



Pictures Alternative D



Mosholu Parkway, beginning of retaining wall (looking north)



Mosholu Parkway, beginning of retaining wall (looking south)



View of the retaining wall and the Mosholu Underpass (Major Deegan Expressway Overpass, looking north)



Mosholu Underpass, shoulder



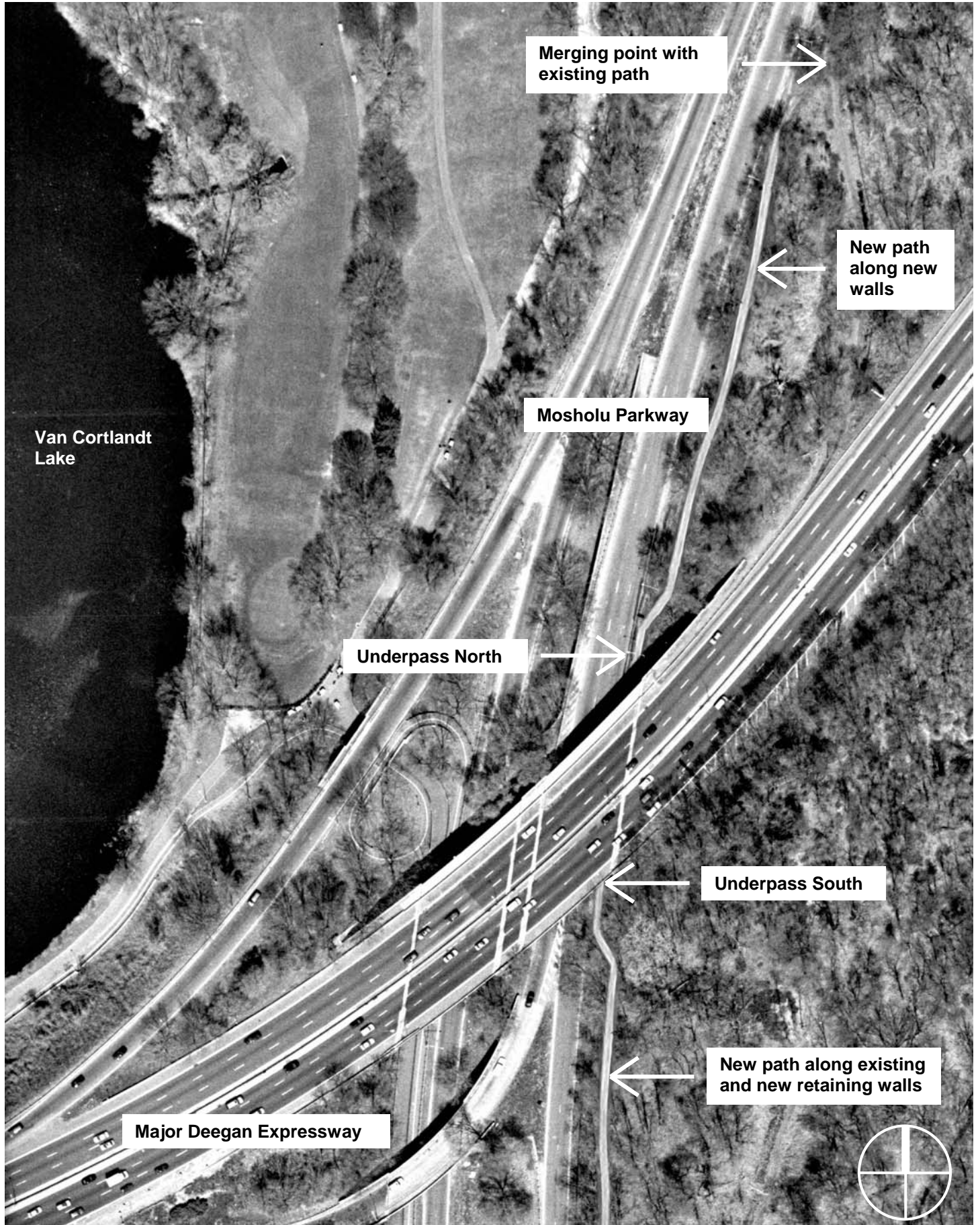
Mosholu Underpass, shoulder (looking north)



End of the retaining wall at the Mosholu Underpass (looking south)



Rendering Alternative D



of the Major Deegan Expressway bridge above. A new barrier and fence would be placed 2 feet from the roadway curb line to create the path. On the north side of the underpass, a trail would follow the Mosholu Parkway until it meets the existing trail coming from the pedestrian bridge described in Alternative A (refer to “Conceptual Sections” in Appendix E). South of the underpass, the trail would follow along the grades of the top of the existing retaining wall. Because the landscape is steep it would be necessary to create another retaining wall of substantial length on the uphill side of the trail both north and south of the underpass. Figure 3-12, “Rendering Alternative D”, shows how Alternative D would look after implementation.

**Status**

NYC DPR indicated that the underpass in Alternative D would not be consistent with its philosophy and standards concerning pedestrian safety and security. In addition, the underpass alternative would be in a location significantly south of the Old Croton Aqueduct and would not address the functional needs of the users. Therefore, it was agreed that Alternative D would not be pursued further.

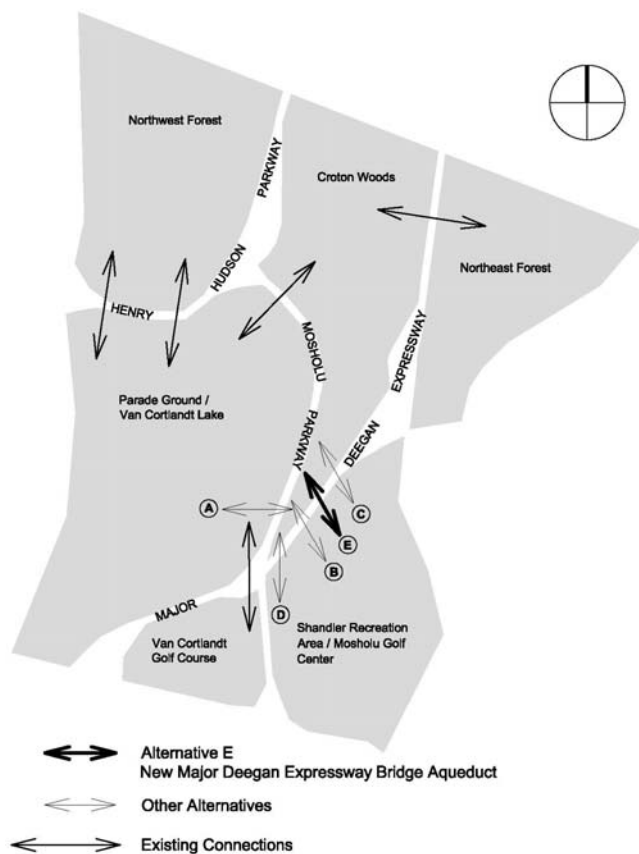
**3.5 ALTERNATIVE E  
NEW MAJOR DEEGAN EXPRESSWAY AQUEDUCT BRIDGE  
(SELECTED ALTERNATIVE)**

**Description**

Alternative E connects the southern Croton Woods area with the northern area of Shandler Recreation area/Mosholu Golf Course via a new bridge that would be located on the Old Croton Aqueduct Trail, and is located between Alternatives B and C. Figure 3-13 shows the selected bridge alternative.

Alternative E proposes a new bridge located in an area where the difference in elevation between the east and west side of the Major Deegan Expressway is minor (near Station 108, refer to “Major Deegan Expressway Sections” in Appendix A). This bridge alternative follows the historic but below-grade Old Croton Aqueduct and therefore would cross the Major Deegan Expressway somewhat diagonally. On both sides of the bridge are sloped paths that lead to at-grade paths which, in turn would connect with the existing path system. The east ramp is approximately 300' long with a slope of 5 percent, while the west ramp is approximately 361' long, also with a slope of 5 percent. Figure 3-14, “Rendering Alternative E”, shows how Alternative E would look after implementation.

Figure 3-13  
Alternative E



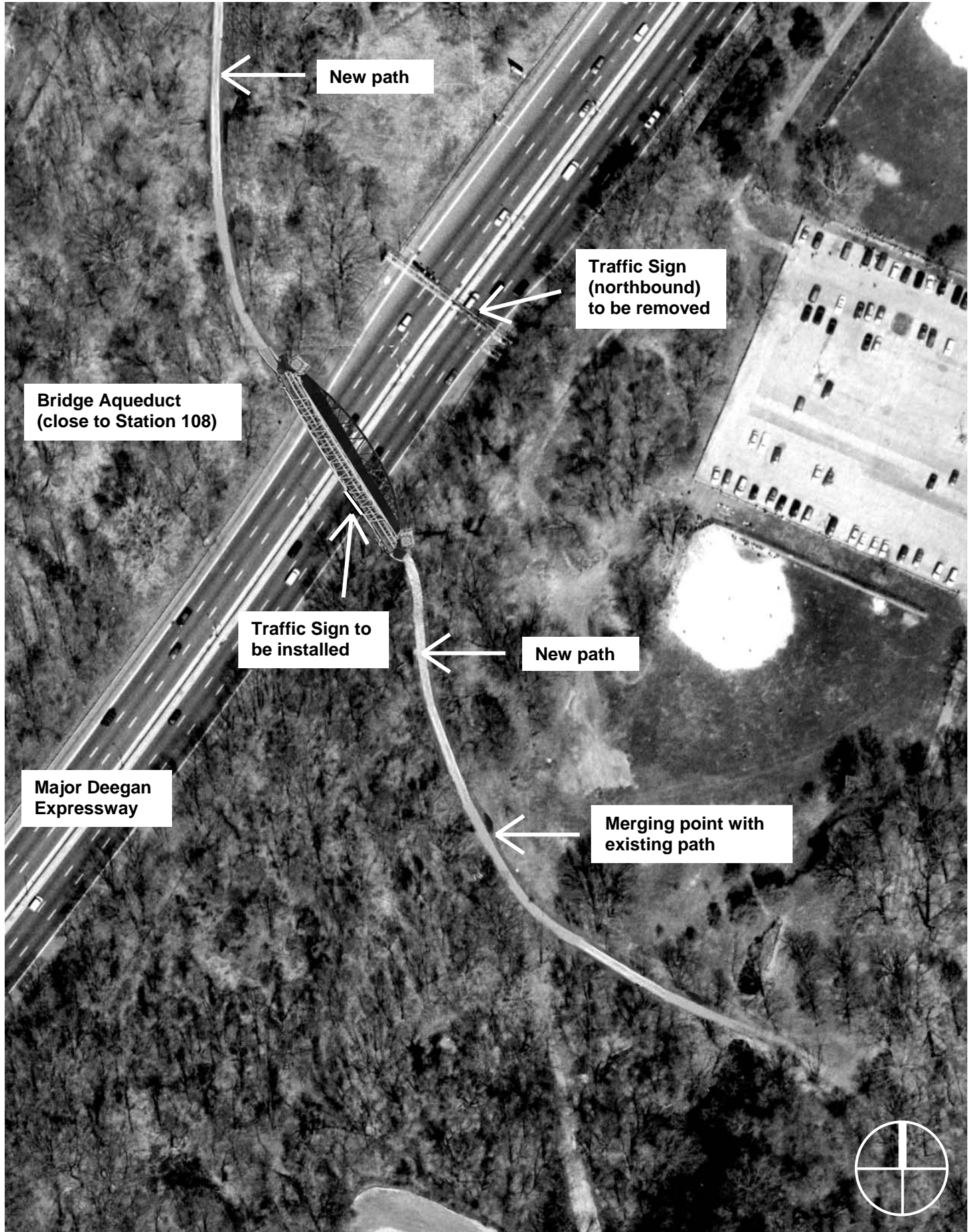
### Status

Alternative E was presented at a meeting with NYC DPR. NYC DPR representatives approved Alternative E, as the preferred alternative, somewhat superior to Alternative C. This alternative is conceptually and technically similar to Alternative C, but reconnects the historical-severed pedestrian path on the Old Croton Aqueduct that was interrupted by the construction of the Major Deegan Expressway in 1956. It was agreed that this alternative should be developed in more detail, including a cost estimate. As the bridge is in vicinity of the Old Croton Aqueduct, it would be necessary to adjust the location of the bridge, so that there would not be a conflict with the historic Aqueduct pipe.

### 3.6 BRIDGE CROSSING DETAILS FOR ALTERNATIVE E

#### Bridge Clearance and Direction

The bridge clearance would be at least 16.5 feet, which is the required minimum clearance according to the New York State Department of Transportation (NYS DOT). Therefore, the bridge deck would be about 18 feet above the Major Deegan Expressway. Since the selected bridge alternative's location was determined to follow the direction of the Old Croton Aqueduct, the bridge would cross the Major Deegan Expressway in a somewhat diagonal direction





(southeastern to northwestern direction). In addition to the vertical clearance, a 30 foot offset from the edge of the shoulder of the expressway would also be incorporated into the design.

**Bridge Location and Highway Signage**

In this section of the Major Deegan Expressway that is the focus for a bridge crossing in this feasibility study, there are two existing highway signs (refer to Figure 3-15, “Major Deegan Expressway Existing Sign in Van Cortlandt Park”). As shown in Figure 3-16, “Sample Sign Installation on Pedestrian Bridge in Yonkers”, this highway sign extends over the whole width of the Major Deegan Expressway and contains information for south- and northbound drivers. The sign on the southbound side of the Major Deegan Expressway announces Exit 11, Van Cortlandt Park South. The sign on the northbound side of the Major Deegan Expressway announces the exit to East 233<sup>rd</sup> Street.

Due to the location of the new pedestrian bridge just south of that highway sign, a northbound driver would not be able to see the sign early enough. However, the southbound driver would not be affected, since the sign is located north of the new pedestrian bridge (refer to “Length Profile Major Deegan Expressway” in Appendix G). Therefore, the highway sign on the northbound side of the Major Deegan Expressway would need to be moved from the existing gantry and be mounted on the new pedestrian bridge. Details about the highway sign and new location have to be coordinated with NYS DOT (see Figure 3-16 for Photo of similar installation in Yonkers).

**Figure 3-15**  
**Major Deegan Expressway Existing Sign in Van Cortlandt Park**



Source: PHA

**Figure 3-16**  
**Sample Sign Installation on Pedestrian Bridge in Yonkers**



Source: PHA

### **Topography, Elevations, and Ramps**

The topography of the bridge crossing location is similar east and west of the Major Deegan Expressway. However, since the Expressway slopes downward from north to south, and the bridge crossing it diagonal, the elevation difference between the bridge deck and at-grade landscape is slightly smaller on the east side than on the west side. Both paths leading from the bridge would have a slope of up to 5 percent. The east path would be 336 feet long and the west path would be 400 feet long. Retaining walls would be necessary in order to build these paths (refer to Length Profiles in Appendices C, D, and F).

### **Bridge Type**

The bridge type proposed for the new pedestrian bridge in Van Cortlandt Park is a prefabricated steel truss bridge as shown in Figures 3-17 below. The bridge would consist of half-through Capstone truss with a span of 196 feet and would be fabricated from painted steel, with a galvanized form deck (the concrete for the deck would be provided by the contractor). The bridge would include a dead load camber over the entire span, 85 psf uniform live load reduced per pedestrian guide specifications, or one 10,000 lb vehicle load, 35 psf wind load over the vertical projection of the bridge. With the 196 foot long span of the new pedestrian bridge, it would be delivered in four sections.



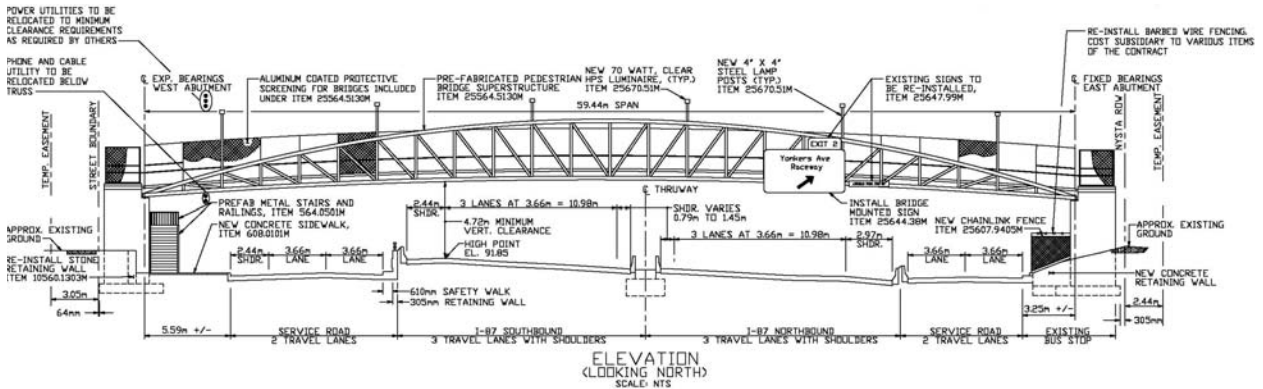
**Figures 3-17**  
**Examples of Metal Truss Bridges**



Source: Contech Bridge Solutions, Inc.

Steel truss bridges of the type described above have been constructed by the NY State Thruway Authority and are in operation in Yonkers, Westchester County, just north of Van Cortlandt Park. Figure 3-18 shows a sectional drawing of the Lincoln Park Pedestrian Bridge in Yonkers. This sample pedestrian bridge has an overall clear span of approximately 180 feet.

**Figure 3-18**  
**Lincoln Park Pedestrian Bridge, Yonkers**



Source: NY State Thruway Authority, 2000

**Bridge Construction Procedure**

The proposed connection includes excavation for and construction of foundations, installation of a prefabricated steel truss pedestrian bridge, and the construction of paths, including retaining walls, that connect the existing path system of the park to the bridge on the east and west side of the Major Deegan Expressway. Foundations can be constructed without disrupting the traffic flow on the Major Deegan Expressway. However, during the assembly and installation of the pedestrian bridge, the Major Deegan Expressway would have to be closed to traffic for periods between 2am and 6am.

### 3.7 PRELIMINARY COST ESTIMATES

Preliminary cost estimates were prepared as part of a more detailed development of the Pedestrian Bridge Alternatives B, C, and E. These estimated include the hard and soft construction costs and are shown in Table 3-1.

**Table 3-1  
Preliminary Construction Cost Estimates**

	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative E</b>
<b>Direct Construction Cost</b>	4,119,000	2,108,000	2,577,000
<b>Other Construction Cost</b>	1,113,000	570,000	567,000
<b>Soft Costs</b>	733,000	375,000	441,000
<b>TOTAL</b>	<b>5,965,000</b>	<b>3,053,000</b>	<b>3,585,000</b>

Alternative B would be the most expensive with a cost of \$ 5,965,000 due to the substantial amount of retaining walls caused by the steep topography on the west side of the Expressway. Alternative C, with very similar elevations on the east and west side of the Expressway, would be the least expensive solution with a cost of \$ 3,053,000, Alternative E, with a cost of \$ 3,501,000 would be similar to Alternative C (refer to detailed Cost Estimates in Appendix H).

## 4 ENVIRONMENTAL SCREENING

### 4.1 INTRODUCTION

The proposed action is the construction of a new pedestrian bridge over the Major Deegan Expressway (I-87) in Van Cortlandt Park in the Bronx in order to reconnect the southeastern east and west portions of Van Cortlandt Park that were disconnected through the Major Deegan Expressway construction in the mid-1950s (refer to Figure 4-1, "Tax Map"). The proposed action is considered a Type I action since the future bridge is located in vicinity of a national historic landmark, the Old Croton Aqueduct (see discussion below under section "4.7 Historic Resources"). The aqueduct is below grade in Van Cortlandt Park. Since the proposed action is a Type I Action, an Environmental Impact Statement (EIS) or an Environmental Assessment Statement (EAS) will have to be conducted in conjunction with the implementation of Alternative E.

Therefore, this environmental screening has been prepared in accordance with the procedures set forth in the *CEQR Technical Manual*. For each technical area, the *CEQR Technical Manual* defines thresholds, which if met or exceeded, require that a detailed technical analysis be undertaken. Preliminary screening analyses were conducted, using the guidelines presented in the *CEQR Technical Manual*, to determine whether detailed analysis of a given technical area is appropriate. Table 4-1 shows the technical areas that would likely require a detailed analysis in an EAS or EIS.

**Table 4-1  
Technical Areas Requiring Detailed Analyses for EAS/EIS**

Technical Area
Open Space
Historic Resources
Visual Resources
Natural Resources
Hazardous Materials

The following discusses each *CEQR* Technical Area for this screening analysis.

### 4.2 LAND USE, ZONING AND PUBLIC POLICY

A detailed analysis of land use and zoning is appropriate if the proposed action would result in a significant change in land use or would substantially affect regulations or policies governing land use. An assessment of zoning is typically performed in conjunction with a land use analysis when the action would change the zoning on the site or result in the loss of a particular use.

Van Cortlandt Park is a mapped New York City park. As shown in Figures 4-2, "Zoning Map 1c", and 4-3, "Zoning Map 1d", the zoning districts adjacent to the park are R6 on the west side, R4A on the northeast side, and R7-1 on the south side. There are two small manufacturing districts in vicinity of the park. One is a M1-1 district at the southwest corner and the other is a M1-2 district at the southeast corner of the park. Generally, the zoning districts surrounding Van Cortlandt Park are mainly residential. In addition to the residential



districts mentioned above there are also R3-1, R3A, and R4 zoning districts in the vicinity of the park. Woodlawn Cemetery to the east of the park, is among the few non-residential land uses adjacent to the park.

The proposed action would add a pedestrian bridge to connect portions of Van Cortlandt Park. No land use changes and no loss of a particular use would occur as a result of the proposed action. In addition, the proposed action would not impact any existing public policies. Therefore, no significant adverse impacts to land use, zoning and public policy would be expected to occur as a result of the proposed action and no detailed analysis is warranted.

### **4.3 SOCIOECONOMIC CONDITIONS**

A socioeconomic assessment may be necessary if the action is expected to create substantial socioeconomic changes within the area, which would not be expected to occur in the absence of the action. Such socioeconomic changes include direct displacement of residential population, businesses, or employees; a new development that is markedly different from existing uses and activities within the neighborhood; and adverse effect on conditions in the real estate market in the area; or an adverse effect on socioeconomic conditions in a specific industry.

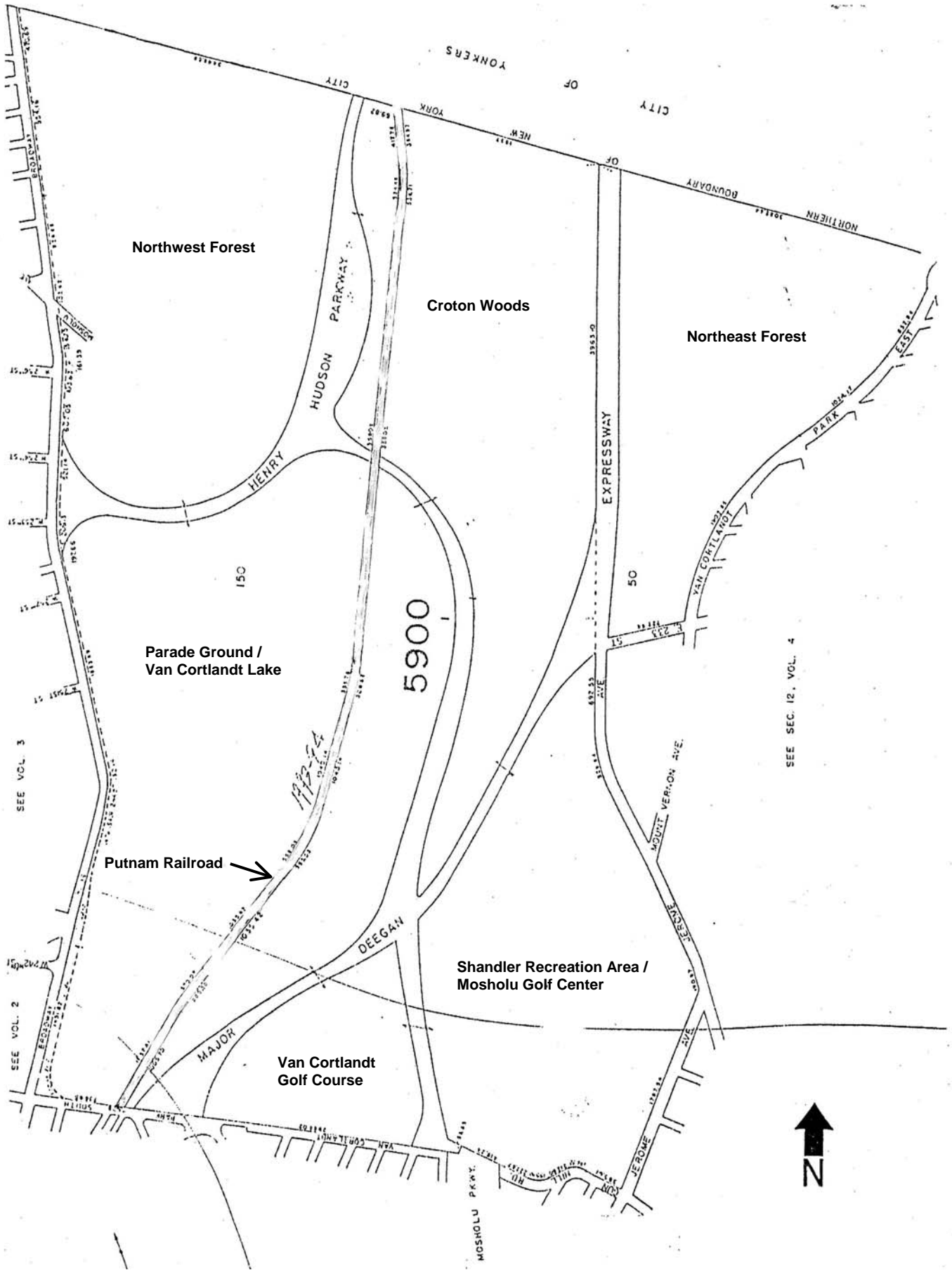
Since the proposed action would affect a park but not an urbanized area, there would not be any displacement of residential, business or employee populations. Therefore, a change of the socioeconomic profile in the surrounding neighborhoods of Van Cortlandt Park due to the proposed action is highly unlikely. In addition, because the proposed action would result in the addition of an element to Van Cortlandt Park's path system, it is not a type of development that can be considered "markedly different from existing uses in the neighborhood". In contrast, it is a contribution to the park's path system. Therefore, no socioeconomic impacts are expected and no detailed analysis of socioeconomic conditions is warranted.

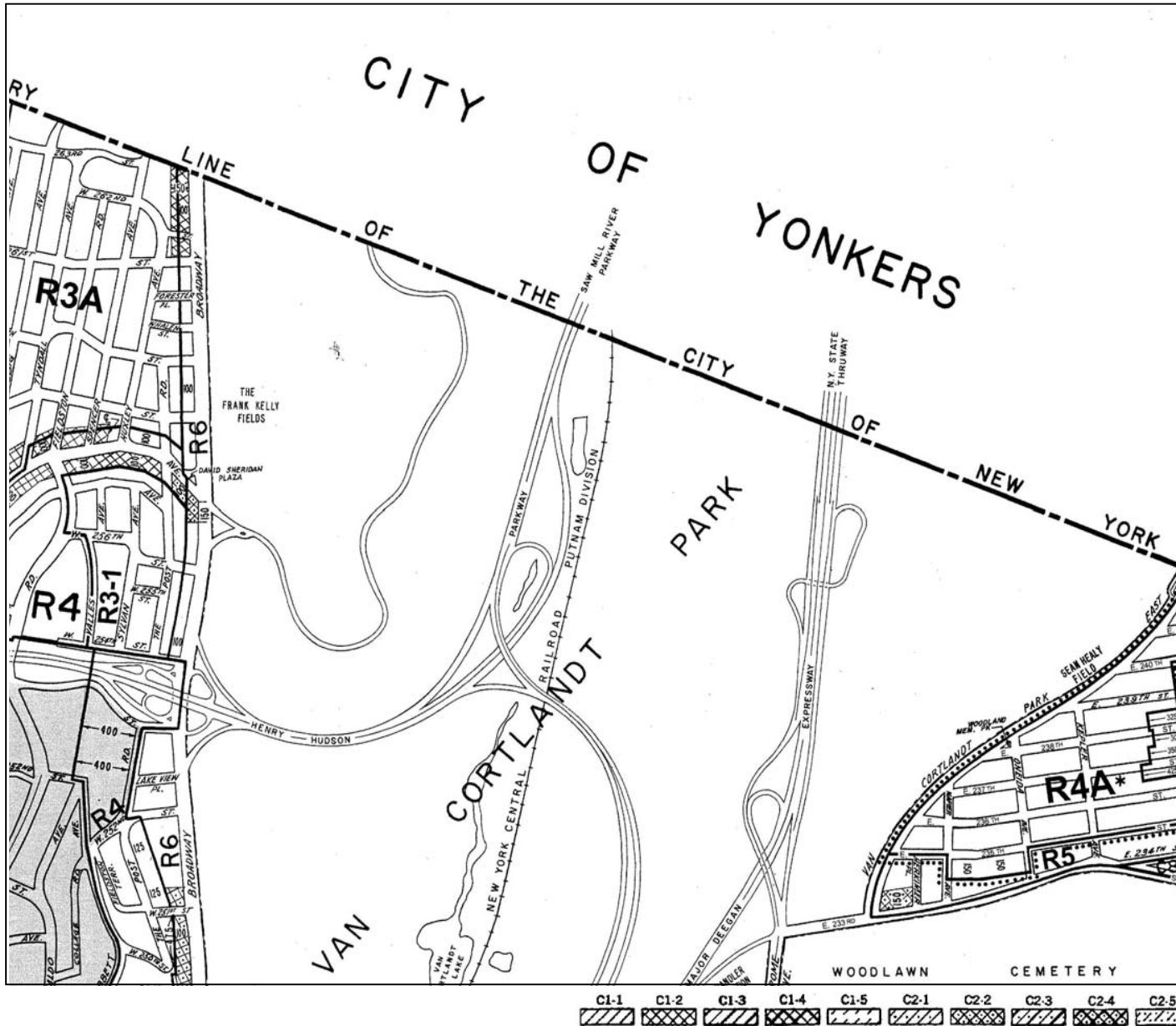
### **4.4 COMMUNITY FACILITIES AND SERVICES**

The need for analysis of community facilities can be triggered by potential direct or indirect effects of a proposed action. Direct effects occur if the proposed action would "physically alter a community facility, whether by displacement or other physical change." Indirect effects occur if a project would add population to an area, which may potentially affect service delivery. According to the *CEQR Technical Manual*, demand for community facilities and services such as schools, libraries, hospitals, and day care generally stems from the introduction of new residents to an area.

Van Cortlandt Park shares borders with three Community Districts. Community District 7 is located to the south, Community District 8 is located to the west, and Community District 12 is located to the east of Van Cortlandt Park. Multiple NYC Police Precincts (3) and Fire Department Stations (7) are located within these three Community Districts adjacent to Van Cortlandt Park, as indicated in Figure 4-4, "NYC Police and Fire Department Locations".

Since the proposed action would be the construction of a pedestrian bridge and associated park improvements, none of the community facilities and services named above which currently exist in the surrounding neighborhood would be directly or indirectly affected by it.





## ZONING MAP

THE NEW YORK CITY PLANNING COMMISSION

### Major Zoning Classifications:

The number(s) and/or letter(s) that follows an **R**, **C** or **M** District designation indicates use, bulk and other controls as described in the text of the Zoning Resolution.

- R** – RESIDENTIAL DISTRICT
- C** – COMMERCIAL DISTRICT
- M** – MANUFACTURING DISTRICT

⋯ AREA(S) REZONED

EFFECTIVE DATE(S) OF REZONING:

\* 2-15-2006 C 060110 ZMX  
10-11-2005 C 050480 ZMX

■ SPECIAL PURPOSE DISTRICT  
The letter(s) within the shaded area designates the special purpose district as described in the text of the Zoning Resolution.

- (D) – RESTRICTIVE DECLARATION
- (E) – CITY ENVIRONMENTAL QUALITY REVIEW DECLARATION

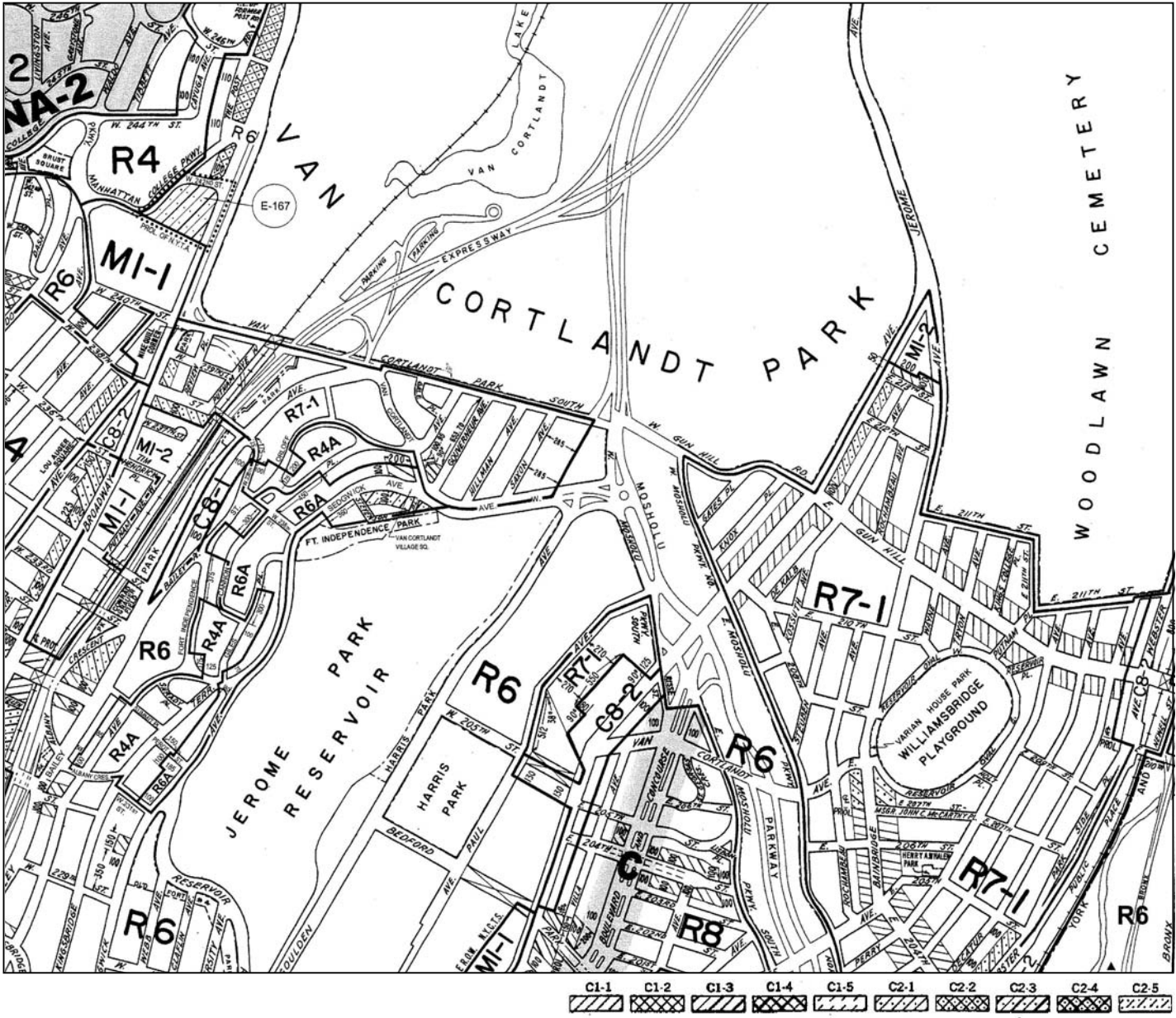
### MAP KEY

1a	<b>1c</b>	2a
1b	1d	2b

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ZONING MAP 1c





### ZONING MAP

THE NEW YORK CITY PLANNING COMMISSION

#### Major Zoning Classifications:

The number(s) and/or letter(s) that follows an **R**, **C** or **M** District designation indicates use, bulk and other controls as described in the text of the Zoning Resolution.

- R – RESIDENTIAL DISTRICT
- C – COMMERCIAL DISTRICT
- M – MANUFACTURING DISTRICT

⋯ AREA(S) REZONED

EFFECTIVE DATE(S) OF REZONING:  
7-19-2006 C 060214 ZMX

■ SPECIAL PURPOSE DISTRICT  
The letter(s) within the shaded area designates the special purpose district as described in the text of the Zoning Resolution.

- Ⓓ – RESTRICTIVE DECLARATION
- Ⓔ – CITY ENVIRONMENTAL QUALITY REVIEW DECLARATION

CITY MAP CHANGE(S):  
▲ 9-29-2006 C 990141 MMX

MAP KEY

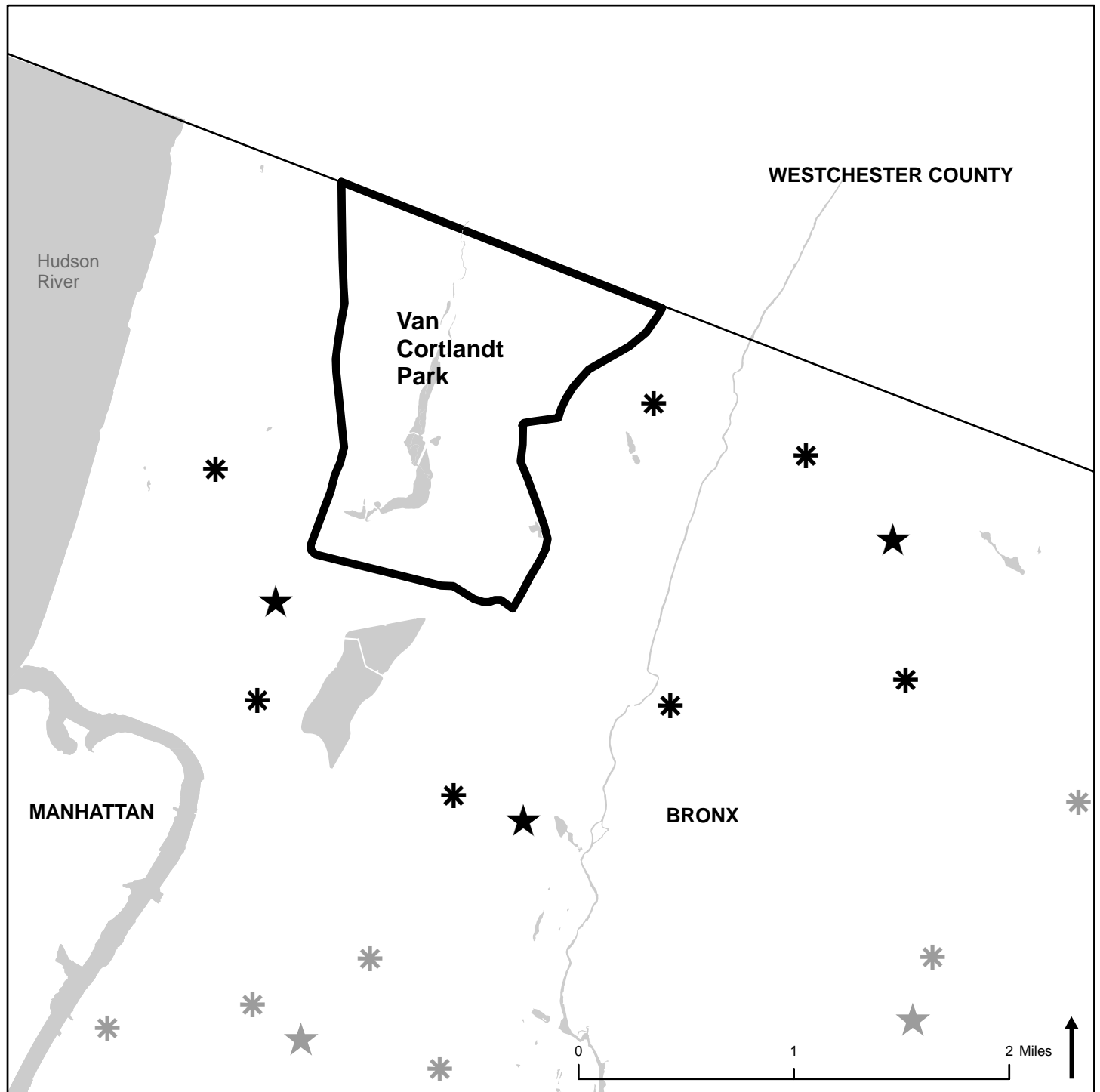
1a	1c	2a
1b	<b>1d</b>	2b
3a	3c	4a

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ZONING MAP 1d

Van Cortlandt Park Pedestrian Bridge Feasibility Study

Figure 4-3  
Zoning Map 1d



**Legend**

- ★ Police Precincts within adjacent Community District
- \* Fire Department Stations within adjacent Community District
- ★ Other Police Precincts
- \* Other Fire Department Stations
- ▭ Van Cortlandt Park

Therefore, no significant direct or indirect effects on service delivery of community facilities are expected, and a detailed analysis of community facilities is not warranted.

#### **4.5 OPEN SPACE**

Open space is defined as publicly or privately owned land that is publicly accessible and has been designated for leisure, play or sport, or land set aside for the protection and/or enhancement of the natural environment. An open space assessment may be necessary if a proposed action could potentially have a direct or indirect effect on open space resources in the area. A direct impact would “physically change, diminish or eliminate an open space or reduce its utilization or aesthetic value.” An indirect effect may occur when the population generated by a proposed project would be sufficient to noticeably diminish the ability of an area’s open space to serve the existing and future population.

The construction of a pedestrian bridge would have direct effects on open space and would physically affect portions of Van Cortlandt Park. Foundations for the bridge and the respective retaining walls would have to be placed in forested areas close to the Major Deegan Expressway. The areas affected would not be spatially diminished because new paths and a pedestrian bridge would be accessible to the public. In addition, the proposed action would increase the park’s utilization by creating a pedestrian connection between the park sections east and west of the Major Deegan Expressway. Also, certain areas would be temporarily affected during the construction period. In addition, the design of the paths and the proposed selected location for the bridge would affect as little area of the forest and park as possible.

Since the proposed action is a bridge structure, no population will be added to the area. Thus, the proposed action will not result in indirect effects.

As the proposed action results in direct effects on public open space but not in indirect effects, a more detailed analysis, with focus on physical impacts caused through the construction of the bridge, is warranted.

#### **4.6 SHADOWS**

A shadow assessment considers whether proposed actions might result in adverse shadow impacts on publicly accessible open space or historic resources (shadows occurring within an hour and a half of sunrise or sunset are diffused and are not considered significant). For actions resulting in structures less than 50 feet high, a shadow assessment is generally not necessary unless the site is adjacent to a park, historic resource or important natural feature (if the features that make the structure significant depend on sunlight). According to the *CEQR Technical Manual*, some open spaces contain facilities that are not sunlight sensitive, and do not require a shadow analysis including paved areas (such as handball or basketball courts) and areas without vegetation.

In the case of the proposed action, the deck of the new pedestrian bridge would be 18 feet high and is therefore well below the *CEQR Technical Manual* threshold of 50 feet. The new structure would be located in a park, and in proximity of the Old Croton Aqueduct, which is a historic resource. However, the location in which the new pedestrian bridge would be placed does not contain important natural features, such as protected species. In addition, the Old Croton Aqueduct is below grade in Van Cortlandt Park and is therefore considered a historical



resource that is not dependent on sunlight. Also, since a large portion of the bridge's span extends over the Major Deegan Expressway, the shadows that would be cast from the bridge's deck and the retaining walls on both the east and west side would mainly fall on the surface of the Major Deegan Expressway and the marginal park areas in immediate proximity to the Major Deegan Expressway. Hence, no significant shadow impact is expected from the proposed action. Therefore, a detailed shadow analysis is not warranted.

### 4.7 HISTORIC RESOURCES

Historic resources are defined as districts, buildings, structures, sites and objects of historical, aesthetic, cultural, and archaeological importance. This includes properties that have been designated or are under consideration as New York City Landmarks or Scenic Landmarks or are eligible for such designation; properties within New York City Historic Districts; properties listed for the State and/or National Register of Historic Places; and National Historic Landmarks. The *CEQR Technical Manual* distinguishes historic resources into architectural and archeological resources.

In contrast to other New York City Parks such as Central Park and Prospect Park, which are landmarked, Van Cortlandt Park is not a designated NYC landmark, nor is the park listed on the State and/or National Register of Historic Places or as a National Historic Landmark.

However, the Old Croton Aqueduct, which crosses Van Cortlandt Park below grade in a north-south direction, is considered a historic structure (refer to Figure 4-5, "Location Old Croton Aqueduct"). According to the *CEQR Technical Manual*, a structure is a "built work composed of interdependent parts or elements in an organized pattern. The term is used in order to distinguish buildings from functional constructions with other purposes than shelter". The Old Croton Aqueduct was designated a National Historic Landmark in 1992.

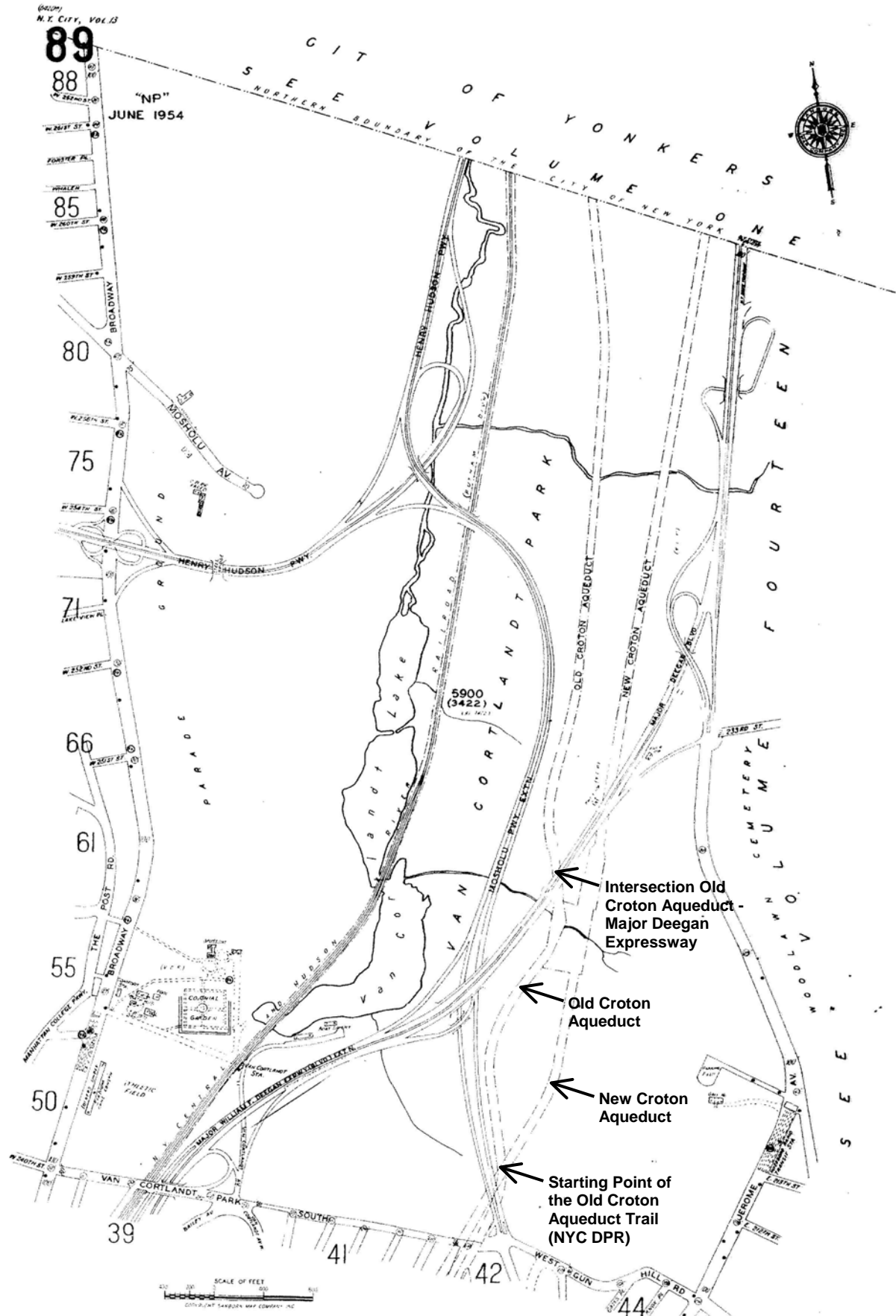
The Old Croton Aqueduct was constructed between 1837 and 1842 and was New York City's first planned water supply system. The construction of the aqueduct can be interpreted as a reaction to nineteenth century unprecedented population growth and unsanitary living conditions, which both led to an increase in diseases and epidemics.

The aqueduct carried water from the Croton Lake reservoir in Westchester County, approximately 40 miles north of New York City, through the Bronx to the former reservoir at 42nd Street and 5<sup>th</sup> Avenue in Manhattan (today the location of Bryant Park and the New York Public Library). The aqueduct conduit is 8.5 feet in diameter and masonry-lined. According to the National Historic Landmarks Program, most of the Old Croton Aqueduct lies on a stone foundation immediately below ground. However, there are a few places where it is tunneled or carried across valleys on bridges and berms, and therefore visible. In the Westchester section of the aqueduct, its ventilators are visible above grade.

In Van Cortlandt Park the Old Croton Aqueduct is below grade and therefore not visible. The *Old Croton Aqueduct Trail* (under supervision of NYC Department of Parks and Recreation), which is located on the aqueduct, runs through Van Cortlandt Park in a north-south direction (refer to Figure 2-1, "Van Cortlandt Park Trail Map").

The original route of the aqueduct, and therefore the trail, was severed by the construction of the Major Deegan Expressway between 1950 and 1956. Scenic views of the aqueduct can be

Location Old Croton Aqueduct



seen beyond Van Cortlandt park to the south, for example in front of the Bronx Community College. The trail continues via Highbridge to Manhattan and ends in Central Park.

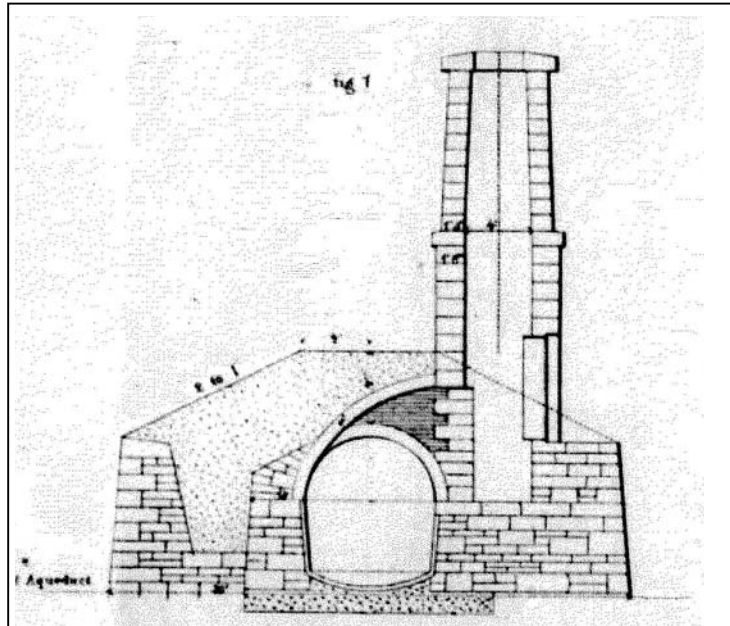
The *Old Croton Aqueduct State Park* (NY State Park) is a linear park that runs from the northern border of Van Cortlandt Park north to the Croton Dam in Cortlandt, NY. The Old Croton Aqueduct State Park passes numerous historic sites, particularly several aqueduct ventilators (refer to Figures 4-6 and 4-7), bermed aqueduct foundations and conduits, and a weir.

**Figure 4-6**  
**Old Croton Aqueduct Ventilator**



Source: <http://en.wikipedia.org>

**Figure 4-7**  
**Section Drawing Showing Ventilator Shaft**



Source: <http://pdfhost.focus.nps.gov/docs/NHLS/Photos/74001324.pdf>  
Schramke, T., Description of the New York Croton Aqueduct 1843

## Architectural Resources

According to the *CEQR Technical Manual*, urban landscape features that are planned open spaces within a built urban environment (such as parks) are considered a site. The *CEQR Technical Manual* defines sites as “the location or place that possesses historic, cultural, or archeological value. A site can be important because of its potential to yield information important in prehistory or history”.

An assessment of architectural resources is required by *CEQR* if the proposed action would result in new construction, demolition, or physical alteration to any building, structure, or object. In addition, for proposed actions that are located in proximity to historic or landmarked structures, or that are located within a locally or nationally recognized historic district, a more detailed assessment is required.

Since the proposed action would result in construction of a new structure in Van Cortlandt Park, and the proposed bridge would be located in immediate proximity to the Old Croton

Aqueduct, which is a national historic landmark, a detailed architectural assessment is warranted.

### **Archaeological Resources**

The *CEQR Technical Manual* defines archeological resources as “physical remains, usually subsurface, of the prehistoric (Native American) and historic periods, such as burials, foundations, artifacts, wells, and privies”. According to *CEQR*, an assessment of archeological resources is necessary for all actions that would result in any in-ground disturbance. In-ground disturbance is defined as “any disturbance to an area not previously excavated, and includes new excavation deeper and/or wider than previous excavation on the same site”.

The construction of the pedestrian bridge would require in-ground disturbance due to excavation for the bridge foundations. Therefore, a detailed analysis of archaeological resources is warranted.

## **4.8 URBAN DESIGN/VISUAL RESOURCES**

Together, the urban design components and visual resources of an area define the distinctive identity of a neighborhood or a green space. A detailed analysis of urban design is required for proposed actions that would affect the built environment such as buildings with a substantially different bulk, height, form, setbacks, size, scale, use or arrangement different than those existing in the area; a change in block form, demapping of active streets or mapping of new streets, effects on street hierarchy, streetwall, curb cuts, pedestrian activity or streetscape elements. A detailed analysis of visual resources is required if an action would result in above-ground development in areas containing significant visual resources.

### ***Urban Design***

The proposed new pedestrian bridge would be located in the southern portion of Van Cortlandt Park, crossing the Major Deegan Expressway. The bridge would connect the southern part of the Croton Woods segment to the northern part of the Shandler Recreation Area. Currently, no bridge is connecting these two park segments.

Van Cortlandt Park is a green space, which consists of several different habitat types: meadow (e.g. the Parade Grounds), freshwater wetland (in the Van Cortlandt Lake area), and the forests (e.g. Northwest Forest). The area affected by the construction of the bridge is mainly forest. There are only very few built structures in the Park, such as the Van Cortlandt House Museum and the Van Cortlandt Golf House.

Therefore, since the proposed action would not result in any buildings but a pedestrian bridge, no adverse impacts on the existing character of the park due to the new bridge is expected. In addition, it is highly unlikely that the proposed action would result in changes to or effects on any of the urban design elements, such as building bulk, setback, block form and street space pattern, in the neighborhoods surrounding Van Cortlandt Park. Therefore, no significant adverse impacts to the urban design character of the neighborhoods surrounding Van Cortlandt Park are anticipated as a result of the proposed action. Accordingly, a more detailed analysis of urban design is not warranted.

### **Visual Resources**

According to the *CEQR Technical Manual*, “an area’s visual resources are its unique or important public view corridors, vistas, or natural or built features”. Visual resources could include views of public parks and landmark structures. Even though the proposed pedestrian bridge would be located in vicinity of a national historic landmark, the Old Croton Aqueduct, it would not affect the view of the landmark as it is below grade in Van Cortlandt Park.

However, the views from existing trails such as the Old Croton Aqueduct Trail (north and south of the Major Deegan Expressway) and the trails within the Shandler Recreation Area would be changed due to the sloped paths and retaining walls connecting to the pedestrian bridge. In addition, the view from the Major Deegan Expressway would be significantly altered through the proposed pedestrian bridge. Since there is potential for significant impacts related to visual resources, a detailed analysis of visual resources is warranted.

### **4.9 NEIGHBORHOOD CHARACTER**

The *CEQR Technical Manual* states that a neighborhood character assessment is generally required when the proposed action would significantly impact land use, urban design, visual resources, historic resources, socioeconomic conditions, traffic, or noise within the neighborhood; or if it would have moderate effects on several of the elements that contribute to neighborhood character.

The proposed action would be compatible with the character of Van Cortlandt Park. The construction of the pedestrian bridge is not anticipated to result in any significant adverse impacts on land use, socioeconomic conditions, historic resources, urban design/visual resources, traffic, air, or noise. In addition, it would not result in moderate effects in those categories that would combine to create a significant impact to neighborhood character. Therefore, no significant adverse impacts on neighborhood character are anticipated as a result of the proposed action. As a result, a detailed analysis is not warranted.

### **4.10 NATURAL RESOURCES**

A natural resource is defined for *CEQR* purposes as plant and animal species, and/or any area capable of providing habitat for plant and animal species or capable of supporting environmental systems and maintaining the City’s environmental balance. These resources include surface and groundwater, drainage systems, wetlands, dunes and beaches, grasslands, woodlands, landscaped areas, gardens, and some built structures used by wildlife.

An assessment of natural resources is appropriate if a natural resource exists on or near the site of the proposed action, or if an action involves direct or indirect disturbance of that resource. In the case of the proposed action, the area of implementation – Van Cortlandt Park – is a natural resource. Van Cortlandt Park mainly contains upland resources, which include all natural areas that are not water resources or wetlands, such as grasslands, landscaped areas, woodlands and forests. The area where the pedestrian bridge would be located can be considered woodland and forest. As a result of the bridge and ramp constructions, there would be impacts on these two upland resources. Therefore, the proposed action might have the potential to result in adverse natural resources impacts and a detailed assessment of natural resources is warranted.



#### **4.11 HAZARDOUS MATERIALS**

A hazardous material is any substance that poses a threat to human health or the environment. Substances that can be of concern include, but are not limited to, heavy metals, volatile and semivolatile organic compounds, methane, polychlorinated biphenyls, and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive, or toxic). According to the *CEQR Technical Manual*, the potential for significant adverse impacts from hazardous materials can occur when: a) hazardous materials exist on a site, and b) an action would increase pathways to their exposure; or c) an action would introduce new activities or processes using hazardous materials.

According to the *CEQR Technical Manual*, a hazardous materials assessment is required if construction takes place in an area with fill material of unknown origin. Fill material historically used in New York City has included hydraulic dredge material, which may contain petroleum and heavy metal contamination, and ash from the historical burning of garbage in residential and commercial buildings in the City. The proposed action would be implemented in an area where there might be fill material of unknown origin related to the Major Deegan Expressway construction and the Old Croton Aqueduct construction. In addition, the proximity of the proposed action's area to the Major Deegan Expressway, and the exposure to highway-related hazardous materials might result in potential soil and groundwater contamination in these areas east and west of the Major Deegan Expressway.

Therefore, a more detailed analysis is necessary. In accordance with the *CEQR Technical Manual* guidelines, a Phase I Environmental Site Assessment (ESA) should be conducted to determine whether the proposed action could lead to increased exposure of people or the environment to hazardous materials and whether the increased exposure would result in significant adverse public health impacts or environmental damage.

#### **4.12 WATERFRONT REVITALIZATION PROGRAM**

Van Cortlandt Park is not located within the designated New York City Coastal Zone Boundary. Therefore, an assessment of the proposed action's consistency with the City's Local Waterfront Revitalization Program is not required.

#### **4.13 INFRASTRUCTURE**

For *CEQR*, the City's "infrastructure" comprises the physical systems supporting its population, including water supply, wastewater treatment, and stormwater management. Other infrastructure components are addressed separately under *CEQR*. Given the size of New York City's water supply system and the City's commitment to maintaining adequate water supply and pressures, few actions have the potential to cause significant impacts on this system. Therefore only very large developments or actions having exceptionally large water demands (e.g., more than 1 million gallons per day) would warrant a detailed water supply assessment. Similarly, only unusual actions with very large flows could have potential impacts on wastewater treatment.

Accordingly, the proposed action would not generate any water demand or wastewater flows. Furthermore, the proposed action would not be likely to substantially affect stormwater management as the construction of the pedestrian bridge and the two ramps would not

significantly increase impervious surface areas or otherwise affect combined sewer infrastructure. In addition, the pedestrian bridge will be constructed in a park with predominantly permeable surfaces. Therefore, small amounts of increased stormwater volumes would naturally drain in the park. The proposed action would therefore not result in significant adverse infrastructure impacts and a detailed analysis is not warranted.

#### **4.14 SOLID WASTE AND SANITATION SERVICES**

The *CEQR Technical Manual* states that actions involving construction of housing or other development generally do not require evaluation of solid waste impacts unless they are unusually large. A generation rate of less than 10,000 pounds per week is not considered large.

Since the proposed action would not result in construction of an inhabited structure or structure containing uses that produce solid waste, no solid waste generation is expected in Van Cortlandt Park. Therefore, no significant adverse solid waste impacts are anticipated and more detailed analysis is not warranted.

#### **4.15 ENERGY**

Energy analysis focuses on an action's consumption of energy, as well as any relevant effects on energy transmission resulting from the action. Detailed assessments of energy impacts are limited to actions that could significantly affect energy transmission or generation, or that would generate substantial indirect energy consumption. As all new structures requiring heating and cooling are subject to the New York State Energy Conservation Code, reflecting State and City energy policy, actions involving new construction or substantial renovation of buildings would not create adverse energy impacts, and hence do not require detailed energy analyses. As a pedestrian bridge, the proposed action would not significantly affect energy transmission or generation, nor would it generate substantial indirect energy consumption, thus a detailed assessment of energy is not provided.

#### **4.16 TRAFFIC AND PARKING**

The objective of traffic and parking analyses is to determine whether a proposed action would have a significant impact on street and road conditions and/or on parking resources. This includes the sufficiency of the street network to adequately process the proposed action's expected traffic flow and operating conditions changes, and the effect of the proposed action on parking resources in the area. According to the *CEQR Technical Manual*, actions with single or multiple land uses which may result in fewer than 50 peak hour vehicle trips are generally unlikely to cause significant adverse impacts.

Since the proposed action would result in a pedestrian bridge in Van Cortlandt Park, it is not expected that there would be any impact on street and road conditions in the neighborhoods surrounding the park. Also, it is not expected that the pedestrian bridge would attract an increased amount of car drivers to the park's parking lots so that there would be adverse impacts on roads and parking lots within the park.

Therefore, it is highly unlikely that the proposed action would trigger the *CEQR* threshold of 50 peak hour vehicle trips, and no further traffic and parking analysis is warranted.

#### **4.17 TRANSIT AND PEDESTRIANS**

The objective of transit and pedestrian analyses is to determine whether a proposed action would have a significant impact on public transit facilities and services, as well as on pedestrian flows. According to the general thresholds used by the Metropolitan Transportation Authority specified in the *CEQR Technical Manual*, detailed transit analyses are not required if a proposed project is projected to result in less than 200 peak hour rail or bus transit riders. A proposed action that generates such a low number of transit riders is unlikely to create a significant impact on the current transit facilities.

At its east and west sides, Van Cortlandt Park is connected to subway and bus transportation. The nearest subway station to the pedestrian bridge location is the Woodlawn station for the #4 line, located approximately a 20 minute walk away. On the west side, the #1 line station Van Cortlandt Park/242 Street is the nearest station to the park.

In addition to subway transportation, on the east side of the park several bus lines, Bx 16, Bx 34, B-L 4, B-L 20, and B-L 21 travel along Jerome Avenue and Woodlawn Cemetery. Bx 16 connects Norwood and Eastchester. Bx 34 connects Van Cortlandt Park East/242 Street and Fordham. The B-L 4, 20, and 21 lines connect to Westchester. On the west side of the park Bx 9, B-L 1, B-L 2, and B-L 3 travel along Broadway. The Bx 9 connects West Farms close to the Bronx Zoo with Riverdale north of Van Cortlandt Park. The B-L 1, 2, and 3 buses connect to Westchester.

It is highly unlikely that the number of peak hour transit users would change by a significant number due to the proposed action. As a result, it is expected that the number of transit riders will be below 200 for any peak hour. Therefore, a more detailed transit and pedestrian analysis is not warranted.

Concerning the path system in the park, the main users are pedestrians, runners, and bicyclists. In addition, there are golf players who use small motorized vehicles to reach the driving ranges. For golf players, connections from Van Cortlandt Golf House to the southern Van Cortlandt Golf Course portion between the Major Deegan Expressway and the Mosholu Parkway are in place. As for pedestrians, runners and bicyclists, they are currently confined to conduct their recreational activities in certain park segments that are not connected to others.

For example, the Shandler Recreation Area is widely used by joggers who run loops within this park segment. Bicyclists who want to ride the Old Croton Aqueduct Trail from the Shandler Recreation Area to the Croton Woods Area have to take a detour east via 233<sup>rd</sup> Street in order to cross the Major Deegan Expressway.

It is expected that through the construction of the new bridge park users would move more in east-west and west-east direction than just circulate within the park sections closest to their neighborhood or most ideal for their type of recreational activity. As a result of the proposed action it is likely that the distribution of users within the different park sections might slightly change since east-west and west-east movements would be possible due to the new bridge. However, it is highly unlikely that change in user distribution would adversely impact the pedestrian and bicyclist flow in the park nor is it likely that the number of park users would

significantly change due to the proposed action. Therefore, a more detailed pedestrian and bicyclist analysis is not warranted.

#### **4.18 AIR QUALITY**

##### **Mobile Sources**

As mentioned above, it is highly unlikely that the proposed action would add vehicle trips to any single intersection in the surrounding neighborhoods of Van Cortlandt Park in any peak hour. As the proposed action is not expected to trigger the *CEQR* threshold of 100 vehicles per peak hour through an intersection, it does not warrant detailed mobile source air quality analysis.

##### **Stationary Sources**

According to the *CEQR Technical Manual*, the potential for stationary source air quality impacts exists when actions create new stationary sources of pollutants, when they add uses near existing (or planned) emissions stacks, and the new uses might be affected by the emissions from the stacks; or when they add structures near such stacks and those structures can change the dispersion of emissions from the stacks so that they begin to affect surrounding uses. Stationary sources include emission stacks from industrial plants or exhaust from boiler stacks used for heating/hot water, ventilation or air conditioning systems.

Since the proposed action does not have potential for stationary source air quality impacts, no detailed analysis is warranted.

#### **4.19 NOISE**

A noise analysis examines a project for its potential effects on sensitive noise receptors, including the effects on the interior noise levels of residential, commercial, and certain community facility uses, such as hospitals, schools, and libraries. The principal types of noise sources affecting the New York City environment are mobile sources (primarily motor vehicles), stationary sources (typically machinery or mechanical equipment associated with manufacturing operations or building heating, ventilating and air conditioning systems), and construction noise.

According to the guidelines established in the *CEQR Technical Manual*, an initial impact screening would consider whether the proposed action would generate any mobile or stationary source noise, or would be located in an area with high ambient noise levels. As stated in the *CEQR Technical Manual*, there is the potential for significant adverse impacts and a detailed mobile source noise analysis is generally performed if passenger car equivalent (PCE) values are at least doubled between existing and action conditions during the worst case expected hour at receptors most likely to be affected by the proposed action. As discussed above in the "Traffic and Parking" section, the proposed action would generate less than 50 vehicle trips in any peak hour and therefore is not expected to result in doubling of PCE values between existing and action conditions in the study area. As the proposed action would not double PCE values, an assessment of mobile source noise is not warranted.

In addition, the proposed action would not create any new stationary noise source generators, nor locate a sensitive receptor in the vicinity of an existing stationary source noise generator. As such, the proposed action will not result in any significant adverse noise impacts and no further analysis is warranted.

#### **4.20 CONSTRUCTION IMPACTS**

Although usually temporary, construction impacts can include noticeable and disruptive effects from an action that are associated with construction or could induce construction. The proposed action would result in the construction of a pedestrian bridge over the Major Deegan Expressway in Van Cortlandt Park. It is expected that the construction of the bridge foundations would have a duration of about two months, with most construction occurring approximately between 7:00 AM and 5:00 PM on weekdays. The assemblage of the bridge would take place in one night between 2am and 6am.

Construction activities may result in short-term disruption to the Major Deegan Expressway traffic at the bridge location. This would occur primarily due to the assemblage of the prefabricated metal truss bridge. Due to security reasons during that time the Major Deegan Expressway would have to be closed. However, these conditions would not result in significant adverse impacts on traffic and transportation conditions given the limited duration of any obstructions. Noise associated with construction would not result in significant adverse impacts and would be limited to typical construction activities, and would be subject to compliance with the New York City Noise Code and by EPA noise emission standards for construction equipment. These controls and the temporary nature of construction activity assure that there would be no significant adverse noise impacts associated with construction activity.

Excavation and construction would be conducted with care, particularly because of the underground national historic landmark, the Old Croton Aqueduct. All appropriate fugitive dust control measures required by law - including watering of exposed areas and dust covers for trucks - would be employed. During construction, standard practices would be followed to ensure safe vehicular movement on the Major Deegan Expressway. Given the relatively small construction project and the limited construction period, the mobile source emissions generated by the proposed action would not be significant. Overall, construction-related activities for the proposed action are not expected to have significant adverse impacts not already addressed in other technical areas.

#### **4.21 PUBLIC HEALTH**

Public health involves the activities that society undertakes to create and maintain conditions in which people can be healthy. Many public health concerns are closely related to air quality, hazardous materials, construction, and natural resources.

A public health assessment may be warranted if a project results in a) increased vehicular traffic or emissions from stationary sources resulting in significant adverse air quality impacts; b) increased exposure to heavy metals and other contaminants in soil/dust resulting in significant adverse impacts, or the presence of contamination from historic spills or releases of substances that might have affected or might affect ground water to be used as a source of drinking water; c) solid waste management practices that could attract vermin and result in an



increase in pest populations; d) potentially significant adverse impacts to sensitive receptors from noise and odors; or e) vapor infiltration from contaminants within a building or underlying soil that may result in significant adverse hazardous materials or air quality impacts.

As assessed in the applicable sections of this attachment, the proposed action is not anticipated to result in any significant adverse impacts related to air quality, noise, or hazardous materials. Solid waste would not be expected to attract vermin or pest populations during construction or upon completion of the proposed bridge. During construction, solid waste would be carted by a private solid waste management company, and would consist predominantly of construction materials. Regular solid waste collection by the New York City Department of Sanitation would ensure that vermin problems do not arise. Therefore, the proposed action is not expected to result in a significant adverse impact to public health, and no further analysis is provided.