposal Cultural Resources Documentary Study of Two Priority Sites for the Hudson-Raritan Estuary Ecosystem Restoration Project, Liberty State Park, Jersey City, Hudson County, New Jersey [and] Sherman Creek, New York County, New York*. U.S. Army Corps of Engineers, New York District, New York.

Will, Bob

2002 Personal Communication, U.S. Army Corps Engineers, New York District

**Appendix B**  
**SCOPE OF WORK**

**Appendix C**  
**VITAE OF KEY PERSONNEL**

**ROBERT J. HANLEY III, RPA**  
**Senior Archaeologist**

**EDUCATION**

- M.A. Archaeology, State University of New York at Albany, 1994
- B.A. Anthropology, State University of New York, College at Buffalo, 1989

**EXPERIENCE**

Mr. Robert J. Hanley is currently a Senior Archaeologist with Panamerican Consultants, Inc. He has more than thirteen (13) years experience in prehistoric and historic period archaeology serving as principal investigator, field director, crew chief and field technician. He has participated in over 100 field investigations throughout the Northeast, including New York, New Jersey, Pennsylvania, Connecticut, Maryland, and Rhode Island, as well as in Puerto Rico, St. Croix, Iowa, Illinois, Texas and Virginia. He is experienced at conducting cultural resource investigations on large-scale projects including waterfront development, pipeline/corridor and highway projects and military installations, which often require design of field methodology including predictive site modeling strategies, all phases of archaeological field investigations, and report preparation.

He has extensive experience in lithic and human bone analysis. Mr. Hanley has directed and implemented a comprehensive array of field methodologies pertinent to cultural resource investigations, including developing and implementing research designs, directing field investigations, and preparing detailed written discussions of fieldwork. As principal investigator and field director, he has coordinated and supervised field investigations and artifact analysis. His other responsibilities include data analysis and report writing. While with PCI, he has presented *Cultural Resources Management Planning and Predictive Modeling at Picatinny Arsenal, New Jersey* at the 2000 Society for American Archaeology Meeting and for the Houghton Chapter of the New York State Archaeological Association. He has also conducted presentations for primary and secondary education classes to broaden public knowledge of archaeology and cultural resource preservation. He is a member of the Register of Professional Archaeologists (RPA) and the Society for American Archaeology (SAA).

**PANAMERICAN CONSULTANTS, INC. EXPERIENCE (MAY 1997 TO PRESENT)**

For Parsons Brinckerhoff Quade & Douglas, Buffalo, Mr. Hanley conducted a Phase IA archaeological and architectural reconnaissance survey as part of the Southtowns Connector/ Buffalo Outer Harbor Project, Cities of Buffalo and Lackawanna and Town of Hamburg, Erie County, New York.

For National Fuel Gas Supply Corp. under contract to Northern Ecological Associates, Inc., Mr. Hanley served as Co-Principal Investigator for a Phase I Cultural Resource Investigation of the Proposed Ellisburg Alternative Natural Gas Pipeline, Towns of Allegany and Hebron, Potter County, Pennsylvania. Served as PCI's Co-Principal Investigator for the cultural resources investigation of the proposed Northwinds natural gas pipeline installation.

Mr. Hanley was Co-Principal Investigator and Field Director for a Phase I cultural resources survey of the Selody property in the Borough of Manville, Somerset County, New Jersey. The investigation was completed for the U.S. Army Corps of Engineers (USACE), New York District under contract to Barry A. Vittor and Associates, Inc., Mobile, AL, and conducted as part of an evaluation of a potential wetland mitigation site for the Green Brook Flood Control Project.

For the New York District, USACE (under contract to NEA, Inc.), he served as PCI Field Director and Co-Principal Investigator for the Phase I cultural resources investigation of the Union Beach Flood Protection and Beach Restoration Feasibility Study, Union Beach, NJ. Field investigations included walkover reconnaissance, photographic documentation, shovel testing, and stratigraphic sampling.

For the New York District, USACE (under contract to Barry Vittor & Associates), he served as Field Director and Co-Principal Investigator for the Phase I cultural resources investigation of the South River Flood Control and Ecosystem Restoration Project in Sayreville and South River, NJ. Field investigations included walkover reconnaissance, photographic documentation, shovel testing, and stratigraphic sampling.

He was Field Director for PCI's Phase IB cultural resources investigation at Clinton Square in the City of Syracuse, Onondaga County, New York. Prepared for Edward V. Curtin & Associates (under contract to Clough, Harbour & Associates, LLP), the investigation identified the presence and assessed the condition of the historic Erie Canal at Clinton Square. Phase IB investigations at Clinton Square involved backhoe monitoring in proposed areas of construction and hand excavation at six locations determined in consultation with Dr. Robert Kuhn of the New York SHPO. Remains of canal or canal basin walls were found at five of the six locations beneath modern fill.

For National Fuel Gas Supply Corp. under contract to Northern Ecological Associates, Inc., Mr. Hanley served as Field Director for a Phase I cultural resource survey for the proposed Line S-43 replacement in the Summit Township, Erie County, Pennsylvania. Field methods consisted of intensive surface and subsurface investigations of the complete study area. The study area is a proposed 9,445-ft long gas line replacement with a 100-foot right-of-way and three existing staging areas. The purpose of the project was to determine the presence of cultural resources prior to potential construction impacts.

He has served as PCI field director for at least ten terrestrial archaeological projects sponsored by the USACE, New York District under contracts DACW51-97-D-0009 and DACW51-97-D-0010, including a cultural resource survey for the South River Flood Control and Ecosystem Restoration project, Middlesex County, NJ; a cultural resources investigation of the Selody Property, Manville, Somerset County, NJ; a Phase I investigation of the Finderne property, Bridgewater Township, NJ; a Phase II investigation for the Hemlock Street weir and wing dam, Bergen County, NJ; and a Phase I cultural resources investigation at Building 117 (the Lee House) at Fort Hamilton, Brooklyn.

For the USACE, New York District, Mr. Hanley has served as Field Director for Phase II cultural resource investigations at three prehistoric sites in Sensitivity Areas 16A and 25A at Picatinny Arsenal, Rockaway Township, Morris County, New Jersey. The investigation included field inspection of the three archaeological site areas, supplemental, close-interval shovel testing of sensitive areas, excavation of 1-x-1-meter units, and photographic documentation of the sites and field conditions.