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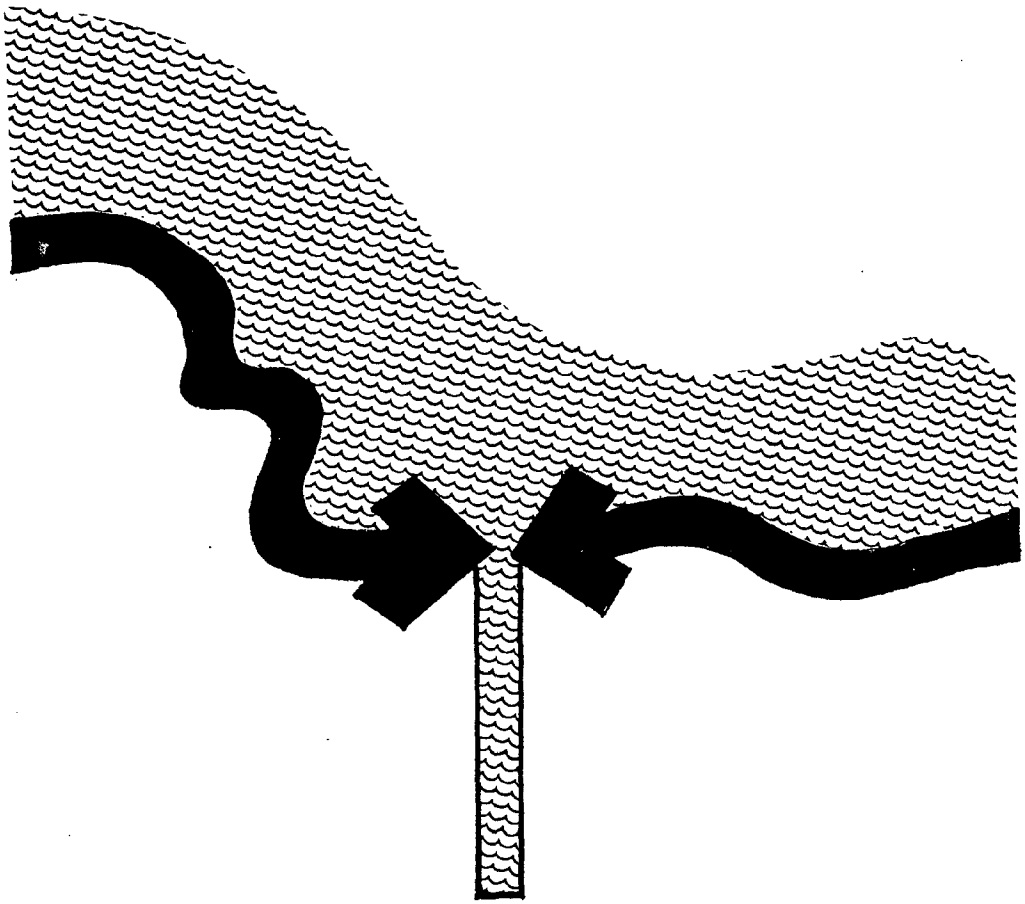

PROJECT : INTER-CITY LINK

HUDSON RIVER WATERFRONT WALKWAY

City Of Jersey City

DEPARTMENT OF HOUSING AND ECONOMIC DEVELOPMENT

SEPTEMBER 5, 1989

This report was prepared under contract with the New Jersey Department of Environmental Protection, Division of Coastal Resources, Bureau of Coastal Planning and Project Review with the financial assistance of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, Under the provisions of the federal Coastal Zone Management Act, P.L. 92-583, as amended.

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COASTAL RESOURCES

Introduction

The concept of a continuous walk along the Hudson River was conceived by citizens over twenty years ago. The citizens envisioned the walkway to be located along the rivers edge offering the public opportunities to experience the Waterfront for walking, jogging, bicycling, sitting and viewing the river. The recreational corridor was to link existing parks and adjacent neighborhoods.

This vision received governmental support expressed through the Hudson Waterfront Walkway: Plan and Design Guidelines Report prepared by Wallace, Roberts and Todd in March 1984. (Regional Plan Association's 1966 Study, The Lower Hudson) The Plan was funded by the N.J. Dept of Environmental Protection. Since 1984, the State has required that developers along the Hudson River construct and maintain a Walkway.

In the Hudson Waterfront Walkway Plan the Long Slip Canal was identified as a "gap site". "Gaps" in the Walkway may occur for various reasons including active industrial use, hazardous waste contamination and physical barriers. One such gap created by the Long Slip Canal and the adjacent New Jersey Transit Rail Road yards and terminal exists on the waterfront at the border of Jersey City and Hoboken. Pedestrian access from the Jersey City portion of the walkway at the northern most edge of the Newport Development to the Erie-Lackawanna Terminal in Hoboken represents an important potential link in the Hudson River Waterfront Walkway. Without this link, the pedestrian or bicyclist must travel a significant distance to circumvent the canal and the industrial areas.

The purpose of this Planning Study is to lay the ground work for the eventual construction of a connecting link across the Long Slip Canal, and through the rail road facility, thus taking the first step to ensure this link joining the neighboring cities is created. The Planning Study attempts to identify the numerous constraints associated with linking the walkway including physical conditions of existing piers and bulkheads, soil testing for contamination, physical constraints and other issues associated with bridging the canal.

Location (7:7E-2.0)

The Coastal Resources Location Policies(7:7E-2.0) classify land and water features of the coastal zone into at least one of four categories. The Long Slip Canal would be classified as a special area. Special areas are areas that constitute a highly valued resource, serve important purposes of human use, or form a significant natural hazard. The Special Areas policies supplement other Location Policies and take precedence in case of policy conflict. Jersey City and Hoboken are also defined as Special Urban Areas (7:7E-3.41). The Special Urban Area Policy encourages development to help restore the economic and social viability of the area, as well as to benefit and serve local needs.

The attached Figure 1 shows the location of the project in relationship to the larger Jersey City/Hoboken area. As described earlier, the site is located at the intersection of the two cities.

Figure 2 is an aerial photo showing conditions existing in 1984. Many changes have occurred however, the physical barrier of the canal and rail road facility still exists. The Erie Lackawanna and New Jersey Transit Terminals are located to the north of the proposed crossing with the Newport concrete batching plant currently in operation to the south. The yellow line indicates the proposed route the walkway would take with the thick yellow section indicating the approximately location of a proposed crossing. The blue line indicates the ideal location of the walkway as it appears in the Hudson River Walkway Plan. Figure 2 also shows the portion of Newport directly south of the crossing which is currently not developed; full build out is expected in approximately ten to fifteen years.

Figure 3 is taken from the Hudson River Walkway Plan and shows the "Ideal Walkway" north and south of the area being discussed. The proposed Hudson River Walkway and Inter City Link will open the Hoboken and Jersey City Waterfront to direct pedestrian flow between the N.J. Transit Erie-Lackawanna Terminal and the commercial/residential developments from Newport, south to Exchange Place. The direct pedestrian access is a key negotiating point with several of the larger companies considering relocating a portion of their operations to the Jersey City/Hoboken Waterfront.

Ownership

The area studied consists of Jersey City Tax Block 19, Lots A.3, A.5, A.6, A.9 and A.11 and the City of Hoboken Tax Block 139, Lots 1.1, 1.2, 1.3, 2, 3, 3.1, 4 and 5.

Figure 6 depicts the ownership of the various tax blocks, Newport and New Jersey Transit (NJT) being the primary land owners involved. The canal being discussed is also denoted on the map to show which properties would be effected.

City Tax Blocks	Lots	Ownership
Jersey City 19	A.3 and A.11	Newport Development Co.
Jersey City 19	A.5, A.6, A.9	NJ Transit
Hoboken 139	1.1, 1.2, 1.3, 2, 3, 4	NJ Transit
Hoboken 139	5	Harborside Development Company (Newport)
Hoboken 139	3.1 Building	Costa, George c/o S.S. Victoria

In effect, there are two major land owners which would be involved in any attempt to connect the Jersey City and Hoboken waterfront walkway. As the walkway continues southward, it immediately crosses over to Newport property. However, as the ownership map indicated, both sides of the Long Slip Canal are controlled by New Jersey Transit, thus making the negotiating process less complicated.

General Land Use

Existing

In looking at location maps (Figures 1-5), it is apparent that the communities of Newport and Hamilton Park in Jersey City are separated from Hoboken by a large expanse of vacant land, an abandon canal and an active commuter rail road line and station.

In the Jersey City Downtown area (Ward E) construction has been completed on 2,619 residential units, 1,484,055 sq. ft. of office space and 1,275,307 sq. ft. of commercial/retail space. The Newport Development has accounted for

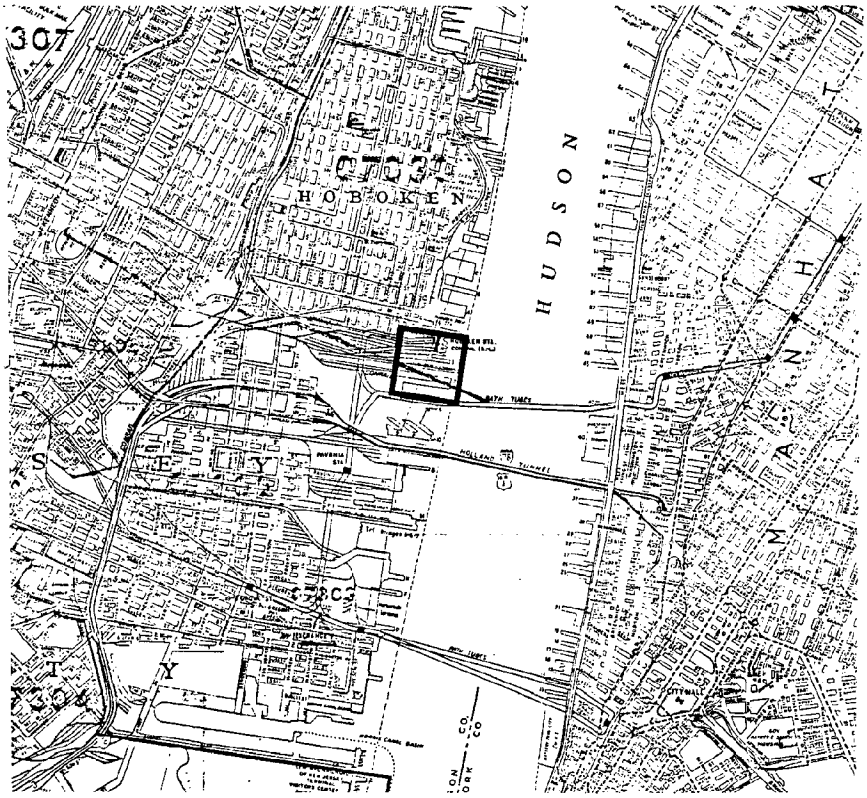


FIGURE #1

SITE LOCATION

1984 Aerial Photo Showing Proposed Link

FIGURE 2

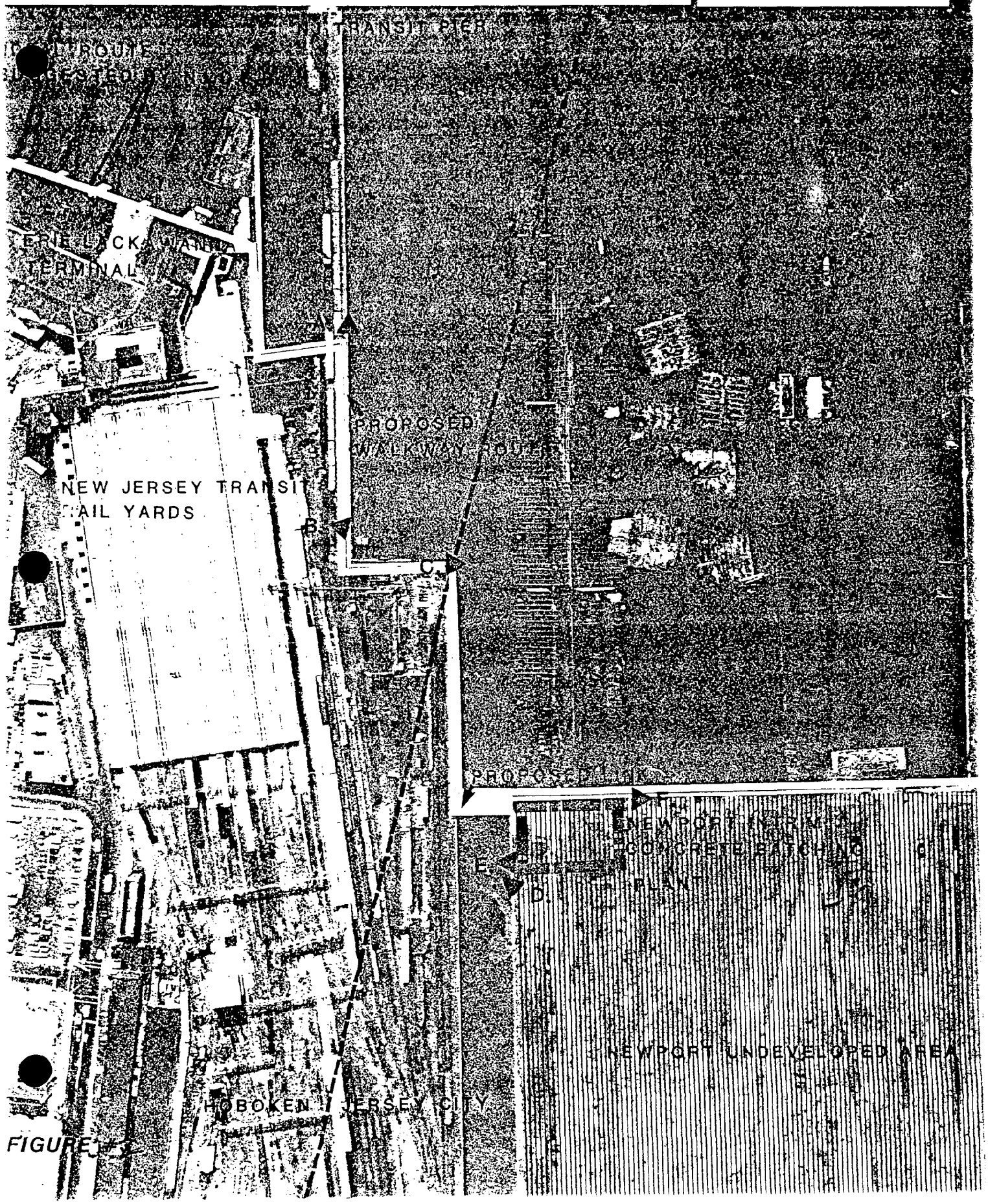
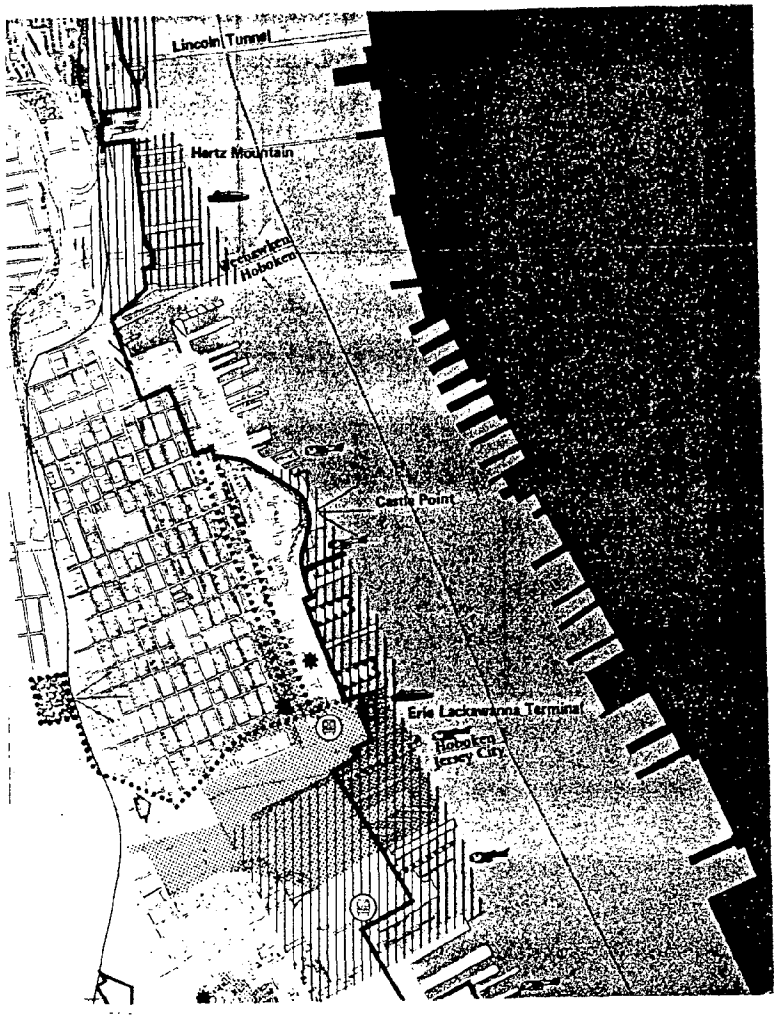


FIGURE 2

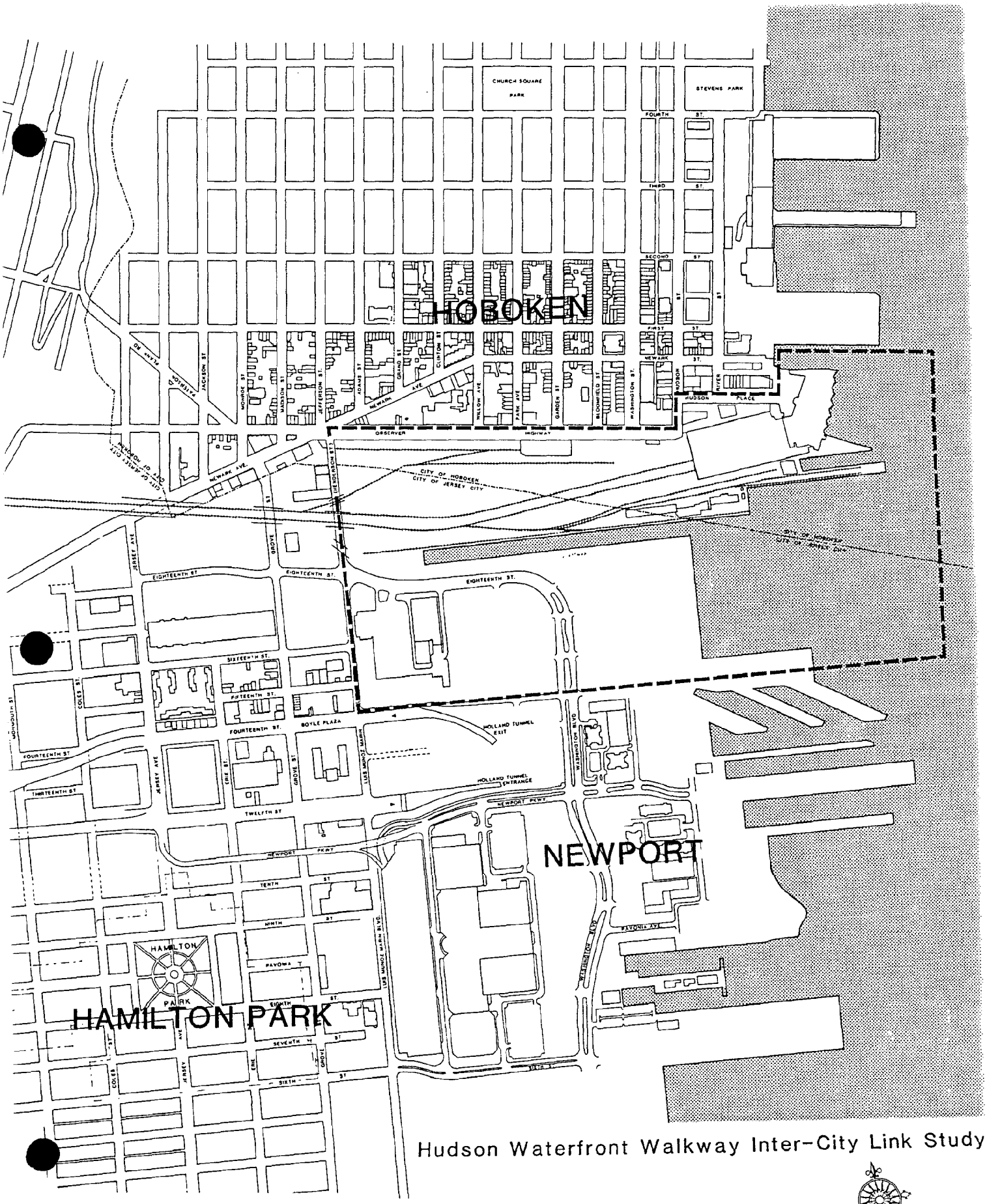
FIGURE 3



HUDSON WATERFRONT WALKWAY

"IDEAL" ROUTE AS PROPOSED

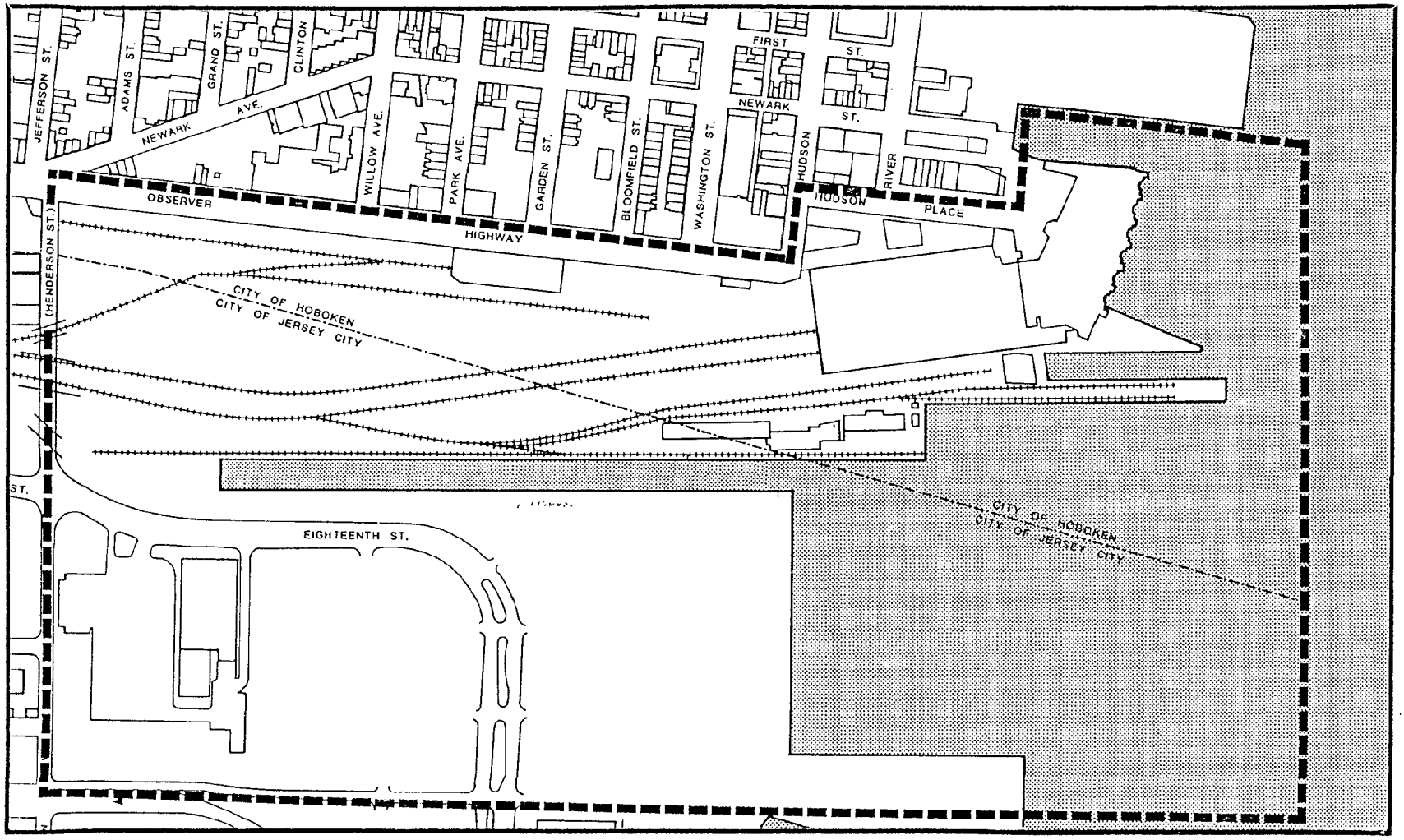
BY NEW JERSEY D.E.P.



Hudson Waterfront Walkway Inter-City Link Study

FIGURE 4 Study Area and Vicinity

Hudson Waterfront Walkway Inter-City Link Study



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Study Area Boundaries

Figure 5

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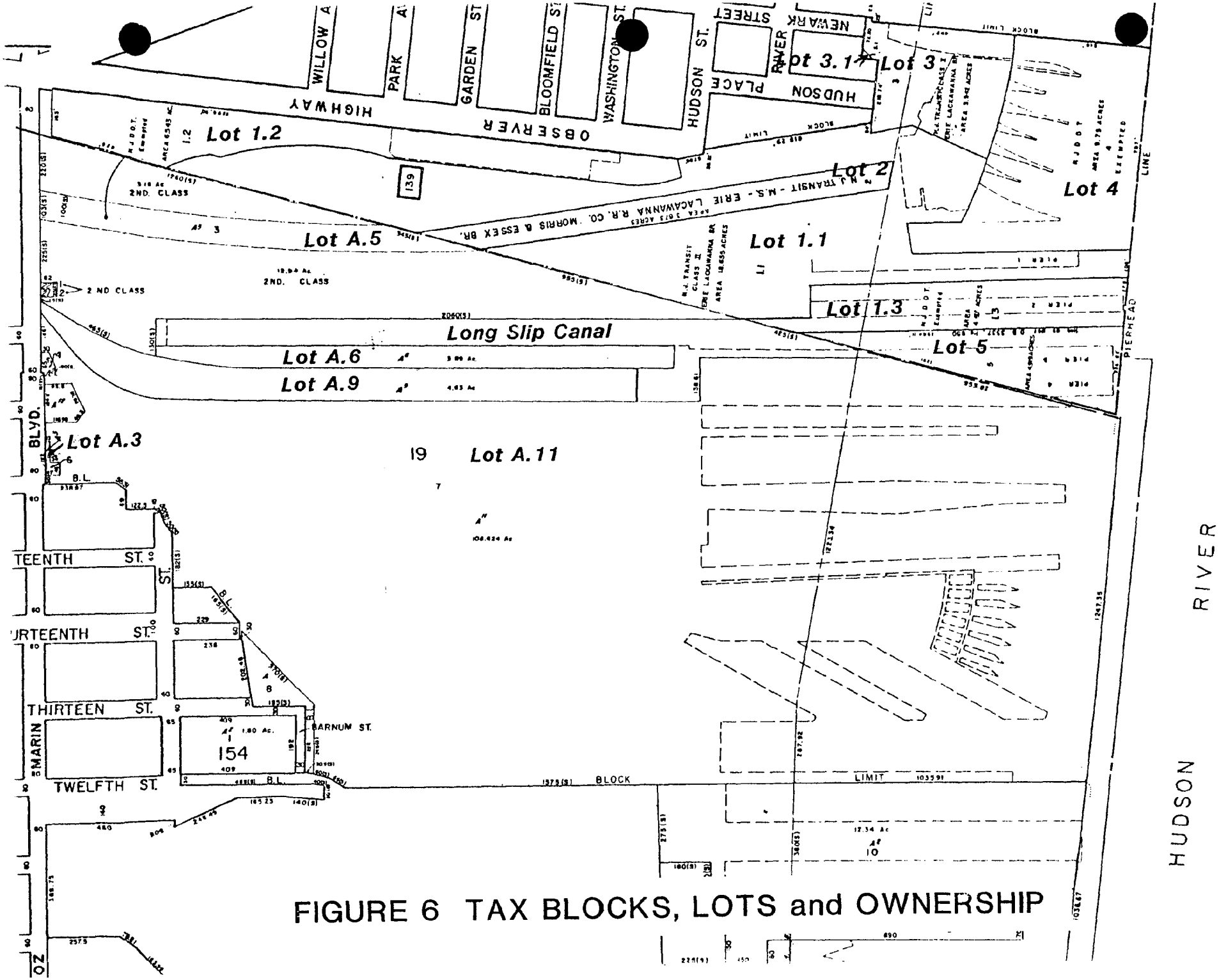

FIGURE 6 TAX BLOCKS, LOTS and OWNERSHIP

approximately 1,948 of the residential units and the Hamilton Park area directly east of the Newport Project extending from 6th Street to 12th Street is experiencing a substantial amount of revitalization resulting in an increased density along with an increased median income. This trend is similar to the rest of downtown as well as in Hoboken.

Because revitalization and redevelopment of the area is a fairly recent phenomena, the areas on both sides of the Long Slip Canal are also characterized by large tracts of vacant land as well as obsolete industrial facilities currently being used for parking.

Proposed

Residential Development
Figures 7 and 8 show the proposed development in Hoboken and the Newport Project.

Based on proposals for development on the Jersey City Waterfront (Ward E) it is estimated that approximately 18,466 new units will be constructed by the year 2,000. This will result in the addition of approximately 27,890 new residents. Residential projections for the Hoboken waterfront are not as clearly defined but based on the Hoboken Master Plan prepared by the Ehrenkrantz Group and Eckstut a total of 1,600,000 sq. ft. of residential space is projected.

Office & Commercial Development

Again, using projections for the Jersey City waterfront taken from development proposals it is anticipated that approximately 21,544,039 sq. ft. of office space which could produce as many as 86,171 new employees. The Ehrenkrantz Group Master Plan calls for 1,287,000 sq. ft. of office space which based on 250 sq. ft. per worker would result in 5,148 new employees.

Commercial/Retail

Looking at Commercial/Retail development the recently completed Newport Center Mall accounts for 1,191,568 sq. ft. of the total 2,113,833 sq. ft. projected in Jersey City. This regional shopping center will attract people from all over Hudson County. The Ehrenkrantz Group Master Plan calls for 83,000 sq. ft. of retail space which creates another major retail node. Taken together these retail centers will create approximately 5,008 additional jobs.

To summarize if the proposed projects are developed as anticipated an additional 119,069 residents/employees would live and/or work on the waterfront. This is significant in

terms of providing for easy pedestrian access between the two cities as well as to and from mass transit (ferry/rail) stations. It should also be noted that with this development traffic created will put roadways at or above capacity thus making the option of walking even more attractive.

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1 Totals for recent & projected development Jersey City URD - 6/29/89
2 Ehrenkrantz Group & Echstut - February 1989

Site Specific Land Use

Existing

In discussing existing and proposed land uses, it is important to discuss those which immediately effect the link site.

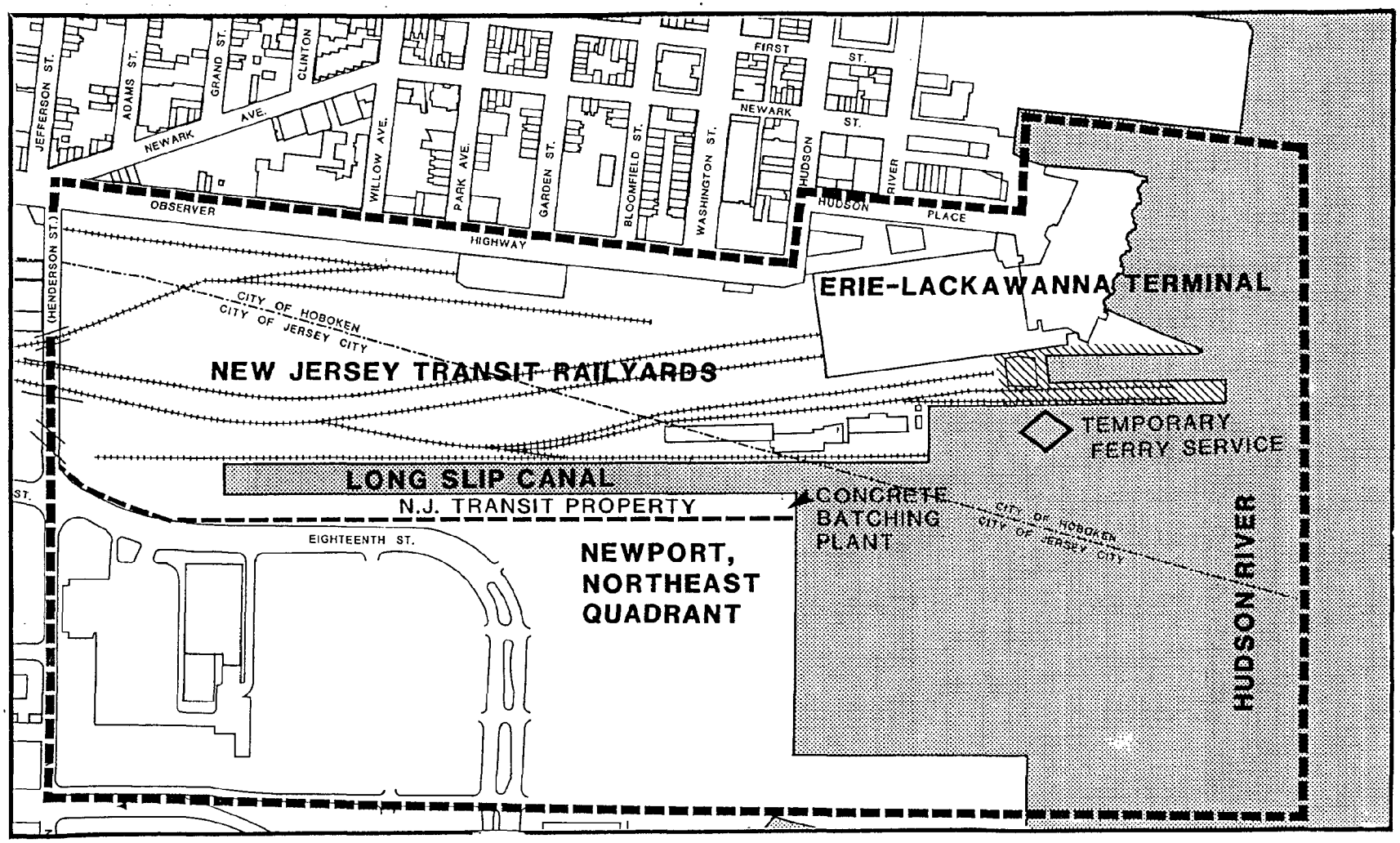
The Newport Concrete Batching Plant is currently in operation directly south of the Long Slip. This facility is located on New Jersey Transit property and was granted interim site plan approval by the Jersey City Planning Board on March 29, 1988. This approval is good for a period of two years and would have to be renewed prior to March 29, 1990. The plant produces concrete for the Newport Development and uses the eastern end of the canal to float barges loaded with aggregate used in producing the concrete. It is anticipated that Newport would continue to prepare its own concrete until completion of development, however because the plant is situated on New Jersey Transit property it is conceivable that the plant may have to be relocated to accommodate proposed N.J. Transit plans.

It should also be noted that the Port Authority of New York and New Jersey has entered into a 5 year lease with N.J. Transit to use of the pier located directly north of the long slip for a temporary ferry docking facility which will begin operations in August of this year (See attached Figure 9). This ferry will carry passengers to Battery Park in Lower Manhattan during week day peak periods.

Proposed

New Jersey Transit will shortly be reviewing it's development options for all property owned in both Hoboken and Jersey City. Preliminary platform and yard plans call for the creation of a roadway directly north of the Canal with a parking lot at the sites of the powerhouse and coach house. This proposal is intended to provide for employee access to

Hudson Waterfront Walkway Inter-City Link Study



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Existing Site Specific Land Use

FIGURE 9

AREA LEASED TO PORT AUTHORITY

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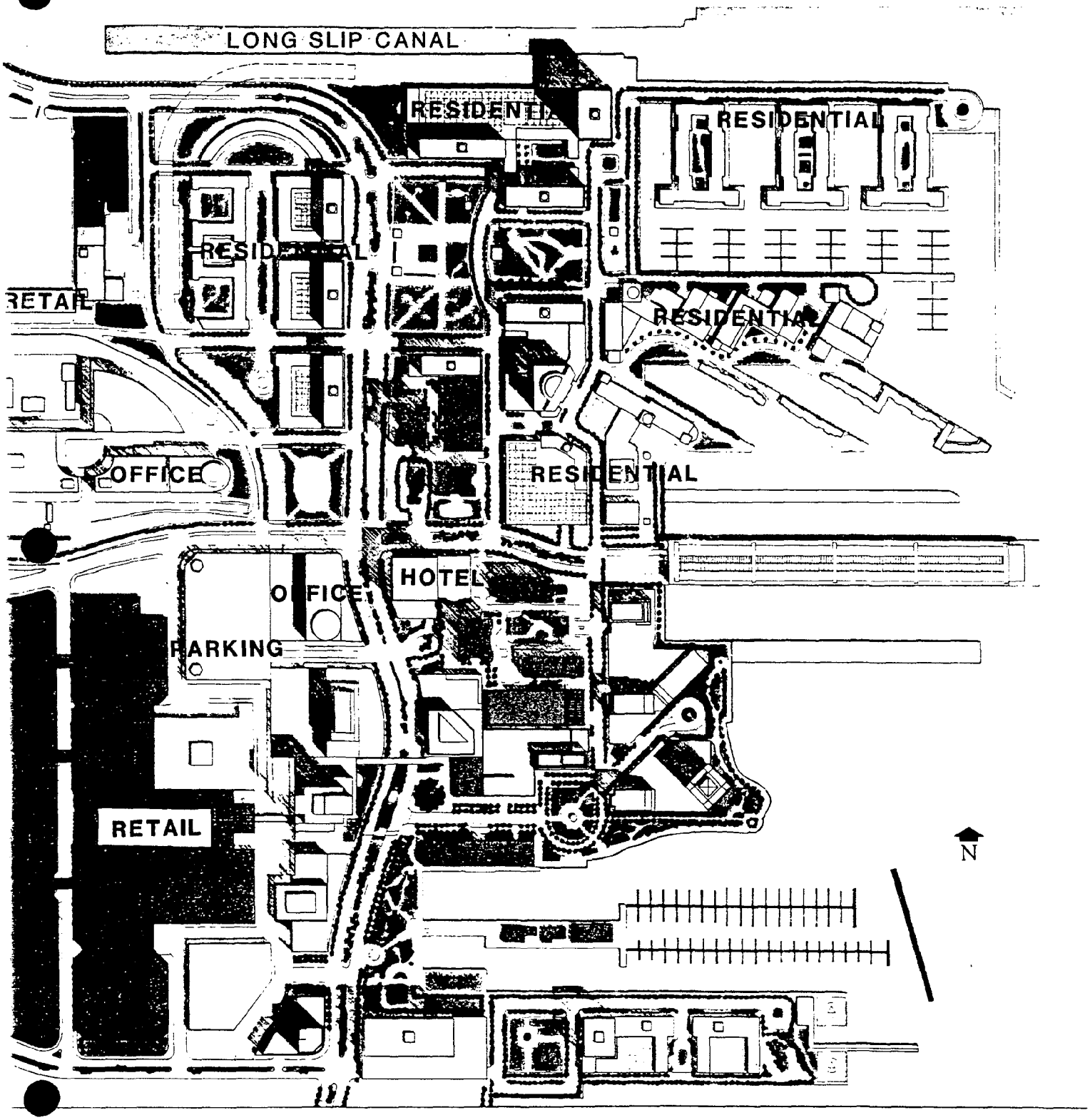
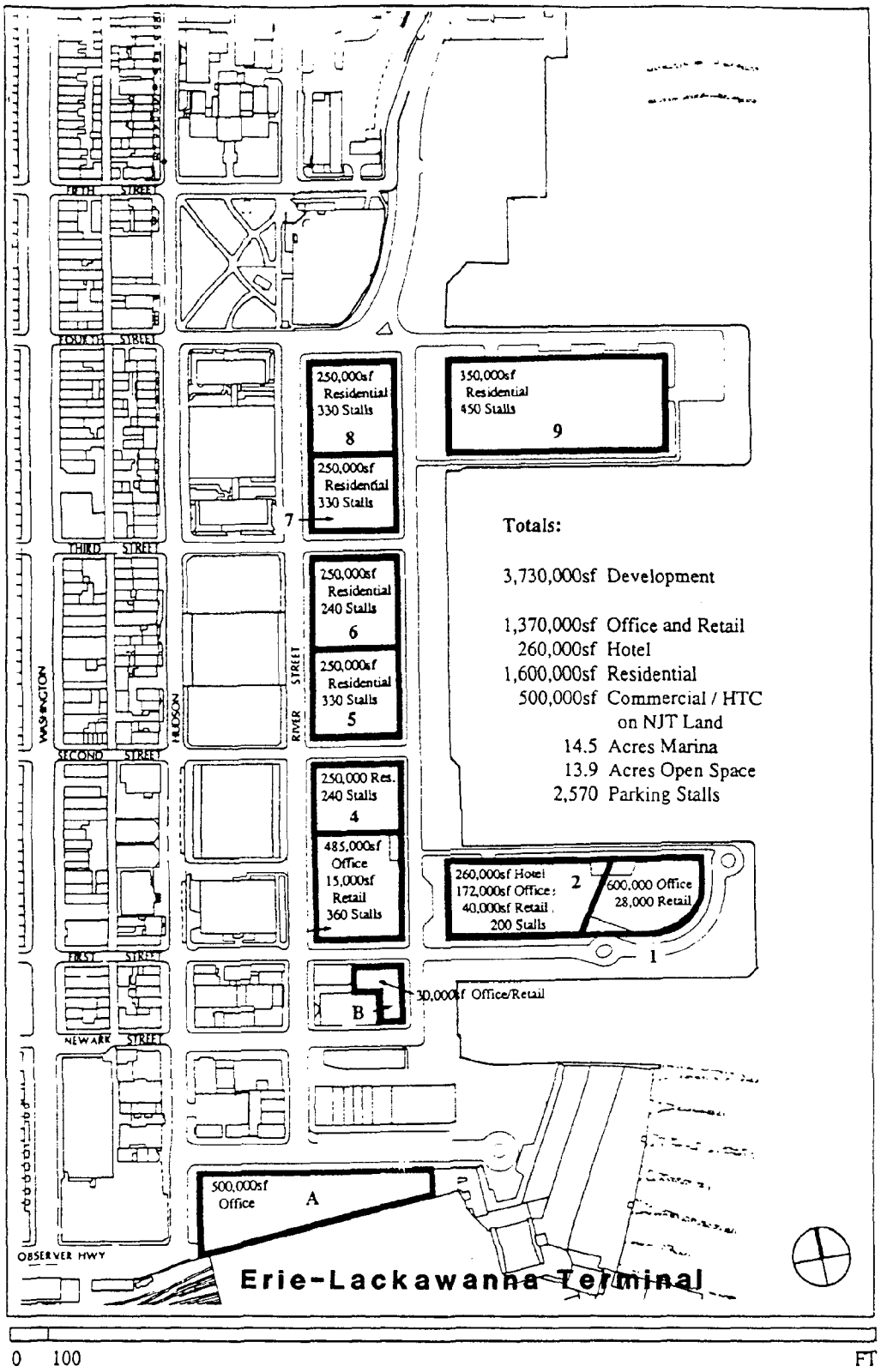
Hudson Waterfront Walkway Inter-City Link Study
Proposed Development Jersey City
FIGURE 8



Source: NEWPORT

Existing
Approved
Proposed



Source: Hoboken MASTER PLAN

Fact Sheet

The Ehrenkrantz Group & Eckstut

Hudson Waterfront Walkway Inter-City Link Study

Proposed Development Hoboken

FIGURE 7

the site, as well as additional train storage during off peak hour. The completed study is expected to be released by January 1990. (See attached Figure 10 - 11).

The Port Authority is currently looking at options for providing a permanent ferry docking site, which would either be located in the existing Erie-Lackawanna Terminal or would remain at the same site as the temporary facility but would be expanded. (See attached Figure 11).

Additionally, the Ehrenkrantz Group Master Plan calls for a 500,000 Sq. ft. office building to be located directly east of the existing station. However, the Preliminary Report "Hoboken- The City and the Waterfront", calls for major commercial development above and beside the railyards. The proposal is for buildings over the tracks, rangeing in height between 25 and 30 stories, if development proves feasible for commercial or mixed use.

In summary, plans being considered by N.J. Transit and Port Authority directly effect the accessible of the canal and consequently the proposed pedestrian link. In discussing the proposal with these agencies, both seemed very much in favor of assisting in the planning of the link and felt that it would be an added asset for their patrons to have easy pedestrian access to the station/dock from both the north and the south.

Historic and Archaeological Resources 7:7E-3.34

The Jersey City and Hoboken Waterfront areas have a rich historical and cultural background. Located in and around the study area are several structures of historical significance. The historic sites shown on Figure 12 are the following:

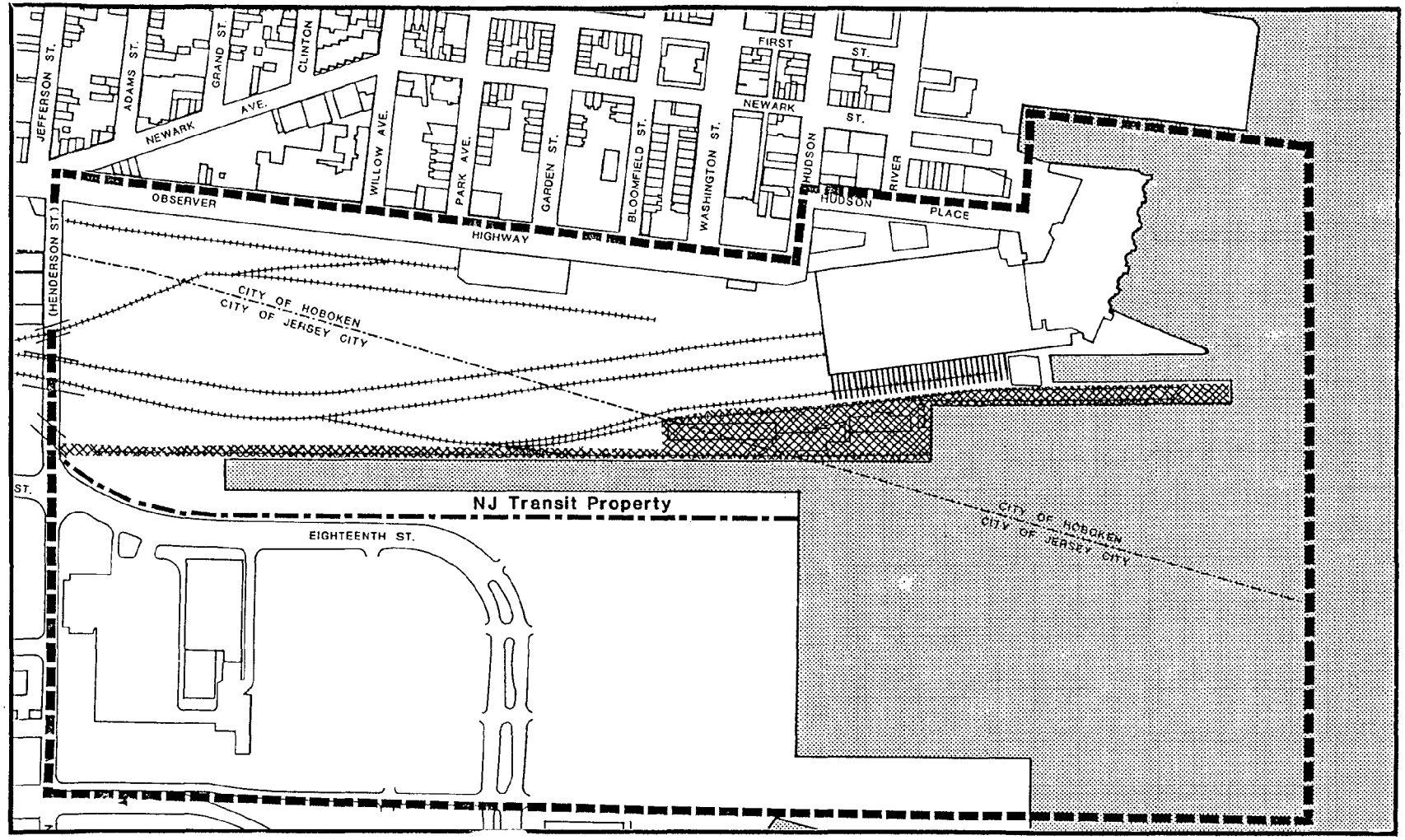
Hoboken City Hall

The Hoboken City Hall occupies a square block in the heart of downtown Hoboken, fronting on Washington Street. The present building incorporates two phases of construction, the first completed in 1883, the second in 1911. City Hall is of significance in the areas of architecture, politics and military history, having been used as an Armory during both world wars.

Hoboken Land and Improvement Company Building

The Hoboken Land and Improvement Company Building at 1 Newark Street, is significant for its historic association with the commercial development of Hoboken, and enterprises involving the development and expansion of transportation facilities. Also the unique design of

New Jersey Transit: Preliminary Proposed Development



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Expand Train Platform Area

Remove Buildings and Railroad Tracks

New Jersey Transit Proposal

FIGURE 10

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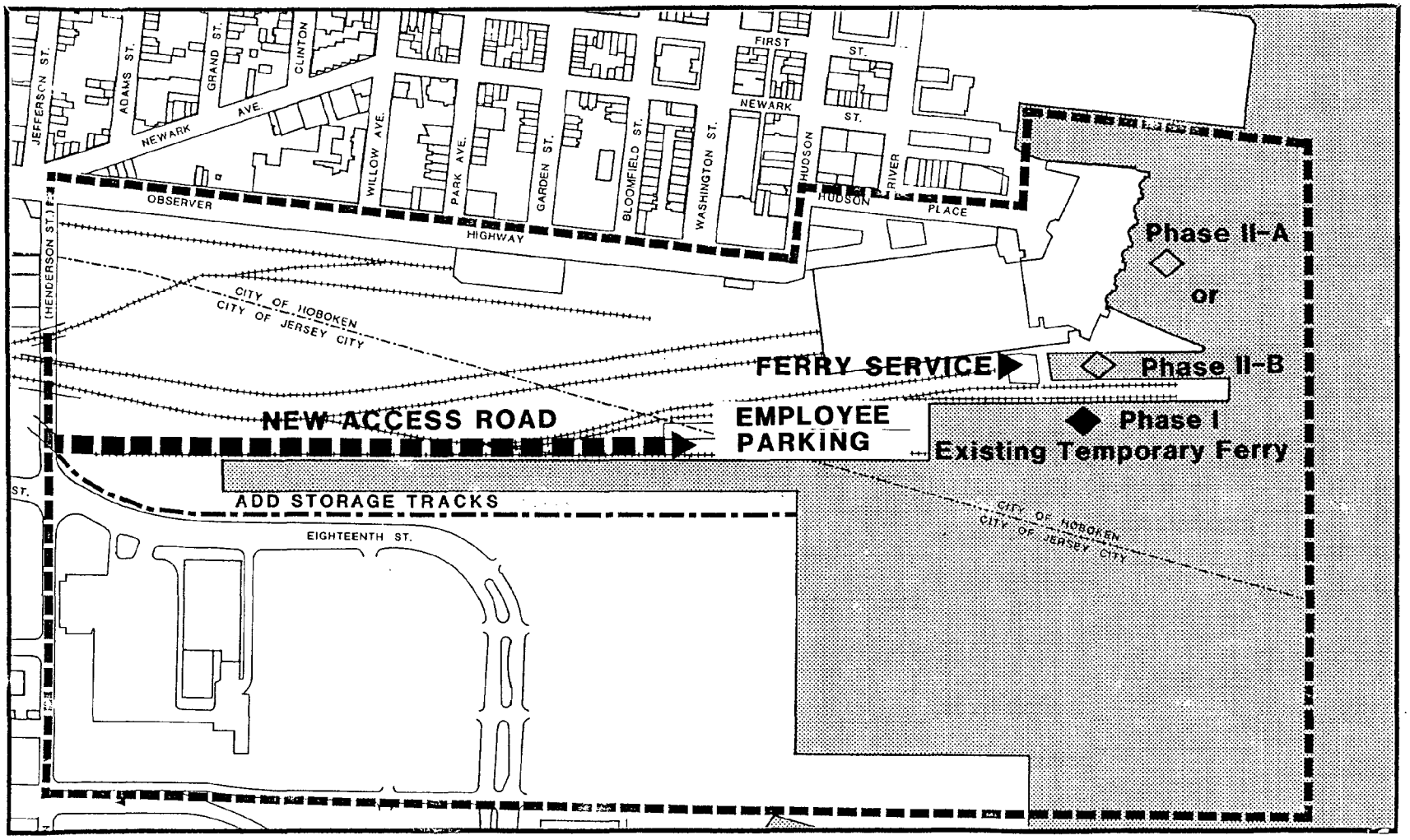
Hudson Waterfront Walkway Inter-City Link Study



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New Jersey Transit

Preliminary Proposed Development

FIGURE 11

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Hudson Waterfront Walkway Inter-City Link Study

209 River Street, Hoboken

This is the location of a handsome brick office building associatec with the maritime industry in Hoboken. It is located in front of the Port Authority Piers in southern Hoboken.

Southern Hoboken Historic District

This historic district encompasses the main commercial area anc transportation hub of Hoboken. It includes portions of River, Hudson, Court, Washington, Bloomfield, Observer Highway, and First through Fourth Streets. Several sites within the district are listed on or eligible for the State and National Registers on their own merit.

1 Hoboken City Hall

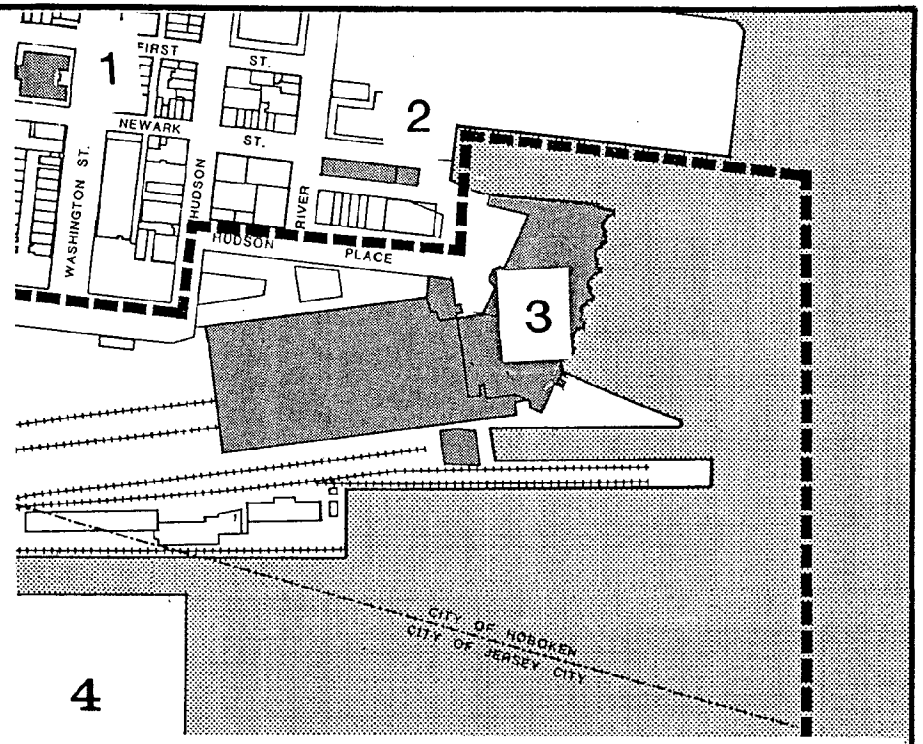
The Hoboken City Hall occupies a square block in the heart of downtown Hoboken, fronting on Washington Street. The present building incorporates two phases of construction, the first completed in 1883, the second in 1911. City Hall is of significance in the areas of architecture, politics and military history, having been used as an Armory during both world wars.

2 Hoboken Land & Improvement Company Building

The Hoboken Land & Improvement Company Building at 1 Newark Street, is significant for its historic association with the commercial development of Hoboken, and enterprises involving the development and expansion of transportation facilities. Also the unique design of the building is significant for the excellence of its craftsmanship and detailing. The building dates back to 1889.

3 Erie Lackawanna Railroad & Ferry Terminal, Hoboken

This handsome complex looks much as it did when completed in 1907. It is significant in the areas of architecture, engineering (the entire main structure is built over water) and transportation.



Hoboken Seamen's Mission Not shown on map

The Seamen's Mission building at 60-64 Hudson Street was built in 1907 and added to in 1910 and 1925. For seventy years, the Hoboken Seamen's Mission has served as a refuge for German Sailors. It was the site of raids by Federal agents during both world wars to seek out spies.

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Historic & Archaeological Resources

FIGURE 12

N

the building is significant for the excellence of its craftsmanship and detailing. The building dates back to 1889.

Erie Lackawanna Railroad and Ferry Terminal, Hoboken

This handsome complex looks much as it did when completed in 1907. It is significant in the areas of architecture, engineering (the entire main structure is built over water) and transportation.

Railroad and Ferry Yards, Jersey City

This area contained a number of railroad yards and piers including an early coal pier (ca. 1913), rail-to-barge transfer piers, and the former Pavonia Ferry Landing. It is significant in the area of transportation and occupies the waterfront area from the Holland Tunnel to the Hoboken boundary. The Long Slip Canal lies within this area. A ferry service operated by the Railroads as well as a pontoon bridge for the Presidential Lines crossed the canal, at one point in time. The eligibility opinion on the Erie-Lackawanna yard for the State or National Register of Historic Places was removed by the State Historic Preservation Officer in 1985.

Transportation Use Policies (7:7E-7.5)

The existing transportation network depicted in Figure 13 illustrates the various modes of transportation currently available.

New Jersey Transit Rail service is one form of transportation with its hub at the Hoboken terminal. N.J. Transit trains bring passengers in to the Hoboken terminal from northern and western New Jersey. Recent plans include providing additional train service into Hoboken by rerouting trains which currently provide access to PATH through Newark's Penn Central Station. This would increase the number of passengers arriving in Hoboken bound for the Jersey City Waterfront. These passengers could greatly benefit by being provided the option of walking to their final destination.

Also shown on Figure 13 are the existing bus routes which link Jersey City and Hoboken. These routes are primary oriented to inter city/Journal Square.

PATH Trains are also shown on Figure 13 and are an important means of north/south Transportation between Jersey City and Hoboken. The following numbers taken on June 13, 1989 were provided by the Port Authority:

Average Weekday

	Entrances	Exits
Hoboken	36,988	35,997
Pavonia/Newport	2,385	2,911
Exchange Place	6,187	6,600

7-10 AM Peak Period

	Entrances	Exits
Hoboken	28,737	1,403
Pavonia/Newport	1,388	357
Exchange Place	2,411	2,267

AM Peak Hour

	Entrances	Exits
Hoboken	15,991	622
Pavonia/Newport	766	137
Exchange Place	1,153	1,242

In analyzing the data it is important to note the number of people entering the PATH system during the AM Peak Period at the Hoboken station. A large percentage of these riders are transferring from NJ Transit and are bound for New York City or other stops on the Jersey City waterfront, ie. Pavonia Avenue or Exchange Place. The figures indicate that as many as 2,624 people exited PATH at Pavonia or Exchange Place during the peak hour period. The data provided does not indicate the point where these riders entered the PATH system but we must assume that some portion originated in Hoboken. It is this group of commuters that would benefit from the proposed pedestrian link by chosing to walk as opposed to boarding PATH in Hoboken and exiting at either Pavonia or Exchange Place.

It is important to keep in mind that at the time of this count, no office space was completed within the Newport development. As office space is completed, the number of persons exiting PATH at Pavonia will increase dramatically. Thus making the need for a pedestrian link all that much more apparent.

Pedestrian Access

Figure 14 shows the existing and proposed pedestrian access routes between the two cities. The current path would require a person to travel approximately 10 block west to Henderson Street to reach the first north/ south connector.

Bus and "PATH" Rail Service

FIGURE 13

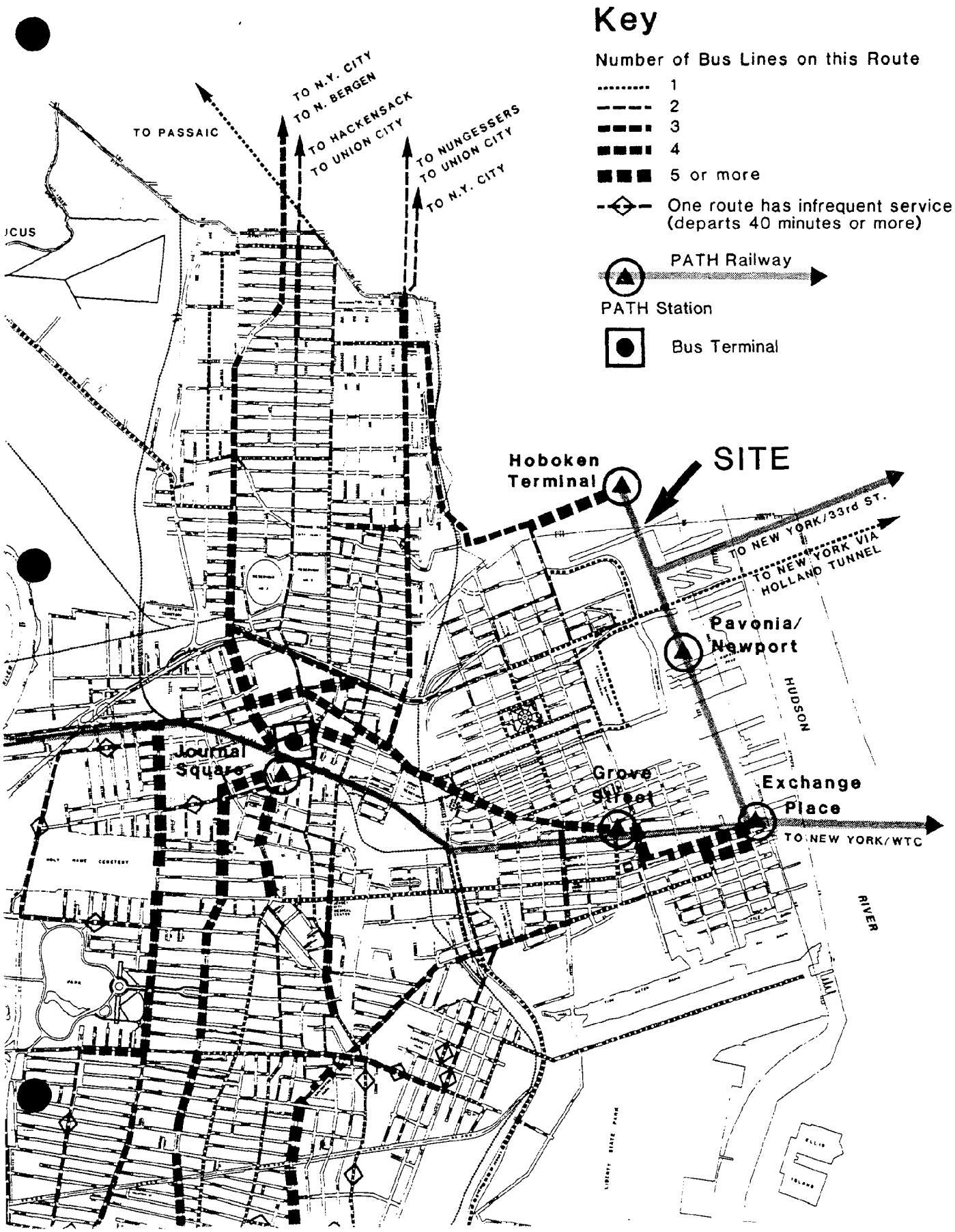
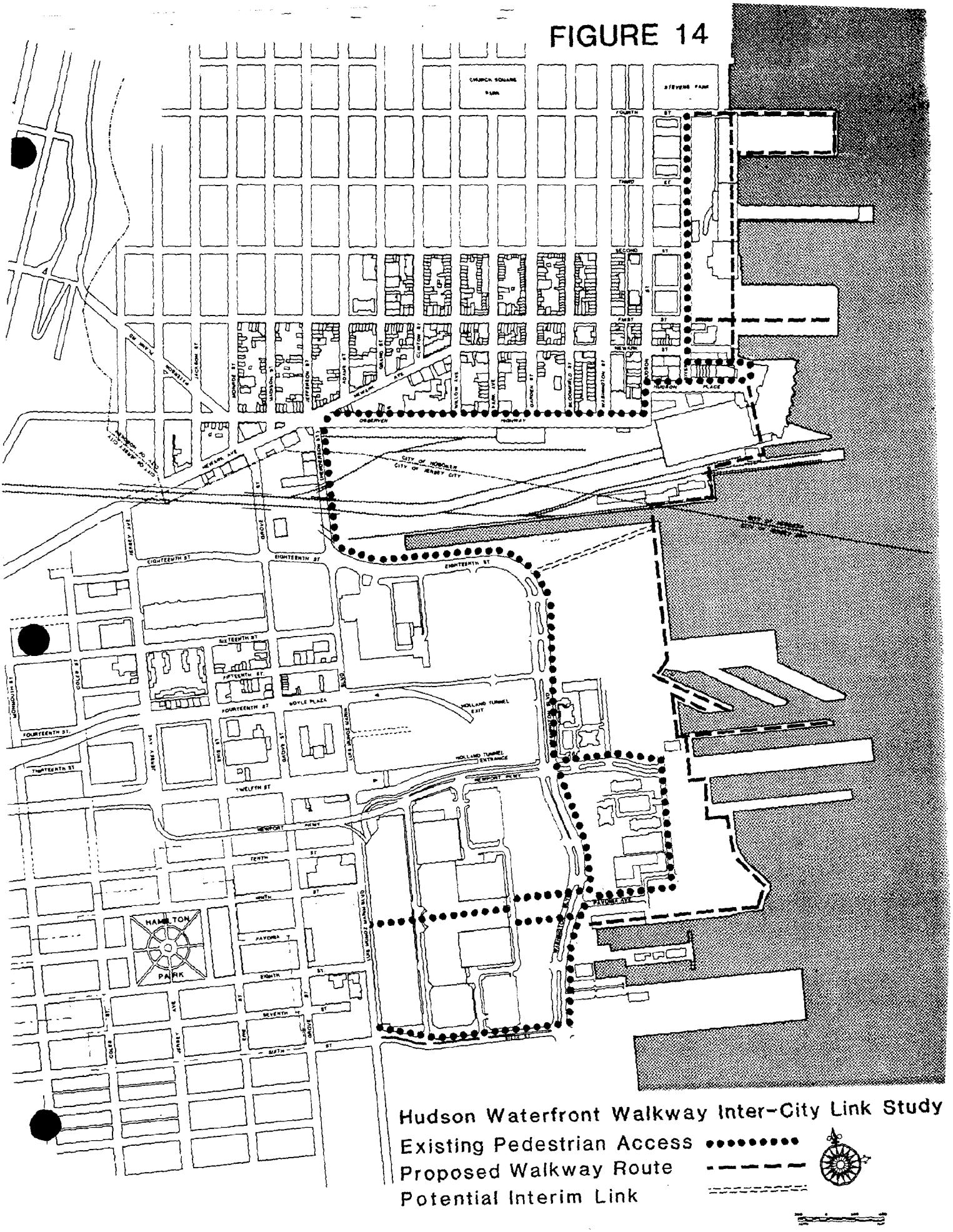


FIGURE 14

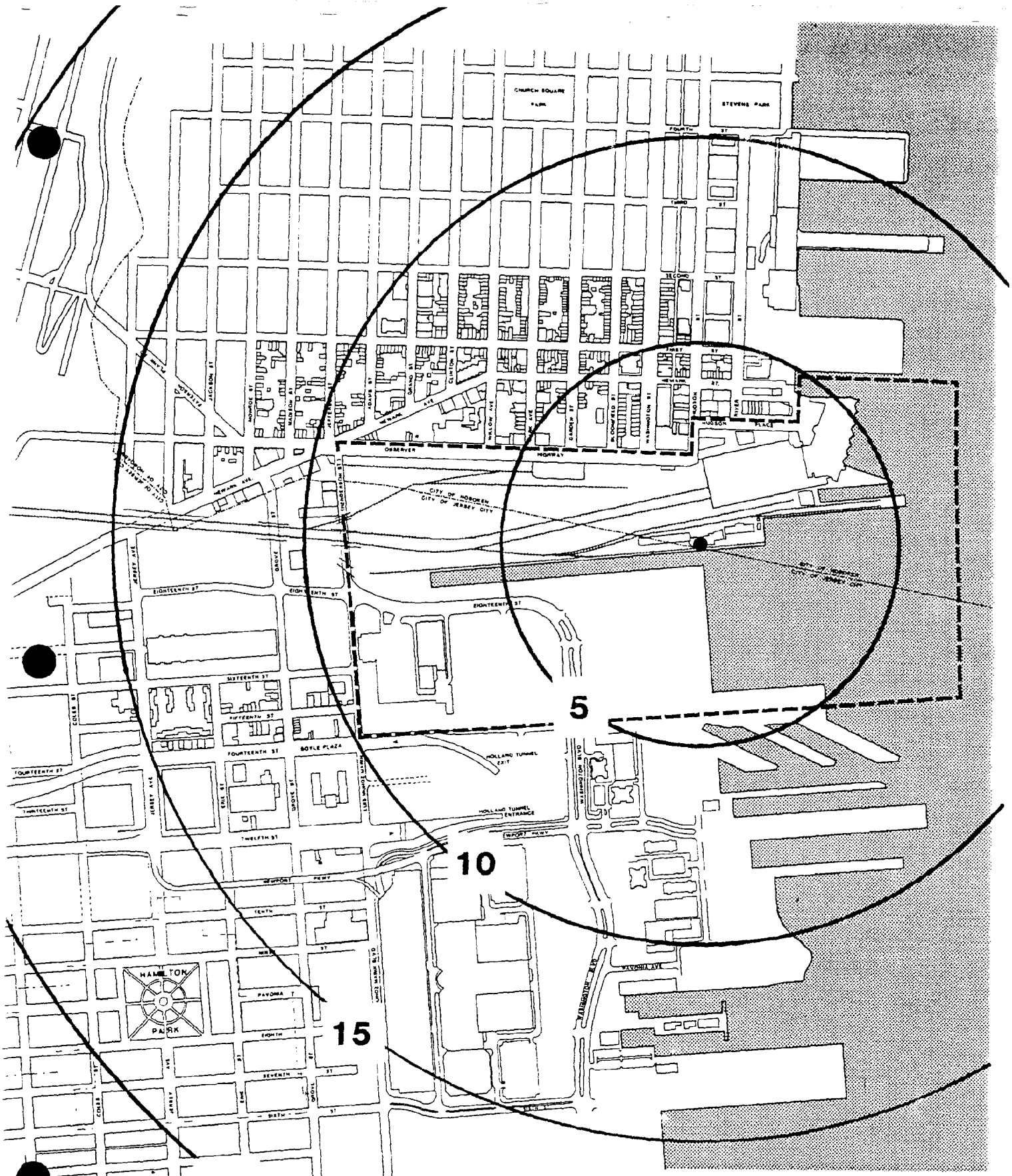


Hudson Waterfront Walkway Inter-City Link Study

Existing Pedestrian Access

Proposed Walkway Route

Potential Interim Link



Hudson Waterfront Walkway Inter-City Link Study

FIGURE 15

Walking Time to Site in Minutes

The proposed path would not only allow faster and easier access but it would afford the pedestrian with an enjoyable journey away from automobile traffic and with spectacular views of the Hudson River. It is important to note that Newport has provided its temporary access along Washington Blvd. of which a temporary access way to the link could be provided prior to construction of the northeastern section of the Newport development.

Figure 15 shows the walking time to the proposed crossing site in the study area. Surveys show the average free flow walking speed for pedestrians to be 260 feet per minute, which corresponds to walking a mile in 20 minutes, or three miles per hour. As you will note, the entire Newport development is within 15 minutes walking time from the link site. This is a very reasonable distance for a passenger exiting NJ Transit in Hoboken and bound for a job at Newport to choose to walk as opposed to boarding PATH.

CONSTRAINTS

Navigation Channels (7:7E-3.7)

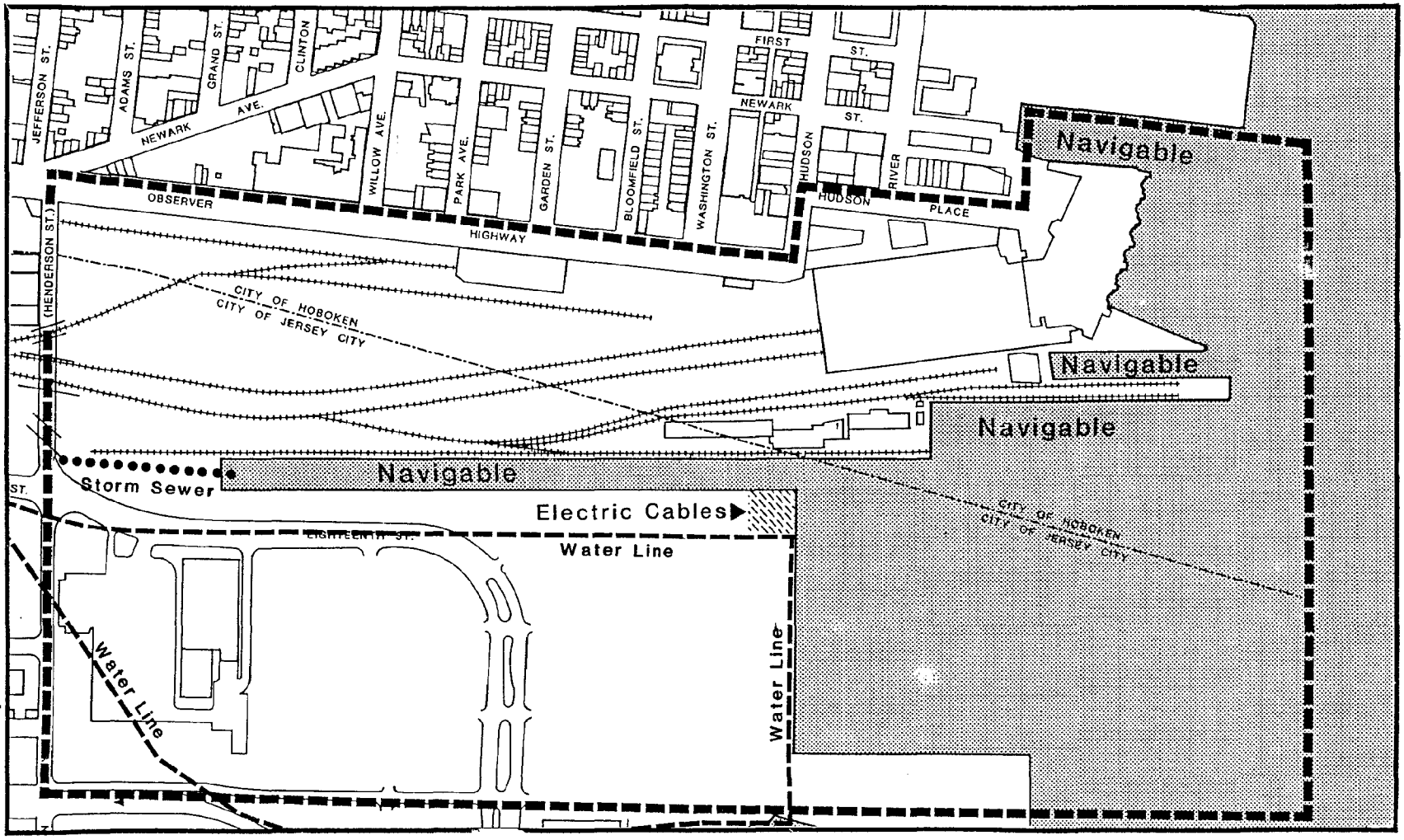
The Long Slip Canal is listed as a navigable channel by the Coast Guard and is part of the New York-New Jersey Port District.Ports (7:7E-3.11) . At one time the canal was used for anchorage of ships and barges brought into the canal by the railroads. Presently, the southeasterly portion of the canal is used by the developers of Newport, for barges containing raw materials for the concrete batching plant.

At this time, N.J. Transit has no plans for the future use of the canal. N.J.Transit are the owners of both sides of the Long Slip Canal and would be the only users of the property. Considerations for the possible use by the Port Authority of N.Y. and N.J. for ferry service was ruled out because of the shallow depths in the canal. Dredging and a turning basin for deep draft ships would be needed for commercial use of the canal.

Submerged Infrastructure Routes (7:7E-3.12)

There are several submerged Infrastructure Routes in the Long Slip Canal. The major infrastructure route would be that of the extension of the new separated sewer outfall for Eighteenth Street. There are also electrical and water lines that run the length of the southern upland area of the Long Slip Canal. See Figure 16 for locations. The electrical and water line at one time serviced the piers east of the canal.

Hudson Waterfront Walkway Inter-City Link Study



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Submerged Infrastructure and Navigable Channels

FIGURE 16

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Filled Water's Edge (7:7E-3.16)

The southern edge of the Long Slip Canal was investigated in May 1986 by Vollmer Associates for Newport. The analysis was for overall soil stability. The investigation revealed that the bulkhead consisted of a timber crib build in the 1860's with a gravity concrete wall on top. (See Figure 17). The timber crib was analyzed for resistance to sliding and to overturning under the load imposed for a proposed roadway. The concrete wall on top of the timber crib was analyzed for resistance to sliding and to overturning under the same conditions as the crib.

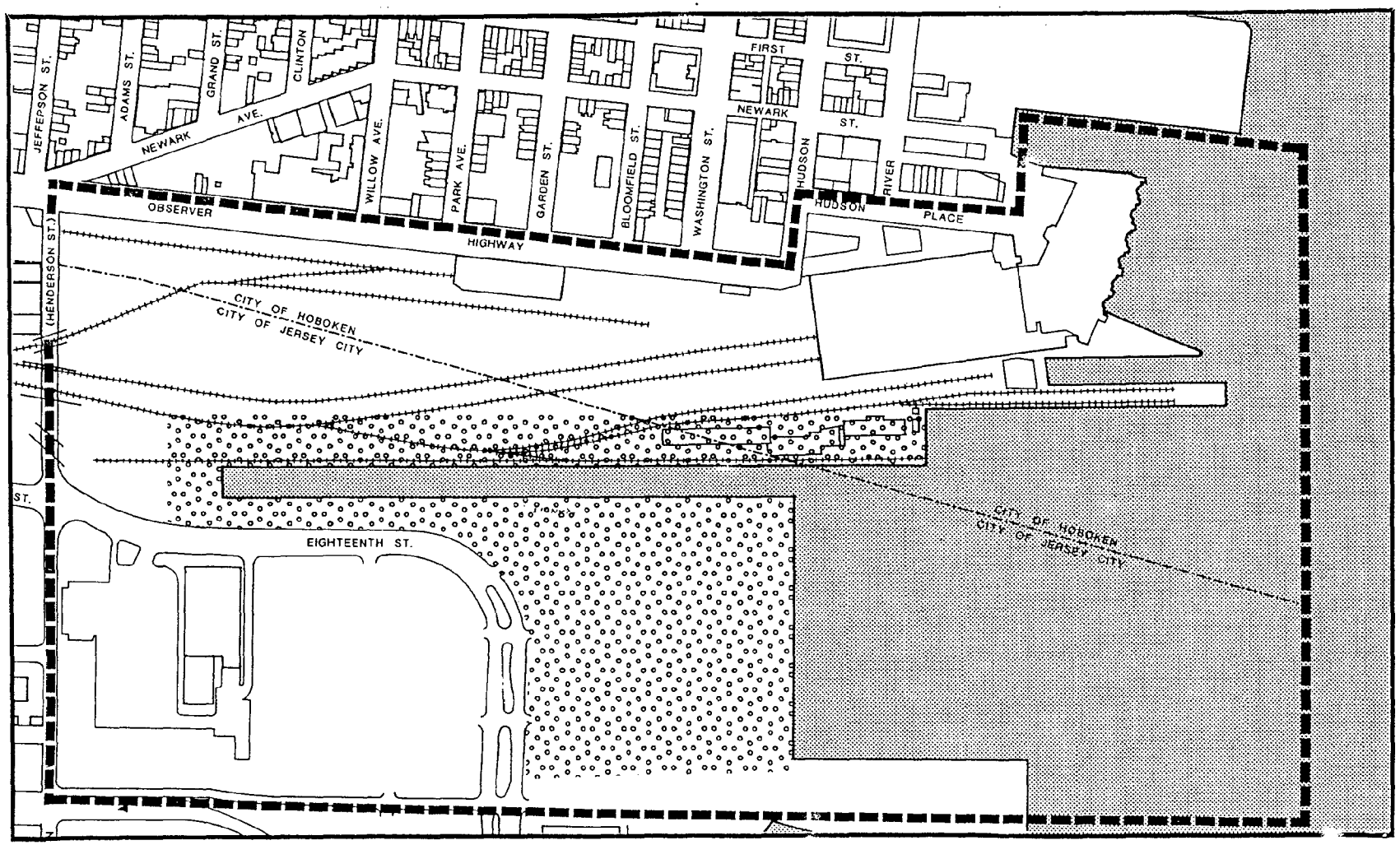
The Bulkhead is a timber crib below mean low water with a concrete wall atop from mean low water to approximately five (5) feet above mean sea level (MSL) the project datum. This type of crib would be built and floated over a previously prepared bed. The bed would have been dredged to firm material or if firm material was too deep, as on the east end of the Long Slip Canal, the bed would be overdredged and backfilled to the design depth. The crib would then be filled with stone ballast and sunk.

The portion of the crib below Mean Low Water remains wet all the time and deterioration slowly takes place. The part of the crib in the tidal zone is alternately wet and dry and the timber quickly deteriorates, needing replacement every ten to twenty years. Timber was used for replacement in the tidal zone until the late 19th or early 20th century when concrete was substituted to provide longer and more inexpensive service. From the type of construction materials used and condition of the concrete wall, it is inferred that the concrete wall had ben built in the 1930's or 1940's. A reconnaissance underwater inspection was conducted on the timber crib. No generalized deterioration or failure was found. No overt evidence of marine borers were found.

The bottom of the crib was determined by borings to be 21 feet below MSL. Below the crib at this location is six feet of fill above organic silt. For + 300 feet at the eastern end of Long Slip Canal, approaching the Hudson River, the organic layer thickens considerably and the underlying firm sand is found at over forty feet below MSL. The back of the crib was found at approximately elevation +3 MSL and forty-eight (48) feet from the edge.

From the soil borings, there are indications that the Long Slip Canal was dredged deeper than the bottom of the crib. This is not an uncommon occurrence, during and just after World War II as ship were becoming larger, deeper slips were dredged. This dredging has reduced the factor of safety for the stability of the bulkhead.

Hudson Waterfront Walkway Inter-City Link Study



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Filled Water's Edge: Cribs

FIGURE 17

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The factors of safety for the crib for resistance to sliding and overturning are satisfactory being in excess of two. For overall soils stability, the factor of safety is 1.4 which is marginal. The analysis quantified a number of factors that vary throughout the soils at the site. The judgements have tended to be conservative, allowing acceptance of a lower than optimal factor of safety. The Report recommended however, that the bulkhead be monitored during placement and compaction of the roadway fill in order to determine if any movement in the bulkhead occurs.

Overall, the bulkhead was determined to be in reasonably good condition. There were some localized areas that needed to be repaired for exposed reinforcing bars and damage to the concrete and timbers. In addition it was recommended that the upper portion of the wall should have some remedial work done for preventive maintenance reasons.

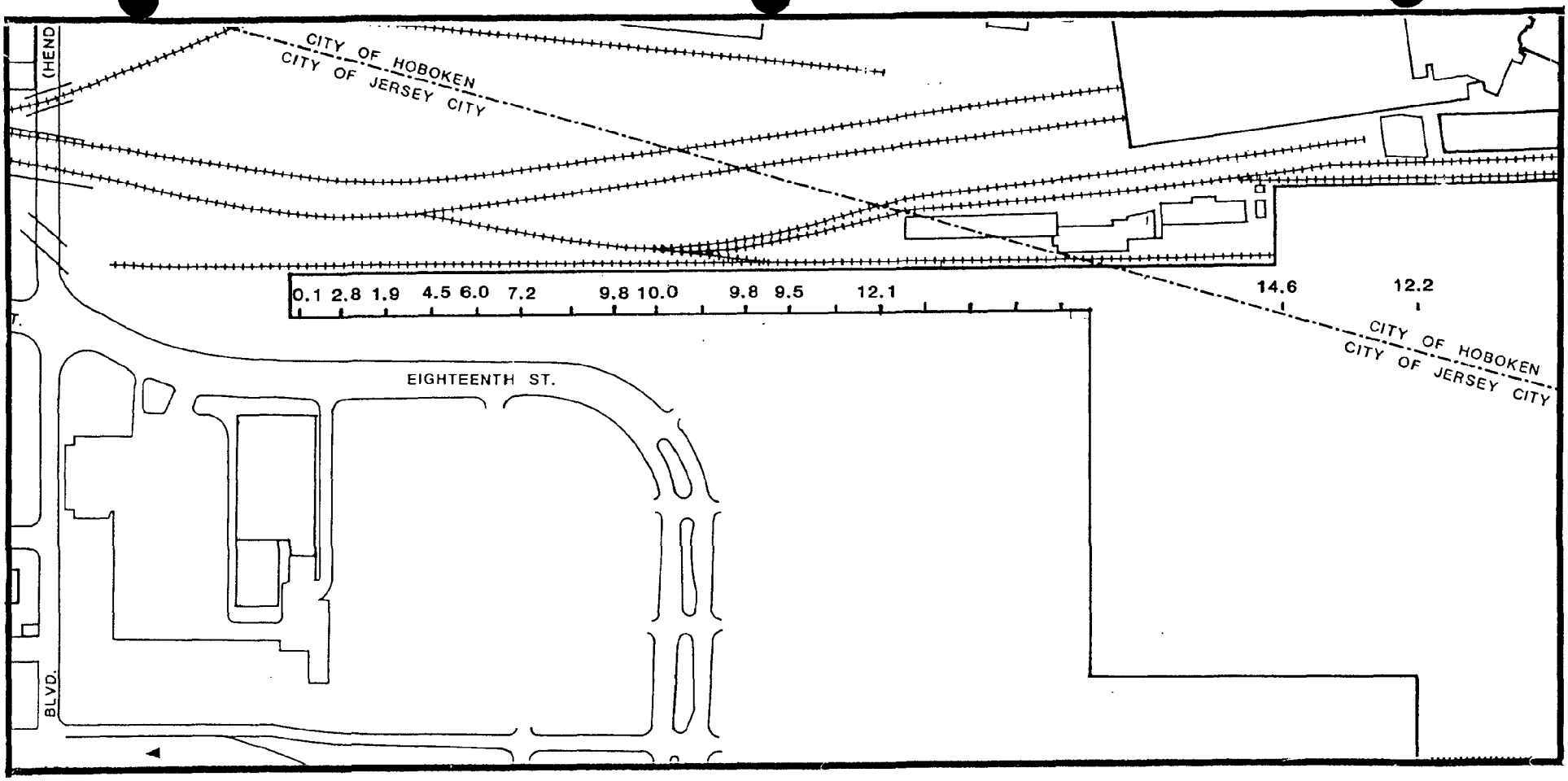
The concrete wall on top of the timber crib will be unstable to sliding under the loads imposed by a new roadway or bridge. The problem could be corrected by various means. Some possible solutions include driving new piles in front of the wall, installing a tie-back or modifying the wall itself.

Intertidal and Subtidal Shallows (7:7E-3.15)

The western portion of the canal would be included in the classification of subtidal shallows. The shallows are permanently submerged to a depth of 4 feet below the mean high water line. Soundings for the canal are shown on Figure 18. The Intertidal and Subtidal areas normally play a critical role in the estuarine ecosystem. These are critical habitats for many benthic organisms and are critical in the food web as forage areas for fishes. The Long Slip Canal shallows have been directly impacted by the Combined Sewer Outfall at the bulkhead end of the canal. As new regulators and major sewer line improvements are made during the construction of the Newport Project, water quality will improve.

Special Hazard Areas (7:7E-3.39)

Special Hazard Areas, shown in Figure 19, include areas with a known actual or potential hazard to public health, safety, and welfare, or to public or private property, such as airplane zones, potential evacuation zones around major industrial and energy facilities and areas where hazardous materials are used or disposed, including adjacent areas. Clean up plans must adequately address the concerns of the N.J. Department of Environmental Protection.



Soundings: Long Slip Canal

FIGURE 18

The Environmental conditions existing at the site were created by the previous transportation and maritime uses. On the southside of the canal, the rail lines with high tension lines ran the entire length of the canal onto the piers. In this area a transformer house and crane house were located. The pier piling fields are being removed as part of the Harbor Clean-up and Removal Project, because of the navigational hazards they pose. To the north of the canal, rail lines with high tension lines, a coachhouse, powerhouse and wireless tower are located.

Detailed soil and groundwater investigations of the Newport site have been conducted as part of the Environmental Impact Study. The investigations found that the site soils contain varying concentrations of polycyclic aromatic hydrocarbons, trace metals and one groundwater sample out of nine contained concentrations of benzene and other solvents up to 25 mg/l.

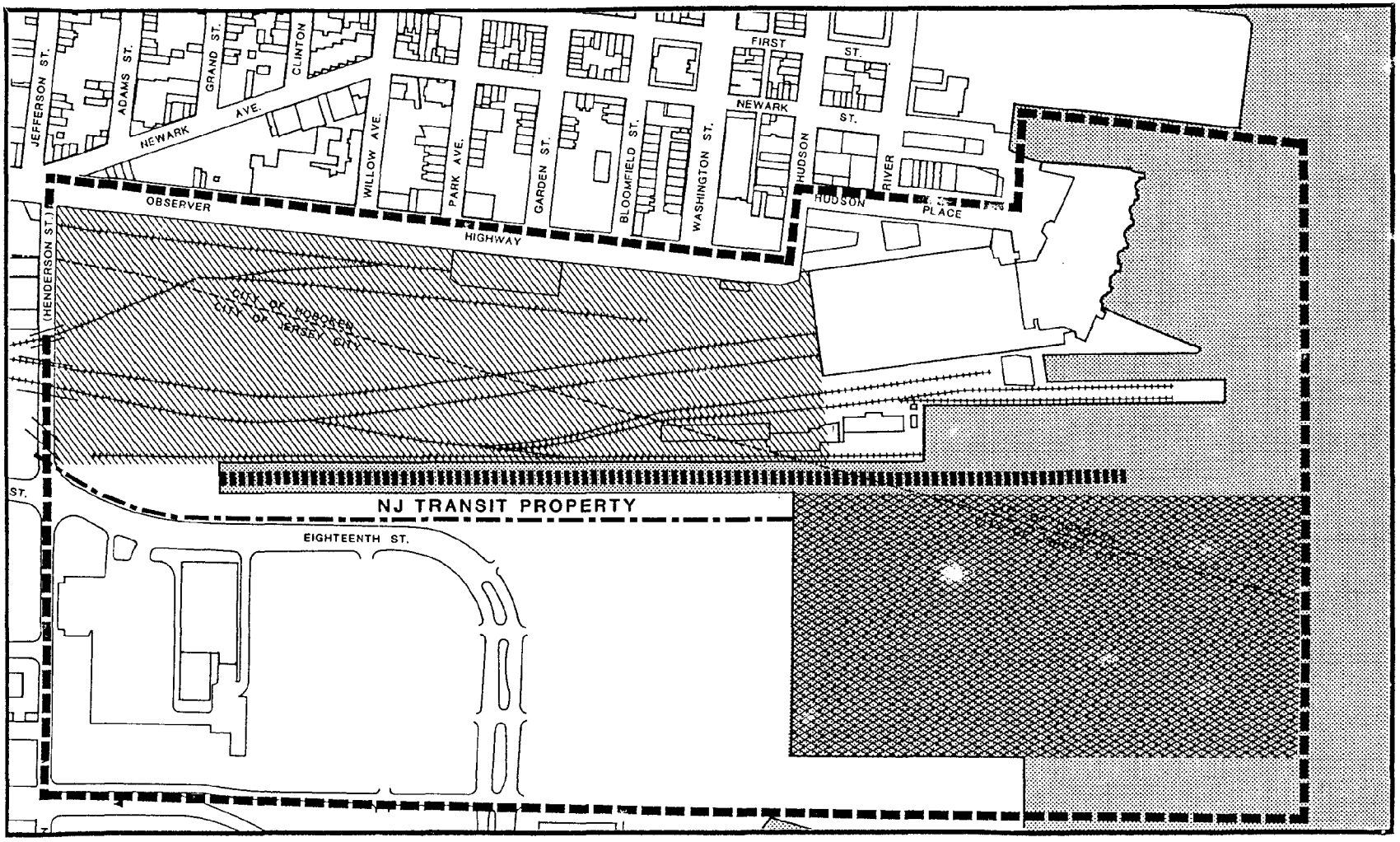
Twenty six samples taken from borings along and in the Long Slip Canal were tested for polycyclic aromatic hydrocarbons(PAH), benzene, oil and grease. In addition, two samples from the recently deposited harbor mud were tested for the EPA priority pollutants plus fort designated by N.J. Department of Environmental Protection. No benzene was found. On land, PAH was found in the surface layer at concentrations well below 10 parts per million which is at the low end of the range of values found on the rest of the Newport Project Site. Polycyclic aromatic hydrocarbons found in the Long Slip Canal sediments were significantly lower, but there was some migration of PAH downward into the lower soil layers. Oil and grease concentrations is the harbor mud are high, the average is approximately 2000 parts per million. See Figures 20. This is not an uncommon occurrence for an area such as the canal, which has a long industrial history.

Jersey City conducted a supplemental soil and groundwater sampling and analysis program. The purpose of the supplement program was to characterize the site with respect to other possible hazardous substances and to determine whether the remedial measures recommended for polycyclic aromatic hydrocarbons (PAH) were adequate to address the other substances that might be identified in additional sampling programs. It was decided that the remedial measures projected for the Newport Development Project Remedial Work Plan was adequate for handling the contamination on site. The Remedial Work Plan is supervised by both Jersey City and the N.J. DEP, Division of Site Mitigation.

Water Quality (7:7E-8.4)

The water quality in the vicinity of the site is poor. This

Hudson Waterfront Walkway Inter-City Link Study



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scale feet

Special Hazard Areas

Sewage from Outfall

Submerged Pilings

Overhead Electric Power Lines

FIGURE 19

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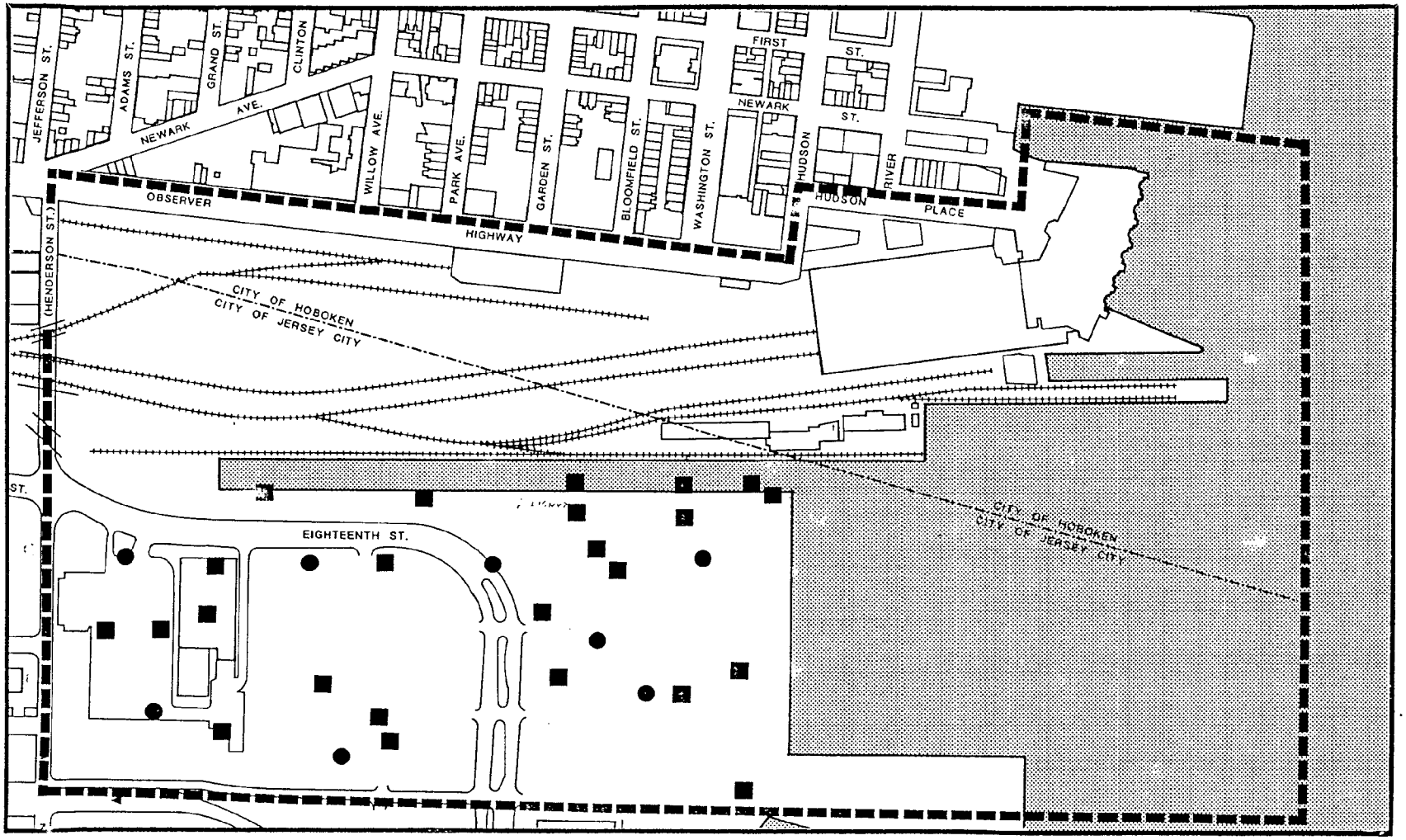
Hudson Waterfront Walkway Inter-City Link Study



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Boring Locations

FIGURE 20

● Borings by LEAI, 1982

■ Test Pits by LEAI, 1982

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can be attributed to high pollutant loading from inadequately treated municipal and industrial effluents as well as non-point source of pollutants associated with previous urban industrial land use.

The New Jersey Department of Environmental Protection has classified the Hudson River and Upper New York Bay as a TW-2 body of water. TW-2 Classification would allow secondary contract recreation such as boating and fishing. Dissolved oxygen (DO) concentrations for waters near the Newport City site are usually below N.J. DEP standards during the summer months. Near the bottom of the river in the general Newport Project site area DO has been measured at 3.0 - 3.8 ppm. However, at the Long Slip Canal Site, summer dissolved oxygen was recorded at 2.3 ppm at the surface and 0.0 at the bottom, too low to support fish (N.J. DEP 1983).

The unusually low dissolved oxygen at this location is caused by the discharges of the combined stormwater outfall which flows into the Long Slip Canal. Rehabilitation of this outfall will allow for improved water quality.

Marine Fish and Fisheries (7:7E-8.2)

The N.J. Department of Environmental Protection Fisheries Data of 1985 was in the vicinity of the Long Slip Canal. Generally, the number of species collected in the shore zone of the Hudson River estuary, which would include the site area, varies seasonally in a pattern typical of temperature waterbodies. The numbers should increase through the spring to a maximum in the summer, then a decrease into the winter months. At the site location this will not occur because of the reduced dissolved oxygen level.

Some anadrous species such as American shad and blueback herring are limited to seasonal occurrence in the lower Hudson River vicinity of the proposed site. The adults of these species migrate through this reach in early spring on their way to freshwater spawning grounds and the juveniles will migrate back in the fall.

Stripe bass also use this area as a passage zone for upstream freshwater spawning areas. The juveniles are more or less permanent residents in the lower Hudson River reach. Some species, such as Atlantic tomcod and white perch, spend their entire life cycle in the Hudson River Estuary. Other species such as menhaden and Atlantic herring, move in and out during seasonal migrations along the coast. These patterns of movement, residency, abundance and presence or absence of spawning activity which occurs in the estuarine (brackish) lower portion of the Hudson River are summarized in Table 1.

Water Quality		Winter	Spring	Summer	Fall	Total
Date		1/26/83	4/27/83	8/2/83		
Time		1330	1145	1130		
Tidal Stage (hr.)		low +1	high +3	low +4		
Average Depth (ft.)		12	12	15		
Secchi (ft.)		2.5	0.7	3.0		
D.O. (mg/l)	surface	9.5	10.2	2.3		
	bottom	9.7	9.9	0.0		
Salinity (^{o}/oo)	surface	12	0.0	20		
	bottom	14	0.5	24		
Water Temp. (^{o}C)	surface	3.0	10.0	24.5		
	bottom	2.5	9.5	23.5		
# and Length of Trawl (#/min.)		2/3	2/3	2/3		

Catch	#	Size Range (mm)	#	Size Range (mm)	#	Size Range (mm)	#	Size Range (mm)	#	Size Range (mm)
FINFISH										
Atlantic tomcod	-	-	4	165-204	-	-				
Summer flounder	-	-	1	287	-	-				
Striped bass	-	-	12	111-220	-	-				
White perch	-	-	1	175	-	-				
Windowpane	-	-	1	57	-	-				
INVERTEBRATES										
Hard-shelled clam	-	-	-	-	13	-				
Mud snail	-	-	-	-	218	-				
Sand shrimp	32	-	50	-	-	-				
Scuds	-	-	400	-	-	-				
Sea grape	-	-	-	-	2	-				
Soft-shelled clam	1	-	-	-	7	-				

TABLE 1

N.J.DEP TRAWL AND WATER QUALITY DATA 1983

ERIE LACKAWANNA CANAL

Public Open Space (7:7E-3.38)

The recent creation of the Hudson River Waterfront Conservancy, a non-profit land trust, will assist in the implementation, promotion and management of the Hudson River Waterfront Walkway which will provide continuous public access along and to the river. The Walkway will offer public opportunities to experience the waterfront for walking jogging, bicycling, siting and viewing. The recreational corridor will also serve as a link to existing parks and adjacent neighborhoods.

An abandoned or underutilized canal such as the Long Slip Canal, can offer a wide range of recreational opportunities. The Canal could be a temporary stop for small crafts and a fishing/crabbing area for the recreationalist. At the southeastern edge of the Long Slip Canal there is an opportunity to create a small plaza leading to the Inter City Link. The plaza area would serve the recreationalist without interfering with the flow of commuters to and from the Hoboken Terminal.

BRIDGE ALTERNATIVES

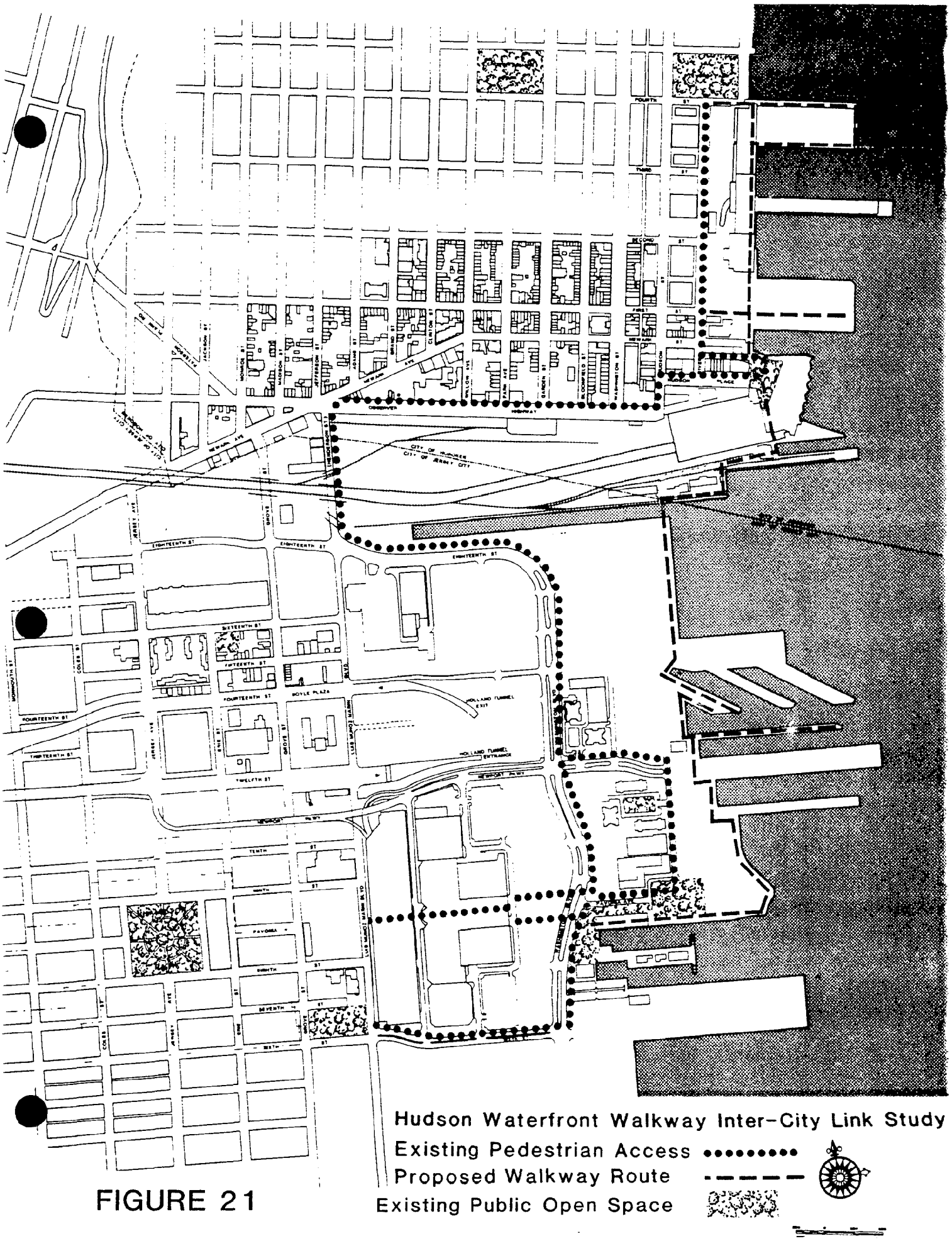
Jurisdiction and Rules

The Coast Guard exercises jurisdiction over the Long Slip Canal as a navigable channel. The Coast Guard has authority to issue permits for bridge construction across navigable waters of the United States. The **Army Corps of Engineers** (ACOE) has authority to issue permits for any fill or structure (except bridges) to be placed in navigable waters of the United States.

Long Slip Canal is considered a **navigable waterway** because it is subject to the ebb and flow of the tide, and was used as a means to transport interstate or foreign commerce. Because it is the owner of the property on both sides of the Long Slip Canal, **New Jersey Transit** has the authority to request the permit to construct the bridge, it is inherent in ownership of the land on which the proposed structure (bridge) is to be placed.

One of the main constraints on development of the Inter-City Link will be to provide a bridge with the vertical/horizontal clearance needed for a navigable waterway without major intrusion into the New Jersey Transit railyards on the north side of the canal.

New Jersey Transit's plan to remove selected tracks and structures and to build an access road and employee parking area near the proposed crossing site will open up some space for a bridge and walkway. New Jersey Transit has expressed interest in the Inter City Link, but insists on separation of


Hudson Waterfront Walkway Inter-City Link Study
Existing Pedestrian Access
Proposed Walkway Route
Existing Public Open Space
FIGURE 21

the workers' areas from the walkway.

The following bridge specifications are adapted from the Hardesty & Hanover Study for the Morris Canal (1989) which considered four water crossing alternatives: Tunnel, Tram, Ferry and Bridge (Fixed or Movable). In summary, the conclusions of the Hardesty and Hanover Study had favored a bridge over the other alternatives.

BRIDGE (Fixed): A fixed bridge should have a 16 foot useable walkway (as required by the Hudson Waterfront Walkway Design Guidelines, 1984, et. seq.) and should provide a 100 foot horizontal channel. The bridge would be designed for pedestrian loadings in accordance with New Jersey Department of Transportation requirements for pedestrian crossings.

BRIDGE (Moveable): The movable bridge will have a 100 foot horizontal clearance with a minimum vertical clearance of 30 feet in the closed position. All other design assumptions are the same as for the fixed bridge. See Exhibit 17, Propotypical Bridges.

We present two Scenarios for Long Slip Canal.

Scenario I: Long Slip Canal Remains Navigable Waterway

Fixed Bridge over Navigable Waterway: A fixed bridge at Long Slip Canal would be difficult because it would require a long approach ramp on both sides of the canal to attain the required clearance over a navigable channel. There is not enough room on the NJ Transit railyard site to locate an approximately 100 foot approach ramp. It would pose a significant adverse impact on rail operations, which take priority as an existing and important land use.

Movable Bridge over Navigable Waterway: A movable bridge requires a shorter approach ramp because it can be lower to the waterway in the closed position. A movable bridge may be feasible in this location, the responsibility for operation of a movable bridge would be the determining factor.

Scenario II: Long Slip Canal Decommissioned as a Navigable Waterway

New Jersey Transit has suggested that there are no foreseeable further uses of the canal as a navigable waterway. It would require an Act of Congress to decommission the canal. Note that this would be in direct conflict with the Coastal Resources Policy on Navigable Channels, but can be weighed against other Coastal Resources policies for Special Urban Areas.

Fixed Bridge vs. Movable Bridge If Long Slip Canal were

decommissioned as a navigable waterway, the clearance height requirement would be removed. This would make the movable bridge alternative unnecessary. Since the property owner, New Jersey Transit, has no plans for boating activity on Long Slip Canal, the bridge could span the canal at a lower clearance/elevation, facilitating pedestrian and handicapped access, and reducing the costs of a fixed bridge.

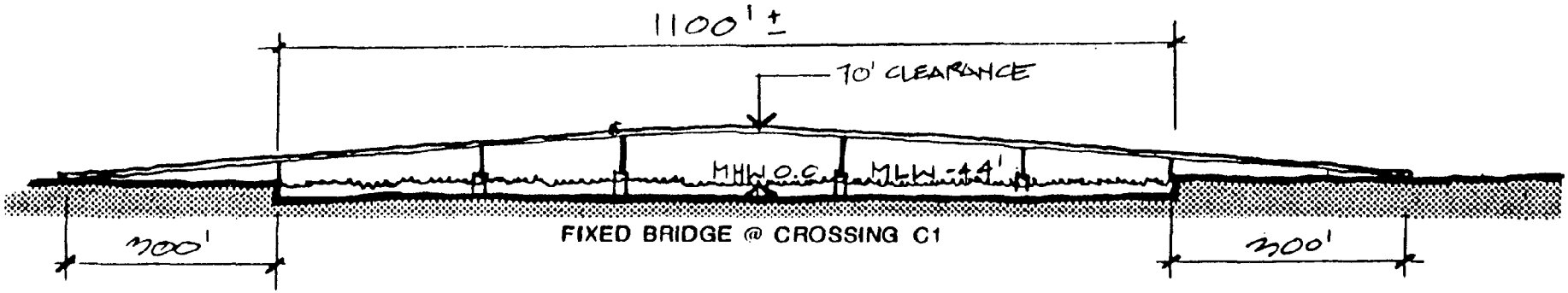
Fixed Bridge

Advantages:

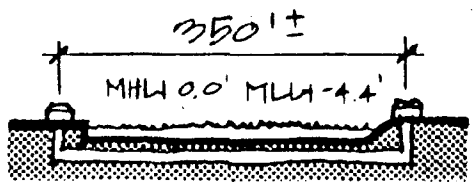
- good public access
- low maintenance and operating costs
- excellent views offered from structure
- compatible with Waterfront Walkway concept

Fixed Bridge Prototypes

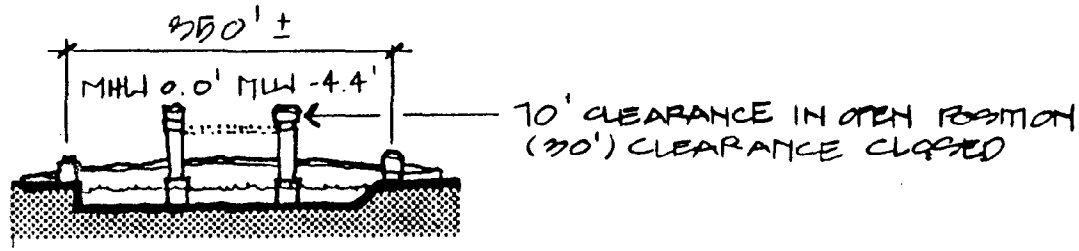
A sampling of product literature reveals a number of suppliers of prefabricated bridges which would meet the design requirements for a low clearance, fixed bridge over Long Slip Canal. They can supply the prefabricated bridge -- the foundations and footings would be contracted separately.



FIXED BRIDGE @ CROSSING C1



TUNNEL @ CROSSING C3 OR C4



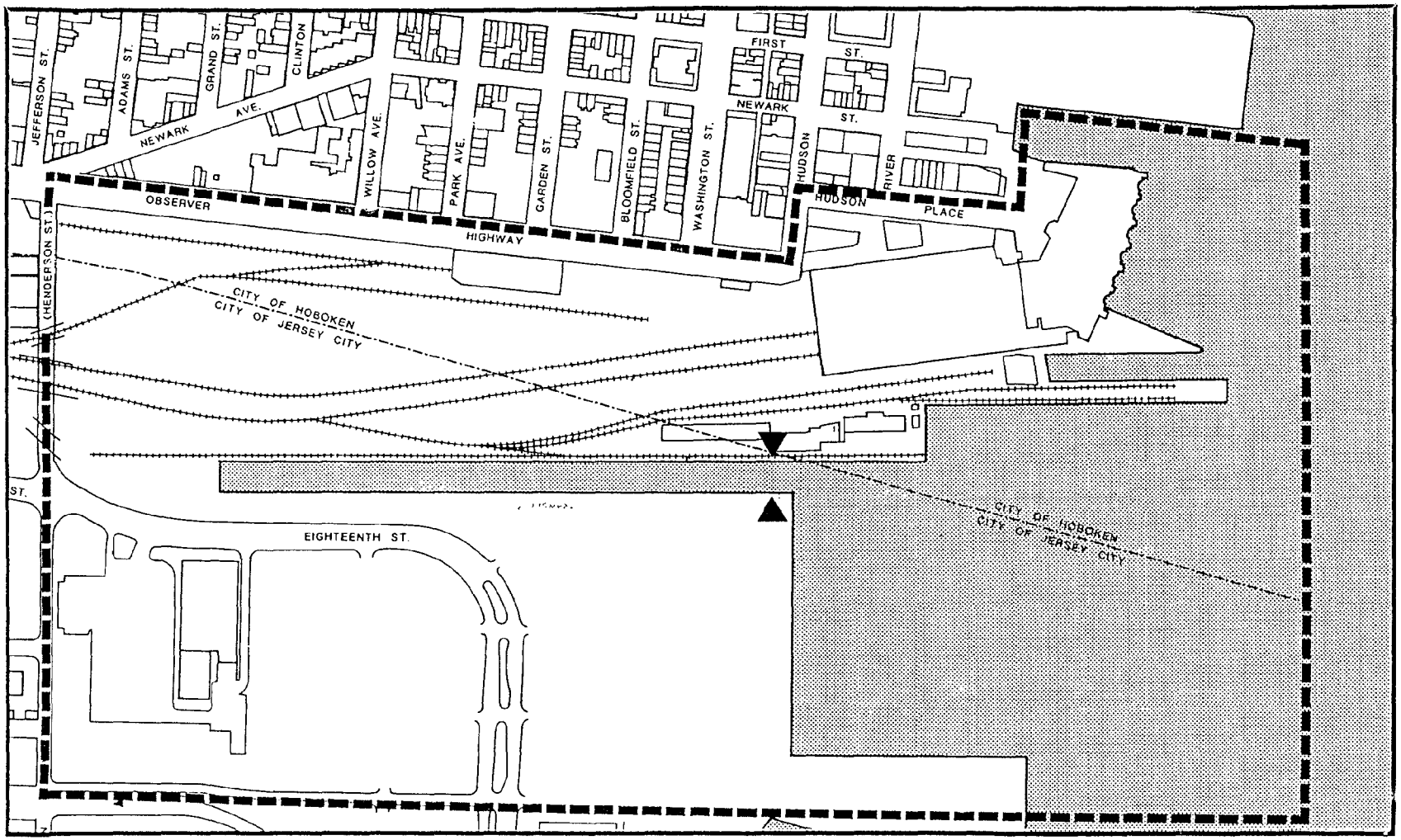
MOVABLE BRIDGE @ CROSSING C3 OR C4

FIGURE 22

EXHIBIT 17

PROTOTYPICAL BRIDGES AND TUNNEL

Hudson Waterfront Walkway Inter-City Link Study



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scale feet

Proposed Crossing Site

Figure 23

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Implementation

An important portion of the Inter-City Link Plan, at the northern edge, is the redevelopment of the N. J. Transit Railyards. The Redevelopment Plan for the platform and railyards with conceptual designs, should be completed by December 1989. N. J. Transit will then establish a policy for the Redevelopment Plan. N. J. Transit intends the reconstruction to take place within the next three to five years.

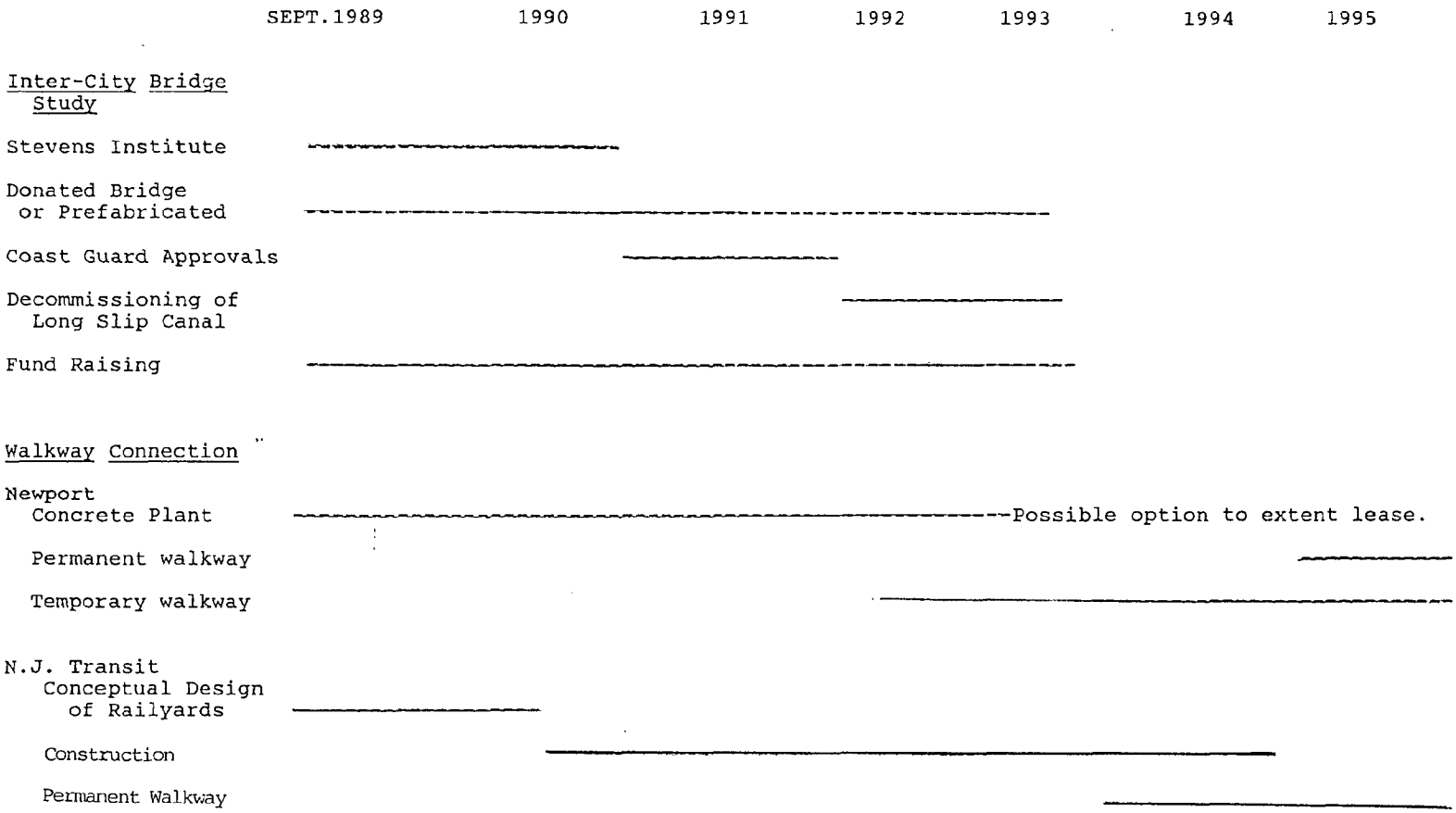
Engineering students from Stevens Institute of Technology will undertake the physical study of the walkway and bridge requirements. It has been suggested that a decommissioned railroad trestle bridge may be available from Conrail or N. J. Transit. The donation of a bridge which can serve as the link for the Walkway will be actively sort.

The completed conceptual design for the Inter-City Link Bridge along with assurances from N. J. Transit on the future use for the land surrounding Long Slip Canal, must be submitted to the Bridge Division of the Coast Guard for review. There may be no need to seek decommissioning of the Long Slip Canal, if the design for the Inter-City Link is above the 100 year floodplain for the area. The Bridge Division of the Coast Guard has agreed to review the conceptual design. The decommissioning of the navigable canal would be sort, only if the design would not be approved.

Funding for the Inter-City Link Bridge will be sought from Port Authority, N. J. Transit, Hudson County, Developers and the Green Acres/Green Trust funding. Coordination of these efforts will be made with the assistance of the Hudson River Walkway Conservancy.

Table 2 shows the timeframe for implementation of the Inter City Link Plan. The earliest date possible for the connection between Hoboken and Jersey City would be 1993.

IMPLEMENTATION PLAN



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