



THE CITY OF NEW YORK
OFFICE OF THE MAYOR
NEW YORK, N Y 10007

**NOTICE OF COMPLETION
DRAFT ENVIRONMENTAL IMPACT STATEMENT
GATEWAY CENTER AT BRONX TERMINAL MARKET**

Date Issued:	July 7, 2005
CEQR No.	04DME017X
SEQRA Classification	Type I
Lead Agency	Office of the Deputy Mayor for Economic Development and Rebuilding (ODMEDR)
Location	Block 2356, Lot 20; Block 2357, Lots 1 and 86; and Block 2359, Lots 2 (part), 32, and 60 (part), the West Haven neighborhood in the Borough of the Bronx, generally bordered by the Metro North Rail Road tracks to the north, River Avenue to the east, 149 th street to the south, and the Harlem River to the west.

Pursuant to City Environmental Quality Review, Mayoral Executive Order 91 of 1977 as amended, and the City Environmental Quality Review Rules of Procedure found at Title 62, Chapter 5 of the Rules of the City of New York (CEQR), and the State Environmental Quality Review Act, Article 8 of the New York State Environmental Conservation law and its implementing regulations found in Part 617 of 6 NYCRR (SEQRA), a Draft Environmental Impact Statement (DEIS) has been prepared for the actions described below and is available for public inspection at the office listed on the last page of this notice. An Environmental Assessment Statement (EAS) for the project was prepared and the lead agency (ODMEDR) issued and distributed a *Positive Declaration*, including a draft Scope of Work for the EIS, on August 5, 2004. A public scoping meeting was held on September 9, 2004 at the Bronx Borough President's Office at 198 East 161st Street in the Bronx, to accept oral comments. Written comments on the proposed project's draft Scope of Work were accepted through September 20, 2004. The final Scope for this project's EIS, including a summary of comments received and responses to those comments, was issued on October 8, 2004. A public hearing on the DEIS will be held in conjunction with the City Planning Commission's public hearing pursuant to the Uniform Land Use Review Procedure (ULURP). Written comments on the DEIS should be forwarded to the contact office listed on the last page of this notice, and will be accepted until the 10th calendar day following the close of the public hearing. Subsequent notice will be given as to the time and place of the public hearing and the close of the public comment period.

A. PROJECT IDENTIFICATION AND DESCRIPTION

The Gateway Center at Bronx Terminal Market is a proposal to redevelop a 26-acre portion of the current Bronx Terminal Market site and the current Bronx House of Detention (BHOD) site, with approximately 1.1 million gross square feet (gsf) of retail establishments, 3,216 parking spaces in a multi-level parking garage and at-grade parking, a 250-room hotel, and a public open space and waterfront esplanade totaling approximately 2 acres (the Proposed Project). In total, the project would comprise approximately 2,427,162 gsf of new development on the site.

The Proposed Project is located in the West Haven neighborhood of the Bronx on Block 2356, Lot 20; Block 2357, Lots 1 and 86; and Block 2359, Lots 2 (part), 32, and 60 (part). The site is bordered by River Avenue to the east, 149th Street to the south, and the Harlem River to the west. On the site's east side, the northern boundary is the Metro North Rail Road tracks and on the west side, the northern boundary is just north of the East 161st Street exit from the Major Deegan Expressway. The Oak Point Link rail connection runs on a trestle in the Harlem River parallel to the shoreline and the project site. The Major Deegan Expressway bisects the project site. The parcels east of the Expressway would be merged with portions of 150th and 151st Streets and Cromwell Avenue to form the "eastern portion" of the project site. The parcel west of Exterior Street is the "western portion." The project site is owned by the City of New York, except for one parcel on the west side of the project site that is owned by the New York State Department of Transportation (NYSDOT).

The Proposed Project involves the disposition of City-owned property (a long-term lease) by the New York City Department of Citywide Administrative Services (NYCDCAS) and the New York City Department of Small Business Services (NYCDSBS) to a private developer.

The project site is currently used for wholesale food markets, a farmer's market (on weekdays), and parking. A portion of the project site is also used seasonally as parking for games at Yankee Stadium. The project site is currently occupied by seven buildings and a portion of an eighth, referred to as Buildings B-D, F-H, and J, and BHOD. Another building on the site, the former Building A, was recently demolished. The remainder of the buildings on the project site would be demolished as part of the Proposed Project. The west side of the project site contains Pier 4, combined Piers 2 and 3, and a portion of Pier 1 on the Harlem River

If approved, the Proposed Project is expected to be complete and operational in 2009, except for the hotel, which would not be completed until 2014.

Under the terms of its agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site, although retaining the option to renew its leasehold interest in the future should the City determine that retail development of this portion is in its best interest. If the leasehold interest were returned, the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop a 2-acre public open space. The City also would be responsible for developing the remainder of the western portion of the site, but noxious uses or those similar to those on the eastern portion would be prohibited. Remediation of this site would need to be implemented before redevelopment and would be the responsibility of the City or a designated developer.

Plans for a new Yankee Stadium, to be relocated on a nearby site with a build-year of 2009, have been announced. The relocation of Yankee Stadium would alter conditions in the study area. Chapter 22,

“Future Conditions with a Relocated Yankee Stadium,” provides an assessment of how the project could be expected to change background conditions by 2009 and 2014, and discusses any concomitant changes to the impacts identified for the Proposed Project. As information on the stadium project that may be relevant to the Bronx Terminal Market project becomes available, it will be analyzed and disclosed in the Bronx Terminal Market FEIS.

This Environmental Impact Statement (EIS) analyzes the Proposed Project as the reasonable worst-case scenario for both portions of the project site.

PROPOSED ACTIONS

Disposition will require approval through the Uniform Land Use Review Procedure (ULURP) under City Charter Section 197(c). In addition, a number of other discretionary actions subject to ULURP will be required, as follows:

- A zoning map amendment from M2-1 to C4-4;
- Elimination of portions of the following City streets:
 - East 150th Street between River Avenue and Exterior Street;
 - East 151st Street between River and Cromwell Avenues; and
 - Cromwell Avenue between Exterior Street and the Metro North Rail Road tracks.

EASTERN PORTION OF PROJECT SITE

- A special permit pursuant to ZR Section 74-512 to permit a public parking garage in excess of 150 spaces;
- A General Large-Scale District will be declared for the area east of Exterior Street. Several special permits will be required, including:
 - A special permit pursuant to Zoning Resolution (ZR) Section 74-743 for bulk modifications for height and setback waivers along River Avenue and Exterior Street, distribution of floor area within the general large-scale district, and a yard waiver adjacent to the Metro North Rail Road tracks; and
 - A special permit pursuant to ZR Section 74-744(c) for signs not otherwise permitted under the Zoning Resolution.

WESTERN PORTION OF PROJECT SITE

- A General Large-Scale District will be declared for the area west of Exterior Street. Several special permits will be required, including:
 - A special permit pursuant to ZR Section 74-53 to permit an increase in accessory parking above that permitted by the Zoning Resolution; and
 - A special permit pursuant to ZR Section 74-744(c) for signs not otherwise permitted under the Zoning Resolution.
- Waivers and modifications of the waterfront regulations will be required for the development of the western side of the project site, as follows:
 - Authorization pursuant to ZR Section 62-722(a) for modification of public access and visual corridors;

Gateway Center at Bronx Terminal Market

- Authorization pursuant to ZR Section 62-722(b) for modification of design standards for the waterfront area;
- Certification for a zoning lot subdivision pursuant to ZR Section 62-712; and
- Certification for compliance with waterfront public access and visual corridors pursuant to ZR Section 62-711.

BTM Development Partners will initiate each of the above actions as a co-applicant with EDC.

In addition to the above, the disposition of the long term lease will require approval pursuant to Section 384(b)(4) of the City charter, which requires Borough Board and mayoral approval. The proposed actions are limited and restricted by the terms and conditions of these approvals. The project sponsor will seek financing for the Proposed Project from the New York City Industrial Development Agency (NYCIDA). The project has applied for and been accepted into the Brownfield Cleanup Program (BCP) by the New York State Department of Environmental Conservation (NYSDEC). The project site is divided into two sites for the BCP: the east side of the site and the public open space west of Exterior Street; and the remaining part of the west side of the site. Project site remedial activities under the BCP are subject to review under the State Environmental Quality Review Act (SEQRA). The project would also require a NYSDEC State Pollution Discharge Elimination System (SPDES) permit for stormwater discharges associated with construction activities.

One or more additional outfalls for stormwater discharge into the Harlem River may need to be installed if the project site's existing outfalls cannot be used. If the construction of new outfalls is necessary, an amendment of the City's SPDES permit would be required, as well as Tidal Wetlands and Protection of Waters permits from NYSDEC, a U.S. Army Corps of Engineers (USACOE) permit, an amendment to the City's drainage plan, and possibly a Water Quality Certification. If the existing outfalls can be used and no new outfalls are needed, the City's drainage plan and SPDES permit would need to be amended, which would require NYSDEC approval. If use of the existing outfall requires the removal of sedimentation from the mouths of the outfall and placement of related structures, Tidal Wetlands and Protections of Waters permits from NYSDEC, and an USACOE permit, would be needed. The project may also require NYSDEC and USACOE permits for removal of debris from interpier areas, and a USACOE permit for work on platforms above the River. All of the forgoing activities (except possibly work on platforms over the River) are expected to qualify for a Nationwide Permit from USACOE.

The Proposed Project is within the boundaries of the coastal zone and will require a New York State Department of State (NYSDOS) determination of consistency with New York City's Local Waterfront Revitalization Program. The project may also involve a land transfer from NYSDOT to the City of New York, and a revocable consent for utility lines underneath Exterior Street. The potential widening of the 149th Street exit ramp from the Major Deegan Expressway may require approval from NYSDOT.

To the extent the Proposed Project will involve discretionary actions by a federal agency, it will include a review under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as implemented by federal regulations appearing at 36 Code of Federal Regulations (CFR) Part 800.

DESCRIPTION OF THE PROPOSED PROJECT

BUILDING PROGRAM

The eastern side of Exterior Street would include a series of five 1-story retail buildings approximately 19,820 gsf in size—collectively referred to as Retail Building E—with an adjacent surface parking lot of approximately 22 spaces; a 4-story, approximately 499,630-gsf building with 401,765 gsf of retail and 256 parking spaces at the ground floor (Retail Building B/F); a six-level, approximately 920,632-gsf parking garage with a capacity of approximately 2,342 spaces and 22,485 gsf of retail on Exterior Street (Retail Building C) and 8,015 gsf of retail on River Avenue (Retail Building D); a 3-story, approximately 436,480-gsf retail building (Retail Building A); and a hotel approximately 247,500 gsf in size, with 250 rooms, a 30,000-gsf banquet facility, and approximately 225 parking spaces. At each level of the parking garage would be galleria spaces, totaling 39,930 gsf, leading to either Retail Building A or Retail Building B/F. A fee would be charged for parking in the proposed parking garage. On the western side of Exterior Street, the Proposed Project would include a public open space and waterfront esplanade totaling approximately 2 acres, and a 2-story, approximately 264,170-gsf building with 140,435 gsf of retail and 344 parking spaces at the ground floor (Retail Building G) as well as 27 spaces in a surface parking lot to the north of the proposed building. In total, the project would comprise approximately 2,427,162 gsf of new development on the site.

PROJECT SCHEDULE AND STATUS

The parking spaces on the roof of Building C are currently used during games at Yankee Stadium, required by an existing agreement for Yankee parking. To avoid disrupting the availability of parking during games, the Proposed Project would be completed in two phases. Building C would be demolished as part of the first phase of the project and its current parking use would be relocated to the proposed hotel's portion of the project site, which would be constructed as the second phase of the project. The first phase would comprise the development of the retail, parking, and public open space portions of the project. The construction period for this phase would be approximately 24 months. The second phase would include the development of the hotel. The construction period for the second phase would be approximately 24 months. If the proposed actions are approved, it is anticipated that site preparation and construction for the first phase would begin in 2007, and the development would be complete and operational in 2009. Site preparation and construction for the second phase would begin in 2012, and the building would be complete in 2014.

RELOCATION PLAN

EDC has hired a relocation consultant to provide assistance to the current market tenants of the project site. This is being done independently of the Proposed Project and is not subject to any discretionary approvals. EDC, Bronx Empowerment Zone, and the project sponsor will provide various benefits to assist tenants in their relocation efforts. The relocation package includes the following benefits:

- EDC will provide Bronx Terminal Market tenants payments of \$10 per square foot towards expenses;
- Tenants who relocate to a building within or near the Bronx Empowerment Zone will be eligible to borrow up to \$500,000, at 0 percent interest rate for a maximum of 10 years, for the purchase of fixtures and equipment or for working capital;
- The project sponsor will provide incentive payments equal to half of the net rental payments paid by each tenant and received by the project sponsor from the date the tenant accepts the relation offer to the date the tenant vacates;

- EDC's relocation consultant will provide relocation services at no cost to Bronx Terminal Market tenants; and
- In addition, other government programs such as tax incentives, energy discounts, and financing programs are also available to eligible tenants.

B. PROBABLE IMPACTS OF THE PROPOSED PROJECT

LAND USE

The Proposed Project would represent a dramatic change in land use on the project site, replacing underutilized and dilapidated buildings with a major shopping center of approximately 1.1 million gross square feet (gsf) of retail; a multi-level parking garage and at-grade parking totaling approximately 3,216 spaces; and an approximately 2-acre public open space and waterfront esplanade with recreation public access to the Harlem River. The parcels east of the Major Deegan Expressway would be merged with portions of 150th and 151st Streets and Cromwell Avenue to form a superblock on the eastern section of the project site. The current tenants of the Bronx Terminal Market would be required to relocate, and the Bronx House of Detention would be closed as a result of the Proposed Project.

The change in primary use of the project site from predominantly wholesale commercial to retail with parking would not result in a significant adverse impact on the adjacent land uses. The Proposed Project continues the mixed-use quality of the study area by introducing retail uses in close proximity to residential areas and to Yankee Stadium—a major attraction drawing visitors to the area. The retail center would act as a transitional area between the existing residential uses to the north and east of the project site and the remaining heavy commercial and light industrial uses to the south. With the announcement of a new Yankee Stadium to the north of the site with four new parking garages and a capacity for 54,000 spectators, it is expected that the Proposed Project would be compatible with and complement the proposed new Yankee Stadium, as the proposed retail uses would likely be used by visitors to the stadium.

The addition of an approximately 2-acre waterfront esplanade and public open space would provide substantial new open space and access to the waterfront, which currently does not exist on the site and would improve the visual quality of the Harlem River shoreline.

A portion of the project site is currently used for parking and the site would continue to have a large parking element with the completion of the first phase of the Proposed Project. The existing streets that would be closed as a result of the proposed actions (150th Street between River Avenue and Exterior Street; 151st Street between River and Cromwell Avenues; and Cromwell Avenue between Exterior Street and Metro North Rail Road tracks) are currently not through streets and are used almost exclusively by workers and patrons of the Bronx Terminal Market and would be used by any potential workers at the Bronx House of Detention and receive minimal additional traffic. The elimination of these streets would therefore have no major impact on area visitors or residents and would allow for a cohesive site plan.

The existing Bronx Terminal Market tenants would be required to relocate as a result of the project. Relocation assistance would be provided to the tenants. Overall, the first phase of the Proposed Project would provide a major retail facility that would serve the local residents and workers as well as residents and workers in surrounding communities and would be compatible with the surrounding residential and commercial land uses.

The second phase of the Proposed Project would introduce a new approximately 247,500 gsf hotel—the only hotel in this area of the city—with 250 rooms, a 30,000 gsf banquet facility, and approximately 225 parking spaces to the project site. The introduction of the hotel use would be compatible with the other uses to be developed on the project site and with surrounding residential and commercial uses.

ZONING AND PUBLIC POLICY

The Proposed Project requires a number of discretionary actions including a zoning map change, declaration of a General Large Scale District, special permits related to the creation of the General Large Scale District, waivers and modifications of waterfront regulations, and the elimination of sections of several streets. Together, the proposed actions would allow development of commercial uses and waterfront public access on the project site.

The proposed actions, if approved, would represent a change in zoning on the project site from an M2-1 medium manufacturing district to a C4-4 general commercial district. C4 districts are major commercial centers. The zoning change would be compatible with land use designations in the area, including the R8 and R6 districts to the east. The C4-4 district would also be compatible with the M1-2 district to the east, which typically borders residential and commercial districts, as it currently does in this case to the north, south, and east.

The New York City Zoning Resolution allows the City Planning Commission to permit bulk modifications for height, setback, and yards within a general large-scale development. The proposed actions include special permits that would allow greater height and distribution of floor area on the eastern portion of the project site than would otherwise be permitted under zoning regulations. The requested special permits would allow the modification of the underlying height and setback requirements on the River Avenue frontage to permit Retail Building B/F and the public parking garage to be constructed without the required setback at 60 feet above curb level. Retail Building B/F would rise without setback to a height of approximately 96 feet along River Avenue, and the parking garage would rise without setback to approximately 84 feet along its River Avenue frontage. The height and setback modifications would allow a greater portion of the retail development to occur on the widest portion of the project site and are necessary to provide floor plates that are regular in configuration to meet the needs of the proposed large- and medium-scale retail tenants. The distribution of floor area to the portion of the project site north of the Major Deegan Expressway ramp would allow a hotel of sufficient size to accommodate the project program while complying with required height and setback requirements on this portion of the site.

The proposed actions would include a special permit pursuant to ZR Section 74-512 to allow a parking garage with approximately 2,339 spaces, 1,553 of which would be public parking spaces. This exceeds the 150 spaces permitted in a parking garage by the Zoning Resolution without the special permit. The remaining spaces in the garage would be accessory parking spaces. The Proposed Project also requires a special permit pursuant to ZR Section 74-53 to allow an increase spaces in an accessory group parking facility above that permitted as-of-right. The Proposed Project would include an accessory group parking facility of 344 spaces, 204 spaces above what is permitted as-of-right by the Zoning Resolution.

These changes do not constitute a significant adverse impact to the City's framework for zoning within large scale developments. Furthermore, the project site currently contains several large paved areas that are used for parking for Yankee Stadium, as well as 50 parking spaces adjacent to the Bronx House of Detention and approximately 423 rooftop parking spaces. The proposed parking would therefore be a continuation of uses that currently exist on the site.

In addition, the proposed actions include a special permit that would increase the permitted surface area of accessory signs and allow them to be located above a height of 40 feet. Along River Avenue, signs on the proposed parking garage would reach a height of approximately 100 feet. Along the eastern side of Exterior Street on the proposed Retail Building B/F, signage would rise on stanchions to a maximum height of approximately 155 feet. Signage would rise to a height of approximately 87 feet on the proposed Retail Building G on the western side of Exterior Street. The increased height and area of the signs is necessary due to the presence of the elevated structure of the Major Deegan Expressway over Exterior Street and the change in elevation of approximately 29 feet from Exterior Street to River Avenue.

As per the New York City Zoning Resolution, special regulations guide development along the City's waterfront in order, among other reasons, to maintain and re-establish physical and visual public access to and along the waterfront; to promote a greater mix of uses in waterfront developments in order to attract the public and enliven the waterfront; and to create a desirable relationship between waterfront development and the water's edge, public access areas, and adjoining upland communities. The Proposed Project would create an approximately 2-acre waterfront public esplanade and open space fronting on the Harlem River that would provide access to the waterfront where it is currently not available, and would thus be consistent with the goals of the Zoning Resolution as they pertain to waterfront areas.

Waterfront zoning also allows an applicant to modify the Zoning Resolution's bulk, visual corridor, and public access requirements by obtaining authorizations. The applicant would require such approvals to facilitate a feasible site plan. The applicant is requesting authorizations to modify waterfront public access, waterfront yards, visual corridors, and design standards for a waterfront area, and a certification for a zoning lot subdivision. The project's waterfront improvements have been designed to provide public access, views, and enjoyment of the waterfront. The modifications that would be allowed by the authorizations and certification include a reduction in the required 40-foot shore public walkway and waterfront yards and a change in the location of visual corridors, which are required by the Zoning Resolution to be located at maximum intervals of 600 feet. Retail Building G on the western side of Exterior Street would encroach approximately 3 to 19 feet upon the required shore public walkway at various locations. Additionally, the two required visual corridors to the Harlem River would be spaced approximately 885 feet apart from one another due to the locations of the Retail Building G and the proposed parking garage. However, the approximately 2-acre public open space that would be created on the southern portion of the project site would compensate for the slight decrease in visual and pedestrian access to the waterfront on the northern part of the site. These changes do not constitute a significant adverse impact to the City's framework for zoning on the waterfront.

The Proposed Project would be consistent with the public policies that govern the site and surrounding area. The Proposed Project would be consistent with the goals of the *2002 New York State Open Space Conservation Plan*, as the plan seeks to provide urban open space and waterfront access on the site; this will be accomplished with the creation of the approximately 2-acre public waterfront esplanade and open space. The Proposed Project would also be consistent with the Bronx Borough President's new Bronx Waterfront Plan, as it would create a year-round commercial center that would employ Bronx residents and provide publicly accessible waterfront recreational space, thereby achieving several of the plan's goals. Finally, the proposed amendments to the City Map that would eliminate portions of 150th Street, 151st Street, and Cromwell Avenue would follow the procedures of the City's ULURP process, which permits such amendments. The proposed map changes would not conflict with public policy.

No additional zoning actions would be required for the completion of the second phase of the Proposed Project. The special permit for bulk waivers included in the proposed actions would allow the distribution of floor area to the hotel site from elsewhere on the project site.

Overall, the Proposed Project would be consistent with land use, zoning, and public policy.

SOCIOECONOMIC CONDITIONS

DIRECT RESIDENTIAL DISPLACEMENT

The project site currently contains no residential units. Therefore, the proposed actions would not directly displace any residential population, and no significant adverse impacts would result from direct residential displacement.

INDIRECT RESIDENTIAL DISPLACEMENT

Indirect residential displacement is the involuntary displacement of residents that can result from a change in socioeconomic conditions created by a proposed action. In most cases, the issue for indirect residential displacement is whether an action would increase property values, leading to higher rents throughout the study area, making it difficult for some residents to afford their homes. The proposed actions would not have a substantial influence on residential property values, and no significant adverse impacts would result from indirect residential displacement. The Proposed Project would not directly displace a residential population, nor would it introduce new housing or residents to the study area.

DIRECT BUSINESS DISPLACEMENT

The *CEQR Technical Manual* defines direct business displacement as the involuntary displacement of businesses from the site of (or a site directly affected by) a proposed action. The analysis of direct business displacement examines the employment and business value characteristics of the affected businesses to determine the significance of the potential impact. A significant direct displacement impact may occur if the businesses in question have substantial economic value to the City or region, are the subject of regulations or publicly adopted plans to preserve, enhance, or otherwise protect them, or substantially contribute to a defining element of the neighborhood character. As set forth in the *CEQR Technical Manual*, the consideration of the economic value of a business is based on: (1) its products and services, (2) its location needs (particularly whether those needs can be satisfied at other locations), and (3) the potential effects on business or consumers of losing the displaced business as a product or service. The analysis finds that the proposed actions would not result in significant adverse impacts due to the direct business displacement. All of the 23 businesses currently operating on the project site—engaged either in food wholesaling or sale of related restaurant or grocery products—would be displaced by the Proposed Project. The displaced businesses represent about 4 percent of the wholesale food employment in the Bronx and only 1 percent of the wholesale food employment in New York City. In addition, all of the foods sold at the Bronx Terminal Market, including West African, Caribbean, and Hispanic specialty items, are available through other wholesale distributors and retailers in New York City, as well as in New Jersey.

The impact of displacing existing merchants in Bronx Terminal Market on local businesses and consumers is also not expected to be significant. Many of the West African businesses and grocery stores in northern Manhattan and the South Bronx either directly import their goods from West Africa or use wholesale distributors in New Jersey to stock their inventories. In addition, online research and telephone interviews confirmed that there are at least 16 African grocery stores located in the Bronx that deal in both wholesale and retail of West African specialty food items, as well as the two wholesale/retail purveyors of African foods and specialty products in Brooklyn and Queens. Although there are some restaurants and retailers of African foods who use the Bronx Terminal Market, it was not their only supply source. Thus, the direct displacement of African food merchants in the Bronx Terminal Market will not completely eliminate sources of African food products in the Bronx and other parts of New York City. All of the above factors combined with the availability of approximately 472,500 sf of ground-floor

industrial space within the Bronx show that the Bronx Terminal Market businesses do not have a unique or substantial economic value to the city or regional area and can be relocated without any great difficulty.

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

Indirect Displacement Due to Changes in Property Values and Rent

One issue for indirect business and institutional displacement is whether an action would increase property values and thus rents in the study area, making it difficult for some categories of business or institutions to remain at their current locations.

The ¼-mile study area would not result in significant indirect business displacement as a result of increased property values and rents. Despite the decline in manufacturing employment between 1990 and 2000, the real estate market for industrial properties within the Bronx has been strong. According to real estate firm CB Richard Ellis, prices for industrial properties over the past few years have been increasing with the vacancy rate currently at approximately 8 percent. Current industrial rents in the study area are about \$8-10 per square foot, which is comparable to other industrial areas in the Bronx. The low vacancy rate combined with high industrial rents makes it unlikely that the Proposed Project would create indirect displacement of industrial properties within the ¼-mile study area. In addition, the potential for development of additional retail uses similar or complementary to the Proposed Project is severely limited by the presence of institutional uses east of the project site, Yankee Stadium to the north, the Hudson River to the west, the development constraints imposed by highway ramps, as well as the existing zoning in the study area which would limit any potential impacts by the need for a discretionary action by the City Planning Commission.

Indirect Displacement Due to Competition (Primary Trade Area and 3-Mile Trade Area)

The issue of competition as described in the *CEQR Technical Manual* is whether the Proposed Project could affect neighborhood character by affecting the viability of neighborhood shopping areas through competition, thereby becoming an environmental concern. A detailed competition analysis was performed for two areas: a Primary Trade Area defined as the borough of the Bronx as well as Manhattan north of 110th Street, and a smaller 3-Mile Trade Area, from which the Proposed Project would be expected to draw a large portion of its repeat business as a result of more convenient access, shorter travel time and distance, and propensity to take advantage of a major shopping resource close to home.

The analysis finds that the Proposed Project would not substantially raise retail capture rates within the Primary Trade Area or the 3-Mile Trade Area and therefore, would not have the potential to adversely affect competitive stores in the trade areas. The analysis concluded that within the Primary Trade Area and 3-Mile Trade Area the Proposed Project would increase the food store capture rate by only 1.9 percentage points and 1.8 percentage points, respectively, compared to the future without the Proposed Project. The department store capture rate would increase by less than the capture rate for all shopping goods, increasing from 34.3 percent in the future without the Proposed Project to 35.9 percent in the future with the Proposed Project.

Given that the Proposed Project would not substantially raise retail capture rates within the Primary Trade Area or 3-Mile Trade Area, it would not have the potential to adversely affect competitive stores in the trade areas. To the contrary, the proposed actions would help retain retail sales dollars, tax revenues, and employment opportunities in the Bronx and New York City while enhancing the retail section available to trade area residents.

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

According to the *CEQR Technical Manual*, a significant adverse impact may occur if an action affects the operation and viability of a specific industry that has substantial economic value to the City's economy. The analysis of this Proposed Project focuses on the project's implications for the wholesale food industry in New York City and concludes that the project would not result in a significant adverse impact to the industry.

This conclusion is based on the findings that the Proposed Project would not substantially reduce employment in the wholesale food industry in the city or impair the economic viability of the wholesale food industry in the Bronx or the city as a whole. Employees currently working at businesses on the project site represent only 4 percent of all wholesale food employees in the Bronx and roughly 1 percent of wholesale food employees in New York City. Furthermore, all of the products sold at the Bronx Terminal Market are available through other wholesale distributors and retailers in New York City that do not depend solely on the Bronx Terminal Market for their supply, as well as through two major wholesalers in New Jersey (one of which supplies the Bronx Terminal Market).

COMMUNITY FACILITIES

The proposed actions include the disposition of the BHOD for redevelopment. This action would reduce the New York City Department of Correction's (NYCDOC) reserve capacity by approximately 30 percent. Fewer beds would be available to be reopened when NYCDOC eventually replaces the 4,800 temporary beds on Rikers Island that are approaching the end of their useful lives. Therefore, the Proposed Project would reduce the options available to NYCDOC as it chooses among several capacity replacement configurations. The Proposed Project would also reduce the number of jail beds available in Bronx County, where 22 percent of the City-wide inmate population is now arraigned. Given the need for a continued presence in the Bronx and the need to dry-dock the Vernon C. Bain Center in the near future, NYCDOC would need a new site in the Bronx to build a new facility to replace the existing Bronx House of Detention and to provide improved access to jail facilities to families of inmates, defense attorneys, and other members of the community.

OPEN SPACE

The Proposed Project would create approximately two acres of publicly accessible passive open space on the project site along the Harlem River. The open space will contain a waterfront esplanade along with a larger open space area on the southern edge of the project site along the waterfront that contains benches and landscaping. Overall, the Proposed Project would not have any significant adverse impacts on open space.

SHADOWS

Overall, the Proposed Project would have no significant adverse shadow impacts. The proposed buildings would cast shadows on Macombs Dam Park, but these shadows would be cast during the midday hours of the winter months and would mostly fall on paved areas, and thus would not affect park usage or vegetation growth. The open space to be created by the Proposed Project would receive incremental shadows throughout the year; however, the majority of the open space would be only covered by project-generated shadows in the early morning hours. The portion of the waterfront esplanade to the west of the proposed Retail Building G would continue to receive shadows through the early afternoon, but it would receive full sun in the early evening until sunset in the late spring and through the summer. Open space users could utilize the southern portion of the open space if they desired a sunny seating area when the esplanade would be in shadow, but most esplanade users are expected to walk, bike, or run through this area (rather than sit), and thus would not be affected by the shadows. As necessary, plantings on the esplanade will conform to any New York City Department of Parks and Recreation requirements for

shade-tolerant species. In addition, this new open space would not exist without the proposed building to be constructed adjacent to it. Incremental shadows would not meet any of the criteria that would lead to a significant adverse impact based on shadow coverage.

HISTORIC RESOURCES

ARCHAEOLOGICAL RESOURCES

The study area for archaeological resources is the Area of Potential Effect (APE), the area of planned construction and disturbance on the project site. At the request of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), a Phase IA Archaeological Assessment was prepared for the project site by Historical Perspectives, Inc.

Portions of the APE at the northern end of the project site contain the potential for precontact archaeological resources to be located beneath the layer of peat found under fill deposits and river mud. However, project specifications indicate that future excavation would only extend to the depth of these potential resources (i.e., to below the peat layer) in the form of building pilings. Due to the depth of the potential precontact resources and the difficulty in accessing the potentially sensitive strata, which are well below the water table, no archaeological field investigations are recommended for precontact resources at this time.

Full excavation for the proposed buildings would only extend approximately three to four feet below grade, for the construction of pile caps within the proposed buildings' footprints; this depth would not reach the peat layer or below. Future utilities planned for the site would not be located any deeper than existing utilities on the property. The area of the project site that would require deeper excavation as part of the project does not contain a layer of peat, being just at the edge of the original shoreline and not within a former marshy area, and has been previously disturbed from earlier construction. Therefore, any potential precontact period archaeological resources in this area would already have been destroyed, and no archaeological field investigations are recommended.

Historic period archaeological sensitivity for the project APE is low, and no archaeological field investigations are recommended for historic period resources. Therefore, the project is not expected to have any significant adverse impacts on archaeological resources.

The future hotel site falls within the area of precontact archaeological sensitivity. While construction specifications for the proposed hotel have not yet been determined, it is expected that the excavation for the hotel would be consistent with that of the other proposed buildings. Therefore, the project is not expected to have any significant adverse impacts on archaeological resources. If future project specifications for the proposed hotel indicate it would require deep excavation instead (i.e., excavation that would penetrate/impact the peat layer or below the peat layer), then archaeological field investigations or monitoring for the recovery of precontact resources would be undertaken.

ARCHITECTURAL RESOURCES

All of the buildings on the project site would be demolished for the Proposed Project by 2009. The demolition of the buildings identified as historic resources—Buildings B, D, F, G, H, and J, and the Bronx House of Detention—would constitute a significant adverse impact. Measures to mitigate the effect of the proposed project on historic resources are being developed in consultation with OPRHP. Potential mitigation measures are discussed in the “Mitigation” section

The project site is located far enough away (i.e. more than 90 feet) from the known and potential historic resources in the study area (the 145th Street Bridge, 691 Gerard Avenue/109 153rd Street, and 690 Gerard

Avenue) not to have any direct, physical effects on these resources from ground-borne vibrations or other potential construction-related issues.

The new, modern development on the project site would be expected to alter the context of the historic resources in the surrounding area. However, these resources already exist in an environment that is predominantly industrial, and this change is not considered a significant adverse impact. In addition, the bulk of the project development would be somewhat less noticeable from the resources along the Grand Concourse, which is at a higher elevation than the project site. While the project site buildings would be more noticeable from the Macombs Dam and 145th Street Bridges, they would not block views from those bridges to any historic resource. The Proposed Project would provide new views to the historic bridges spanning the Harlem River by providing public access to the project site waterfront in the form of a public open space and waterfront esplanade.

There are no historic resources on the area of the project site to be developed as a hotel by 2014, and there would be no historic resources on the remainder of the project site by 2014. Therefore, the development of the proposed hotel would not affect any historic resources on the project site.

URBAN DESIGN AND VISUAL RESOURCES

The Proposed Project would alter the street pattern of the project site by demapping East 150th Street between River Avenue and Exterior Street, and eliminating East 151st Street between River and Cromwell Avenues and Cromwell Avenue between Exterior Street and the Metro North Rail Road tracks. This change is not considered to be adverse, as these streets are currently underutilized and are not a defining element of the area's urban design. The Proposed Project also would substantially alter the appearance of the project site by replacing the existing one- and two-story, long, narrow industrial buildings and the 8- and 10-story Bronx House of Detention with a series of retail establishments of up to 96 feet in height, a 6-level parking garage, and a landscaped open space and waterfront esplanade. The proposed buildings would be larger and squarer in form than the existing buildings, and their expected materials, coloration, and style would be different and more modern than those of the existing buildings on the project site. While the proposed buildings would be considerably different than the existing buildings, the existing buildings are currently unutilized or underutilized and have a neglected quality, and the proposed buildings would be expected to improve the visual quality of the site. The proposed buildings also would maintain the existing streetwalls on Exterior Street and River Avenue. The proposed retail and parking uses would be expected to generate more pedestrian activity than the existing wholesale and retail uses. The signage to be erected on the sides of the proposed buildings would include elements intended to create a visual rhythm along the Major Deegan Expressway.

The Proposed Project would create landscaped passageways between the proposed buildings, allowing for better pedestrian access, and would introduce street lighting and trees to improve the visual appearance of the project site. The landscaped passageways would not be built upon and would be available for public use, facilitating access to the public open space to be created on the west side of the project site. It would also create a public open space and waterfront esplanade, which would enhance the project site's piers and make the Harlem River waterfront both visually and physically more accessible. The Belgian block paving on Exterior Street would be removed as part of the Proposed Project; however, it is possible that the pavers would be incorporated into the design of the public open space. In summary, the Proposed Project is not expected to have a significant adverse impact on the urban design of the project site.

The demolition of the Bronx House of Detention could create new views to Yankee Stadium from the project site; however, the construction of the proposed buildings could eliminate other views of the stadium from the project site. Views of Bronx House of Detention from the project site are mainly of the rear or western façade which is not original to the building. Views of the Harlem River from the project site would be improved with the creation of the public open space and waterfront esplanade.

The Proposed Project would enhance the vitality of streets in the study area by introducing new commercial and parking uses and pedestrian activity to the project site. It would also improve the appearance of the area's streetscape by adding street lighting and landscaping. The lighting of the pedestrian walkways could include industrial light fixtures as well as decorative accent lighting. The Proposed Project would include signs that would be visible from the surrounding area. Illuminated signs identifying retail tenants would be located on Retail Buildings A, B/F, and G and would be located along the public streets that run through and along the project site. Taller backlit signs approaching heights of approximately 155 feet, 87 feet, and 100 feet respectively would be located along Exterior Street at the corners of Retail Buildings B/F and G, and along River Avenue on the proposed parking garage. The proposed signage would draw attention to the retail development and the surrounding recreational space and would create visual interest along the Major Deegan Expressway. The Proposed Project would not affect other streetscape elements within the Bronx study area.

The second phase of the Proposed Project would involve the development of a hotel on the northern portion of the project site by the 2014 Build year. This would be a new use on the project site and in the study area; however, it would be compatible with the retail center which would already exist on the project site by 2014. The development of the proposed hotel would not alter any street patterns, block shapes, natural features, or adversely affect views to visual resources from the project site.

The proposed hotel would not adversely affect the streetscape of the study area. It is anticipated that development of the hotel would bring greater activity to the streets of the project site and the study area in the Bronx. The proposed hotel would not impact the streetscape of the East Harlem study area. At approximately 230 feet in height, the hotel would be taller than the buildings currently on the project site and in the study area; however, it would occupy a much smaller footprint than the proposed retail buildings. Therefore, its bulk would be most noticeable from across the Harlem River or along East 153rd Street near the project site.

NEIGHBORHOOD CHARACTER

The first phase of the Proposed Project would result in a major change in land use on the project site. This change is considered to be complementary to the area, as it would create a major retail facility that would serve the residents, workers, and visitors of surrounding communities and Yankee Stadium. Wholesale commercial uses, vacant space, and an unused detention center would be removed from the site to allow for development of active retail uses, parking, and a public open space/waterfront esplanade. The project site is currently underutilized, and the Proposed Project would bring a greater intensity of use to the project site.

The Proposed Project would substantially improve the condition of the shoreline and waterfront edge. The Harlem River waterfront would be both visually and physically more accessible. The project would provide substantial access to the waterfront, which currently does not exist on the site or at very many locations within the study area. Views from and through the project site to the waterfront and the surrounding area would be improved with the provision of the waterfront open space and promenade. There would also be a notable improvement in the amount of open space in the neighborhood for use by visitors to the project site and the surrounding community, compared to conditions without the proposed actions. Therefore, the proposed actions are expected to have a beneficial effect on the waterfront and open space in the study area.

The proposed buildings would be in keeping with the height and bulk of some of the existing structures in the study area. As the existing buildings on the project site are currently unutilized or underutilized and have a neglected quality, the proposed buildings would be expected to improve the visual quality and the character of the area. The Proposed Project would modify the shapes of the project blocks by demapping

portions of several streets to create a superblock. These streets are currently underutilized and form blocks with unusual shapes. The change would not result in a negative neighborhood character impact related to urban design, as it would not significantly alter the basic street pattern or block shapes of the study area.

In general, the Proposed Project is expected to enhance the vitality of the surrounding streets by introducing active retail uses and increasing visitation to the project site. The Proposed Project would also add to the visual quality of the surrounding area, by creating landscaped passageways between buildings, introducing street lighting and trees, and opening up views from the project site to the Harlem River. Although the context of surrounding views would be altered by the introduction of taller, modern buildings to the area, this change is not considered to be adverse, as these buildings would replace underutilized, deteriorating buildings and the project would create new waterfront access and views to the Harlem River.

Although the Proposed Project would require the demolition of the historic resources on the project site (Buildings B, D, F, G, H, and J, and the Bronx House of Detention)—this impact would be lessened by mitigation that is being developed in consultation with OPRHP. Other known and potential historic resources are located far enough away from the project site to not experience any direct physical effects from the Proposed Project. While the Proposed Project would be expected to alter the context of the historic resources in the surrounding area, these resources already exist in an environment that is predominantly industrial, and there would be no significant adverse neighborhood character impact related to changes to views of historic resources.

Overall, the Proposed Project would not have an historic resources-related impact on neighborhood character.

The Proposed Project would displace some existing businesses; however, the businesses on the project site are not dependent upon siting on the waterfront and do not substantially contribute to defining the neighborhood, and thus removal would not result in a significant adverse impact to the neighborhood character of the area.

The Proposed Project would include several improvements to the roadway network. Exterior Street between 149th Street and its northern terminus and River Avenue between 149th and 153rd Streets would be substantially upgraded to include pavement resurfacing, dedicated turning lanes into the site, and widening along certain sections to provide two full travel lanes in each direction. New traffic signals would also be installed at parking garage driveways on Exterior Street in order to facilitate vehicle access in and out of the proposed parking garages. Yankee Stadium parking facilities would be displaced by the Proposed Project; however, the Proposed Project's parking facilities would provide capacity for the displaced Yankee Stadium parking activity. Although there would be significant increases in traffic volumes in the surrounding neighborhood, including along the Major Deegan Expressway, street network and Expressway capacities would be sufficient to accommodate traffic from the Proposed Project with the proposed mitigation measures, which include standard traffic engineering improvements as well as the widening of the northbound Major Deegan Expressway ramp at 149th Street. The Proposed Project is expected to generate a number of pedestrian trips to and from the site. The neighborhood's sidewalks are expected to have sufficient capacity to accommodate this increase in demand. Therefore, the Proposed Project should not have a pedestrian-related impact on neighborhood character.

The Proposed Project is also expected to generate a number of pedestrian trips to and from the site and to increase public transportation demand in the area. However, the neighborhood's sidewalks, subways, and buses are expected to have sufficient capacity to accommodate these increases in demand with the mitigation measures proposed. Therefore, the Proposed Project should not have traffic- or transit-related impacts on neighborhood character.

The first phase of the Proposed Project would not significantly adversely affect the combined elements contributing to the neighborhood character of the study area. No significant adverse impacts to neighborhood character would result from the Proposed Project.

The second phase of the Proposed Project would introduce a new hotel use to the project site. The hotel would be compatible with the retail center that would already exist on the project site by 2014.

There would be no significant adverse impacts on neighborhood character from the second phase of the project.

The proposed hotel would continue to bring greater activity to the streets of the project site and the study area, and the building form would be compatible with the previously developed retail center. At approximately 230 feet in height, the hotel would be taller than the buildings currently on and proposed for the project site, as well as existing buildings in the study area; moreover it would occupy a much smaller footprint than the proposed retail buildings, and therefore its bulk would be most noticeable from across the Harlem River or along 153rd Street near the project site. The proposed hotel would also not have significant adverse impacts on the visual resources within the study area; it would not block existing views of Yankee Stadium from the majority of the study area.

The proposed hotel would generate smaller increases in traffic, pedestrians, and public transportation demands than Phase I, and the Proposed Project would not have any traffic- or transit-related neighborhood character impacts by 2014. Noise levels with the completion of the Proposed Project would change imperceptibly and would have no resulting impact on neighborhood character.

In summary, the completion of the Proposed Project would not adversely affect the combined elements contributing to the neighborhood character of the study area. No significant adverse impacts to neighborhood character would result from the Proposed Project.

NATURAL RESOURCES

The Proposed Project would have no significant impacts on the limited terrestrial natural resources occurring on the site.

Portions of the existing timber bulkheads within the inter-pier areas would be removed at or just above spring high tide and replaced by a softer, sloped, and more stable rip-rap edge. The affected areas would be portions of: the northern bulkhead along the southern inter-pier area, both bulkheads along the middle inter-pier area, and the southern bulkhead along the northern inter-pier area. The project involves no filling of state-regulated Tidal Wetlands or U.S. waters. Adjacent area disturbance would occur during construction and would include mainly the new rip-rap replacing portions of bulkhead in the inter-pier areas, replacement of existing disturbed, sparsely vegetated adjacent area with a landscaped public open space and esplanade in the south and esplanade in the north, as well as possibly some covering of adjacent areas with impervious material (asphalt or concrete) for parking and a retail building. The project is expected to have no significant impacts on wetlands and may have a beneficial ecological affect on the adjacent area.

The Proposed Project would employ best management practices to prevent potential disturbances from any work below mean high water, and therefore no significant impacts to endangered, threatened, and special concern species would be expected during construction activities.

HAZARDOUS MATERIALS

The project sponsor has entered into agreements with NYSDEC under the auspices of the New York State Brownfield Cleanup Program (BCP) to investigate and, where necessary, remediate contamination on large portions of the site as part of its redevelopment. There are two Brownfield Cleanup Agreements, for two portions of the project site—an area east of Exterior Street plus the area planned for the open space, and the area north of the proposed open space and west of Exterior Street. Under this program, a draft Remedial Work Plan (RWP) would be submitted to NYSDEC and the New York State Department of Health (NYSDOH) after the completion of an Investigation Report describing and characterizing the environmental conditions of the project site. The RWP would include remedial actions, as necessary, to be performed before, during, and/or after construction of the Proposed Project.

Without appropriate controls, there would be a potential for adverse impacts resulting from the presence of subsurface contamination, as well as asbestos-containing materials (ACMs) and lead-based paint in the site's buildings, since demolition, excavation and construction activities could disturb hazardous materials and increase pathways for human exposure. However, impacts would be avoided by performing construction activities in accordance with the protocols that will be detailed in a RWP. No significant adverse impacts related to hazardous materials would result from demolition and/or construction activities on the project site. Following construction, there would be no further potential for the Proposed Project to have significant adverse hazardous materials impacts.

WATERFRONT REVITALIZATION PROGRAM

The project site is located in the coastal zone designated by New York State and City and is therefore subject to their coastal zone management policies. The Proposed Project would be consistent with the policies of the city's Local Waterfront Revitalization Program (WRP) and the WRP's guiding principle of maximizing the benefits derived from economic development, environmental preservation, and public use of the waterfront while minimizing conflicts among these objectives. It would also be consistent with the Bronx Waterfront Plan and its objectives to improve existing parkland, develop pedestrian connections to the Harlem River waterfront, and redevelop the Bronx Terminal Market to include a waterfront open space. The Proposed Project would re-establish physical and visual public access to the Harlem River waterfront and result in waterfront uses that attract the public and enliven the waterfront as well as benefit the surrounding community.

INFRASTRUCTURE

As part of the Proposed Project, new water lines would be installed both within the City's right of way and the project site. All new water lines would be designed and built to meet NYCDEP requirements. Sanitary sewers also would be constructed within Exterior Street as part of the Proposed Project. New sewer lines would be designed in accordance with the NYCDEP amended drainage plan for the area and will be built to meet all NYCDEP requirements. The Proposed Project would include construction of a NYCDEP storm sewer within Exterior Street in accordance with the City's amended drainage plan for the area. The drainage plan would be amended as part of the mapping action associated with the Proposed Project.

The existing City infrastructure has sufficient capacity to accommodate the Proposed Project without having a significant adverse impact on other users.

SOLID WASTE

Based on the project's anticipated size, the total weekly solid waste generation with the Proposed Project would amount to 168,361 pounds per week. All solid waste would be handled by private carters. The Proposed Project would account for a very small increase in the amount of solid waste generated in the City, and therefore would not have an adverse impact on solid waste handling and disposal systems.

ENERGY

The operational consumption for the Proposed Project is expected to be approximately 126 billion British Thermal Units per year. Consolidated Edison could easily supply this energy without disruption to the main distribution system. Thus, there would not be any significant adverse energy impacts from the Proposed Project.

TRAFFIC AND PARKING

A traffic study area encompassing 16 intersections was analyzed. Traffic conditions were analyzed under both non-Yankee game scenarios (weekday midday and PM peak hours and Saturday midday peak hour) and game day scenarios (weeknight pre-game peak hour, Saturday midday pre-game peak hour, and Saturday PM post-game peak hour).

Nineteen public parking facilities surveyed within ½-mile of the project site contain approximately 8,070 spaces. On a typical non-game day peak hour during a weekday or Saturday, the occupancy level is less than seven percent, leaving about 7,500 unoccupied spaces available. On a typical weeknight game day, between 7-8 PM, occupancy peaks at about 75 percent; on a typical Saturday game day between 2-3 PM, the occupancy peaks at approximately 91 percent. Approximately 1,200 on-street parking spaces are available within ½-mile of the project site. Between 40 and 80 percent of parking spaces are occupied during non-game day and game day conditions.

TRIP GENERATION

The Proposed Project retail development in 2009 can be expected to generate approximately 3,100 person trips (i.e., by all travel modes) in the non-game weekday midday peak hour, 6,800 person trips in the non-game weekday PM peak hour, and 9,200 person trips in the non-game Saturday midday peak hour. Equivalent peak hours on game days would generate slightly lower volumes of person trips, because a portion of retail shoppers would be drawn to off-peak periods to avoid peak game day traffic arrival and departure hours. The game day peak hours are expected to generate 6,100 person trips in the pre-game weekday PM peak hour compared to 6,800 in the non-game weekday PM peak hour, and 7,400 person trips in the pre-game Saturday midday peak hour compared to 9,200 in the non-game Saturday midday peak hour; the Proposed Project is estimated to generate approximately 5,500 person trips in the post-game Saturday PM peak hour.

The Proposed Project's retail development in 2009 can be expected to generate 1,032 vehicle trips (i.e., by autos, taxis, and trucks) in the non-game weekday midday peak hour, 2,145 vehicle trips in the non-game weekday PM peak hour, and 2,434 vehicle trips in the non-game Saturday midday peak. The Proposed Project is estimated to generate 1,973 vehicle trips in the pre-game weekday PM peak hour, 1,946 vehicle trips in the pre-game Saturday midday peak hour, and 1,472 vehicle trips in the post-game Saturday PM peak hour. These may well be significantly conservative projections (i.e., higher than what may realistically be expected), as many more shoppers may choose to drive at times not as heavily trafficked by Yankee fans going to or leaving a game.

The Proposed Project's hotel development in 2014 can be expected to generate 165 person trips (i.e., by all travel modes) in the non-game weekday midday peak hour, 214 person trips in the non-game weekday PM peak hour, and 310 person trips in the non-game Saturday midday peak hour. Equivalent peak hours on game days would generate approximately the same volumes of person trips, because hotel trips would not be significantly affected by game day traffic. The proposed hotel is estimated to generate 214 person trips in the pre-game weekday PM peak hour, 310 person trips in the pre-game Saturday midday peak hour, and 310 person trips in the post-game Saturday PM peak hour. The proposed hotel development in 2014 can be expected to generate 90 vehicle trips (i.e., by autos, taxis, and trucks) in the non-game weekday midday peak hour, 116 vehicle trips in the non-game weekday PM peak hour, and 120 vehicle trips in the non-game Saturday midday peak hour. The Proposed Project is estimated to generate 116 vehicle trips in the pre-game weekday PM peak hour, 120 vehicle trips in the pre-game Saturday midday peak hour, and 120 vehicle trips in the post-game Saturday PM peak hour.

PROGRAMMED IMPROVEMENTS, STREET CLOSURES, AND PARKING DISPLACEMENT

Exterior Street Improvements

Exterior Street, currently a wide, unstriped, cobblestone street with significant damage to the roadway surface, would be completely rebuilt by the Proposed Project. Upgrades include widening to two travel lanes per direction, dedicated turning lanes into parking areas on both sides of Exterior Street, pavement resurfacing, crosswalks at exits and entrances to parking areas, traffic signals at parking garage driveways, lane striping, signage, upgraded lighting, and aesthetically-pleasing streetscaping designs. Signal warrant analyses will be conducted during the period between certification of this DEIS and certification of the FEIS, as per NYCDOT guidelines. It is expected that traffic signals will be warranted at the two major garage driveways. However, should the analyses indicate otherwise, alternative measures would be needed in order to avoid significant impacts at those two locations.

River Avenue Improvements

River Avenue would be restriped by the Proposed Project to include crosswalks at 150th and 151st Streets and the proposed garage exit, two travel lanes per direction, shared left-turn/through lanes at 150th and 151st Streets, and streetscaping treatments. Motorists would experience improved levels of service before and after Yankee games along River Avenue due to the added capacity within the four-lane section between 149th and 151st Streets.

Major Deegan Expressway Improvements

As part of their redecking of the Major Deegan Expressway project, NYSDOT is considering widening the northbound Exit 4/149th Street off-ramp to two lanes, which would increase the capacity of the 149th Street/Exterior Street/River Avenue intersection. Currently, the schedule and design of this improvement is being explored by NYSDOT. As it is not known when the widening would be constructed, the analyses in this chapter do not account for this improvement in the Build conditions. The traffic impacts have been assessed independent of the ramp widening.

Minor Street Closures

Portions of three streets would be closed as a result of the Proposed Project. 150th Street would be closed between River Avenue and Exterior Street, Cromwell Avenue would be closed north of 150th Street, and 151st Street west of River Avenue would become an entrance to the Proposed Project's parking garage. Of the street closures, 150th Street between River Avenue and Exterior Street is the only segment that currently carries traffic in excess of 50 vehicles per hour.

A moderate number of trips (between 50 to 80 vph per direction) on 150th Street currently use this street as a cut-through between Exterior Street and River Avenue; very few motorists take through-trips along westbound 150th Street to Exterior Street—only about 20 to 30 vph. 150th Street allows southbound River Avenue motorists to access northbound Exterior Street and vice-versa without waiting at the 149th

Street/Exterior Street/River Avenue intersection's traffic signal. Also, westbound 149th Street motorists destined to northbound Exterior Street bypass the traffic signal by using the stop-controlled channelized right-turn lane and make a left onto 150th Street. So, as a result of the proposed street closure, approximately 40 to 50 vph per direction would likely divert from 150th Street to the 149th Street/Exterior Street/River Avenue intersection in the 2009 and 2014 Build conditions. This is accounted for in the Build analyses.

TRAFFIC LEVELS OF SERVICE AND IMPACTS

Build traffic volumes were developed by adding project-generated volumes to No Build volumes, and compared to levels of service without the Proposed Project in order to determine where significant impacts would occur. Measures to mitigate significantly-impacted locations are discussed below in "Mitigation."

PARKING

The proposed development of the project site would result in the addition of 2,991 parking spaces in 2009 with 225 more in 2014. It is anticipated that these parking spaces will have a payment structure with lower fees for one, two, and three hour parking than for parked cars staying more than three hours, so that fees for the longer parking duration would be commensurate with fees charged for Yankee Stadium parking lots accommodating fans on game days. A similar type of fee payment structure is used today at the Concourse Plaza Shopping Center on 161st Street.

The analyses have concluded that all site-generated traffic would be accommodated by the Proposed Project's parking facilities. However, eight off-street parking facilities and on-street parking along Exterior Street currently used by Yankee fans would be displaced when construction begins and become permanently displaced upon completion of the proposed development. Although approximately 1,925 striped parking spaces in off-street facilities and about 165 on-street spaces on Exterior Street would be displaced, observations from the 2004 season indicate that during typical Yankee games, no more than 800 to 1,200 of these parking spaces are occupied, and only the Bronx House of Detention and northern Bronx Terminal Market parking facilities are typically open.

Excess parking capacity at the project site would accommodate nearly all displaced Yankee-game parking. However, to be conservative, 20 percent of existing parking trips have been assumed to divert to available on-street parking between River Avenue and the Grand Concourse, and to an off-street parking facility at the Concourse Village Shopping Center in the weekday and Saturday pre-game and Saturday post-game peak hours, as stated in the Build analyses. The remaining 80 percent of Yankee-game parking has been assigned to the Proposed Project's parking facilities

On a typical weekday during the baseball season, the parking need would peak from approximately 5 to 8 PM with about 65 percent of the site's facilities occupied by shoppers and Yankee-game parking. On a typical Saturday during the Yankee season, the parking facilities would peak at approximately 98 percent occupancy by shoppers and Yankee-game parking between 2 and 3 PM. The parking facilities would be sized for the peak shopping holiday season demand of approximately 2,991 spaces in December, but parking would be available on Yankee game days, which would accommodate Yankee fans.

The proposed hotel, which would be completed by 2014, would include a 225-space parking lot. Parking accumulation calculations have indicated that the planned parking lot size would be sufficient to accommodate peak weekday and weekend parking hourly accumulations of 204 vehicles at 5-6 PM and 122 vehicles at 2-3 PM, respectively. To be conservative, the traffic and parking analyses have assumed that existing Yankee Stadium Lot 13D, where the proposed hotel would be located, would be displaced in

2009. Hence, no additional displacement of Yankee stadium parking would occur between 2009 and 2014.

MAJOR DEEGAN EXPRESSWAY

Because of its importance to regional travel and proximity to the Bronx Terminal Market site, key northbound and southbound Major Deegan Expressway segments were analyzed to assess the potential impacts of the proposed development on the expressway.

Northbound Major Deegan Expressway

Traffic generated by the Proposed Project would generally enter the northbound Major Deegan Expressway further south of the study area, appear as through traffic at the 138th Street on-ramp, and exit at the 149th Street off-ramp. Project-generated traffic volumes exiting the northbound Major Deegan Expressway destined to the project site in 2009 would range from approximately 120 to 280 vph during non-game peak hours and between 160 and 235 vph during Yankee game day peak hours. The additional project-generated exiting volumes at 149th Street represent approximately three to eight percent of the total northbound Major Deegan Expressway traffic.

During the non-game weekday midday peak hour, conditions just before the 149th Street off-ramp would deteriorate from LOS C in the 2009 No Build condition to LOS F in the 2009 Build condition; all other peak hours would continue to operate at LOS F conditions with additional queuing, slower speeds, and higher densities. In all peak hours, queuing would occur along the 149th Street off-ramp onto the right lane of the Major Deegan Expressway. Motorists would react to the right lane queues by slowing in the center lane, and left lane speeds would decrease somewhat as well. In the post-game Saturday peak hour conditions, speeds would continue to be below 5 mph within the segment, and queuing would occur in all three travel lanes.

Traffic generated by the second phase of the Proposed Project would approach the study area similar to the 2009 Build conditions. Project-generated traffic volumes exiting the northbound Major Deegan Expressway destined to the site in 2014 would range from approximately 135 to 295 vph during non-game peak hours and between 175 and 250 vph during Yankee game day peak hours. The additional project-generated exiting volumes at 149th Street represent approximately three to nine percent of the total northbound Major Deegan Expressway traffic.

During the non-game weekday midday peak hour, conditions just before the 149th Street off-ramp would deteriorate from LOS D in the 2014 No Build condition to LOS F in the 2014 Build condition; all other peak hours would continue to operate at LOS F conditions with additional queuing, slower speeds and higher densities. Similar to 2009 Build conditions, in all peak hours, queuing would occur along the 149th Street off-ramp onto the right lane of the Major Deegan Expressway. Motorists would react to the right lane queues by slowing in the center lane, and left lane speeds would decrease somewhat as well. In the post-game Saturday peak hour conditions, speeds would be below three mph within the segment, and queuing would occur in all three travel lanes.

Southbound Major Deegan Expressway

Traffic generated by the Proposed Project would enter the southbound Major Deegan further north of the study area, either in the North Bronx, Westchester, or at the Cross Bronx Expressway interchange and predominantly exit at the Bronx Terminal Market off-ramp and less frequently exit at the Macombs Dam Bridge exit. At the Bronx Terminal Market off-ramp, project-generated traffic volumes destined to the project site in 2009 would range from approximately 170 to 370 vph during non-game peak hours and between 225 and 330 vph during Yankee game day peak hours. Between 15 and 30 vph on non-game days and 5 to 10 vph on game days would exit at the Macombs Dam Bridge exit. The additional project-

generated exiting volumes on the southbound Major Deegan Expressway mainline exiting at both off-ramps represent approximately five to nine percent of the total southbound Major Deegan Expressway traffic.

During the non-game weekday midday peak hour, conditions just before the Bronx Terminal Market off-ramp would deteriorate from acceptable LOS D in the 2009 No Build conditions to unacceptable LOS D in the 2009 Build conditions, the same area would be significantly impacted in all three Yankee game day peak hours as densities progressed further into LOS F conditions. Levels of service would not change just before the Macombs Dam Bridge off-ramp between 2009 No Build and Build conditions. Mitigation measures are discussed below in "Mitigation."

Traffic generated by the Proposed Project would approach the site on the southbound Major Deegan in generally the same proportions in 2014 as it would in 2009. At the proposed off-ramp, project-generated traffic volumes destined to the Proposed Project in 2014 would range from approximately 175 to 360 vph during non-game peak hours and between 225 and 330 vph during Yankee game day peak hours. Between 20 and 40 vph on non-game days and 5 to 15 vph on game days would exit at the Macombs Dam Bridge exit. The additional project-generated exiting volumes on the southbound Major Deegan Expressway mainline exiting at both off-ramps would again represent approximately five to nine percent of the total southbound Major Deegan Expressway traffic.

During the non-game weekday midday peak hour, levels of service just before the Bronx Terminal Market off-ramp would deteriorate from acceptable LOS D in the 2014 No Build conditions to unacceptable LOS D in the 2014 Build conditions, similar to the 2009 Build conditions; the same area would be significantly impacted in all three Yankee game day peak hours as densities progressed further into LOS F conditions. As was the case in the 2009 Build conditions, levels of service would not change just before the Macombs Dam Bridge off-ramp between 2014 No Build and Build conditions.

Mitigation measures are discussed below in "Mitigation."

TRANSIT AND PEDESTRIANS

The Proposed Project would not result in any significant adverse impacts to subway station operations. Impacts to bus line haul is considered significant if the Proposed Project would operate above the guideline capacity. There would be overcrowding on the Bx19 during the 2009 and 2014 Build conditions' non-game day Saturday midday peak periods. During these peak periods the eastbound Bx19 Local route would operate above its guideline capacity of 70 passengers for a standard bus, with an increase in passengers per vehicle from 41 in the No Build condition to 71 in the Build condition, at the maximum load location.

The Proposed Project is expected to result in a significant adverse impact to the operations of the north crosswalk at 149th Street and River Avenue. The decrease in the level of service from No Build to Build conditions (LOS A to LOS D) at this location would require improvements that would return the crosswalk to an acceptable level of service.

Mitigation measures for these impacts are described below in the "Mitigation" section.

AIR QUALITY

MOBILE SOURCE ANALYSIS

The Proposed Project would result in increased mobile source emissions in the immediate vicinity of the project site. CO concentrations with the Proposed Project were determined for the 2009 and 2014 analysis years. The results indicate that in the future with the Proposed Project, there would be no potentially significant adverse mobile source air quality impacts. In addition, with or without the Proposed Project in 2009 or 2014, maximum predicted ambient CO concentrations at the intersections analyzed would be less than the corresponding ambient air quality standards. The Proposed Project is also not considered to have significant PM₁₀, or PM_{2.5} impacts.

INDUSTRIAL SOURCE IMPACTS

The results of the field survey indicated that a single industrial facility within 400 feet of the proposed hotel. A single contaminant (trichloroethylene) has the potential to exceed the New York State Department of Environmental Conservation (NYSDEC) Air Guide-1 annual concentration based on the modeling analyses conducted. Therefore, to preclude the potential for significant adverse air quality impacts from the industrial source, an (E) designation for air quality would be incorporated into the rezoning proposal. The text of the (E) designation is as follows:

- In order to ensure there will be no potential adverse air quality impacts, if trichloroethene emissions continue at the adjacent business, all windows on the east face of the development on Block 2539, Lot 60, up to a height of 45 feet above local grade must be inoperable. Similarly, air intakes must not be placed up to a height of 45 feet above local grade in this location.

NOISE

Noise monitoring at three receptor locations was performed where 20-minute spot measurements were taken during the two weekday periods and three weekend periods that reflect peak hours of trip generation: PM weekday (5:00 PM – 7:00 PM), late night (LN) weekday (10:00 PM – 11:00 PM), midday (MD) weekend (12:00 PM – 2:00 PM), PM weekend (5:00 PM – 7:00 PM) and late night (LN) weekend (10:00 PM – 11:00 PM). Given the site's proximity to Yankee Stadium and the traffic generated to and from a Yankee game, noise monitoring at the three receptor locations was performed both with and without a Yankee game in progress.

2009

Future 2009 Build noise levels at all sites both with and without a Yankee game would be less than 0.5 dBA higher than future 2009 No Build noise levels. (And at one site Build noise levels would be less than No Build noise levels due to the resurfacing of Exterior Street and the replacement of the cobblestone surface with asphalt.) Changes of this magnitude would be imperceptible and insignificant.

In terms of the CEQR criteria, 2009 future No Build noise levels at two of the sites would remain in the "marginally acceptable" category and 2009 future No Build noise levels at the third would remain in the "clearly unacceptable" category, both with and without a Yankee game during one or more time periods.

Noise levels in the western portion of the 2-acre public open space that would be developed as part of the Proposed Project (i.e., adjacent to Exterior Street) would be slightly less than the values on Exterior Street. Noise levels would decrease by approximately 3 dBA per doubling of distance going west from Exterior Street. Maximum $L_{eq(1)}$ noise levels in the proposed open space would range from approximately 75 to 76 dBA. Maximum $L_{10(1)}$ noise levels in the proposed open space would be approximately 3 dBA higher than the $L_{eq(1)}$ noise levels. Noise levels at the portions of the proposed waterfront esplanade would be lower due to the attenuation with distance from Exterior Street (and the Major Deegan Expressway) and the barrier effect of the Proposed Project's buildings. However, noise levels in the proposed public open space and waterfront esplanade would be higher than the 55 dBA $L_{10(1)}$ noise level for outdoor areas requiring serenity and quiet contained in the Noise Exposure Guidelines for City Environmental Impact Review. Therefore, based upon these guideline values, the Proposed Project would have a significant impact on users of this new open space. There are no practical and feasible mitigation measures that could

be implemented to reduce noise levels within the open space to below the 55 dBA $L_{10(1)}$ guideline noise level. A sound barrier on Exterior Street would raise aesthetic and safety issues, and unless the barrier was of excessive height, would not be effective in reducing noise from the elevated Major Deegan Expressway. While noise levels in the open space would be above the 55 dBA $L_{10(1)}$ guideline noise level, they would be comparable to noise levels in a number of existing parks in New York City which are also located adjacent to heavily trafficked roadways.

2014

Future 2014 Build noise levels at all sites both with and without a Yankee game would be less than 1.0 dBA higher than future 2014 No Build noise levels. (at one site Build noise levels would be less than No Build noise levels due to the resurfacing of Exterior Street and the replacement of the cobblestone surface with asphalt.) Changes of this magnitude would be imperceptible and insignificant.

In terms of the CEQR criteria, 2014 future No Build noise levels at at two sites would remain in the "marginally acceptable" category and 2014 future No Build noise levels at the third would remain in the "clearly unacceptable" category, both with and without a Yankee game during one or more time periods.

As discussed above, noise levels in the western portion of the 2-acre public open space to be developed as part of the Proposed Project would be slightly less than the values on Exterior Street. Maximum $L_{eq(1)}$ noise levels in the proposed open space would range from approximately 75 to 76 dBA. Maximum $L_{10(1)}$ noise levels in the proposed open space would be approximately 3 dBA higher than the $L_{eq(1)}$ noise levels. Noise levels in the proposed public open space and waterfront esplanade would be higher than the 55 dBA $L_{10(1)}$ noise level for outdoor areas requiring serenity and quiet contained in the Noise Exposure Guidelines for City Environmental Impact Review. Therefore, based upon these guideline values, the Proposed Project would have a significant impact on users of this new open space. There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open space to below the 55 dBA $L_{10(1)}$ guideline noise level.

NOISE ATTENUATION REQUIREMENTS

Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower, and are determined based on exterior $L_{10(1)}$ noise levels. The proposed buildings' designs include the use of well sealed double-glazed windows and central air conditioning (i.e., alternate means of ventilation). With these measures, the window/wall attenuation would provide up to 40 dBA for all facades of the building. Based upon the $L_{10(1)}$ values measured at the project site, these design measures would provide sufficient attenuation to achieve CEQR requirements. The buildings' mechanical systems (i.e., heating, ventilation, and air conditioning systems) also would be designed to meet all applicable noise regulations and to avoid producing levels that would result in any significant increase in ambient noise levels.

CONSTRUCTION IMPACTS

The construction impacts analysis concludes that there would be no significant adverse impacts during either construction phase of the Proposed Project, except for historic resources.

The Bronx Terminal Market (Buildings B, D, F, G, H, and J) and the Bronx House of Detention have been determined eligible for listing on the State and National Registers of Historic Places (S/NR-eligible) by OPRHP. Therefore, the demolition of Buildings B, D, F-H, J, and the Bronx House of Detention pursuant to construction of the Proposed Project would be a significant adverse impact on historic resources. Measures to mitigate this impact are being developed with OPRHP and are discussed below in "Mitigation."

Construction of the Proposed Project is not expected to have an extensive or a long-term impact on traffic or parking conditions in the surrounding area. During the estimated peak construction year of 2008, the 149th Street at Exterior Street and River Avenue study location would be significantly impacted by the combination of about six delivery truck trips per hour and narrowed approaches due to construction on both Exterior Street and River Avenue when compared to 2008 conditions without construction. Monitoring of this intersection during construction could determine if excessive delays would actually occur.

The second phase of the Proposed Project would involve the construction of a 250-room hotel at the north end of the site. Any construction impacts associated with the second phase would be less than those described for the first phase. Therefore, no significant adverse impacts are expected from the second phase of construction of the Proposed Project.

A widening of the Major Deegan Expressway is planned for completion by 2011-2012. This reconstruction would improve access to the area, including the project site. A reconstruction of the 161st Street tunnel below the Grand Concourse is planned, but NYCDOT has stated that the capacity of the 161st Street/Grand Concourse intersection would remain the same during construction and upon completion. The New York City Department of Design and Construction (NYCDDC) will be rehabilitating 149th Street between Exterior Street/River Avenue and Anthony J. Griffin Place beginning in 2005 and ending in 2007. NYCDDC has stated that this would not change the operation or capacity of the intersections within the study area, and all lanes will be maintained during construction.

The cumulative effects of the simultaneous construction projects would include street closures and narrowing of streets in the study area. During peak hours a small to moderate amount of traffic may divert during construction on or adjacent to the closed or narrowed streets, which could add traffic volumes to the Grand Concourse and minor east-west cross streets between 138th Street and 165th Street. Additional traffic due to the cumulative affects of construction workers and construction site deliveries would mainly occur during off-peak hours and would not represent a measurable increment during peak travel periods.

FUTURE CONDITIONS WITH A RELOCATED YANKEE STADIUM

The New York Yankees recently announced plans to build a new stadium on the north side of 161st Street between River Avenue and Jerome Avenue. The existing stadium would be partially demolished and converted for use by Little League baseball, as well as other users. Plans for the new stadium are also expected to include the construction of new parking garages in the surrounding area, including one near the Gateway Center at Bronx Terminal Market project site on River Avenue. The Yankee Stadium project would incorporate a 4.8-acre portion of the west side of the Gateway Center at Bronx Terminal Market project site to create new active parkland to mitigate the loss of area from Macombs Dam Park. In that event, only the east side of the Gateway Center at Bronx Terminal Market project would be developed, and an additional approximately 64,000 square feet of retail space would be accommodated within Retail Buildings A and B/F. The Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on the western portion of the project site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop a public open space. Development of a new Yankee Stadium will require a series of public approvals. If that project moves forward, it is expected to be completed by the first Build year of the Gateway Center at Bronx Terminal Market project, 2009.

Chapter 22, "Future Conditions with a Relocated Yankee Stadium," provides an assessment of how the project could be expected to change background conditions by 2009 and 2014, and discusses any concomitant changes to the impacts identified for the Proposed Project.

The construction of the Yankee Stadium project would not substantially alter the conclusions of the analyses presented in this EIS, with the exception of historic resources, traffic and parking, transit and pedestrians, and air quality, in which the effects of the Proposed Project could be reduced if the Yankee Stadium project were to be built. As information on the stadium project that may be relevant to the Bronx Terminal Market project becomes available, it will be analyzed and disclosed in the Bronx Terminal Market final EIS.

MITIGATION AND UNAVOIDABLE ADVERSE IMPACTS

HISTORIC RESOURCES

The demolition of the historic buildings on the project site—Buildings B, D, F, G, H, and J, and the Bronx House of Detention—would constitute a significant adverse impact on historic resources. Measures to mitigate this impact are being developed in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The mitigation measures are anticipated to include recording Buildings B, D, F, G, H, and J, and the Bronx House of Detention through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative; publishing a pamphlet describing the historical development and significance of the Bronx Terminal Market; and creating interpretive displays or markers on the site illustrating the Market's history. The mitigation measures developed with OPRHP would be recorded in either a Memorandum of Agreement (MOA) or Letter of Resolution (LOR) and implemented in order to partially mitigate the effects of the Proposed Project on historic resources.

TRAFFIC AND PARKING

The detailed analyses of mitigation measures indicated that all significant adverse impacts on the local street network as well as on the sections of the Major Deegan Expressway could be mitigated, with one exception. The mitigation measures at most intersections would consist of traffic signal timing changes, parking prohibitions, lane re-striping, and other non-geometric improvements.

At the 149th Street intersection with the Major Deegan Expressway's northbound off-ramp, Exterior Street and River Avenue, geometric changes to the intersection would be necessary to mitigate the project's impacts. The recommended improvements include reconstruction of the intersection to bring all approaches closer to the intersection in order to concentrate turning movements and reduce driver confusion. Some approaches would be widened and restriped to gain additional capacity, and the Major Deegan Expressway's northbound off-ramp at 149th Street would be widened to two lanes. The New York State Department of Transportation is also considering widening this northbound off-ramp at 149th Street to two lanes while they rehabilitate the deck suspended over Exterior Street, but because this improvement would not likely be constructed by 2009, the at-grade portion of the off-ramp could be widened as a mitigation measure under a highway work permit.

TRANSIT AND PEDESTRIANS

NYCT BUS LINE HAUL

The proposed actions would result in adverse impacts to the operations of the eastbound Bx19 bus route during both the 2009 and 2014 Non-Game Day Saturday Midday peak periods. The Bx19 route would operate above its guideline capacity, 70 passengers for a standard bus, with an increase in passengers per vehicle from 41 in the No Build condition to 71 in the Build conditions at the maximum load location in both 2009 and 2014. In order to mitigate the impact, the project sponsor will request NYCT to schedule one additional eastbound bus per hour during the Non-Game Day Saturday Midday peak hour. With these

improvements, the Bx19 would have adequate capacity to accommodate the project-generated increase in bus ridership.

STREET-LEVEL PEDESTRIAN OPERATIONS

The Proposed Project is expected to result in a significant adverse impact to the operations of the north crosswalk at 149th Street and River Avenue. The decrease in the No Build LOS A to a Build LOS D at this location would require improvements that would return the crosswalk to an acceptable level-of-service. In order to alleviate the impact, the project sponsor will request NYCDOT to widen the north crosswalk by four feet to a total width of 15 feet. With this mitigation, the north crosswalk would operate at LOS D or better during all analysis peaks.

AIR QUALITY

The proposed traffic mitigation measures would not result in any violations of the CO standard or any significant impacts at the intersections analyzed.

ALTERNATIVES

Four alternatives to the Proposed Project are considered: the No Action Alternative, in which the site would remain in its existing condition; a Retention of Expanded Market Alternative, in which the proposed retail development would be restricted to the portion of the site east of Exterior Street, and the existing market uses would be expanded within a new facility on the west side of the project site; a Development of East Project Site Only Alternative, in which only the east side of the project site would be developed and the west side of the project site would be vacant; and a No Significant Adverse Unmitigated Impacts Alternative, in which the Proposed Project is modified to avoid any unmitigated significant adverse impacts.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the site would remain as it is in current conditions and there would be no changes to zoning or the City Map. No special permits, waivers, modifications, authorizations, or certifications from the New York City Planning Commission (CPC) would be requested, and there would be no disposition of City-owned property. No other state or federal actions would be requested. This is the same scenario that is described throughout the EIS as “The Future without the Proposed Actions.”

Land Use, Zoning, and Public Policy

Under this alternative, land uses on the site would remain as they currently are, and there would be no significant adverse impact to land use and zoning. With respect to public policy, this alternative would not provide public waterfront open space and therefore would not meet the Bronx Waterfront Plan’s objective to improve waterfront access.

Socioeconomic Conditions

Unlike with the Proposed Project, in the No Action Alternative the mix of 23 businesses employing approximately 297 workers on-site would be retained; however, the project’s substantial economic benefits would not be realized. There would be no direct or generated construction employment and income, or the expected local and state revenue resulting from the construction activity. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would not occur.

Community Facilities

The No Action Alternative would not result in the new demands on police, fire, and emergency services associated with the Proposed Project. In this alternative, the utilization of the Bronx House of Detention would be dependent on the NYCDOC’s determination of how it will meet its need to replace a substantial portion of its existing bed capacity.

Open Space

Without the Proposed Project, the passive open space ratio for workers (as well as the ratio for workers and residents combined) in the area would exceed DCP guidelines. Under this alternative, the approximately two acres of new public open space and waterfront esplanade that the Proposed Project would provide would not be created.

Shadows

In the No Action Alternative, no new shadows would be cast on Macombs Dam Park or the project-generated open space.

Historic Resources

With the No Action Alternative, the structures on the project site identified as historic resources—Buildings B, D, F, G, H, and J of the Bronx Terminal Market, and the Bronx House of Detention—would remain, and thus the significant adverse impacts on historic resources resulting from the Proposed Project would not occur. With the Proposed Project, this impact would be partially mitigated by measures developed with OPRHP. Neither this alternative nor the Proposed Project would result in significant adverse impacts to archaeological resources.

Urban Design and Visual Resources

In the No Action Alternative, the dilapidated condition and visual character of the project site would remain unchanged, and the esplanade and open space along the waterfront would not be developed. The Proposed Project's enhancement of the project site and surrounding area with active retail use and landscaping would not occur.

Neighborhood Character

The changes in neighborhood character associated with the Proposed Project would not occur with the No Action Alternative. The project site buildings would continue to block views to the waterfront from the surrounding area, and the site would not offer public access to the waterfront.

Natural Resources

With respect to natural resources, the site would maintain its current, predominantly paved condition, and the deterioration of the project site waterfront would continue. Unlike the Proposed Project, the No Action Alternative would not result in the elimination of some areas of the site that may be attractive to nuisance species, nor would it add new vegetated areas within the public open space and waterfront esplanade.

Hazardous Materials

Under the No Action Alternative, it is assumed that no remediation of hazardous materials would occur on the project site.

Waterfront Revitalization Program

The No Action Alternative would not provide new public waterfront access or recreational opportunities, nor would it establish physical and visual public access to the Harlem River waterfront.

Infrastructure

With the No Action Alternative, water consumption, sewage and solid waste generation, and stormwater runoff are not expected to change, and no impacts to these systems are expected.

Solid Waste and Sanitation Services

It is expected that the volumes of solid waste generated at the project site would not change, and no major changes are expected in the City's solid waste management handling practices.

Energy

Unlike with the Proposed Project, no new energy demands would be created with the No Action Alternative.

Traffic and Parking

The increase in vehicle trips to the project site expected with the Proposed Project would not occur with the No Action Alternative. Therefore, this alternative would not require the mitigation measures proposed for the Proposed Project, including signal phasing and timing modifications, parking prohibitions, lane re-striping and intersection channelization improvements, and pavement markings, as well as the widening of the Major Deegan Expressway ramp at 149th Street.

Transit and Pedestrians

The increases in transit and pedestrian trips to the project site expected with the Proposed Project would not occur with the No Action Alternative. Therefore, this alternative would not have any adverse impacts on pedestrian conditions at the north crosswalk at the intersection of 149th Street and River Avenue, or marginal impacts on the Bx19 local bus route.

Air Quality

Unlike with the Proposed Project, no new mobile or stationary source emissions would be created on the project site with the No Action Alternative. The (E) designation for air quality that under the Proposed Project would be incorporated into the proposed rezoning of hotel portion of the site to preclude the potential for significant adverse air quality impacts from this industrial source would not be necessary.

Noise

No new sources of noise or noise-sensitive receptors would be created on the project site with the No Action Alternative.

Construction

No construction would occur on the site in the No Action Alternative. Therefore, the temporary adverse impacts associated with construction would not occur, nor would the substantial economic benefits to the local area and New York City attributable to project construction.

Public Health

Neither the No Action Alternative nor the Proposed Project is expected to result in significant adverse impacts to public health.

RETENTION OF EXPANDED MARKET ALTERNATIVE

No significant adverse impacts related to the Proposed Project's displacement of the current market tenants were identified. However, in order to address comments made during the scoping of the Proposed Project, this EIS considers an alternative in which the existing wholesale market uses are retained and expanded within a new facility on the west side of the project site. In this scenario, proposed Retail Building G would not be constructed, no public open space or waterfront esplanade would be created, and an additional approximately 64,000 gross square feet of retail space would be accommodated within Retail Buildings A and B/F, on the east side of Exterior Street. Overall, the retail program would be 7 percent smaller than with the Proposed Project.

The spatial requirements assumed for the new market facility are as noted in public scoping comments: 500,000 square feet (sf), of which 200,000 sf would be refrigerated, with room for expansion; a wide central corridor; good night-lighting; secure boundaries, loading docks above street level, contiguity along the platform; large, uninterrupted open storage areas; high-capacity, high load-carrying flat concrete floors; adequate floor drainage; industrial three-phase electric service; high ceilings; and strong poured concrete, steel-reinforced walls that are rodent resistant.

Although the Retention of Expanded Market Alternative would result in similar impacts to the Proposed Project, this alternative would not necessarily provide many of the improvements and benefits associated with the Proposed Project. This alternative would result in a greater quantity of wholesale market space on the project site, and the wholesale market uses would be directly adjacent to the new retail uses across Exterior Street. It is likely that the two uses would be incompatible when located in such close proximity, as the truck traffic for the wholesale market uses would not be pedestrian friendly, and the market uses would attract a different clientele than the proposed retail buildings on the east side of the project site. This alternative would not provide an open space or waterfront esplanade, and therefore would not meet the Bronx Waterfront Plan's objective to improve public waterfront access.

The existing jobs and businesses on the site would be retained, and the wholesale food market uses could generate slightly more economic benefits than they currently do, assuming that the entire expanded market is occupied. However, since less new retail would be developed, the amount of economic benefits from the proposed retail development would not be somewhat diminished.

Under this alternative, the approximately two acres of new public open space and waterfront esplanade that the Proposed Project would provide would not be created, and the amount of open space available for area residents and workers would continue to be below DCP guidelines. The new market facility would have to be at least five stories or 100 feet tall to create 500,000 sf of usable space; such a facility would be much larger than the proposed Retail Building G on this portion of the site, and could potentially cast additional shadows on Macombs Dam Park.

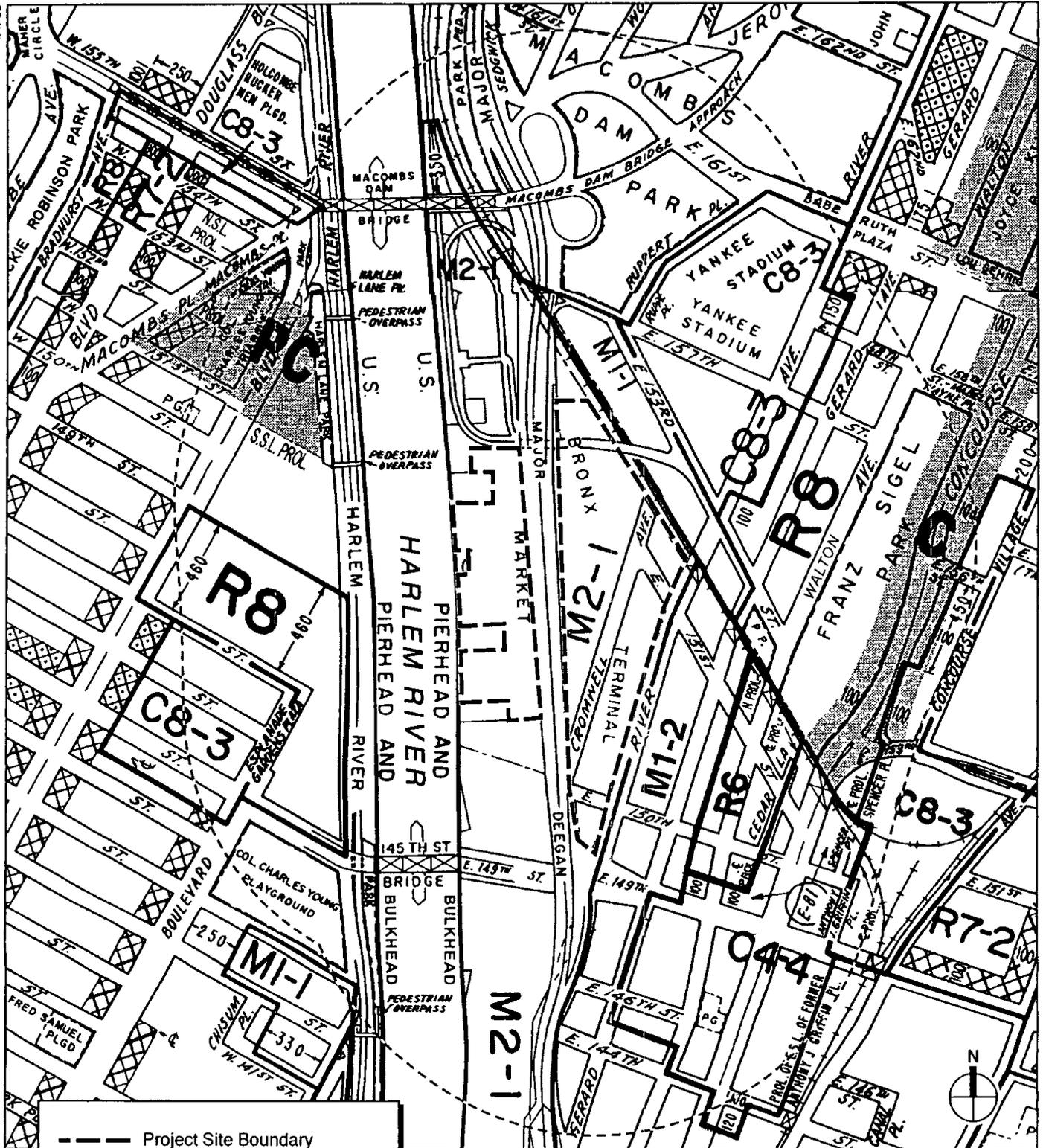
The effect on architectural resources would be the same with this alternative as with the Proposed Project, since the demolition of Buildings F, G, H, and J would be required in order to construct the new wholesale market facility on the west side of the site, and the demolition of Buildings B, D, and the Bronx House of Detention would be required to construct the retail buildings on the east side of the site.

Unlike the Proposed Project, the Retention of Expanded Market Alternative would not substantially improve access to or the condition of the Harlem River waterfront; nor would it create a new public open space amenity for the surrounding neighborhood. This alternative would introduce some active retail uses and landscaping and increase public access to the east side of the site, but these could conflict with the wholesale market, non-pedestrian-friendly activities on the west side of Exterior Street.

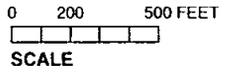
Under the Retention of Expanded Market Alternative, it is not expected that new habitat for terrestrial wildlife (in the form of a new public open space) would be created on the project site, and it is expected that the deterioration of the project site waterfront could continue. The new market facility to be developed with this alternative could create additional shading on the Harlem River.

Peak hour traffic volumes are projected to be slightly lower under this alternative when compared to the Proposed Project, ranging from about 0.5 percent lower in the weekday midday peak hour to 3.5 percent lower in the non-game Saturday midday peak hour. Traffic assignments would only differ from the Proposed Project at the Exterior Street access points to the proposed garage between Exterior Street and River Avenue. Vehicle trips on Exterior Street would all enter the garage east of Exterior Street, and the garage intersections would continue to operate at acceptable levels of service when compared to the Proposed Project. The project's marginal impact on the Bx19 bus line would probably not occur with this alternative.

Given that the new wholesale market facility would be more than twice as large as the building to be constructed on the west side of the site as part of the Proposed Project (Retail Building G), it is expected that construction-period activities would be greater than those associated with the Proposed Project.



- Project Site Boundary
- - - 1/4 Mile Study Area Boundary
- Zoning District Boundary
- ▨ C1-2 Overlay
- ▩ C1-4 Overlay
- ▧ C2-2 Overlay
- Special Purpose District



Study Area

There are no major residential or commercial construction projects planned in the study area by 2009. However, as shown in Table 2-1 and Figure 2-4, there are several transportation and infrastructure projects expected to be completed in the study area by 2009. 149th Street between Griffin Place and Exterior Street would be reconstructed, and the reconstruction work is expected to be completed prior to 2009. Improvements would include better traffic lighting, sidewalks, and curbs, thereby improving both vehicular and pedestrian access to the area. Two institutional projects are also planned for the study area by 2009. The New York City Department of Homeless Services has plans for a new 60,000 sf Emergency Assistance Unit at 151st Street and Walton Avenue to replace the existing facility at this location. Hostos Community College has plans to renovate a 125,000 gsf academic building, and has future capital investment projects that are pending budget allocation. Outside the study area, Lincoln Hospital is in the process of constructing several new facilities, including a \$6 million labor and delivery center (30,000 sf) and a \$2 million MRI unit (2,000 sf). Other improvements at Lincoln Hospital that are in the planning and/or design phase include a \$10 million redesign of the emergency room, a new \$1 million women's option center (2,000 sf), and a \$1 million upgrade of the existing 650-space parking garage facility. Also just outside the study area, East 153rd Street will be connected by a bridge over the railroad tracks between Grand Concourse and Park Avenue.

**Table 2-1
Proposed Development Projects**

Map No.	Name/Address	Description
<i>To be completed by 2009</i>		
1	Reconstruction of 149th Street between Griffin Place and Exterior Street	Improvements to lighting, sidewalks, curbs
2	New York City Department of Homeless Services Emergency Assistance Unit	60,000 sf
3	Hostos Community College	Renovation of 125,000 sf academic building
4	Improvements at Lincoln Hospital	30,000 sf labor and delivery center, 2,000 sf MRI unit, 2,000 sf women's option center, redesign of emergency room, upgrade of parking garage
5	East 153rd Street Bridge between Grand Concourse and Park Avenue	Bridge over rail cut
6	New Yankee Stadium	Construction of new stadium in Macombs Dam Park
<i>To be completed by 2014</i>		
7	Widening of the Major Deegan Expressway Viaduct	
Sources: NYC Department of City Planning; NYC2012.		

One major project proposed within the study area that could be developed by 2009 is the construction of a new stadium for the New York Yankees, in the portion of Macombs Dam Park located north of the existing stadium across 161st Street. The potential land use, zoning, and public policy impacts of that No Build project are discussed in Chapter 22, "Future Conditions with a Relocated Yankee Stadium."

2014

Project Site

No changes to the project site are expected to occur without the Proposed Project by 2014.

Study Area

A widening of the Major Deegan Expressway viaduct is planned for completion by 2011-2012. This reconstruction would improve access to the area, including the project site. In addition, the Metro North Rail Road has been studying the possibility of establishing a station in the study area at least since the mid-1980s. If this station were created, it would improve transit access to the area.

Since New York City will not be hosting the 2012 summer Olympics, the area south of the project site on the Harlem River that had been proposed as the velodrome venue will be considered for other possible uses.

ZONING AND PUBLIC POLICY

No changes to zoning or public policy have been identified for the project site or the land use study area by 2009 or 2014.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

LAND USE

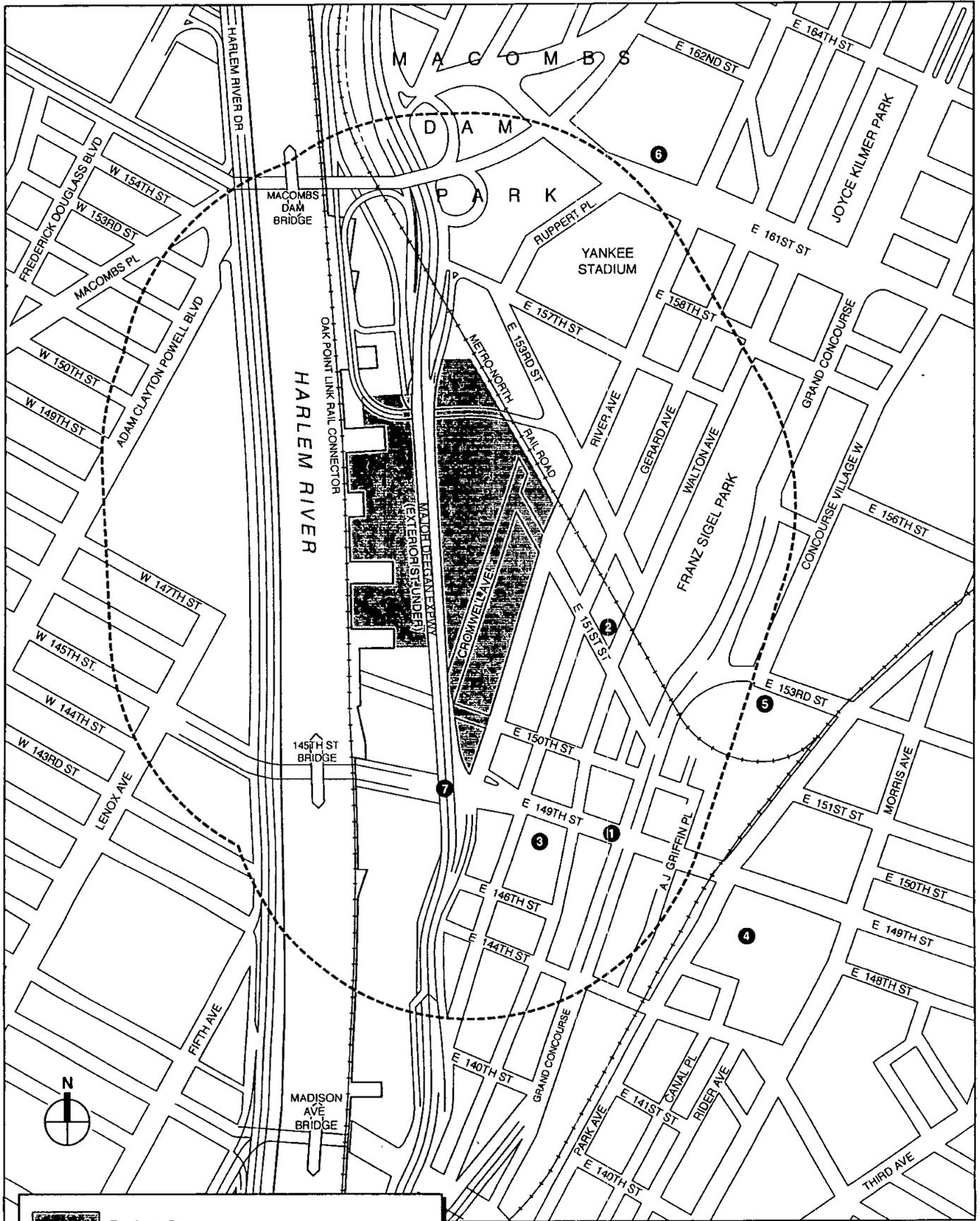
2009

Project Site

The Proposed Project would represent a dramatic change in land use on the project site, replacing underutilized and dilapidated buildings with a major shopping center of approximately 1.1 million gross square feet (gsf) of retail; a multi-level parking garage and at-grade parking totaling approximately 3,216 spaces; and an important new community amenity—the approximately 2-acre public open space and waterfront esplanade—which would serve the surrounding neighborhood and create recreational public access to the Harlem River. The parcels east of the Major Deegan Expressway would be merged with portions of 150th and 151st Streets and Cromwell Avenue to form a superblock on the eastern section of the project site. The current tenants of the Bronx Terminal Market would be required to relocate, and the Bronx House of Detention would be closed as a result of the Proposed Project. A new site for the Bronx House of Detention has not been selected. The siting of any new facility will be subject to its own discretionary approval and its CEQR review. The bulk of the Proposed Project would be completed and operational by the 2009 Build year.

Study Area

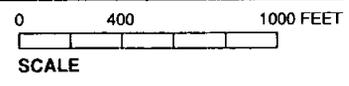
The change in primary use of the project site from predominantly wholesale commercial to retail with parking would not result in a significant adverse impact on the adjacent land uses. The Proposed Project continues the mixed-use quality of the study area by introducing retail uses in close proximity to residential areas and to Yankee Stadium—a major attraction drawing visitors to the area. The retail center would act as a transitional area between the existing residential uses



Project Site

Study Area Boundary (1/4-Mile Perimeter)

1 Proposed Development Project



Proposed Development Projects
Figure 2-4

to the north and east of the project site and the remaining heavy commercial and light industrial uses to the south. The New York Yankees have recently announced a proposal to construct a new Yankee Stadium to the north of the site with four new parking garages and a capacity for 54,000 spectators (for more detail see Chapter 22, "Future Conditions with a Relocated Yankee Stadium"). The Proposed Project would be compatible with and complement the proposed new Yankee Stadium, as the proposed retail uses would be available for use by visitors to the stadium.

The addition of an approximately 2-acre waterfront esplanade and public open space would provide substantial new open space and access to the waterfront, which currently does not exist on the site and would improve the visual quality of the Harlem River shoreline.

A portion of the project site is currently used for parking and the site would continue to have a large parking element with the completion of the first phase of the Proposed Project. The existing streets that would be closed as a result of the proposed actions (150th Street between River Avenue and Exterior Street; 151st Street between River and Cromwell Avenues; and Cromwell Avenue between Exterior Street and Metro North Rail Road tracks) are currently not through streets and are used almost exclusively by workers and patrons of the Bronx Terminal Market and any potential workers at the Bronx House of Detention and receive minimal additional traffic. The elimination of these streets would therefore have no major impact on area visitors or residents and would allow for a cohesive site plan.

The existing Bronx Terminal Market tenants would be required to relocate as a result of the project. As described in Chapter 3, "Socioeconomic Conditions," relocation assistance would be provided to the tenants.

Overall, the first phase of the Proposed Project would provide a major retail facility that would serve the local residents and workers as well as residents and workers in surrounding communities and would be compatible with the surrounding residential and commercial land uses. The Proposed Project is compatible with the proposed roadway infrastructure improvements planned for the study area that would improve access to the area, as well as with the planned community facility projects described above in Section C, including the expansions of Hostos Community College and Lincoln Hospital. It is not expected that the Proposed Project would result in additional changes to land use. Given the overall compatibility of land uses and the proposed public open space, the project would not result in significant adverse land use impacts in 2009.

2014

Project Site

The second phase of the Proposed Project would introduce a new approximately 247,500 gsf hotel—the only hotel in this area of the city—with 250 rooms, a 30,000 gsf banquet facility, and approximately 225 parking spaces to the project site. The introduction of the hotel use would be compatible with the other uses to be developed on the project site, which by 2014 would be a large-scale retail center.

Study Area

The hotel would be compatible with surrounding residential and commercial uses as well as with the proposal to construct a new Yankee Stadium to the north of the site. The Proposed Project

would be compatible with and complement the proposed new Yankee Stadium. The hotel component of the Proposed Project would likely serve users of the proposed new stadium.

ZONING AND PUBLIC POLICY

2009

As described in Chapter 1, "Project Description," the Proposed Project requires a number of discretionary actions including a zoning map change, declaration of a General Large Scale District, special permits related to the creation of the General Large Scale District, waivers and modifications of waterfront regulations, and the elimination of sections of several streets. Together, the proposed actions would allow development of commercial uses and waterfront public access on the project site.

The proposed actions, if approved, would represent a change in zoning on the project site from an M2-1 medium manufacturing district to a C4-4 general commercial district. As described above, C4 districts are major commercial centers. The zoning change would be compatible with land use designations in the area, including the R8 and R6 districts to the east. The C4-4 district would also be compatible with the M1-2 district to the east, which typically borders residential and commercial districts, as it currently does in this case to the north, south, and east.

The New York City Zoning Resolution allows the City Planning Commission to permit bulk modifications for height, setback, and yards within a general large-scale development. The proposed actions include special permits that would allow greater height and distribution of floor area on the eastern portion of the project site than would otherwise be permitted under zoning regulations. The requested special permits would allow the modification of the underlying height and setback requirements on the River Avenue frontage to permit Retail Building B/F and the public parking garage to be constructed without the required setback at 60 feet above curb level. Retail Building B/F would rise without setback to a height of approximately 96 feet along River Avenue, and the parking garage would rise without setback to approximately 84 feet along its River Avenue frontage. The height and setback modifications would allow a greater portion of the retail development to occur on the widest portion of the project site and are necessary to provide floor plates that are regular in configuration to meet the needs of the proposed large- and medium-scale retail tenants. The distribution of floor area to the portion of the project site north of the Major Deegan Expressway ramp would allow a hotel of sufficient size to accommodate the project program while complying with required height and setback requirements on this portion of the site.

The proposed actions would include a special permit pursuant to ZR Section 74-512 to allow a parking garage with approximately 2,339 spaces, 1,553 of which would be public parking spaces. This exceeds the 150 spaces permitted in a parking garage by the Zoning Resolution without the special permit. The remaining spaces in the garage would be accessory parking spaces. The Proposed Project also requires a special permit pursuant to ZR Section 74-53 to allow an increase spaces in an accessory group parking facility above that permitted as-of-right. The Proposed Project would include an accessory group parking facility of 344 spaces, 204 spaces above what is permitted as-of-right by the Zoning Resolution.

These changes do not constitute a significant adverse impact to the City's framework for zoning within large scale developments. Furthermore, the project site currently contains several large paved areas that are used for parking for Yankee Stadium, as well as 50 parking spaces adjacent

to the Bronx House of Detention and approximately 423 rooftop parking spaces. The proposed parking would therefore be a continuation of uses that currently exist on the site.

In addition, the proposed actions include a special permit that would increase the permitted surface area of accessory signs and allow them to be located above a height of 40 feet. Along River Avenue, signs on the proposed parking garage would reach a height of approximately 100 feet. Along the eastern side of Exterior Street on the proposed Retail Building B/F, signage would rise on stanchions to a maximum height of approximately 155 feet. Signage would rise to a height of approximately 87 feet on the proposed Retail Building G on the western side of Exterior Street. The increased height and area of the signs is necessary due to the presence of the elevated structure of the Major Deegan Expressway over Exterior Street and the change in elevation of approximately 29 feet from Exterior Street to River Avenue.

As per the New York City Zoning Resolution, special regulations guide development along the City's waterfront in order to, among other reasons, maintain and re-establish physical and visual public access to and along the waterfront; to promote a greater mix of uses in waterfront developments in order to attract the public and enliven the waterfront; and to create a desirable relationship between waterfront development and the water's edge, public access areas, and adjoining upland communities. The Proposed Project would create an approximately 2-acre waterfront public esplanade and open space fronting on the Harlem River that would provide access to the waterfront where it is currently not available, and would thus be consistent with the goals of the Zoning Resolution as they pertain to waterfront areas.

Waterfront zoning also allows an applicant to modify the Zoning Resolution's bulk, visual corridor, and public access requirements by obtaining authorizations. The applicant would require such approvals to facilitate a feasible site plan. While the applicant is requesting authorizations to modify waterfront public access, waterfront yards, visual corridors, and design standards for a waterfront area, and a certification for a zoning lot subdivision, the modifications proposed are necessary for the Proposed Project to provide a functional size and shape of the proposed retail uses. The project's waterfront improvements have been designed to provide public access, views, and enjoyment of the waterfront. The modifications that would be allowed by the authorizations and certification include a reduction in the required 40-foot shore public walkway and waterfront yards and a change in the location of visual corridors, which are required by the Zoning Resolution to be located at maximum intervals of 600 feet. Retail Building G on the western side of Exterior Street would encroach approximately 3 to 19 feet upon the required shore public walkway at various locations. Additionally, the two required visual corridors to the Harlem River would be spaced approximately 885 feet apart from one another due to the locations of the Retail Building G and the proposed parking garage. However, the approximately 2-acre public open space that would be created on the southern portion of the project site would compensate for the slight decrease in visual and pedestrian access to the waterfront on the northern part of the site. Therefore, these changes do not constitute a significant adverse impact to the City's framework for zoning on the waterfront.

The Proposed Project would be consistent with the public policies that govern the site and surrounding area. The Proposed Project would be consistent with the goals of the *2002 New York State Open Space Conservation Plan*, as the plan seeks to provide urban open space and waterfront access on the site; this will be accomplished with the creation of the approximately 2-acre public waterfront esplanade and open space. The Proposed Project would also be consistent with the Bronx Borough President's new Bronx Waterfront Plan, as it would create a year-round commercial center that would employ Bronx residents and provide publicly accessible

Gateway Center at Bronx Terminal Market DEIS

waterfront recreational space, thereby achieving several of the plan's goals. Finally, the proposed amendments to the City Map that would eliminate portions of 150th Street, 151st Street, and Cromwell Avenue would follow the procedures of the City's ULURP process, which permits such amendments. The proposed map changes would not conflict with public policy.

2014

No additional zoning actions would be required for the completion of the second phase of the Proposed Project. The special permit for bulk waivers included in the proposed actions would allow the distribution of floor area to the hotel site from elsewhere on the project site.

Overall, the Proposed Project would be consistent with land use, zoning, and public policy. *

A. INTRODUCTION

The Proposed Project would result in the development of approximately 1.1 million gross square feet of retail, 3,216 parking spaces, a 250-room hotel with a 30,000-square-foot banquet facility, and a public open space and waterfront esplanade totaling approximately two acres.

This chapter examines the potential effects of the Proposed Project on the socioeconomic conditions in the study area, including population and housing characteristics, economic activity, and the commercial real estate market. In accordance with the guidelines presented in the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, this chapter evaluates five specific factors that could create substantial socioeconomic change in a study area: (1) direct displacement of residential population; (2) direct displacement of existing businesses and institutions; (3) indirect displacement of residential population; (4) indirect displacement of businesses and institutions; and (5) adverse effects on specific industries not necessarily tied to the project site or to the study area.

B. METHODOLOGY

This chapter follows the preliminary and detailed assessment methodologies established in the 2001 *CEQR Technical Manual*. The analysis begins with a preliminary assessment that addresses the five principle issues of concern with respect to socioeconomic change outlined in the introduction above. The approach of the preliminary assessment is to learn enough about the effects of the Proposed Project either to rule out the possibility of significant adverse impact, or to determine that more detailed analysis would be required to resolve the question.

The detailed analysis section takes a more comprehensive examination of the effects of direct displacement and the potential for indirect displacement that may occur as a result of the Proposed Project. Each of the detailed analyses is framed in the context of existing conditions and evaluations of the future without the proposed actions and the probable impacts of the proposed actions in 2009 and 2014. In conjunction with the land use task, specific development projects that would occur in the area in the future without the Proposed Project are identified, as well as the likely changes in socioeconomic conditions that would result.

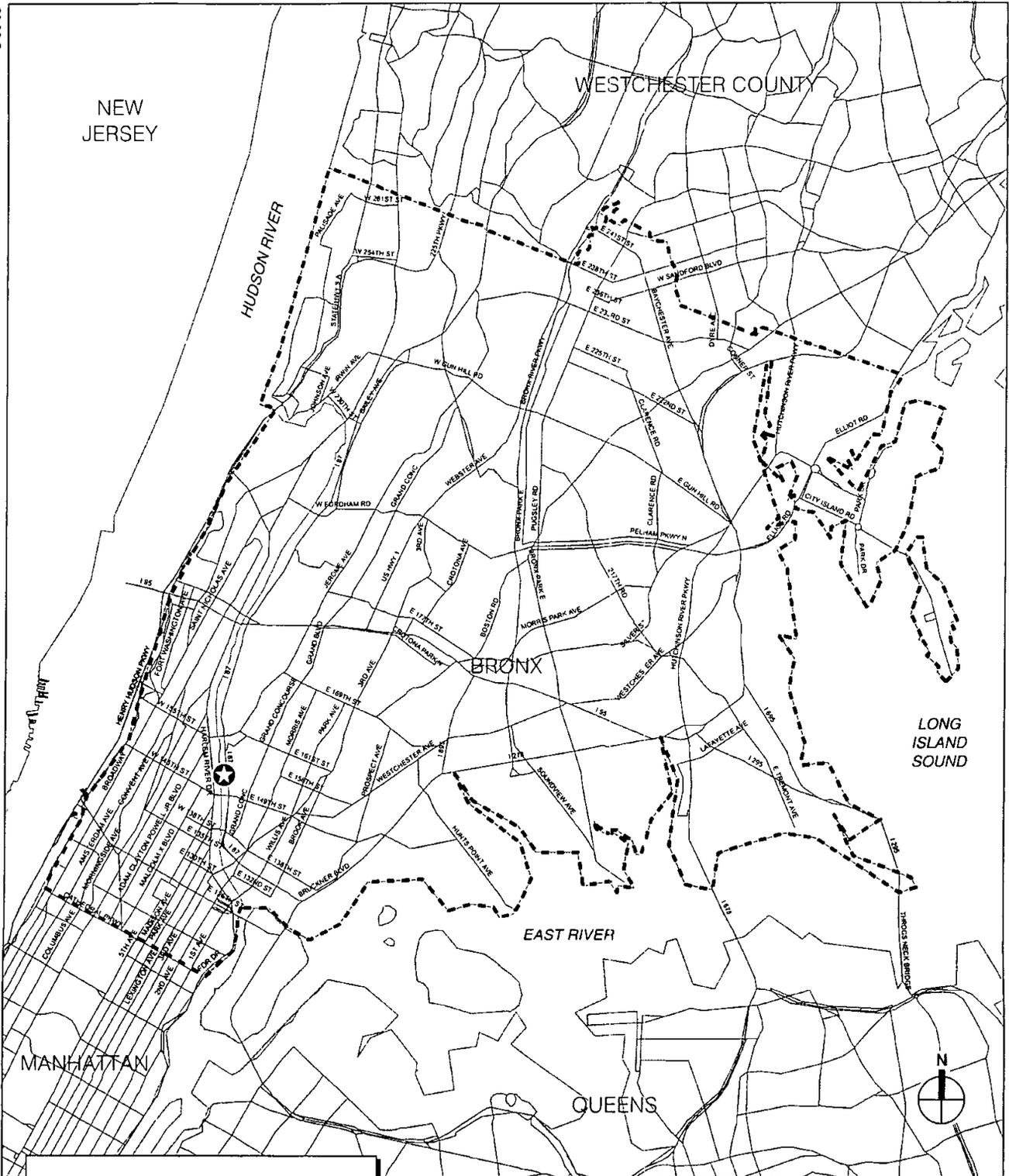
The detailed analyses are based on assumptions derived from the project description provided by the project sponsor. According to the project sponsor, the 1.1 million square feet of retail space planned under the proposed actions would include a mix of stores selling a variety of goods such as clothing, furniture, electronics, home improvement supplies, and groceries, as well as several restaurants and fast food places. As currently envisioned, the retail development would house approximately five large-scale retail stores totaling 755,990 gross square feet; 5 medium-scale retail stores totaling 262,620 gross square feet; and small-scale retail stores/restaurants totaling 49,780 gross square feet.

While specific tenants have not been identified, for purposes of providing a conservative analysis it is assumed that one of the large-scale stores would be a home improvement store, another large-scale store would be a wholesale club, and a third large-scale store would be a department store, while one of the medium-scale stores would be a supermarket. The home improvement store would sell products such as power tools, hand tools, lumber, electric and plumbing supplies, and outdoor furniture. The wholesale club would offer convenience goods such as food and beverages, paper goods, and personal products, as well as a variety of shopping goods products such as clothing, books, and jewelry. The department store would offer a variety of general merchandise typically including men's, women's and children's apparel, home furnishings, housewares, and small appliances. The selection of comparison goods may also include electronics, such as TV's and audio equipment, toys, and a limited offering of furniture. The supermarket is likely to offer a wide variety of fresh, frozen, and canned foods, including meats, fish, and produce, as well as bakery and dairy items, and housekeeping supplies such as paper products and cleaning aids. Comparing the number of stockkeeping units (SKU's) in a supermarket and a wholesale club indicates a significant difference in the selection of grocery items offered by these types of stores. For example, large supermarkets normally stock between 30,000 and 52,000 SKU's at any one time, while wholesale clubs carry an average of approximately 7,500 active SKU's. All analyses presented in this chapter are based on the assumption that the Proposed Project would include these four stores (a wholesale club, a home improvement store, a department store, and a supermarket totaling a combined 441,681 square feet) and approximately 24,890 square feet of restaurant or fast food space, and that the vast majority of the remaining space would be occupied by businesses selling shopping goods.

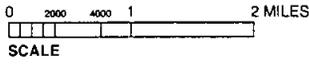
The study areas used in this chapter vary depending on the socioeconomic issue of concern. In terms of direct business displacement, the area of focus is the project site and the 23 businesses on the site that would be displaced by the Proposed Project. The analysis describes their operational characteristics and relocation needs as well as their significance to the New York City economy.

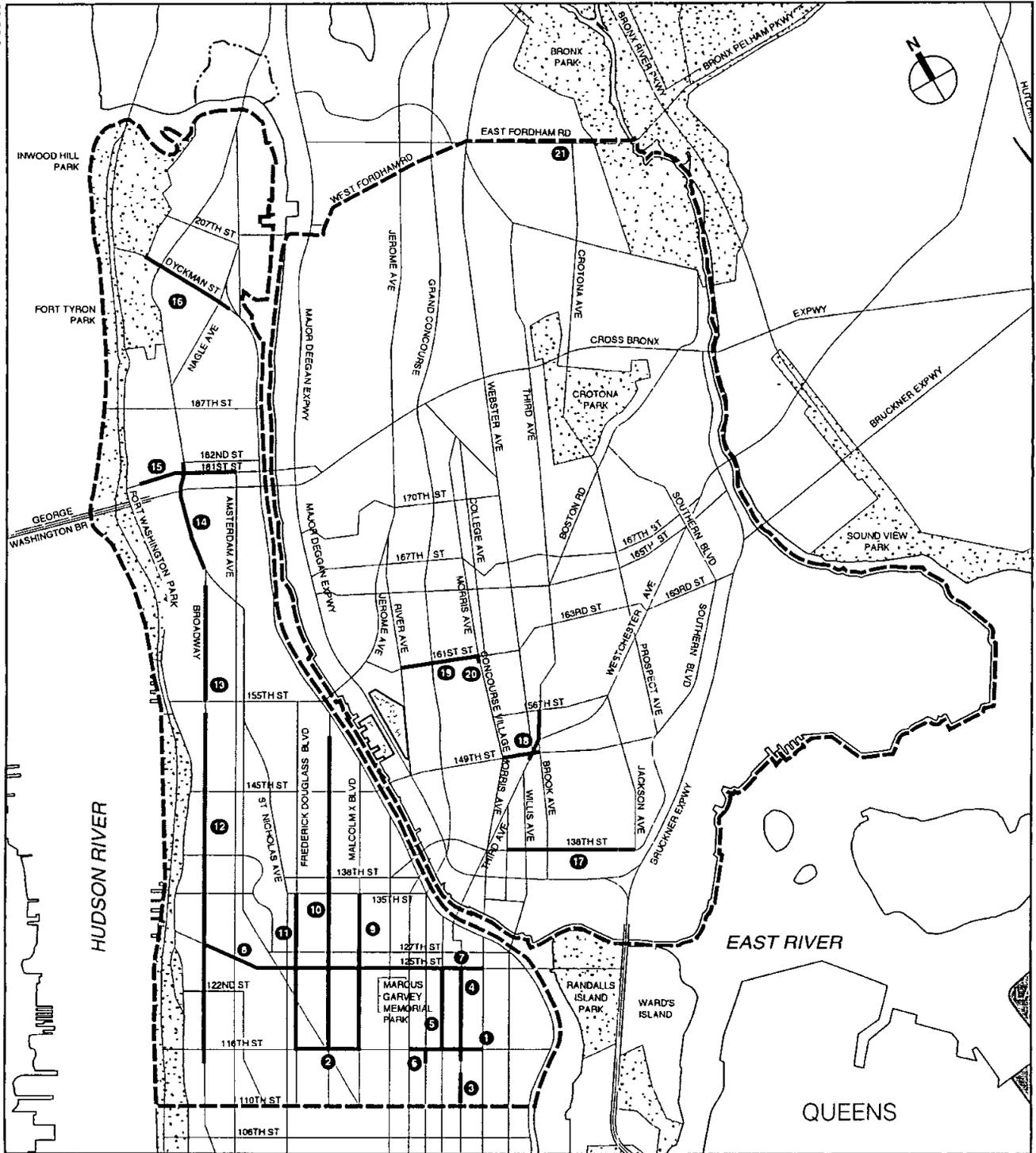
In terms of indirect business and indirect residential displacement, one issue of concern is whether the Proposed Project's 1.1 million gross square feet of retail could change socioeconomic conditions and property values in the immediate vicinity of the project site. Both of these analyses focus on a ¼-mile study area.

In addition to the potential effects on nearby property values, the Proposed Project could affect neighborhood shopping patterns in a wider area, which requires an analysis to address the possibility of indirect business displacement due to competition. As described in the *CEQR Technical Manual*, an analysis of the potential effects of competition should encompass a primary trade area from which the bulk of the new stores' sales are likely to be derived. As described in detail in Section D below, for purposes of analysis the "Primary Trade Area" for the Proposed Project is defined as the borough of the Bronx as well as Manhattan north of 110th Street (see Figure 3-1). In addition, there is an expectation that within this Primary Trade Area, the Proposed Project would draw a large portion of its repeat business from residents that live closest to the project site, as a result of more convenient access, shorter travel time and distance, and propensity to take advantage of a major shopping resource close to home. Those living farther from the Proposed Project would likely have a greater selection of large shopping resources in closer proximity to their homes. For this reason, the competition analysis focuses on both the Primary Trade Area and a smaller 3-mile area surrounding the project site, referred to as the "3-Mile Trade Area." The 3-Mile Trade Area includes the portion of Manhattan north of 110th Street and the portion of Bronx County roughly bounded by West and East Fordham Road



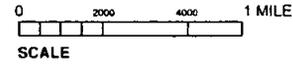
 Project Site
 Primary Trade Area Boundary





- Project Site
- 3-Mile Trade Area Boundary
- Retail Concentration

- | | |
|---------------------------------------|----------------------------------|
| 1 East 116th Street | 11 Fredrick Douglass Boulevard |
| 2 West 116th Street | 12 Broadway (Manhattanville) |
| 3 Third Avenue South | 13 Broadway (Hamilton Heights) |
| 4 Third Avenue North | 14 Broadway (Washington Heights) |
| 5 Lexington Avenue | 15 West 181st Street |
| 6 La Marqueta | 16 Dyckman Street |
| 7 East 125th Street | 17 East 138th Street, BX |
| 8 West 125th Street | 18 The Hub/149th Street, BX |
| 9 Malcom X Boulevard | 19 East 161st Street, BX |
| 10 Adam Clayton Powell, Jr. Boulevard | 20 Concourse Plaza Mall, BX |
| | 21 Fordham Road, BX |



3-Mile Trade Area
Figure 3-2

to the north, the Harlem River to the west, the East River to the south, and the Bronx River to the east (see Figure 3-2). The 3-Mile Trade Area spans several neighborhoods in Manhattan (Central Harlem, South Harlem, East Harlem, Washington Heights, and Inwood) and the Bronx (South Bronx and Central Bronx). The South Bronx includes neighborhoods south of the Cross Bronx Expressway, including Highbridge, Mount Eden, Concourse Village, Crotona Park East, Claremont, Morrisania, Bathgate, Longwood, Melrose, Mott Haven, Port Morris, and Hunts Point. Central Bronx covers the area north of the Cross Bronx Expressway and south of Gun Hill Road and includes Mount Hope, East Tremont, Bronx Park South, Tremont, Belmont, University Heights, Fordham, Bedford Park, Kingsbridge Heights, Norwood, and Van Cortlandt Village. The 3-Mile Trade Area includes all or portions of Manhattan Community Districts 9 through 12 and Bronx Community Districts 1 through 7. Once these trade areas were delineated, a profile of residents within the trade areas was prepared, including estimates of the current population and number of households and consumer expenditure potential.

Demographic and economic data were collected for the project area, the study areas, the borough, and New York City. Within the project area, field surveys were performed to identify businesses to be displaced. Field interviews and phone surveys of businesses potentially affected by displacement of the Bronx Terminal Market were conducted in May 2005. Within the ¼-mile study area, demographic characteristics such as population, number of households, median household income, median contract rent, and median house value were gathered from the 1990 and 2000 U.S. Census. Data were analyzed at the census tract level, or at the block group level where a census tract was not entirely within the study area boundary. Real Property Assessment Data (RPAD) were used to determine the number of rent-regulated units within the ¼-mile study area.

Profiles of the major retail concentrations within the 3-Mile Trade Area were prepared through detailed field surveys that indicate the number and types of stores in major retail strips and shopping centers. Retail sales and establishments data for the Primary Trade Area were obtained from the 2002 Census of Retail Trade. For the 3-Mile Trade Area, annual retail sales and number of establishments were estimated based on the 2002 Census of Retail Trade data, adjusted using data from Claritas, Inc., a national planning data service. Claritas data were used to determine the proportion of Primary Trade Area sales that occur within the 3-Mile Trade Area, and that proportion was applied to the Primary Trade Area sales figure from the 2002 Census of Retail Trade to derive estimated retail sales for the 3-Mile Trade Area. These sales data were reported for a variety of goods that correspond to the types of retail stores anticipated for the Proposed Project, including shopping goods¹, convenience goods², eating and drinking places, and building materials.

¹ Shopping goods is a retail term referring to a variety of goods for which consumers generally travel farther to compare price, quality, and variety of merchandise. The types of goods typically included in the shopping goods category are general merchandise, apparel and accessories, home furnishings, furniture, and equipment, and miscellaneous shopping goods, including sporting goods, books, stationery, jewelry, hobbies, toys, games, cameras and photographic supplies, gifts, novelties, and souvenirs, luggage and leather goods, sewing needlework, piece goods, and optical goods.

² Convenience goods is a retail trade term referring to a variety of goods that typically do not require comparison shopping, but rather are more readily purchased in stores more convenient to home or work. Foods for home consumption, both fresh and frozen, as well as dry goods for home use, such as housekeeping supplies, make up the largest portion of convenience goods sales. These products are typically found in supermarkets, grocery stores, meat and fish markets, bakeries, fruit and vegetables markets, and candy and nut stores. The category also includes the sale of prescription and over-the-counter drugs, personal care items, and

These sales data were then compared to household expenditure data to determine current retail capture rates for the Primary and 3-Mile Trade Areas. The household expenditure data was obtained from Claritas, which generates the data using statistical models estimated from the most current Consumer Expenditure Survey (CEX) data from the Bureau of Labor Statistics. As explained in further detail below under the section titled "Indirect Business Displacement: Competition," capture rates for the future without the proposed project were estimated based on retail or mixed-use projects known to be planned for the two trade areas. Annual sales for the planned retail establishments were estimated based on the characteristics of the projects and sales per square foot estimates as reported in the *Dollars & Cents of Shopping Centers: 2004*, Urban Land Institute. Future household expenditures were estimated based on current household spending data and future household growth, which was estimated using 2010 forecasts generated by the New York Metropolitan Transportation Council in 2004. Annual sales at the proposed Gateway Center were added to sales in the future without the proposed project to derive retail capture rates for the future with the proposed project. These Gateway Center sales were estimated based on per square foot sales data from the Urban Land Institute's *Dollars & Cents of Shopping Centers: 2004*.

Information on commercial and residential rents within the study area were based on telephone interviews with local real estate brokers, as well as the classified sections of the *New York Times*, the *Daily News* and the *New York Post*.

C. PRELIMINARY ASSESSMENT

Under *CEQR Technical Manual* guidelines, the first step in a socioeconomic impact analysis is a preliminary assessment. This section examines each of the five areas of socioeconomic concern in relation to the Proposed Project. The goal of a preliminary assessment is to learn enough about the potential effects of Proposed Project either to rule out the possibility of significant impact, or to establish that a more detailed analysis would be required to determine whether the proposed actions would lead to significant adverse impacts.

For three of the five issue areas—direct residential displacement, indirect residential displacement, and adverse effects on specific industries—the preliminary assessment rules out the possibility that the Proposed Project would have a significant adverse impact. For the two remaining areas—direct and indirect business displacement—the preliminary assessment indicates that a more detailed analysis is necessary to adequately address whether the Proposed Project would have a significant adverse impact. The detailed analyses follow this preliminary assessment.

DIRECT RESIDENTIAL DISPLACEMENT

The project site currently contains no residential units. Therefore, the Proposed Project would not directly displace any residential population, and no further analysis of this issue is necessary.

DIRECT BUSINESS DISPLACEMENT

The *CEQR Technical Manual* defines direct business displacement as the involuntary displacement of businesses from the site of (or a site directly affected by) a proposed action. A

health and beauty aids commonly found in neighborhoods drug stores. Tobacco products, newspapers and magazines, fresh flowers, and pet food supplies make up the remainder of the convenience goods category.

preliminary assessment of direct business displacement looks at the employment and business value characteristics of the affected businesses to determine the significance of the potential impact. A significant direct displacement impact may occur if the businesses in question have substantial economic value to the City or region, are the subject of regulations or publicly adopted plans to preserve, enhance, or otherwise protect them, or substantially contribute to a defining element of the neighborhood character.

This preliminary assessment concludes that a detailed analysis is required to determine whether the Proposed Project would have a significant direct business displacement impact. Descriptions of the businesses subject to direct displacement, and the Citywide economic context in which those businesses operate, is presented later in this chapter under the detailed analysis.

This preliminary assessment is based on the screening criteria (in italics, below) presented in section 321.2 of the *CEQR Technical Manual*. According to the manual, a proposed action may have a significant direct business displacement impact if it meets the following criteria:

If the businesses in question have substantial economic value to the City or regional area and can only be relocated with great difficulty or not at all.

As set forth in the *CEQR Technical Manual*, the consideration of the economic value of a business is based on: (1) its products and services, (2) its location needs (particularly whether those needs can be satisfied at other locations), and (3) the potential effects on business or consumers of losing the displaced business as a product or service.

As shown in Table 3-3 under the detailed analysis, there are 23 businesses currently operating on the project site. Almost all of these businesses are engaged in food wholesaling or sale of related restaurant or grocery products, such as paper goods and refrigeration equipment. In addition, there is one restaurant on the project site. The restaurant primarily serves employees working at the Bronx Terminal Market and truck drivers making deliveries or pick-ups. It is expected that the Proposed Project would directly displace all of the existing businesses on the site. These businesses employ approximately 297 workers, who would also be displaced.

As described in Chapter 1, "Project Description," the Proposed Project would also displace the Bronx House of Detention and an open air farmers' market. The displacement of the Bronx House of Detention—which is in reserve status, is currently closed and employs a minimal number of people—would not have a socioeconomic impact on the study area or the City. Non-socioeconomic effects of this displacement are discussed in Chapter 4, "Community Facilities."

The Proposed Project would also displace a wholesale farmers' market that operates up to six days a week in warmer months, and is used by approximately 20 farm operations. The farmers do not have a lease to operate on the project site and mostly sell plants, fruits, and vegetables to bodega owners, small grocery stores, and local residents as well as Bronx Terminal Market tenants. Because these farmers do not have a lease to operate on the project site, the impact of their displacement is not evaluated in this analysis.

With less than 0.2 percent of all employment involved in wholesale trade of nondurable goods, the 23 businesses and 297 workers subject to displacement do not represent a sizable proportion of wholesale trade employment in New York City. In addition, the Bronx Terminal Market employees do not represent a considerable proportion of total employment in the wholesale food industry in the City. According to 2004 employment data provided by Claritas, Inc., there are approximately 26,805 jobs in the wholesale food industry in New York City, and 24.2 percent of

those (6,488) are located in the Bronx.¹ Excluding jobs at Bronx Terminal Market businesses that do not primarily sell food products (four jobs at A&S Refrigeration Equipment and six jobs at Bronx Tobacco and Candies), the Bronx Terminal Market employs 287 people working in the wholesale food industry. These 287 employees represent approximately 4.4 percent of all wholesale food employees working in the Bronx, and only 1.1 percent of wholesale food employees in New York City.

Individual food wholesalers are located throughout the City, but there are few official wholesale food market locations where clusters of food wholesalers can be found in close proximity to one another. Aside from the Bronx Terminal Market, there are only two other locations where such agglomerations of wholesale food-related businesses can be found: the New York City Terminal Produce Co-operative Market/Hunts Point Cooperative Market located in the Hunts Point In-Place Industrial Park (IPIP), and the Brooklyn Terminal Market. In addition, the Bronx Terminal Market contains several food wholesalers that sell specialty food items not commonly found in New York City. A discussion of those sales and the potential for significant adverse impacts resulting from displacement of these businesses at the Bronx Terminal Market location is provided in Section D, "Detailed Analysis."

The second set of criteria for determining a business' economic value is whether its location needs can be satisfied at other locations in the Bronx or New York City. The assessment considers the products sold by the displaced businesses, their locational needs, their customer base, and available properties in the Bronx. The third and final criterion to consider is the Proposed Project's potential effects on businesses or consumers of losing the displaced business as a product or service. A large segment of the customer base for the Bronx Terminal Market businesses is comprised of restaurant and small grocery store owners in the south Bronx and across the river in Harlem and Washington Heights.

In conclusion, further detailed analyses are required to determine whether a change in location could have significant adverse impacts on the displaced businesses, or the customers and businesses served by the displaced businesses. See Section D, "Detailed Analysis."

If a category of businesses is the subject of other regulations or publicly adopted plans to preserve, enhance, or otherwise protect it.

The businesses to be directly displaced by the Proposed Project are not subject to regulations or publicly-adopted plans to preserve, enhance, or protect them. The Bronx Waterfront Plan calls for increasing job opportunities for Bronx residents in general, not preserving jobs in the wholesale industry in particular. The Bronx Waterfront Plan (released by the Bronx Borough President's Office in March 2004) also supports the redevelopment of Bronx Terminal Market, including improved ferry access and a new waterfront open space.

If the business or institution in question defines or contributes substantially to a defining element of neighborhood character or if a substantial number of businesses or employees would be displaced that collectively define the character of the neighborhood.

The Bronx Terminal Market does contribute to the character of the neighborhood, but it does not define or substantially contribute to defining the neighborhood. There are many large

¹ Employment data presented for the wholesale food industry is based on data for businesses falling into the Standard Industrial Category for wholesale groceries and related products (SIC 514). This industry group includes establishments primarily engaged in the wholesale distribution of groceries, packaged frozen foods, dairy products, poultry products, fish and seafoods, meats and meat products, and fresh fruits and vegetables.

institutional and entertainment uses within the ¼-mile study area that make as much of an imprint on the character of the neighborhood as does the Bronx Terminal Market. For example, Yankee Stadium, Eugenia Maria de Hostos Community College, the Bronx General Post Office, and Cardinal Hayes High School are all located within a quarter mile of the Bronx Terminal Market.

INDIRECT RESIDENTIAL DISPLACEMENT

Indirect residential displacement is the involuntary displacement of residents that results from a change in socioeconomic conditions created by the Proposed Project. In most cases, the issue for indirect residential displacement is that an action would increase property values, leading to higher rents throughout the study area, making it difficult for some residents to afford their homes. This preliminary assessment is based on the screening criteria outlined in the *CEQR Technical Manual*, which describe circumstances that can generate potentially significant impacts. The criteria are presented (in italics) and responded to below.

If the Proposed Project would add a substantial new population with different socioeconomic characteristics compared to the size and character of the existing population.

DEMOGRAPHIC PROFILE

As shown in Table 3-1, the ¼-mile study area experienced a 10 percent decrease in total population between 1990 (11,059 residents) and 2000 (9,950 residents), with much of the population decrease (20 percent) occurring in the Manhattan portion of the study area. In contrast, the population increased in the Bronx (11 percent), New York City (9 percent), and Manhattan (3 percent) between 1990 and 2000. The number of total households within the ¼-mile study area reflects changes similar to the total population. Overall, total households in the study area decreased by almost 10 percent between 1990 and 2000 with the Manhattan portion of the study area experiencing a 17 percent decrease in total households compared to a less than one percent decrease in the Bronx portion. Bronx County had a 9 percent increase in total households, followed by New York City and Manhattan with 7 and 3 percents respectively.

**Table 3-1
Demographic Characteristics of ¼-Mile Study Area**

	Total Population			Total Households			Median Household Income		
	1990	2000	% Change	1990	2000	% Change	1989	1999	% Change
Bronx Portion of Study Area	6,202	6,076	-2.0	2,017	2,001	-0.8	\$23,890	\$24,142	1.1
Manhattan Portion of Study Area	4,857	3,873	-20.3	2,422	2,011	-17.0	\$31,012	\$22,416	-27.7
¼-Mile Study Area	11,059	9,949	-10.0	4,439	4,012	-9.6	\$27,775	\$23,277	-16.2
Bronx County	1,203,789	1,332,650	10.7	424,112	463,212	9.2	\$29,740	\$27,611	-7.2
Manhattan	1,487,536	1,537,195	3.3	716,422	738,644	3.1	\$43,724	\$47,030	7.6
New York City	7,322,564	8,008,278	9.4	2,819,401	3,021,588	7.2	\$40,419	\$38,293	-5.3

Notes: 1989 median household income is presented in constant 1999 dollars.
Sources: 1990 and 2000 U.S. Census, Summary File 1 and Summary File 3.

The 1999 median household income in the ¼-mile study area was approximately \$23,277 per year compared to \$27,775 per year in 1989—a decrease of over 16 percent. Within the ¼-mile study area, the Manhattan portion experienced a substantial decline in median household income between 1989 and 1999 with a decrease of almost 28 percent compared to a 1.1 percent increase

in median household income in the Bronx portion. The median household income decreased in Bronx County as a whole (-7.2 percent), and New York City (-5.3 percent), but increased in Manhattan (7.6 percent). The 1999 median household income in the ¼-mile study area (\$23,277 per year) was lower than Bronx County (\$27,611 per year), Manhattan (\$47,030 per year) and New York City (38,293 per year).

The Proposed Project does not have a residential component. Therefore, the Proposed Project would not add a new residential population with different socioeconomic characteristics.

It would directly displace uses or properties that have had a "blighting" effect on property values in the area.

The project site and the existing uses on the project site have not had a blighting effect on residential property values in the area. As shown in Table 3-2, median contract rent in the ¼-mile study area has not changed substantially between 1990 and 2000, with a decrease of only 1.1 percent over the decade. Over the same time period, median contract rent in Bronx County and New York City increased by 2.2 percent and 10.8 percent, respectively. The median contract rent in the ¼-mile study area and Bronx County was almost identical in 2000 while median rent for New York City as a whole was 31.7 percent higher than the median for the study area.

**Table 3-2
Median Contract Rent in the ¼-Mile Study Area**

	1990 Median Contract Rent	2000 Median Contract Rent	Percent Change	2000 Median Housing Value
¼-Mile Study Area	\$568	\$562	-1.1	\$54,325
Bronx County	\$548	\$560	2.2	\$183,800
New York City	\$668	\$740	10.8	\$221,200

Note: 1990 median contract rent is presented in constant 2000 dollars.
Source: U.S. Census Bureau, 1990 and 2000 Census, Summary File 1 and Summary File 3.

The 2000 median contract rent in the study area was compared to three other similar neighborhoods surrounding the ¼-mile boundary: Mott Haven, Highbridge, and Concourse. Mott Haven is a neighborhood located southeast of the study area where the median contract rent in 2000 was approximately \$324 per month (\$238 per month less than contract rents in the study area). Just north of the study area is Highbridge where the 2000 median contract rent was \$492 compared to \$562 in the study area, or \$70 per month less than in the study area. Finally, median contract rents in the Concourse neighborhood, which is just northeast of the study area, were slightly higher than the study area (\$569 compared to \$562 per month).

Based on telephone interviews with several local residential brokers in Mott Haven and along the Grand Concourse,¹ current rents within the study area do not differ significantly from the surrounding areas. For example, rents for a one bedroom apartment in the study area, as well as Mott Haven, Highbridge, and Concourse range from \$800 to \$1,000 per month depending on the size. Likewise, a two bedroom apartment in all four neighborhoods rents from \$1,100 to \$1,200 per month, while a three bedroom is \$1,350 and above.

¹ Real estate brokers were all located in the South Bronx with much of their residential real estate business focusing on Mott Haven, Highbridge, and the Concourse.

In addition, as described in detail below, physical barriers such as the Metro North Rail Road tracks, Yankee Stadium and changes in topography isolate the project site from the study area's residential neighborhoods. The isolation makes it unlikely that existing uses on the project site have had a blighting effect on the residential property values within the ¼-mile study area.

Considering that rents in the study area are similar to other neighborhoods bordering the ¼-mile boundary, and that there are physical barriers that separate the project site from residential areas, it appears that the presence of the Bronx Terminal Market has not had a blighting effect on the value of residential properties in the study area, and no further analysis is necessary.

It would directly displace enough of one or more components of the population to alter the socioeconomic composition of the study area.

Given that there is no housing on the project site, the Proposed Project would not directly displace any residents, and thus would not alter the socioeconomic composition of the study area.

It introduces a more costly type of housing compared to existing housing and housing expected to be built in the study area by the time the project is implemented.

The Proposed Project would not introduce new housing to the area.

It would introduce a "critical mass" of non residential uses such that the surrounding area becomes more attractive as a residential neighborhood complex.

The Proposed Project would introduce a critical mass of non-residential uses to the study area, including retail stores and a hotel. Such a new use could potentially make a neighborhood more attractive, thereby increasing existing rents for current residents or creating a climate for new higher-income residential development which could indirectly displace existing residents. However, the Proposed Project is not expected to make the surrounding neighborhood (within the ¼-mile study area) more attractive for residential use. First, the project site is relatively isolated from the residential areas within the study area. Existing residential buildings located north of the project site are separated from the project site by the Metro North Rail Road tracks and Yankee Stadium. Residential concentrations to the east of the project site along Walton Avenue are separated from the project site by an approximately 29-foot change in grade between Exterior Street and River Avenue. The above-mentioned physical and natural barriers together help to create a residential environment that is separate and distinct from the project site.

Second, the ¼-mile study area is fully developed with no vacant land available for redevelopment, and zoning regulations in the manufacturing areas restrict as-of-right residential development or conversions without a discretionary action from the New York City Department of City Planning (NYCDCP). Finally, many of the residential units within the study area are owner-occupied, rent-regulated, public housing, or publicly assisted housing, which means their tenants would not be affected by potential increases in market rate rents. For example, according to data collected from 2003 Real Property Assessment Data (RPAD), of the 6,210 residential units in the ¼-mile study area, approximately 42 percent (2,607 units) are owner-occupied cooperative units, which are not subject to rental increases, and approximately 47 percent (2,902 units) are rent-stabilized units, which mean they are protected from any significant rental increases. Another 9 percent (576 units) are under the control of the New York City Housing Authority (NYCHA), which means residents are protected against real estate market pressures and potential increases in property values and rents. In total, approximately 98 percent of the

residential units found in the ¼-mile study area are protected against any unregulated or market-driven rental increases.

The residential real estate market in neighborhoods outside of the ¼-mile study area would not be affected by the Proposed Actions. The closest residential concentration outside of the ¼-mile study area is to the north of the project site—an area bounded by Grand Concourse to the east, East 161st Street to the south, the Harlem River to the west, and East 166th Street to the north. That area is separated from the project area by Macombs Dam Park and John Mullaly Park as well as physical boundaries such as a rising slope that begins at Jerome Avenue and becomes increasingly steeper as you go further northwest from the ¼-mile study area. In addition, similar to residential conditions in the ¼-mile study area, many of the residential units to the north of the study area are rent-regulated, which affords those units protection from potential rent increases. According to RPAD, approximately 85 percent (5,760 units) of the 6,786 residential units are rent-stabilized and another 8 percent (535 units) are owner-occupied cooperative units. In addition to the rent stabilized and owner-occupied units, approximately 2 percent (or 134 units) of the total residential units are NYCHA properties. With almost 95 percent of the total residential units protected from any significant rental increases, the residential concentration to the north would not be subject to indirect residential displacement.

The approximately 250,000 gsf hotel with 250 rooms, a 30,000 gsf banquet facility, and approximately 225 parking spaces would also introduce a critical mass of a non-residential use to the study area. However, the existence of a hotel would not increase current residential rents nor would it influence other new higher-income residential developments to occur in the study area.

It would introduce a land use that could have a similar indirect effect if it is large enough or prominent enough or combines with other like uses to create a critical mass large enough to offset positive trends in the study area, to impede efforts to attract investment to the area, or to create a climate for disinvestment.

In the future without the Proposed Actions, there are a number of projects planned for the area surrounding the project site. The New York Yankees recently announced plans to invest approximately \$700 million to build a new Yankee Stadium within Macombs Dam Park, directly north of the current Yankee Stadium. As mentioned in Chapter 2, "Land Use, Zoning, and Public Policy," there are several infrastructure projects planned that will improve access to the study area, including the widening of the Major Deegan Expressway, reconstruction of 149th Street between Griffin Place and Exterior Street, and the potential creation of a Metro North Rail Road station in the project area. The New York City Department of Homeless Services (NYCDHS) has plans for a new Emergency Assistance Unit at 151st Street and Walton Avenue to replace the existing facility at this location. Just southeast of the project site, Hostos Community College is currently renovating a 125,000 gross square foot academic building over the next four to five years. In addition, the school has future capital improvement projects that are pending budget allocation. Finally, Lincoln Hospital has several capital improvement projects that are currently in construction, including a \$6 million labor and delivery center (30,000 sf) and a \$2 million MRI unit (2,000 sf). Other improvements that are in the planning and/or design phase include a \$10 million redesign of the emergency room, a new \$1 million women's option center (2,000 sf), and a \$1 million upgrade of the existing 650-space parking garage facility. All of these projects indicate ongoing investment in the study area that will occur independent of the Proposed Project.

The Proposed Project would not impede efforts to attract investments to the area or create a climate for disinvestment. To the contrary, the Proposed Project would add to the ongoing improvements described above by replacing underutilized and dilapidated buildings with a major retail center, new waterfront public open space, and the only hotel in this area of this city. The Proposed Project would create new employment opportunities for local residents, and would provide convenient shopping and dining opportunities. The Proposed Project also would provide an important new community amenity in the approximately 2-acre public open space and waterfront esplanade, which would serve the surrounding neighborhood and create public recreational access to the Harlem River.

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

Indirect business and institutional displacement is the involuntary displacement of businesses or institutions that results from a change in socioeconomic conditions created by a proposed action. Similar to indirect residential displacement, the issue for indirect business displacement is that an action would increase property values and, indirectly, rents in the study area, making it difficult for some categories of business or institutions to remain at their current locations. The preliminary assessment is based on the screening criteria outlined in the *CEQR Technical Manual*. These criteria are presented (in italics) and responded to below.

It introduces enough of a new economic activity to alter existing economic patterns.

As described above, the Proposed Project is expected to introduce approximately 1.1 million gross square feet of new retail development into a ¼-mile study area that is predominately industrial in character. The Proposed Project would introduce enough of a new economic activity (retail) and would be large enough in size to potentially alter existing economic patterns. The potential issue is that the Proposed Project could indirectly displace existing businesses or institutions within the ¼-mile study area by increasing rents and possibly creating a trend towards conversion to retail uses in the area. Therefore, a detailed analysis is required to examine any potential impacts.

Adds to the concentration of a particular sector of the local economy enough to alter or accelerate an ongoing trend to alter existing economic patterns.

Because the Proposed Project is expected to add approximately 1.1 million square feet of new retail uses on the project site, it could potentially alter existing economic patterns, specifically existing concentrations of retail shopping in a 3-mile study area, which includes 116th Street and 125th Street in Manhattan and 138th Street, Fordham Road, The Hub, and Concourse Plaza in the Bronx. Therefore, a detailed analysis is required.

Displaces uses or properties that have had a "blighting" effect on commercial property values in the area, leading to rises in commercial rents.

Although the Bronx Terminal Market contains some vacant structures and is at times unsightly because of trash generated by its operations, it has not had a "blighting" effect on commercial property values in the ¼-mile study area. Retail businesses along 149th Street and the Grand Concourse include a mix of convenience retail stores and neighborhood services such as groceries, dry cleaners, and restaurants that cater to local residents as well as students and employees from Hostos Community College and the post office. According to CB Richard Ellis, a commercial real estate company, commercial rents in the study area along the Grand Concourse and 149th Street range from \$25 to \$45 per square feet for ground floor retail space,

Gateway Center at Bronx Terminal Market DEIS

and are comparable to other retail locations outside the ¼-mile study area such as the 138th Street and 149th Street retail corridors.

Similarly, Newmark Real Estate Services estimates commercial rents in the ¼-mile study area to be about \$25 per square foot for ground floor space less than 5,000 square feet, and \$20 per square foot for commercial space between 5,000 to 10,000 square feet. According to Newmark, the commercial rents cited above are similar to other commercial rents outside the ¼-mile study area such as 138th Street.

According to real estate firm Kalmon Dolgin, industrial rents in the ¼-mile study area have increased over the past few years and currently stand at approximately \$10-\$12 per square foot for ground floor space with 18 foot ceilings. Industrial rents in the ¼-mile study area tend to be slightly higher than similar industrial space in Mott Haven or Hunts Point due to their proximity to Manhattan.

Based on discussions with industrial and retail brokers familiar with properties within the study area, the Bronx Terminal Market has not had a blighting effect on existing industrial and commercial properties. While the Proposed Project would improve the aesthetics of the area and create a more attractive physical environment, it is unlikely to result in significant increases in industrial rents in the area which, as noted above, are already at the top of the market and higher than rents in nearby industrial districts. Therefore, a detailed analysis of this issue is not required.

Directly displaces uses of any type that directly support businesses in the area or bring people to the area that form a customer base for local businesses.

The Proposed Project would not directly displace uses that directly support local businesses. The study area is predominately industrial with many of the existing manufacturing businesses involved in work that is unrelated to uses found in the Bronx Terminal Market. The Proposed Project also would not directly displace uses that bring people to the area that form the customer base for local area businesses. The businesses on the project site typically attract customers that operate restaurants, grocery stores, and other food-related businesses, as well as truck drivers delivering food and food-related products to the wholesale merchants. Most of the customers and truckers do not remain in the study area long enough to form a customer base for other local businesses. In addition, the Proposed Project would create a new customer base of employees and visitors that could potentially benefit the existing retail businesses in the study area. Therefore, a detailed analysis of this issue is not required.

Directly or indirectly displaces residents, workers, or visitors who form the customer base of existing businesses in the area.

As discussed in the direct displacement analysis, the Proposed Project is expected to directly displace 297 employees from the project site. However, the Proposed Project is expected to add 2,346 jobs to the study area. Accounting for the 297 jobs that would be directly displaced, the Proposed Project would add approximately 1,894 more jobs in 2009 and 2,049 in 2014 to the study area, compared to the future without the Proposed Project. As a result, the Proposed Project is not expected to have any significant adverse impact on the customer base of the study area. In fact, the Proposed Project could potentially have positive impacts by increasing the customer base for local businesses.

Introduces a land use that could have a similar indirect effect, through the lowering of property values if it is large enough to create a critical mass large enough to offset positive trends in the

study area, to impede efforts to attract investment to the area, or to create a climate for disinvestment.

Although the Proposed Project is large enough to create critical mass, it would not offset positive trends in the study area, impede any efforts to attract investment, or create a climate for disinvestment. As previously mentioned in the preliminary assessment on indirect residential displacement, the study area is currently attracting potential new investment by the New York Yankees to build an estimated \$700 million new stadium and recreational facility as well as infrastructure improvements that will upgrade existing streets, sidewalks, and curbs for better vehicular and pedestrian access. NYCDHS has plans for a new Emergency Assistance Unit at 151st Street and Walton Avenue to replace the existing facility at this location. Hostos Community College is currently renovating a 125,000 gross square foot academic building over the next four to five years, and the school has future capital improvement projects that are pending budget allocation. Finally, outside of the study area, Lincoln Hospital has several capital improvement projects that are currently in construction such as a \$6 million labor and delivery center (30,000 sf) and a \$2 million MRI unit (2,000 sf). Other improvements that are in the planning and/or design phase include a \$10 million redesign of the emergency room, a new \$1 million women's option center (2,000 sf), and a \$1 million upgrade of the existing 650-space parking garage facility.

Along with the projects described above, the development planned under the proposed actions would contribute to supporting the economic revitalization of the West Haven neighborhood of the Bronx. The Proposed Project would replace underutilized and dilapidated buildings with a major retail center, new waterfront public open space, and the only hotel in this area of this city. The Proposed Project would create new employment opportunities, convenient shopping and dining opportunities, and create economic and fiscal benefits to the City in the form of economic revitalization and tax revenue.

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

According to the *CEQR Technical Manual*, a significant adverse impact may occur if an action affects the operation and viability of a specific industry that has substantial economic value to the City's economy.

Would the action significantly affect business conditions, reduce employment or impair the economic viability in any industry or any category of businesses within or outside the study area.

The Proposed Project would not substantially reduce employment in the wholesale food industry. Although the businesses on the project site would be displaced, they could relocate to other locations within the Bronx or New York City without significantly reducing total employment in the wholesale food industry (see the section below for further detail on available industrial properties in the Bronx).

The Proposed Project also would not impair the economic viability of the wholesale food industry in the Bronx or New York City as a whole. As mentioned in the preliminary analysis of direct business displacement, the businesses to be displaced currently employ approximately 287 wholesale food industry workers, who represent only 4 percent of all wholesale food employees in the Bronx and roughly 1 percent of wholesale food employees in New York City. All of the products sold at the Bronx Terminal Market, including West African specialty food items, are available through other wholesale distributors and retailers in New York City that do not depend

solely on the Bronx Terminal Market for their supply, as well as through two major wholesalers in New Jersey (one of which supplies the Bronx Terminal Market). More important, the Hunts Point IPIP is home to the Hunts Point Cooperative Market (wholesale meat), the Hunts Point Terminal Market (wholesale produce) and the soon-to-be-opened Hunts Point Fish Market. Together, they make up the Hunts Point Food Distribution Center, which currently supplies approximately 90 percent of New York City's food supply. The wholesale produce market alone supplies 55 percent of the New York City's produce needs.¹

Annual sales generated by the Hunts Point Food Distribution Center is approximately \$3 billion—\$1 billion per year from the meat market and \$2 billion from the produce market. The \$3 billion in annual sales at Hunts Point represents approximately 65.2 percent of the \$4.6 billion in wholesale food industry sales for New York City. The addition of the fish market will generate another \$1 billion per year in sales, increasing the Hunts Point Food Distribution Center's share of New York City total wholesale food industry sales to 87 percent.

With approximately 65 percent of New York City's food supply coming through the Hunts Point Food Distribution Center, the loss of the Bronx Terminal Market as a wholesale food market center would not significantly impact business conditions or the economic viability of the wholesale food industry in New York City. Therefore, a detailed analysis is not required.

D. DETAILED ANALYSIS

The possibility that the Proposed Project could cause significant impacts through direct or indirect business displacement could not be ruled out through the preliminary assessment presented above in Section C. Therefore, a detailed analysis for those areas of concern is presented below. In accordance with CEQR guidelines, the detailed analyses are divided into three sections: existing conditions, the future without the proposed actions, and the probable impacts of the proposed actions, which includes a determination about whether the Proposed Project would cause significant adverse impacts.

DIRECT BUSINESS DISPLACEMENT

For the Proposed Project, a detailed analysis of direct business displacement was deemed necessary because the preliminary analysis did not rule out the possibility that the businesses to be displaced are of substantial economic value to the city or the regional area and they could only be relocated with great difficulty or not at all. Existing conditions at the Bronx Terminal Market and in the study area are described below, followed by a description of the area in the future without the proposed actions. This scenario is then compared to the future with the proposed actions to determine how the displaced businesses and broader business community would be affected, and whether their displacement would constitute a significant adverse impact.

EXISTING CONDITIONS

Businesses at Bronx Terminal Market

As indicated in the preliminary analysis, there are 23 businesses currently operating on the project site, and almost all of them are engaged in food wholesaling or the sale of related

¹ Information based on telephone conversation with Myra Gordon, Executive Administrative Director for the New York City Terminal Produce Cooperative Market on March 22, 2005.

restaurant or grocery products, such as paper goods or refrigeration equipment. In addition to selling wholesale food products, some of the Bronx Terminal Market merchants also engage in retail operations, selling food products to residents primarily from northern Manhattan and the South Bronx. There is also one restaurant on the project site that primarily serves Bronx Terminal Market employees and truck drivers making deliveries or pick-ups. As shown in Table 3-3, these businesses employ approximately 297 workers and are leasing approximately 407,180 square feet of space.

Operational Characteristics and Location Needs

Stores in the Bronx Terminal Market range in size from 985 square feet to 52,250 square feet. Only six of the businesses occupy over 20,000 square feet of space. According to property lease information provided by BTM Development Partners, rental rates in the market range from \$6.00 per square foot (psf) to \$9.75 psf and the average rental rate is \$7.60 psf. However, some businesses are occupying space in addition to what is specified in their leases (generally second floor space used for storage), lowering effective per square foot rental rates. Per square foot rental rates based on actual amount of space occupied, as opposed to leased space, range from \$4.00 psf to \$9.50 psf and average about \$6.50 psf. These rental rates are lower than the averages for other industrial space in the Bronx and other boroughs. For example, rents at the Hunts Point and Bathgate IPIPs in the Bronx range from \$7 to \$10 psf and \$7 to \$11 psf, respectively, and rents at the Jamaica IPIP in eastern Queens range from \$8 to \$15 psf.

The current Bronx Terminal Market tenants operate either without leases, on month-to-month leases, or leases with termination clauses in the event of redevelopment of the market. As shown in Table 3-3, approximately 14 out of the 23 businesses (61 percent) occupy space that is greater than 10,000 square feet. Some of the larger employers such as NY Produce, Cuba Tropical, Sigmund Strauss Inc., and C. Kenneth Imports occupy space that is more than 30,000 square feet.

The customer base for the businesses located in the Bronx Terminal Market largely consists of restaurants and small grocery stores in Harlem, Washington Heights, and the South Bronx, as well as West African, Caribbean, and Hispanic residents who live within the ¼-mile study area and the larger metropolitan area. These restaurants and stores cater to the ethnically diverse populations of Harlem, Washington Heights, and the Bronx that purchase African, Caribbean, and Latin American meats, fish and vegetables offered at the market. For example, Bronx Terminal Market merchants specializing in African food products cater to the Ghanain, Senegalese, and Nigerian restaurants located along West 116th and 125th Streets in Harlem with traditional food items such as fufu mix, palm oil, kola nuts and cassava. Similarly, Hispanic merchants carry food products that supply the Caribbean and Hispanic population throughout northern Manhattan and the Bronx. The one-stop-shopping convenience provided by the clustering of wholesale food businesses is part of what continues to draw customers to the Bronx Terminal Market.

Another operating characteristic of businesses in the Bronx Terminal Market is convenient vehicular access from both the Bronx and Manhattan. Customers coming from northern Manhattan can cross the Harlem River using one of the six bridges between 125th and 181st Streets, joining local streets or the Major Deegan Expressway to access the market. Customers from the Bronx also have convenient access to the market via local streets or from the Expressway ramps at the northern and southern ends of the market. Once customers enter into the market area, they can drive their trucks or cars directly to the loading docks or into parking areas without entrance fees or security checks.

Table 3-3
Businesses Subject to Direct Displacement Under Proposed Project

Name of Business	Type of Business	Number of Employees	Square Feet of Space Leased
A&S Refrigeration Equipment	Refrigeration equipment	4	6,000
African Market	African & Caribbean Food Products	10	11,960
Bronx Tobacco & Candies Company, Inc	Wholesale Tobacco	6	8,400
C. Kenneth Imports	Food Distributor	30	52,250
7 Ounce, Inc. (aka Caribbean Produce)	Tropical produce & grocery	6	18,000
Cuba Tropical	Produce	40	50,000
Falcon Crest Food Distribution	Food Distributor	10	30,000
Gold Coast Trading Company	Wholesale African, American & West Indian foods	5	6,000
International Market	African, Caribbean, American Products	6	6,000
K&K African Market	African & Caribbean food products	3	6,000
L&S Fruit & Produce	Fruit & Produce	3	12,000
La Ruche Imports, Inc	Importer & wholesaler of African foods	2	6,000
Latin 17 Meat & Provisions Corp	Meat & Groceries	42 (combined with Latin Tropicales)	11,200
Latin Tropicales, Inc	Wholesale fruits, vegetable & groceries	42 (combined with Latin 17)	12,000
Nasem African Market	Wholesale African & Caribbean market	6	12,000
NY Produce*	Import and Distribute fruits & vegetables	50	49,265
PJ's Warehouse, Inc	Paper goods, produce & frozen foods	12	9,600
Pronto Produce Inc (aka New Renacer Produce)	Fruits, vegetables & tropical products	7	6,000
Sal's Wholesale Produce	Fruits, vegetables	2	985
Siegmund Strauss Inc.	Wholesale meats	25	30,000
Trombetta & Sons Inc.	Produce	6	18,000
V&S Products (aka MS Products Co)	Tropical fruits, vegetables & groceries	12	12,000
Victory Food Service Distribution Corp.	Food distributor	10	33,520
Total		297	407,180

Note: * Tropical Café Restaurant also operated by NY Produce
Source: Information provided by BTM Development Partners survey conducted in September 2004.

Effect on New York City's Economy

As previously discussed in the preliminary assessment for direct business displacement, total wholesale food industry employment in the Bronx Terminal Market represent approximately 4 percent of all wholesale food employees in the Bronx and only 1 percent of wholesale food employees in New York City. Therefore, in terms of the number of jobs and related payroll, the businesses to be displaced do not have a substantial economic value to the City.

Relocation Options

All of the existing businesses on the project site currently occupy ground floor space that allows them to load and unload their goods. Therefore, any comparable alternatives would also need to include ground-floor space. As shown in Table 3-4, there are approximately 472,500 sf of ground-floor industrial space available throughout the Bronx. The monthly rents for the available properties range between \$5 and \$16 per square foot (psf) for buildings that are between 6,000 and 90,000 square feet in size. Of the 472,500 sf currently available, slightly more than half are located in or near the Bronx Empowerment Zone and/or the New York State Economic Development Zone (see Figure 3-3).

Approximately 100,000 sf of the industrial space listed in Table 3-4 is within the Hunts Point In-Place Industrial Park (IPIP). The Hunts Point IPIP, which is located in the Hunts Point section of the Bronx, is a industrial park that includes roughly 800 businesses and approximately 25,000 employees. Although some of the monthly rents listed are negotiable, they range from \$6.75 to \$8.59 per square foot.

The Port Morris In-Place Industrial Park (IPIP) is located south of 138th Street and north of the East River. Approximately two miles southeast of the Bronx Terminal Market, the Port Morris IPIP is easily accessible from the Major Deegan Expressway and the Bruckner Expressway. Of the available industrial properties listed in Table 3-4, almost 150,000 square feet is located within the boundaries of the Port Morris IPIP. Monthly rents for ground-floor space range from \$5 to \$16 per square foot.

Table 3-4
Available Industrial Space in the Bronx

Property	Floor	Available Space (sf)	Rent/sf
Property A*	1st	6,000	\$12-\$16
Property B*	1st	22,000	\$5-\$8
Property C*	1st	40,000	\$10
Property D*	1st	10,000	Negotiable
Property E*	1st	13,000	Negotiable
Property F	1st	7,100	\$16
Property G	1st	90,000	\$8.50
Property H*	1st	6,000	\$10
Property I*	1st	10,000	Negotiable
Property J	1st	50,000	Negotiable
Property K*	1st	10,000	\$7.20
Property L*	1st	14,500	\$7.50
Property M**	1st	40,000	\$6.75
Property N*	1st	15,000	Negotiable
Property O*	1st	20,000	Negotiable
Property P*	1st	15,000	Negotiable
Property Q*	1st	40,000	Negotiable
Property R**	1st	27,950	\$8.59
Property S**	1st	16,000	\$8.50
Property T	1st	20,000	\$7
TOTAL		472,550 s.f.	
Notes:			
* Properties located in or near the Bronx Empowerment Zone and the New York State Economic Development Zone.			
** Properties located just in the New York State Economic Development Zone.			
Source: CB Richard Ellis, March 2005.			

In addition to the available properties in the Bronx, there is roughly 8.5 million square feet of available industrial space in Brooklyn and Queens combined, and another 4.5 million square feet in Manhattan. With more than ample industrial space (13.5 million square feet) the businesses current located on the project site would not have any difficulty in finding alternate industrial space within the Bronx or New York City.

FUTURE WITHOUT THE PROPOSED ACTIONS

Project Site

In the future without the proposed actions, it is assumed that in both 2009 and 2014 the Bronx Terminal Market would remain as a wholesale food distribution facility and the existing businesses would remain on the site.

Trade Area

There are no major residential or commercial construction projects planned in the study area in the future without the proposed actions by the 2009 Build year. However, 149th Street between Griffin Place and Exterior Street would be reconstructed. Improvements would include better traffic lighting, sidewalks, and curbs, thereby improving both vehicular and pedestrian access to the area. The reconstruction work is expected to be completed prior to 2009.

Two institutional projects are planned for the study area by 2009: NYCDHS has plans for a new Emergency Assistance Unit at 151st Street and Walton Avenue to replace its existing facility at this location; and Hostos Community College has plans to renovate a 125,000 gsf academic building. Outside of the study area, Lincoln Hospital is in the process of constructing several new facilities, including a labor and delivery center and an MRI unit. The hospital also has plans for a renovated emergency room, women's option center, and upgrade of an existing parking garage.

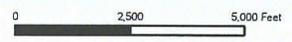
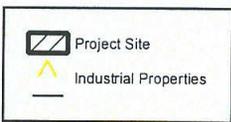
One major project proposed within the study area by 2009 is the construction of a new stadium for the New York Yankees on the north side of 161st Street between River Avenue and Jerome Avenue within Macombs Dam Park, directly north of the current Yankee Stadium. The potential socioeconomic impacts of that project are discussed in Chapter 22, "Future Conditions with a Relocated Yankee Stadium."

A widening of the Major Deegan Expressway viaduct is planned for completion by 2011-2012. This reconstruction would improve access to the area, including the project site. In addition, the Metro North Rail Road has been studying the possibility of establishing a station in the study area at least since the mid-1980s. If this station were created, it would improve transit access to the area.

Also by 2014, across the Harlem River in East Harlem, the East River Plaza development is planned on portions of blocks located between East 116th and East 119th Streets. The large scale retail center includes approximately 475,000 gross square feet (gsf) of retail space on four levels as well as a parking facility for 1,248 vehicles.

PROBABLE IMPACTS OF THE PROPOSED ACTIONS

One of the key issues for the direct business displacement analysis is to determine if the businesses currently located on the project site are of significant economic value to the City or



regional area and whether they can be relocated within the Bronx or New York City without great difficulty. The wholesale food industry businesses to be displaced represent about 4 percent of the wholesale food employment in the Bronx and 1 percent of the wholesale food employment in New York City. In addition, the businesses on the project site employ less than 1 percent of all wholesale employees in the city. Because the businesses currently located on the project site represent a relatively small portion of wholesale food employment and all wholesale employment in New York City, these businesses do not have a substantial economic value to the city or regional area.

Although the existing businesses on the project site would be directly displaced as a result of the Proposed Project, there is sufficient ground-floor industrial space located within the Bronx to accommodate them. As noted in Table 3-4, there is approximately 472,500 square feet of ground-floor industrial space in the Bronx and another 13 million square feet of industrial properties in the remaining boroughs. This is more than the approximately 400,000 square feet that is currently being occupied by the existing project site businesses. It is expected that the more established businesses in the Bronx Terminal Market such as Cuba Tropical, Latin 17 Meat and Provisions, and NY Produce—which combined employ about 132 (or 44 percent) of the 297 workers—would not have any difficulty in reestablishing themselves elsewhere within the Bronx. In fact, NY Produce has another location within the Hunts Point Produce Market.

Another issue in assessing the economic value of the Bronx Terminal Market businesses is the potential effects on businesses or consumers of losing the product or service offered by the businesses to be displaced. As already mentioned above, the Bronx Terminal Market businesses sell typical/everyday food items such as fruits and vegetables as well as a variety of meat and fish products that can be found elsewhere within the Bronx. Wholesale merchants at the Hunts Point Produce Market, the Hunts Point Cooperative Market (wholesale meat and meat products), and the soon-to-arrive Hunts Point Fish Market provide almost all of the basic fruits, vegetables, meat and seafood that are currently sold at the Bronx Terminal Market. The Hunts Point Produce Market has over 50 merchants that sell a variety of fruits and vegetables from all over the world. Similarly, the Hunts Point Cooperative Meat Market has about 47 independent wholesale businesses that offer a greater selection of meat and meat products than businesses at Bronx Terminal Market. Meat products that are sold at Bronx Terminal Market and can also be found at the Hunts Point Meat Market include beef, poultry, goat, lamb, pork, and organ meats (liver, heart, and tongue) and specialty cuts. For example, Latin American Distributors is a current tenant in the Hunts Point Meat Market that carries fresh and frozen Latin food products.

In addition to the above-mentioned everyday food items, some of the Bronx Terminal Market merchants also sell fruits and vegetable items that are unique to the cultures of West African, Caribbean, and Hispanic populations. Examples of common West African and Caribbean food products that are found in the Bronx Terminal Market include varieties of breadfruit, okra, yams, cassava, plantains, sweet potatoes, batatas, chayote, green bananas, and callaloo (some of the Caribbean fruits and vegetables are similar to West African fruits and vegetables). These products, as well as other Caribbean fruits and vegetables, can also be found at the Hunts Point Produce Market. For example, businesses such as Mendez International Fruits and Vegetables, Top Banana, C&J Produce, and HP Tropical are a few of the businesses located in the Hunts Point Produce Market that import products from Jamaica, Puerto Rico, Costa Rica, South America, and Central America.

There are some merchants at the Bronx Terminal Market, such as African Market, K&K African Market, and Nasem African Market that sell West African specialty items (in addition to

common everyday fruits and vegetables). These specialty items include stockfish, fufu flour, bitterleaves, kola nuts, gari, agbono, and palm oil—food items that are commonly used in many West African traditional dishes. West 116th Street in northern Manhattan is home to many West African restaurants and grocery stores, which cater to the growing population of Harlem residents from Senegal, Mali, Ghana, Ivory Coast, and Nigeria. Given the presence of growing West African population and the existence of West African restaurants and grocery stores on West 116th Street, the issue is whether the displacement of the West African merchants from the Bronx Terminal Market could potentially impact West African businesses and consumers in northern Manhattan.

Face-to-face interviews were conducted by AKRF on May 11, 2005 of 10 West African restaurants and grocery stores along West 116th Street between Frederick Douglas and Malcolm X Boulevards to better understand their supply sources. The survey revealed that only one of the restaurants and grocery stores used the Bronx Terminal Market as their primary supplier. Almost all of the grocery stores surveyed said that they are currently purchasing the majority of their goods directly from West Africa or from two West African wholesale food distributors in New Jersey—Heritage Distributors International, Inc. and Makola African Market Imports are importers, distributors, and wholesalers of African food products located in Newark, New Jersey. Outside of the New York City area, they also distribute their products to New Jersey, Washington DC, Chicago, Houston, Minnesota, as well as California. Some of the West African specialty products typically include grains such as millet and sorghum, vegetables such as cocoyam and garden eggs, seeds and beans such as Egusi and Daddawa, and oils such as red palm oil and shea butter.

Similar to the grocery stores, West African restaurant owners also used the New Jersey wholesalers for some of their products as well as directly importing them from West Africa, and buying from the local West African groceries along West 116th Street. While some restaurants do buy products from the Bronx Terminal Market to stock their inventory, they generally make small purchases while waiting for the larger shipment to arrive from West Africa. Only one restaurant purchased all of its goods from the Bronx Terminal Market. However, that restaurant indicated that they are aware of other suppliers in the area that could be used in the absence of the Bronx Terminal Market. It is very likely that this business model is representative of other African restaurants and grocery stores located on West 125th Street.

Within the Bronx, there are approximately 16 African grocery stores located throughout the borough that deal in both wholesale and retail of West African specialty food items. Out of 10 respondents, approximately 40 percent used merchants in the Bronx Terminal Market to make their purchases, 30 percent imported directly from West Africa, and another 30 percent did a combination of both. In addition to the above retailers in the Bronx, there were two other wholesaler/retailers in other boroughs that sell African specialty foods: International Exotic Products, Inc. in Jamaica, Queens; and Osa Adolor African Market in Brooklyn.

As described in the preliminary assessment, the wholesale food industry businesses to be displaced represent about 4 percent of the wholesale food employment in the Bronx and 1 percent of the wholesale food employment in New York City. All of the foods sold at the Bronx Terminal Market, including West African specialty items, are available through other wholesale distributors and retailers in New York City, as well as in New Jersey. On a regional level, the Hunts Point Produce Market and Meat Market ship similar products throughout the northeast region. Even the more difficult to find West African specialty items are available regionally through other New York City wholesalers as well as two large wholesale distributors in New

Jersey whose products are shipped throughout the country. A telephone conversation with the New Jersey wholesale distributors revealed that all of the Bronx Terminal Market merchants that sell African specialty items make their purchases at one of the two New Jersey importers.

Similar to the regional level, the impact of the displaced businesses on local businesses and consumers is also not expected to be significant. Many of the West African businesses and grocery stores in northern Manhattan and the South Bronx either directly import their goods from West Africa or use wholesale distributors in New Jersey to stock their inventories. In addition, online research and telephone interviews confirmed that there are at least 16 African grocery stores located in the Bronx that deal in both wholesale and retail of West African specialty food items, as well as the two wholesale/retail purveyors of African foods and specialty products in Brooklyn and Queens. Although there are some restaurants and retailers of African foods who use the Bronx Terminal Market, it was not their only supply source. Thus, the direct displacement of African food merchants in the Bronx Terminal Market will not completely eliminate sources of African food products in the Bronx and other parts of New York City. All of the above factors combined with the availability of approximately 472,500 sf of ground-floor industrial space within the Bronx show that the Bronx Terminal Market businesses do not have a substantial economic value to the city or regional area and can be relocated without any great difficulty. Therefore, the direct displacement of the existing businesses on the project site would not result in significant adverse impacts, and no further analysis of direct business displacement is necessary.

EDC has hired a relocation consultant to provide assistance to the current market tenants of the project site. This is being done independently of the Proposed Project and is not subject to any discretionary approvals. EDC, Bronx Empowerment Zone, and the project sponsor will provide various benefits to assist tenants in their relocation efforts. The relocation package includes the following benefits:

- EDC will provide Bronx Terminal Market tenants payments of \$10 per square foot towards expenses;
- Tenants who relocate to a building within or near the Bronx Empowerment Zone will be eligible to borrow up to \$500,000, at 0 percent interest rate for a maximum of 10 years, for the purchase of fixtures and equipment or for working capital;
- The project sponsor will provide incentive payments equal to half of the net rental payments paid by each tenant and received by the project sponsor from the date the tenant accepts the relocation offer to the date the tenant vacates;
- EDC's relocation consultant will provide relocation services at no cost to Bronx Terminal Market tenants; and
- In addition, other government programs such as tax incentives, energy discounts, and financing programs are also available to eligible tenants.

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT: PROPERTY VALUES AND RENT [¼-MILE STUDY AREA]

As noted in the preliminary analysis, indirect business and institutional displacement is the involuntary displacement of businesses or institutions that results from a change in socioeconomic conditions created by a proposed action. Similar to indirect residential displacement, the issue for indirect business and institutional displacement is that an action would lead to increased property values and rents in the study area, making it difficult for some

categories of business or institutions to remain at their current locations. Indirect business and institutional displacement can result from a number of factors and conditions, but in this case the potential for change in economic activity would come from the concentration of a new large retail development and its potential to alter local and regional shopping patterns. This section considers whether the Proposed Project introduces enough of a new economic activity to alter existing economic patterns within the ¼-mile study area. While the Proposed Project would attract customers from a broad region that would primarily include the borough of the Bronx and northern Manhattan, it is the businesses in close proximity to the Proposed Project—in this case within the ¼-mile study area—that could be subject to indirect displacement pressures due to increased rents (as a result of new economic activities). The issue of competition as it relates to businesses within the ¼-mile study area (and the broader Primary Trade Area) is addressed in the competition analysis section of the detailed analysis.

EXISTING CONDITIONS

Economic Profile

As shown in Table 3-5, manufacturing employment in New York City has declined by approximately 29 percent since 1990. Data provided by the New York State Department of Labor (NYSDOL) indicates that the manufacturing sector lost almost 96,000 jobs in the City. During this same 10-year period, total private sector employment remained relatively stable, with a total of approximately 3 million private sector employees in the five boroughs in 1990 and again in 2000 (See Table 3-5). Wholesale trade lost approximately 27,000 employees (13 percent decrease) between 1990 and 2000 while Transportation, Communications, and Public Utilities (TCPU) and the FIRE sectors lost 14,000 (6.3 percent decrease) and 28,000 (5.5 percent decrease) employees each. The service sector was the only industry that experienced a significant increase in total employment, with a gain of almost 24 percent between 1990 and 2000.

In 2000, private sector employment in the Bronx was about 181,000—increasing by just over 6 percent from 1990 (see Table 3-5). Similar to New York City, employment categories in the Bronx with the highest number of employees in 2000 were services (101,600 employees), retail trade (30,800 employees) and FIRE (12,500 employees). Between 1990 and 2000, the greatest increase in total employment came from all other (29 percent) services (21 percent), and FIRE (10 percent). In contrast, the greatest decrease in total employment was experienced by the manufacturing industry (39 percent) followed by the construction sector (less than 13 percent).

Within the ¼-mile study area, total private sector employment in 2000 was just under 10,000 workers, compared to 10,200 in 1990. In 2000, the top three leading employers within the ¼-mile study area were services (5,056 workers), manufacturing (1,569 workers), and retail trade (1,206 workers). The 2.3 percent decrease in total employment in the ¼-mile study area is in contrast with the 6 and 5 percent increase in total employment in the Bronx and New York City as a whole. Similar to the Bronx, the manufacturing and construction sectors experienced a decline in total employment between 1990 and 2000. Although the decrease in manufacturing employment was greater in the Bronx (39 percent), employment in the construction sector decreased significantly more in the ¼-mile study area (65 percent) compared to the Bronx. In addition, retail trade and the FIRE industries also decreased in the ¼-mile study area by 39 and 66 percent, respectively. In contrast, the same industries increased their employment in the Bronx by almost 3 and 10 percent, whereas New York City experienced an increase of 11 percent in retail trade and a decrease of less than 6 percent in the FIRE category.

Table 3-5
Private Sector Employment: 1990-2000

	¼-Mile Study Area			Bronx			New York City		
	Employment		Percent Change	Employment		Percent Change	Employment		Percent Change
	1990	2000	1990-2000	1990	2000	1990-2000	1990	2000	1990-2000
Manufacturing	2,088	1,569	-24.9	18,000	10,900	-39.4	335,200	239,400	-28.6
Construction	1,193	414	-65.3	12,400	10,800	-12.9	109,000	117,000	6.9
TCPU	203	477	135.0	8,800	9,400	6.8	219,900	206,100	-6.3
Wholesale Trade	35	643	1737.1	12,000	12,000	0.0	208,300	181,300	-13.0
Retail Trade	1,989	1,206	-39.4	30,000	30,800	2.7	382,200	424,600	11.1
FIRE	1,689	569	-66.3	11,400	12,500	9.6	512,000	483,900	-5.5
Services	3,000	5,056	68.5	84,200	101,600	20.7	1,124,000	1,388,600	23.5
All Other	0	26	N/A	700	900	28.6	11,900	18,500	55.5
Total Industry	10,197	9,960	-2.3	177,500	188,900	6.4	2,902,900	3,059,400	5.4

Note: Employment numbers for some categories may be low due to suppression of data
Source: New York State Department of Labor

Categories that showed gains in employment within the ¼-mile study area include wholesale trade (1737 percent), TCPU (135 percent) and services (69 percent). The wholesale trade sector increased total employment from 35 workers in 1990 to approximately 643 workers in 2000. However, since 2000, total employment in wholesale trade decreased from 643 workers in 2000 to 258 by the 3Q of 2003—a decrease of almost 60 percent. Unlike the ¼-mile study area, wholesale trade in the Bronx remained unchanged while TCPU and services only increased by less than 7 and 21 percent, respectively. In contrast to the ¼-mile study area, TCPU and retail trade decreased by roughly 6 and 13 percent, respectively, while the service sector increased by approximately 24 percent.

Presence of categories of vulnerable businesses/institutions or employment

Businesses most vulnerable to indirect displacement due to increased rent are typically those businesses whose uses are less compatible with the economic trend which is creating upward rent pressures in the study area; i.e., those businesses that tend not to directly benefit (in terms of increased business activity) from the market forces generating the increases in rent. For example, if a neighborhood is becoming a more desirable place to live, uses that are less compatible with residential conditions (such as manufacturing) would be less able to afford increases in rent due to increases in property values compared to a neighborhood service use, such as a bank, which could see increased business activity from the increased residential presence.

Despite the decline in manufacturing employment between 1990 and 2000, the real estate market for industrial properties within the study area, and the Bronx as a whole, has been performing well. According to the real estate firm CB Richard Ellis, prices for industrial properties over the past few years have been increasing, with the vacancy rate currently at approximately 8 percent. Given the low vacancy rate in the face of increasing rents, the industrial businesses in the study area are not vulnerable to indirect displacement due to increased rents.

FUTURE WITHOUT THE PROPOSED ACTIONS

Conditions on the project site and within the study area in the future without the proposed actions would be as discussed above under "Direct Business Displacement."

PROBABLE IMPACTS OF THE PROPOSED ACTIONS

As previously discussed, the issue for indirect business displacement is that an action would increase property values and thus rents in the study area, making it difficult for some categories of business (i.e., industrial) to remain at their current locations. However, the overall trend is that manufacturing and wholesale employment has been decreasing and the industries as a whole represent a small percentage of total employment both in the Bronx and New York City. As shown in Table 3-5, manufacturing has decreased by almost 40 and 29 percents in the Bronx and New York City between 1990 and 2000, while wholesale employment was unchanged in the Bronx, but decreased by 13 percent in the city as a whole, respectively.

Despite the decline in manufacturing employment between 1990 and 2000, the real estate market for industrial properties within the Bronx has been performing well. According to the real estate firm CB Richard Ellis, prices for industrial properties over the past few years have been increasing, with the vacancy rate currently at approximately 8 percent. Current industrial rents in the study area are about \$8 to \$10 per square foot, which is comparable to other industrial areas in the Bronx. The low vacancy rate combined with high industrial rents makes it unlikely that the Proposed Project would create indirect displacement of industrial properties within the ¼-mile study area.

In addition to a strong industrial market, most of the industrial properties in the ¼-mile study area are currently within an M1-2 and M2-1 zoning districts. The uses permitted as-of-right within M1 zoning districts fall within Use Groups 4-14, 16, and 17. Of the use groups permitted, only Use Groups 6 and 12 include retail or service establishments such as book stores, music stores, toy stores, record stores, and stationery stores that could potentially locate in the ¼-mile study area. However, many retail uses, including furniture stores, department stores, appliance stores, and food stores, are limited in their size to no more than 10,000 square feet of floor area. Most Use Group 10 uses, including carpet, rug, linoleum or other floor covering stores, department stores, furniture stores, clothing or clothing accessory stores, television, radio or household appliance stores, and variety stores, all with no limitation on floor area, are permitted in M1 districts only by special permit of the City Planning Commission. All retail uses are limited by the Floor Area Ratio (FAR) requirement for the M1-2 zoning district, which limits building size to 2.0 FAR.

The retail uses in M2 zoning districts are generally limited to those included in Use Groups 6 and 12, including convenience retail or service establishments such as bakeries, barber shops, drug stores, grocery stores and supermarkets under 10,000 square feet, hardware stores, and liquor stores, among others (Use Group 6), and antique stores, music stores, book stores, and paint stores, among others (Use Group 12). Within M2 zoning districts, retail uses in Use Group 6C are limited to specific types of stores such as antique stores, art galleries, artist supply stores and picture framing stores, among others. Toy stores, furniture stores, and most apparel stores are not permitted in this zoning district.

In conclusion, the ¼-mile study area is not likely to experience indirect business displacement as a result of increased property values and rents. Current rents for industrial properties in the study area are comparable to other industrial areas in the Bronx such as the Hunts Point and Port Morris IPIPs. In addition, the potential for development of additional retail uses similar or complementary to the Proposed Project is severely limited by the presence of institutional uses east of the project site, Yankee Stadium to the north, the Harlem River to the west, the development constraints imposed by highway ramps, as well as the existing zoning in the study

area which would limit any potential impacts by the need for a discretionary action by the City Planning Commission.

INDIRECT BUSINESS DISPLACEMENT: COMPETITION

According to the Section 322.2 of the *CEQR Technical Manual*, development activity such as shopping facilities may attract sales from existing stores, and while these competitive socioeconomic impacts do not necessarily generate environmental concerns, they can become an environmental concern if they have the potential to affect neighborhood character by affecting the viability of neighborhood shopping areas. The amount and type of retail that would be introduced by the proposed actions—approximately 1.1 million gross square feet of retail—could potentially result in indirect displacement due to competition. Therefore, the section below presents an evaluation of whether potential indirect displacement from competition could result in significant adverse impacts.

DELINEATION OF THE TRADE AREA

As described in the *CEQR Technical Manual*, an analysis of the potential effects of competition should encompass a primary trade area from which the bulk of the new stores' sales are likely to be derived. As defined by the *Shopping Center Development Handbook*, published by the Urban Land Institute, trade areas for shopping centers similar in size to the Proposed Project generally extend 12 miles from the project site, and typically can be reached within a 30 minute drive. Shopping centers expect to draw 70 to 80 percent of their regular customers from this trade area.

Trade areas for major retail projects in New York City are typically smaller than the national standards cited in the *Shopping Center Development Handbook*, due primarily to the density of development in the New York Metropolitan region. A 12-mile radius from the project site in the South Bronx extends throughout the Bronx and into portions of every other New York City borough except Staten Island, as well as Westchester, Nassau, Bergen, and Hudson Counties. This would not be an appropriate trade area for the Proposed Project, because many of those traveling from the more distant reaches of a 12-mile trade area would be traveling past destination retail concentrations of equal or greater size to reach the project site. For example, residents of Nassau County are more likely to regularly visit closer retail destinations such as Roosevelt Field Mall in Garden City. In addition, for Queens and the New Jersey counties, the bridge and tunnel tolls would discourage regular shopping trips to the Bronx.

Thus, for purposes of analysis the "Primary Trade Area" for the Proposed Project is defined as the borough of the Bronx as well as Manhattan north of 110th Street, based on the regional attraction that would be created by 1.1 million square feet of retail (see Figure 3-1). The Proposed Project would likely draw a substantial number of customers from nearly every part of the Bronx because of its proximity to major roadways, its merchandise mix, and the regional attraction created by the development of more than 1 million square feet of retail space. It is expected that 70 to 80 percent of the Proposed Project's customer base would be drawn from the Primary Trade Area.

There is an expectation that within the Primary Trade Area, the Proposed Project would draw a large portion of its repeat business from residents that live closest to the project site, as a result of more convenient access, shorter travel time and distance, and propensity to take advantage of a major shopping resource close to home. Those living farther from the Proposed Project would likely have a greater selection of large shopping resources in closer proximity to their homes. For this reason, the competition analysis focuses on both the Primary Trade Area and a smaller

3-mile area surrounding the project site, referred to as the "3-Mile Trade Area." The 3-Mile Trade Area includes the portion of Manhattan north of 110th Street and the portion of Bronx County roughly bounded by East Fordham Road and Kingsbridge Road to the north, the Harlem River to the west, the East River to the south, and the Bronx River to the east (see Figure 3-2). The 3-Mile Trade Area spans several neighborhoods in Manhattan (Central Harlem, South Harlem, East Harlem, Washington Heights, and Inwood) and the Bronx (South Bronx and Central Bronx). The South Bronx includes neighborhoods south of the Cross Bronx Expressway, including Highbridge, Mount Eden, Concourse Village, Crotona Park East, Claremont, Morrisania, Bathgate, Longwood, Melrose, Mott Haven, Port Morris, and Hunts Point. Central Bronx covers the area north of the Cross Bronx Expressway and south of Gun Hill Road and includes Mount Hope, East Tremont, Bronx Park South, Tremont, Belmont, University Heights, Fordham, Bedford Park, Kingsbridge Heights, Norwood, and Van Cortlandt Village. The 3-Mile Trade Area includes all or portions of Manhattan Community Districts 9 through 12 and Bronx Community Districts 1 through 7.

EXISTING CONDITIONS

The following sections present demographic conditions in the Primary Trade Area and 3-Mile Trade Area, develop a profile of the retail sector, and provide data on overall employment, retail sales, and number of retail business establishments within the Primary Trade Area and 3-Mile Trade Area.

Demographic Profile

Demographic factors can affect retail market potential. Changes in the number of people living in a trade area can alter the characteristics of the potential customer pool, particularly in terms of household income that can affect how much households spend on retail purchases, as well as auto ownership which can affect where people shop. These demographic and household characteristics are discussed below for both the Primary Trade Area (Bronx County and the area north of 110th Street in northern Manhattan) and the 3-Mile Trade Area (see Figure 3-2), and are used to inform the discussion on potential impacts of the proposed Gateway Center at Bronx Terminal Market development.

Primary Trade Area

Population and Households. As of 2000, there were approximately 1.8 million people living in the Primary Trade Area, representing approximately 23 percent of the total population of New York City. Residents in the Primary Trade Area lived in 642,695 households, representing 21 percent of all households in the city (see Table 3-6). Total populations in the Bronx and Manhattan were approximately 1.3 and 1.5 million, respectively, in 2000.

Table 3-6
Population and Households, Primary Trade Area and New York City, 1990 and 2000

Area	1990		2000		Growth 1990-2000			
	Population	Households	Population	Households	Population	Households	% Growth in Population	% Growth in Households
Primary Trade Area	1,635,740	590,752	1,811,529	642,695	175,789	51,943	10.7%	8.8%
Bronx	1,203,789	424,112	1,332,650	463,212	128,861	39,100	10.7%	9.2%
Manhattan	1,487,536	716,422	1,537,195	738,644	49,659	22,222	3.3%	3.1%
Total New York City	7,322,564	2,819,401	8,008,278	3,021,588	685,714	202,187	9.4%	7.2%

Sources: U.S. Census Bureau, 1990 and 2000 Census, Summary File 1

The population in the Primary Trade Area has grown substantially in recent years. Between 1990 and 2000, the Primary Trade Area gained 175,789 people and 51,943 households. The rate of population growth in the Primary Trade Area (10.7 percent between 1990 and 2000) was similar to the Bronx, but outpaced the rate of growth in Manhattan and New York City overall. In contrast, the 8.8 percent rate of growth of households in the Primary Trade Area was slightly less than the Bronx (9.2 percent), but still higher than Manhattan (3.1 percent) and New York City (7.2 percent).

Household Income. In 1999, median household income for the Primary Trade Area, expressed in 2005 constant dollars (i.e., adjusted to account for inflation) was \$33,773—approximately \$11,046 lower than the citywide median of \$44,819 (see Table 3-7). The median household income in the Primary Trade Area decreased by 7.4 percent or \$2,706 between 1989 and 1999 (in constant dollars). This decrease in median household income was higher than the 5.3 percent decrease in New York City overall but similar to the Bronx where median household income decreased by 7.2 percent. In contrast, median household income in Manhattan increased from \$51,176 per year in 1989 to approximately \$55,045 per year in 1999—an increase of 7.6 percent or \$3,869 per year.

Table 3-7
Median Household Income, Primary Trade Area and New York City,
1989 and 1999

Area	1989	1999	Absolute Change 1989-1999	Percent Change 1989-1999
Primary Trade Area	\$36,479	\$33,773	\$(2,706)	-7.4%
Bronx	\$34,809	\$32,317	\$(2,492)	-7.2%
Manhattan	\$51,176	\$55,045	\$3,869	7.6%
Total New York City	\$47,307	\$44,819	\$(2,488)	-5.3%
Note: All values are expressed in 2005 constant dollars				
Sources: U.S. Census Bureau, 1990 and 2000 Census, Summary File 3				

Vehicle Availability. Vehicle availability can affect shopping habits. Households with access to at least one vehicle are generally more likely to travel farther distances to comparison shop and make certain household purchases than households without access to a car. While this pattern is more typically observed for shopping goods or department store type merchandise, it is also applicable to food shopping or supermarket purchases. For example, a household with access to a car may drive to a wholesale club or major supermarket several miles from home to stock-up on food products or household supplies to serve their needs for a week or more. Households without access to a car are more likely to shop at the grocery store closest to their homes, and may be more likely to make more frequent trips, buying smaller quantities of food per trip than driving households.

According to the 2000 Census, nearly two-thirds of the households in the Primary Trade Area (64.5 percent) did not have access to a car (see Table 3-8), significantly higher than the citywide average where about 56 percent of the households do not have access to a car. Only about one-quarter of the households in the Primary Trade Area had access to at least one car, which is lower than the citywide average of about 32 percent of the households with access to one car. In

general households in the Primary Trade Area have less access to cars than households in the city as a whole and in the Bronx. Households in Manhattan tend to have even less access to a car, principally due to the expense of garaging a car or the inconvenience of parking a car on the street.

Table 3-8
Vehicles Available for Use by Household Members, Primary Trade Area and New York City, 2000

Area	No Car		One Car		Two Cars		Three or More Cars	
	HH	% of HH	HH	% of HH	HH	% of HH	HH	% of HH
Primary Trade Area	414,773	64.5%	159,624	24.8%	38,530	6.0%	9,530	1.5%
Bronx	285,309	61.6%	133,331	28.8%	35,841	7.7%	8,731	1.9%
Manhattan	572,094	77.5%	149,476	20.2%	13,172	1.8%	3,902	0.5%
Total New York City	1,682,946	55.7%	955,165	31.6%	305,267	10.1%	78,210	2.6%

Sources: U.S. Census Bureau, Census 2000, Summary File 3

3-Mile Trade Area

Population and Households. As of 2000, there were approximately 1 million people living in 357,481 households within the 3-Mile Trade Area, comprising approximately 13 percent and 12 percent of all New York City residents and households, respectively. As shown in Table 3-9, total population and total households in the 3-Mile Trade Area increased by 10 and 8.9 percent respectively between 1990 and 2000—an increase of 94,659 residents and 29,128 households.

Table 3-9
Population and Households, 3-Mile Trade Area and New York City, 1990 and 2000

Area	1990		2000		Growth 1990-2000			
	Population	Households	Population	Households	Population	Households	% Growth in Population	% Growth in Households
3-Mile Trade Area	947,172	328,353	1,041,831	357,481	94,659	29,128	10.0%	8.9%
Bronx	1,203,789	424,112	1,332,650	463,212	128,861	39,100	10.7%	9.2%
Manhattan	1,487,536	716,422	1,537,195	738,644	49,659	22,222	3.3%	3.1%
Total New York City	7,322,564	2,819,401	8,008,278	3,021,588	685,714	202,187	9.4%	7.2%

Sources: U.S. Census Bureau, 1990 and 2000 Census, Summary File 1

Similar to the Primary Trade Area, the increase in residents and households in the 3-Mile Trade Area was higher than New York City overall. The Bronx as a whole showed the highest increase in total population (10.7 percent) and households (9.2 percent); Manhattan as a whole had the lowest rate of increase in both population and households.

Household Income. In 1999, median household income for the 3-Mile Trade Area, expressed in 2005 constant dollars (i.e., adjusted to account for inflation) was \$26,468—significantly lower than the citywide median of \$44,819 (see Table 3-10). However, between 1989 and 1999, the median household income the 3-Mile Trade Area increased by 2.4 percent, a better condition than the decline in household income experienced by households in the Bronx as a whole and throughout New York City in general.

Table 3-10

**Median Household Income, 3-Mile Trade Area and New York City,
1989 and 1999**

Area	1989	1999	Absolute Change 1989- 1999	Percent Change 1989-1999
3-Mile Trade Area	\$25,855	\$26,468	\$613	2.4%
Bronx	\$ 34,809	\$ 32,317	\$ (2,492)	-7.2%
Manhattan	\$ 51,176	\$ 55,045	\$ 3,869	7.6%
Total New York City	\$ 47,307	\$ 44,819	\$ (2,488)	-5.3%
Note: All values are expressed in 2005 constant dollars.				
Sources: U.S. Census Bureau, 1990 and 2000 Census, Summary File 3				

Vehicle Availability. According to the 2000 Census, approximately 3 out of 4 households in the 3-Mile Trade Area did not have access to a car (see Table 3-11). There were more residents without a car in the 3-Mile Trade Area compared to the Primary Trade Area, where 64.5 percent of the households were without access to a car. Similarly, there were proportionally more households without access to a car in the 3-Mile Trade Area than in the Bronx as a whole, and only slightly less than in Manhattan, where access to a car is traditionally low. Vehicle availability is significantly lower than in the city overall.

Table 3-11

**Vehicles Available for Use by Household Members, 3-Mile Trade Area and New
York City, 2000**

Area	No Car		One Car		Two Cars		Three or More Cars	
	HH	% of HH	HH	% of HH	HH	% of HH	HH	% of HH
3-Mile Trade Area	271,346	75.9%	61,820	17.3%	7,617	2.1%	2,388	0.7%
Bronx	285,309	61.6%	133,331	28.8%	35,841	7.7%	8,731	1.9%
Manhattan	572,094	77.5%	149,476	20.2%	13,172	1.8%	3,902	0.5%
Total New York City	1,682,946	55.7%	955,165	31.6%	305,267	10.1%	78,210	2.6%
Sources: U.S. Census Bureau, Census 2000, Summary File 3								

Employment Profile

Primary Trade Area

Within the Primary Trade Area, employment trends were collected for the fourth quarters of 2000 and 2003. Table 3-12 below shows that total employment in the Primary Trade Area increased by approximately 0.7 percent during the period, from about 217,000 in 2000 to almost 218,500 in 2003. The employment increase in the Primary Trade Area was due to the 1.9 percent employment growth in Bronx County—employment in the Manhattan portion of the Primary Trade Area declined slightly over the three-year period. Employment for all of Manhattan and New York City decreased by 7.5 percent and 4.7 percent, respectively.

Gateway Center at Bronx Terminal Market DEIS

Health care and social services was the top employer in the Primary Trade Area, with almost 77,000 employees in 2003, or 35 percent of total employment, followed by retail trade (over 27,000 employees, 12.5 percent of total employment) and other services (over 12,000 employees). Employment in retail trade remained relatively constant over the three-year period, while the construction, manufacturing, and information sectors experienced significant decreases in employment. Notable employment increases were in the finance and insurance, administration and support/waste management/remediation services, and accommodation and food services sectors.

Table 3-12
Private Sector Employment Trends Within Primary Trade Area

Employment Category	4Q 2000	4Q 2003	2000–2003 Percent Change
Construction	11,448	10,127	-11.5
Manufacturing	10,969	9,020	-17.8
Transportation & Warehousing	4,544	4,564	0.4
Wholesale Trade	10,412	9,851	-5.4
Retail Trade	27,144	27,254	0.4
Information	4,927	4,271	-13.3
Finance & Insurance	3,184	3,736	17.3
Real Estate & Rental Listings	13,155	12,490	-5.1
Professional, Scientific & Technical Services	4,805	4,913	2.2
Management of Companies & Enterprises	1,260	1,067	-15.3
Admin & Support & Waste Mgmt. & Remediation Services	7,414	8,766	18.2
Educational Services	16,211	16,029	-1.1
Health Care & Social Services	75,672	76,732	1.4
Arts, Entertainment & Recreation	3,127	2,928	-6.4
Accommodation & Food Services	11,653	12,811	9.9
Other Services	10,319	12,024	16.5
Unclassified	701	1,839	162.3
Primary Trade Area Total Employment	216,945	218,422	0.7
Bronx County	188,900	192,400	1.9
Manhattan	1,931,400	1,786,900	-7.5
NYC	3,059,400	2,914,300	-4.7
Note:	Employment data for the Primary Trade Area includes private sector employment for Manhattan zip codes 10027, 10030, 10031, 10032, 10033, 10035, 10037, 10039 and all of Bronx County.		
Source:	4thQ 2000 & 2003 New York State Department of Labor.		

3-Mile Trade Area

Similar to the Primary Trade Area, employment trends for the 3-Mile Trade Area were collected for the fourth quarters of 2000 and 2003. Table 3-13 below shows that total employment in the 3-Mile Trade Area increased by approximately 2.2 percent during the period, from about 75,800 in 2000 to almost 77,500 in 2003. Bronx County also experienced a slight increase of 1.9 percent, from 189,000 employees in 2000 to 192,000 employees in 2003.

Health care and social services was the top employer in the 3-Mile Trade Area, with almost 22,000 employees in 2003, followed by retail trade (14,000 employees) and other services

(7,000 employees). Retail employment was a larger percentage of the total employment in the 3-Mile Trade Area (17.9 percent) compared to the Primary Trade Area (12.5 percent).

However, five employment categories experienced substantial increases in job creation between 2000 and 2003—management of companies and enterprises (133 percent), unclassified (83 percent), finance and insurance (70 percent), other services (53 percent), and administration and support and waste management and remediation services (51 percent). The three employment categories within the 3-Mile Trade Area that showed a significant decrease in total employment were arts, entertainment, and recreation (-73.1 percent), manufacturing (-63.0 percent), and information (-57.2 percent).

**Table 3-13
Private Sector Employment Trends Within 3-Mile Trade Area**

Employment Category	4Q 2000	4Q 2003	2000–2003 Percent Change
Construction	3,132	3,826	22.2
Manufacturing	2,770	1,025	-63.0
Transportation & Warehousing	679	654	-3.7
Wholesale Trade	1,857	1,694	-8.8
Retail Trade	14,062	13,901	-1.1
Information	722	309	-57.2
Finance & Insurance	931	1,580	69.7
Real Estate & Rental Listings	6,542	6,422	-1.8
Professional, Scientific & Technical Services	2,703	2,572	-4.8
Management of Companies & Enterprises	88	205	133.3
Admin & Support & Waste Mgmt. & Remediation Services	3,269	4,950	51.4
Educational Services	5,250	4,382	-16.5
Health Care & Social Services	22,873	21,761	-4.9
Arts, Entertainment & Recreation	542	146	-73.1
Accommodation & Food Services	5,136	5,848	13.9
Other Services	4,661	7,143	53.3
Unclassified	589	1,076	82.7
3-Mile Trade Area Total Employment	75,806	77,494	2.2
Bronx County	188,900	192,400	1.9
Manhattan	1,931,400	1,786,900	-7.5
NYC	3,059,400	2,914,300	-4.7
Note:	Employment data for the 3-Mile Trade Area includes private sector employment for Manhattan zip codes 10027, 10030, 10031, 10032, 10033, 10035, 10037, 10039 and Bronx zip codes 10451, 10452, 10453, 10454, 10455, 10456, 10457, 10458, 10459, 10460, and 10468.		
Source:	4thQ 2000 & 2003 New York State Department of Labor.		

Retail Profile

The retail sector data is divided into four major categories that define the types of goods found within the areas. The four major categories include shopping goods, convenience goods, eating and drinking, and building materials. The shopping goods category includes merchandise that is typically sold in department stores, both full-line and discount department stores. The convenience goods category contains food and housekeeping products that are typically sold in supermarkets and wholesale clubs. The proposed Gateway Center at Bronx Terminal Market would most likely include a mix of shopping goods stores and convenience goods stores. The Proposed Project is expected to consist of approximately 5 large-scale retail stores totaling

Gateway Center at Bronx Terminal Market DEIS

±755,990 gsf; approximately 5 medium-scale retail stores totaling ±263,000 gsf; and miscellaneous small-scale retail stores/restaurants totaling ±50,000 gsf.

Shopping Goods

As shown in Table 3-14, there were 1,640 shopping goods stores located in the Primary Trade Area in 2002. The largest proportion (49 percent) was clothing and accessory stores. Another 200 stores (12 percent) sold furniture and home furnishings, and another 200 (12 percent) were general merchandise stores.

Sales at shopping goods stores in the Primary Trade Area totaled approximately \$2.1 billion (in 2005 dollars) in 2002, representing approximately 27 percent of the total retail sales in the trade area. The majority of shopping goods sales came from the clothing and accessory stores (\$928.8 million) and general merchandise stores (\$543.0 million). Another \$237.3 million in sales was generated by furniture and home furnishing stores. Although department stores accounted for only 4 percent of all general merchandise establishments, they generated approximately 71 percent of all general merchandise sales.

Table 3-14

Estimated Shopping Goods Sales and Number of Establishments: Bronx Terminal Market 3-Mile Trade Area and Primary Trade Area, 2002

NAICS	Business Description	3-Mile Trade Area		Primary Trade Area	
		No. of Establishments	Sales (Millions)	No. of Establishments	Sales (Millions)
	Total Retail	3,936	\$ 4,748.3	6,253	\$ 7,651.6
452	General Merchandise Stores	139	\$ 365.7	200	\$ 543.0
4521	Department Stores	6	\$ 264.1	8	\$ 384.7
448	Clothing & Accessory Stores	572	\$ 710.7	806	\$ 928.8
442	Furniture & Home Furnishings Stores	132	\$ 170.6	200	\$ 237.3
443	Electronics & Appliance Stores	91	\$ 74.6	157	\$ 180.0
453	Miscellaneous Shopping Goods	184	\$ 151.2	277	\$ 214.9
	TOTAL SHOPPING GOODS	1,119	\$1,472.8	1,640	\$ 2,104.0
Notes: All dollar values are presented in 2005 dollars.					
Sources: 2002 Census of Retail Trade and Claritas, Inc. 2004 Retail SIC Summary data.					

Within the 3-Mile Trade Area, shopping goods sales totaled approximately \$1.5 billion, representing approximately 31 percent of the total retail sales in the area. A majority of shopping goods sales came from clothing and accessory stores (\$710.7 million); general merchandise stores (\$365.7 million); and furniture and home furnishings (\$170.6 million). Within the general merchandise stores, department store sales made up about 72 percent of the \$365.7 million in sales.

There were approximately 1,119 shopping goods establishments located within the 3-Mile Trade Area in 2004. Of those, clothing and accessory stores made up about 47 percent (527 businesses) followed by miscellaneous shopping goods (184 businesses) and general merchandise stores (139 businesses).

Convenience Goods

There were approximately 2,271 convenience goods stores located in the Primary Trade Area in 2002 (see Table 3-15). Approximately 65 percent of those stores were food stores, and the majority of food stores (80 percent) were supermarkets and grocery stores as opposed to smaller businesses such as convenience stores, meat and fish markets, bakeries, and candy shops.

Retail sales at convenience goods stores in the Primary Trade Area totaled approximately \$3.0 billion in 2004. Approximately 53 percent of the convenience goods sales (\$1.6 billion) were attributable to food stores, and 93 percent of all food sales (\$1.5 billion) were attributable to supermarkets and grocery stores.

The 3-Mile Trade Area contained approximately 1,533 convenience goods businesses in 2002, of which 980 (or 64 percent) were food stores. Supermarkets and grocery stores represent approximately 95 percent of all food stores, with 874 establishments located within the 3-Mile Trade Area.

In 2002, the 3-Mile Trade Area had approximately \$2.0 billion in convenience goods sales that accounted for about 42 percent of all retail sales in the trade area. Within the convenience goods category, 58 percent of the sales or \$1.1 billion came from businesses selling food products such as meat, seafood, fruit and vegetables, dairy products, and baked goods. With 95 percent of food store sales, grocery stores and supermarkets made up approximately \$1.01 billion of the \$1.15 billion in estimated food sales. The second largest contributors to convenience goods sales were health and personal care stores, which made \$735 million in sales in 2002.

Table 3-15

Estimated Convenience Goods Sales and Number of Establishments: Bronx Terminal Market 3-Mile Trade Area and Primary Trade Area, 2002

NAICS	Business Description	3-Mile Trade Area		Primary Trade Area	
		No. of Establishments	Sales (Millions)	No. of Establishments	Sales (Millions)
	Total Retail	3,936	\$ 4,748.3	6,253	\$ 7,651.6
445	Food Stores	980	1,147.7	1,467	1,617.6
4451 1	Supermarkets & Grocery Stores	874	1,093.4	1,177	1,502.8
446	Health & Personal Care Stores	399	735.3	568	1,273.5
4453	Beer, Wine, & Liquor Stores	99	78.0	152	118.1
4531	Florists	31	10.3	51	14.9
4512 12	News Dealers & Newsstands	24	NA	33	NA
	TOTAL CONVENIENCE GOODS	1,533	1,971.3	2,271	3,024.1
Note: All dollar values are presented in 2005 dollars. NA = Not Available; the 2002 Census of Retail Trade suppresses sales data for categories with low establishment counts.					
Source: 2002 Census of Retail Trade and Claritas, Inc. 2004 Retail SIC Summary data					

Eating & Drinking

The eating and drinking category includes retail establishments engaged in selling prepared food and drinks for consumption on the premises. As shown in Table 3-16, there were approximately 1,833 eating and drinking establishments located in the Primary Trade Area in 2002. Sales at these stores totaled approximately \$966 million, representing about 13 percent of total retail sales in the trade area.

Within the 3-Mile Trade Area, approximately 1,173 eating and drinking establishments had sales of about \$681 million in 2002. This represents almost 14 percent of total retail sales in the 3-Mile Trade Area. Sales at eating places such as fast food and sit-down restaurants made up the vast majority (close to 99 percent) of sales at eating and drinking places.

Table 3-16
Estimated Eating & Drinking Sales and Number of Establishments: Bronx Terminal Market 3-Mile Trade Area and Primary Trade Area, 2002

		3-Mile Trade Area		Primary Trade Area	
NAICS	Business Description	No. of Establishments	Sales (Millions)	No. of Establishments	Sales (Millions)
	Total Retail	3,936	\$ 4,748.3	6,253	\$ 7,651.6
722	Eating & Drinking Places	1,173	\$ 680.9	1,833	\$ 966.0
Note: All dollar values are presented in 2005 dollars.					
Source: 2002 Census of Retail Trade and Claritas, Inc. 2004 Retail SIC Summary data.					

Building Materials

The building materials group includes retail establishments primarily engaged in selling lumber and other building materials; paint, glass, and wallpaper; hardware; nursery; lawn and garden supply; and mobile homes. As shown in Table 3-17, there were approximately 185 building materials and garden supply stores located in the Primary Trade Area in 2002, and sales at those stores totaled approximately \$332 million. Approximately 44 percent (\$146 million) of the sales came from lumber and other building materials. Sales data for other sub-categories could not be presented for the northern Manhattan portion of the trade areas due to low establishment count.

Table 3-17

Estimated Building Materials Sales and Number of Establishments: Bronx Terminal Market 3-Mile and Primary Trade Area, 2002

NAICS	Business Description	3-Mile Trade Area		Primary Trade Area	
		No. of Establishments	Sales (Millions)	No. of Establishments	Sales (Millions)
	Total Retail	3,936	\$ 4,748.3	6,253	\$ 7,651.6
444	Building Materials, Garden Supply, & Mobile Homes	125	164.8	185	332.0
44419	Lumber & Other Building Materials	35	77.4	61	146.1
44412	Paint & Wallpaper	9	NA	12	NA
44413	Hardware Stores	76	NA	105	NA
4442	Retail Nurseries & Garden	1	0.5	4	1.6
Note: All dollar values are presented in 2005 dollars. NA = Not Available; the 2002 Census of Retail Trade suppresses sales data for categories with low establishment counts.					
Source: 2002 Census of Retail Trade and Claritas, Inc. 2004 Retail SIC Summary data.					

Within the smaller 3-Mile Trade Area, approximately 125 building materials and garden supply stores had sales totaling approximately \$164.8 million in 2002. About 47 percent (\$77.4 million) of those sales came from selling lumber and other building materials.

Approximately 68 percent of all building materials and garden supply stores within the Primary Trade Area are located within the smaller 3-Mile Trade Area. This was the largest proportion among all of the major retail categories; overall, approximately 63 percent of all retail stores in the Primary Trade Area are located within the smaller 3-Mile Trade Area.

Capture Rates

Capture rates are measures of business activity in a trade area, indicating the percentage of consumer expenditures for retail goods that are being "captured" by retailers in the trade area. Typically, a primary trade area generates 70 to 80 percent of the sales in a shopping center or major retail concentration.¹ If the total sales in the trade area are much lower than the area's expenditure potential, then residents are spending a large portion of their available dollars outside of the trade area, and the capture rate is low. If sales are closer in value to expenditure potential, then area residents are likely spending a higher proportion of their available resources within the area, and the capture rate is high. However, capture rates are also affected by money flowing into an area from people who do not live in that area, such as employees or visitors. Some of the sales in the Bronx, for example, may be from people living in other New York City boroughs, Westchester County, and elsewhere, shopping at stores in the Bronx. It is not possible to know exactly who (residents or nonresidents) is spending money in the area. Therefore, a high capture rate may be indicative of an area with a high proportion of destination retail, i.e., retail that will attract customers from greater distances in order to compare price, quality, and the selection of merchandise.

¹ Shopping Center Development Handbook, Third Edition, Urban Land Institute, Washington, D.C., 1999.

Despite these uncertainties about the origin of sales in any particular trade area, comparing expenditure and sales data provides a good indication of how much of a trade area's household expenditure potential is being captured by trade area retailers. Capture rates for the Primary Trade Area and 3-Mile Trade Area are presented below.

Primary Trade Area

As shown in Table 3-18, total retail sales for the categories analyzed in the Primary Trade Area were estimated to be \$6.3 billion. Retail expenditures for those categories, on the other hand, were roughly \$13.8 billion, implying that trade area stores are capturing only about 46 percent of the existing expenditure potential. This indicates that Primary Trade Area residents are making a substantial portion of their retail purchases outside of the area, which may include Manhattan, Queens, and Brooklyn, as well as Westchester County and New Jersey. Anecdotal information from residents in the Primary Trade Area indicates a pattern of shopping in big box retailers, including department stores and wholesale clubs, located just outside the Primary Trade Area, since many of these retailers do not currently have a presence in the Bronx or northern Manhattan.

Table 3-18
Estimated Capture Rates for Competitive Retail Stores
in the Primary Trade Area, 2005

Category	Primary Trade Area Retail Expenditure (Millions of 2005 Dollars)	Primary Trade Area Retail Sales (Millions of 2005 Dollars)	Capture Rate
Shopping Goods	\$ 4,518	\$ 2,104	46.6%
<i>Department Stores</i>	\$ 1,424	\$ 385	27.0%
Convenience Goods	\$ 6,123	\$ 3,024	49.4%
<i>Food Stores</i>	\$ 3,551	\$ 1,503	42.3%
Eating & Drinking	\$ 2,743	\$ 966	35.2%
Building Materials	\$ 382	\$ 186	48.7 %
Total	\$ 13,766	\$ 6,280	45.6%
Notes: All dollar values are presented in 2005 dollars			
Sources: Retail expenditure data from Claritas, Inc. 2004 Retail SIC Summary data and 2004 Consumer Spending Patterns data; retail sales based on 2002 Census of Retail Trade and Clantas, Inc. 2004 Retail SIC Summary data.			

The overall capture rate for convenience goods in the Primary Trade Area (49.4 percent) was slightly higher than it was for shopping goods (46.6 percent) or eating and drinking places (35.2 percent), and the capture rate for food stores was 42.3 percent. These are unusually low rates for convenience goods and food stores, since in general, residents are likely to buy a large proportion of their groceries, personal care items, housekeeping supplies, and over-the-counter prescription drugs at stores close to home. A convenience goods capture rate of only 49 percent indicates that Primary Trade Area residents are making a substantial proportion of their convenience goods purchase outside of the area.

Similarly, department stores of any type, i.e., full-line, off-price or discount, have little presence in the Primary Trade Area. Currently the existing department stores are capturing 27 percent of the expenditure potential for department stores in the Primary Trade Area. A comparison of data

from the Census of Population and the Census of Retail Trade can help explain the substantial outflow of department store expenditures from the Primary Trade Area. The data indicate that there is one department store for every 225,000 residents in the Primary Trade Area. In comparison, neighboring Westchester County has one department store for every 55,000 residents. Bergen County, New Jersey, a short ride across the George Washington Bridge from the Primary Trade Area has one department store for every 40,800 residents. Even within New York City the ratios of department stores per capita are higher. For example, Staten Island has one department store for every 92,000 residents, and Queens one department store for every 185,000 residents.

The sources and organization of the retail expenditure data used for the analysis of building materials makes it difficult to directly compare sales and expenditure potential in this category. However, two broad categories of household expenditures—"household repairs" and "miscellaneous household goods" capture most of the goods that would be included in the building materials category (as well as some services that would not be included), and provide a general indication of how much money households in the Primary Trade Area are spending on building materials.¹ Based on 2002 Census of Retail Trade data, sales for building materials typically purchased by household consumers in the Primary Trade Area totaled approximately \$186 million (in 2005 dollars)—less than half the expenditure potential. The remaining retail sales in the building material category (approximately \$146 million) are comprised of lumber and other building materials, a vast majority of which is purchased by contractors, whose expenditures are not included in the household expenditure-based figure of \$186 million. This is likely due to the location of several large building materials and contractor supply retailers in the Primary Trade Area.

3-Mile Trade Area

The capture rates for the 3-Mile Trade Area were higher than the capture rates for the Primary Trade Area. This is likely attributable to the presence of major retail concentrations in the 3-Mile Trade Area, and the comparatively low percentage of auto ownership among the households in the 3-Mile Trade Area. As described earlier, according to the 2000 Census, 24.1 percent of households in the 3-Mile Trade Area have access to at least one car, compared to 38.4 percent of households in the Bronx as a whole. Key retail concentrations in the Bronx portion of the 3-Mile Trade Area include Fordham Road, East 138th Street, East 161st Street, including the Concourse Plaza Shopping Center and The Hub in the vicinity of East 149th Street. Major shopping centers in the Manhattan portion of the 3-Mile Trade Area include East 116th Street and Third Avenue in East Harlem, West 116th and West 181st Streets, East and West 125th Street, Broadway, Adam Clayton Powell, Frederick Douglass, and Malcolm X Boulevards in Central Harlem, and Dyckman Street in northern Manhattan. In addition, because of the intensity of retail in some of these areas, and their identity with particular ethnic and cultural groups, such as the Hispanic community in the East Harlem, the West African community in Central Harlem, and the Dominican community in Washington Heights, these concentrations of retail stores likely draw a substantial number of shoppers from outside of the 3-Mile Trade Area.

¹ The household repairs category includes expenditures on items such as construction materials, electric supplies, hard surface floor labor and materials, landscaping materials, paint and wallpaper supplies, and plumbing and water heater labor and materials. The miscellaneous household equipment category includes expenditures on power tools, hand tools, fresh flowers and potted plants, outdoor equipment, lawn and garden supplies, rental and repair of lawn mowing equipment and yard machinery

As shown in Table 3-19, the overall retail capture rate for the 3-Mile Trade Area is 58 percent, approximately 12.5 percentage points higher than in the larger Primary Trade Area. Still, the capture rates indicate that residents of the 3-Mile Trade Area are making approximately 36.5 percent of their shopping goods purchases and 41.2 percent of their convenience goods purchases outside of the 3-Mile Trade Area. Unlike the Primary Trade Area, the 3-Mile Trade Area is capturing a greater proportion of shopping goods spending potential than convenience goods spending potential. In large part this is the result of several major retail concentrations within the 3-Mile Trade Area that offer large selections of shopping goods stores, particularly The Hub and Fordham Road, as well as the presence of 6 of the 8 department stores located in the Primary Trade Area.

Table 3-19
Estimated Capture Rates for Competitive Retail Stores
in the 3-Mile Trade Area, 2005

Category	3-Mile Retail Expenditures (Millions of 2005 Dollars)	3-Mile Retail Sales (Millions of 2005 Dollars)	Capture Rate
Shopping Goods	\$ 2,319	\$ 1,473	63.5%
<i>Department Stores</i>	\$ 747	\$264	35.3%
Convenience Goods	\$ 3,350	\$ 1,971	58.8%
<i>Food Stores</i>	\$ 1,986	\$ 1,093	55.0%
Eating & Drinking	\$ 1,425	\$ 681	47.8%
Total	\$ 7,095	\$ 4,125	58.1%
Note: All dollar values are presented in 2005 dollars			
Source: Retail expenditure data from Claritas, Inc. 2004 Retail SIC Summary data and 2004 Consumer Spending Patterns data; retail sales based on 2002 Census of Retail Trade and Claritas, Inc. 2004 Retail SIC Summary data.			

The 3-Mile Trade Area is capturing a higher amount of food store sales—55.0 percent—within the Primary Trade Area, which as a whole is capturing 42.3 percent of food store sales. This higher food store capture rate is partially attributable to the presence of several supermarkets along the eastern and northern borders of the 3-Mile Trade Area, which are patronized by non-3-Mile Trade Area residents as well as 3-Mile Trade Area residents, thereby driving up the 3-Mile Trade Area food sales. These include three large supermarkets, specifically an Associated Supermarket on Jerome Avenue near Fordham Road, Pathmark on East 174th Street near the Sheridan Expressway, and Western Beef near the intersection of Southern Boulevard and Boston Road, as well as four smaller supermarkets, including a C-Town (Southern Boulevard and Longwood Avenue), and Fine Fare (East 163rd Street just west of the Bruckner Expressway) in the eastern portion of the study area, and a C-Town (University Avenue near West 184th Street) and a Bravo supermarket on Valentine Avenue south of Fordham Road in the northern portion of the study area.

A capture rate was not estimated for the building materials category within the 3-Mile Trade Area, since the Proposed Project would likely include a home improvement store that would draw the vast majority of its market from outside the 3-Mile Trade Area. Those building materials stores currently located in the 3-Mile Trade Area deal primarily with contractors, building superintendents, and building maintenance staff. These stores include, among others,

Tiffany Lumber on East 165th Street, Bruckner Lumber at 259 Bruckner Boulevard, Starlite Paint & Varnish at 724 East 140th Street, and American Building Supply at 150 Bruckner Boulevard, Butler Lumber at 2311 Third Avenue near East 125th Street, and Wood-O-Rama at 238 West 108th Street in Manhattan just outside the Primary Trade Area. All of these stores primarily sell construction-related products such as lumber, sheetrock, doors, windows, flooring and roofing, etc., and attract professional builders and maintenance contractors from a catchment area that is likely to be broader than the 3-Mile Trade Area.

In most cases, contemporary home improvement stores are geared to “do-it-yourself” households with the need to improve homes and apartments that they own. Apartment renters are less likely to purchase home improvement items, such as sheetrock, flooring, or bathroom and kitchen fixtures. Within the 3-Mile Trade Area home ownership is extremely low, i.e., 6.9 percent, compared to 16.0 percent in the Primary Trade Area, and 30.2 percent in the city as a whole. In addition, residents in the 3-Mile Trade Area have relatively low incomes, approximately \$26,500 compared to \$33,800 in the Primary Trade Area and \$44,819 in the city as a whole. It is anticipated that the customer base for the home improvement store in the Proposed Project would come principally from the portions of Primary Trade Area outside the 3-Mile Trade Area, including neighborhoods in the north Bronx, such as Riverdale and Fieldston, and in northern Manhattan, such as Inwood, where home ownership and incomes are higher. The project site is readily accessible to these neighborhoods via the Major Deegan Expressway and the Harlem River Drive.

Major Retail Concentrations in the 3-Mile Trade Area

Surveys of major retail concentrations in the trade area were conducted in June 2004 and June 2005 to determine the composition, character, and condition of the existing retail inventory. These field surveys helped identify retail concentrations that could possibly be affected by the Proposed Project, including those that are more convenience- or neighborhood-oriented, those with larger proportions of shopping goods, and those more specialized in nature, such as primarily selling to ethnic or cultural markets. A total of 19 major retail concentrations were identified within the 3-Mile Trade Area covering portions of the Central and South Bronx and northern Manhattan. These concentrations, shown in Figure 3-2, were surveyed in detail, i.e., door-to-door, to provide a baseline of retail conditions for the impact analysis.

The survey data is organized according to retail codes of SIC established by the U.S. Department of Commerce, Bureau of the Census, that categorizes establishments as shopping goods, convenience goods, neighborhood services, building materials, auto-related trade, and vacant stores. Examples of shopping goods stores include: general merchandise, or goods commonly found in department stores, including discount department stores, such as 99 cents stores; apparel and accessories, including men’s, women’s, children’s, and family clothing and shoes; furniture and home furnishings, including furniture and floor coverings, home furnishings, household appliances, TV, radio, electronics, records and tapes, computers and software; and miscellaneous shopping goods, such as sporting goods, books, stationery, and jewelry. Examples of convenience goods stores include a variety of food stores, such as supermarkets, grocery stores, bakeries, meat and fish markets, etc., as well as drug stores and newsstands.

138th Street (Between Alexander and Jackson Avenues). As shown in Table 3-20, 138th Street in the Bronx has a total of 153 storefronts between Alexander Avenue to the west and Jackson Avenue to the east. This retail strip primarily serves the surrounding residential community with convenience goods and neighborhood services that together account for nearly half of the total storefronts. Retail activity is interrupted by large public housing projects, including the Mill

Brook Houses and the John Purroy Mitchell Houses. Of the 35 convenience goods stores that represent 23 percent of all storefronts, 26 are food stores, including 16 small groceries and bodegas, and only 1 supermarket. Neighborhood service establishments represent about 26 percent of all storefronts on this strip, and primarily provide hair and nail care, laundromats, and medical and other professional offices. There are 30 shopping goods retailers, or about 20 percent of the inventory, primarily selling apparel and accessories, and home furnishings, including records and musical instruments. Eating and drinking places account for about 13 percent of the total business establishments. National chains on along this strip include McDonald's and Rite Aid. Vacancies are high, with 26 vacant storefronts, representing about 17 percent of the inventory. Some of the more recent additions to the retail inventory along East 138th Streets include a credit union, grocery, sign shop, hair braiding and two medical offices in renovated storefronts between St. Ann's Avenue and Cypress Avenue.

The Hub: Third Avenue and 149th Street. One of the most vibrant commercial areas in the Bronx is The Hub, located around the intersection of 149th Street and Third Avenue. It is both a center of retail activity and a transportation hub, well serviced by subway lines and buses. Five streets intersect, creating an area extremely trafficked by cars, buses, and pedestrians. Both Third Avenue and 149th Street are busy thoroughfares that provide direct access to Manhattan via the Third Avenue Bridge and the 145th Street Bridge, respectively. Although retail activity is located primarily on Third Avenue and 149th Street, it spills over to Melrose, Westchester, and Willis Avenues.

The Hub is oriented toward destination shopping. The field survey observed 213 storefronts in The Hub, of which 109, or 51 percent are shopping goods stores (see Table 3-21). Among these are 42 apparel and accessory stores (mostly women's and family clothing), 29 furniture, home furnishings or equipment stores (mostly furniture or audio and video electronics), 30 miscellaneous shopping goods stores (primarily jewelry and other miscellaneous shopping goods), and 8 discount general merchandise stores. Neighborhood services account for 16 percent of total storefronts (34 stores), including many hair and nail care establishments, medical offices, and other neighborhood services. There are 13 convenience goods stores, mostly small grocery stores and bodegas and meat and fish markets, which account for about 6 percent of the commercial inventory. Eating and drinking places make up about 9 percent of total storefronts in the area. Thirty-four vacant storefronts were observed during the survey, representing about 16 percent of the storefronts. Stores are densely packed in this area, and there are many large stores, particularly discount stores. Most of the retail stores are local chains, including Conway and Jimmy Jazz. National chains are less common, but include Modell's, Jennifer Convertible, Fleet, White Castle, and McDonald's.

Table 3-20
138th Street Between Jackson and Alexander Avenues

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	30	19.7%	CONVENIENCE GOODS	35	22.4%
General Merchandise Stores	5	3.3%	Food Stores	26	16.4%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	16	
Department Stores, discount national chains			Supermarkets	1	
Miscellaneous general merchandise stores	5		Meat and fish markets	2	
Apparel and Accessory Stores	9	5.9%	Retail bakeries	4	
Men's and boy's clothing	2		Fruit and vegetable markets	2	
Women's and girl's clothing	2		Candy, nut, and confectionary	1	
Family clothing	1		Miscellaneous/specialty foods		
Children's clothing	1		Miscellaneous Convenience Goods	9	5.9%
Shoes	3		Drug and proprietary stores	6	
Other apparel and accessories			Liquor stores		
Furniture, Home Furnishings, and Equipment Stores	9	4.6%	Florists	1	
Furniture stores	2		Cigar stores and stands	1	
Floor covering stores	1		Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores	2		Photocopy stores		
Household appliance stores			Photo development	1	
Audio and video electronics (beepers, cell phones)	1		Other miscellaneous convenience goods		
Records and musical instruments	3		EATING AND DRINKING PLACES	19	12.5%
Computer			Restaurants/Luncheonettes	8	
Miscellaneous Shopping Goods Stores	7	4.6%	Refreshments/"Fast food" places	11	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery			NEIGHBORHOOD SERVICES	40	22.4%
Jewelry	1		Video rentals		
Hobby, toy, and games	1		Banks		
Camera and photographic supplies			Cleaners and tailors	2	
Gifts, novelties, and souvenirs	1		Hair and nail care	15	
Luggage and leather goods			Laundry	2	
Sewing, needlework, and piece goods			Travel agencies	2	
Religious articles			TV/Audio/Appliance repair		
Optical goods			Shoe repair	1	
Used merchandise			Medical offices	8	
Other misc shopping goods (pawn shop)	4		Other professional offices (check cashing, taxes)	6	
BLDG MTR'LS, HARDWARE & GARDEN SUPPLY	1	0.7%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware	1		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services	2	
AUTO-RELATED TRADE	2	1.3%	Church	1	
Motor vehicle dealers			Communications Center	1	
Auto supplies	1				
Gasoline and service stations					
Car rental					
Paid Parking	1				
STOREFRONTS SUMMARY					
Total Storefronts	153	100.0%	Convenience Goods	35	22.4%
Shopping Goods	30	19.7%	Eating and Drinking Places	19	12.5%
Bldg Mtr'ls, Hardware, and Garden Supply	1	0.7%	Neighborhood Services	40	22.4%
Auto-Related	2	1.3%	Vacant Storefronts	26	21.1%

Source: AKRF, Inc., Summer 2004

Gateway Center at Bronx Terminal Market DEIS

Table 3-21
The Hub/149th Street
Between Brook and Morris Avenues

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	109	51.2%	CONVENIENCE GOODS	13	6.1%
General Merchandise Stores	8	3.8%	Food Stores	6	2.8%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	4	
Department Stores, discount national chains			Supermarkets		
Miscellaneous general merchandise stores	8		Meat and fish markets	2	
Apparel and Accessory Stores	42	19.7%	Retail bakeries		
Men's and boy's clothing	7		Fruit and vegetable markets		
Women's and girl's clothing	13		Candy, nut, and confectionary		
Family clothing	9		Miscellaneous/specialty foods		
Children's clothing	3		Miscellaneous Convenience Goods	7	3.3%
Shoes	5		Drug and proprietary stores	4	
Other apparel and accessories	5		Liquor stores	1	
Furniture, Home Furnishings, and Equipment Stores	29	13.6%	Florists		
Furniture stores	11		Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops	1	
Miscellaneous home furnishing stores	2		Photocopy stores		
Household appliance stores			Photo development	1	
Audio and video electronics (beepers, cell phones)	13		Other miscellaneous convenience goods		
Records and musical instruments	3		Eating and Drinking Places	19	8.9%
Computer			Restaurants/Luncheonettes	9	
Miscellaneous Shopping Goods Stores	30	14.1%	Refreshments/"Fast food" places	10	
Sporting goods and bicycle	1		Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery			Neighborhood Services	34	16.0%
Jewelry	9		Video rentals		
Hobby, toy, and games	1		Banks	5	
Camera and photographic supplies			Cleaners and tailors	1	
Gifts, novelties, and souvenirs	2		Hair and nail care	9	
Luggage and leather goods			Laundry		
Sewing, needlework, and piece goods			Travel agencies		
Religious articles			TV/Audio/Appliance repair	1	
Optical goods	4		Shoe repair		
Used merchandise			Medical offices	6	
Other misc. shopping goods	13		Other professional offices (ins., lawyer)	3	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	1	0.5%	Home improvement services		
Paint, glass, and wallpaper			Funeral services	1	
Hardware	1		Health/Fitness club	1	
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (check cashing, pawn shop, photo studio)	7	
AUTO-RELATED TRADE	3	1.4%	Communications Center		
Motor vehicle dealers					
Auto supplies	2				
Gasoline and service stations					
Paid Parking	1				
STOREFRONTS SUMMARY					
Total Storefronts	213	100.0%	Convenience Goods	13	6.1%
Shopping Goods	109	51.2%	Eating and Drinking Places	19	8.9%
Building Materials, Hardware, and Garden Supply	1	0.5%	Neighborhood Services	34	16.0%
Auto-Related	3	1.4%	Vacant Storefronts	34	16.0%

Source: AKRF, Inc., Summer 2004

161st Street (Between River and Morris Avenues). 161st Street is a heavily trafficked area due to the presence of Bronx Borough Hall, several courts and other municipal buildings, law offices, retail stores (including the Concourse Plaza Mall), and high density residential development in Concourse Village and along the Grand Concourse. In addition, Yankee Stadium is located close by at 161st Street and River Avenue. The location of the court buildings and the shopping mall, combined with the width of the Grand Concourse, effectively divides this commercial area in half, with the more neighborhood-oriented retail located at either end of the strip.

As shown in Table 3-22, 161st Street between Morris and River Avenues has a total of 51 storefronts, excluding Concourse Plaza Mall. Neighborhood services account for about 31 percent of total storefronts, or 15 establishments that are primarily legal offices. Shopping goods account for 10 percent of the total storefronts with 10 stores. Eating and drinking places also account for 25.5 percent of the total, with 13 restaurants and fast food places (not counting Concourse Plaza) that primarily serve the dense office activity in the area. Convenience goods account for only 10 percent of the total storefronts with 5 stores. There are only six vacant storefronts on 161st Street, which represent 12 percent of the total commercial inventory.

Concourse Plaza Mall. Concourse Plaza Mall is a retail shopping center located on 161st Street just east of the Grand Concourse in the Bronx. The shopping center is essentially a strip mall, anchored by a Food Bazaar supermarket, food court, and a multiplex movie theater. Surface parking is provided in front of the stores, with a lower level parking deck. As shown in Table 3-23, the shopping center has a total of 17 establishments, with shopping goods stores sandwiched between the supermarket and the food court/movie theaters. Altogether, there are 11 shopping goods stores that represent about 65 percent of the tenant mix, including 7 apparel and accessory stores, most of which are shoe stores, such as Foot Action and Payless shoes. There are two neighborhood service establishments, representing about 12 percent of the tenant mix, including a bank and medical office.

Fordham Road (Between Webster Avenue and the Major Deegan Expressway). Fordham Road between Webster Avenue and the Major Deegan Expressway is one of the major shopping destinations in the Bronx, with a total of 238 stores in a range of sizes from small to large. There are 140 shopping goods stores representing 59 percent of the 238 total storefronts (see Table 3-24). Shopping goods retailers include 70 apparel and accessory stores, such as Foot Locker, Strawberry, Modells's, the Gap, and Parade of Shoes. There are 29 furniture, home furnishings, and equipment stores, more than half of which are electronics stores selling cell phones, and 34 miscellaneous shopping goods stores, including 17 jewelry shops. There are 33 neighborhood service establishments that constitute about 14 percent of storefronts, with more than half being hair and nail care stores, professional offices and banks. Convenience goods account for only 8 percent of the storefronts, including 9 smaller groceries and bodegas. Eating and drinking places make up about 10 percent of the storefronts; 20 of those stores are fast food restaurants such as McDonalds, Burger King, Taco Bell, Pizza Hut, and Popeyes. In addition to shopping and convenience goods retailers the strip has 9 auto-related stores, most of which are situated at the west end of Fordham Road near the Major Deegan Expressway. The vacancy rate is relatively low with 15 vacant storefronts, representing 6 percent of the total commercial inventory.

Table 3-22
161st Street Between Morris and River Avenues

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	10	19.6%	CONVENIENCE GOODS	5	9.8%
General Merchandise Stores	0	0.0%	Food Stores	3	5.9%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	2	
Department Stores, discount national chains			Supermarkets		
Miscellaneous general merchandise stores			Meat and fish markets	1	
Apparel and Accessory Stores	5	9.8%	Retail bakeries		
Men's and boy's clothing	1		Fruit and vegetable markets		
Women's and girl's clothing	1		Candy, nut, and confectionary		
Family clothing	1		Miscellaneous/specialty foods		
Children's clothing			Miscellaneous Convenience Goods	2	3.9%
Shoes	1		Drug and proprietary stores		
Other apparel and accessories	1		Liquor stores	1	
Furniture, Home Furnishings, and Equipment Stores	2	3.9%	Floists		
Furniture stores			Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores			Photocopy stores		
Household appliance stores			Photo developing	1	
Audio and video electronics (beepers, cell phones)	1		Other miscellaneous convenience goods		
Records and musical instruments	1		Eating and Drinking Places	13	25.5%
Computer			Restaurants/Luncheonettes	5	
Miscellaneous Shopping Goods Stores	3	5.9%	Refreshments/"Fast food" places	8	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery	2		Neighborhood Services	15	29.4%
Jewelry			Video rentals		
Hobby, toy, and games			Banks	3	
Camera and photographic supplies			Cleaners and tailors		
Gifts, novelties, and souvenirs			Hair and nail care	1	
Luggage and leather goods			Laundry		
Sewing, needlework, and piece goods			Travel agencies		
Religious articles			TV/Audio/Appliance repair		
Optical goods			Shoe repair		
Used merchandise			Medical offices		
Other misc shopping goods (pawn shop)	1		Other professional offices (law offices, tax)	10	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	0	0.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware			Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (pawn shop)	1	
AUTO-RELATED TRADE	2	3.9%	Communications Center		
Motor vehicle dealers					
Auto supplies					
Gasoline and service stations	1				
Car rental					
Paid Parking	1				
STOREFRONTS SUMMARY					
Total Storefronts	51	100.0%	Convenience Goods	5	9.8%
Shopping Goods	10	19.6%	Eating and Drinking Places	13	25.5%
Blding Mtr'ls, Hardware, and Garden Supply	0	0.0%	Neighborhood Services	15	29.4%
Auto-Related	2	3.9%	Vacant Storefronts	6	11.8%
Source: AKRF, Inc., Summer 2004					

Table 3-23
Concourse Plaza Mall, Bronx

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	11	64.7%	CONVENIENCE GOODS	3	17.6%
General Merchandise Stores	1	5.9%	Food Stores	1	5.9%
Department Stores, conventional national chains			Grocery stores, delis, bodegas		
Department Stores, discount national chains			Supermarkets	1	
Miscellaneous general merchandise stores	1		Meat and fish markets		
Apparel and Accessory Stores	7	41.2%	Retail bakeries		
Men's and boy's clothing	1		Fruit and vegetable markets		
Women's and girl's clothing	1		Candy, nut, and confectionary		
Family clothing	1		Miscellaneous/specialty foods		
Children's clothing	1		Miscellaneous Convenience Goods	2	11.8%
Shoes	3		Drug and proprietary stores	1	
Other apparel and accessories			Liquor stores		
Furniture, Home Furnishings, and Equipment Stores	2	11.8%	Florists		
Furniture stores	1		Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops	1	
Miscellaneous home furnishing stores			Photocopy stores		
Household appliance stores			Photo development		
Audio and video electronics (beepers, cell phones)	1		Other miscellaneous convenience goods		
Records and musical instruments			Eating and Drinking Places	1	5.9%
Computer			Restaurants/Luncheonettes		
Miscellaneous Shopping Goods Stores	1	5.9%	Refreshments/"Fast food" places	1	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery			Neighborhood Services	2	11.8%
Jewelry			Video rentals		
Hobby, toy, and games			Banks	1	
Camera and photographic supplies			Cleaners and tailors		
Gifts, novelties, and souvenirs			Hair and nail care		
Luggage and leather goods			Laundry		
Sewing, needlework, and piece goods			Travel agencies		
Religious articles			TV/Audio/Appliance repair		
Optical goods	1		Shoe repair		
Used merchandise			Medical offices	1	
Other misc shopping goods			Other professional offices (check cashing, taxes)		
BLDG MTRLS, HARDWARE & GARDEN SUPPLY	0	0.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware			Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services		
AUTO-RELATED TRADE	0	0.0%	Church		
Motor vehicle dealers			Communications Center		
Auto supplies					
Gasoline and service stations					
Car rental					
Pay Parking					
STOREFRONTS SUMMARY					
Total Storefronts	17	100.0%	Convenience Goods	3	17.6%
Shopping Goods	11	64.7%	Eating and Drinking Places	1	5.9%
Bldg Mtr'l's, Hardware, and Garden Supply	0	0.0%	Neighborhood Services	2	11.8%
Auto-Related	0	0.0%	Vacant Storefronts		0.0%

Source: AKRF, Inc., Summer 2004

Gateway Center at Bronx Terminal Market DEIS

Table 3-24
Fordham Road Between Webster Avenue and Major Deegan Expressway

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	140	58.8%	CONVENIENCE GOODS	18	7.6%
General Merchandise Stores	7	2.9%	Food Stores	10	4.2%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	9	
Department Stores, discount national chains			Supermarkets		
Miscellaneous general merchandise stores	7		Meat and fish markets	1	
Apparel and Accessory Stores	70	29.4%	Retail bakeries		
Men's and boy's clothing	7		Fruit and vegetable markets		
Women's and girl's clothing	21		Candy, nut, and confectionary		
Family clothing	14		Miscellaneous/specialty foods		
Children's clothing	8		Miscellaneous Convenience Goods	8	3.4%
Shoes	12		Drug and propnetary stores	4	
Other apparel and accessories (leather, sportswear, uniforms)	8		Liquor stores	1	
Furniture, Home Furnishings, and Equipment Stores	29	12.2%	Florists	1	
Furniture stores	5		Cigar stores and stands		
Floor covering stores	1		Newsdealers and newsstands		
Drapery, curtain, and upholstery stores	2		Pet shops		
Miscellaneous home furnishing stores	2		Photocopy stores		
Household appliance stores			Photo developing	2	
Audio and video electronics (beepers, cell phones)	19		Other miscellaneous convenience goods		
Records and musical instruments			Eating and Drinking Places	23	9.7%
Computer			Restaurants/Luncheonettes	2	
Miscellaneous Shopping Goods Stores	34	14.3%	Refreshments/"Fast food" places	20	
Sporting goods and bicycle	1		Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery			Neighborhood Services	33	13.9%
Jewelry	17		Video rentals	2	
Hobby, toy, and games	1		Banks	7	
Camera and photographic supplies			Cleaners and tailors	2	
Gifts, novelties, and souvenirs	2		Hair and nail care	9	
Luggage and leather goods			Laundry	1	
Sewing, needlework, and piece goods	1		Travel agencies	1	
Religious articles			TV/Audio/Appliance repair		
Optical goods	4		Shoe repair		
Used merchandise	1		Medical offices	1	
Other misc. shopping goods (pawn shop, party store, beauty supply)	7		Other professional offices (check cashing, taxes, decorator)	7	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	0	0.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware			Health/Fitness club	1	
Retail nurseries, lawn, and garden supply stores			Car service	1	
Lumber and other building materials			Other neighborhood services (watch repair)	1	
AUTO-RELATED TRADE	9	3.8%	Church		
Motor vehicle dealers	1		Communications Center		
Auto supplies	3				
Gasoline and service stations	3				
Car rental					
Paid Parking	3				
STOREFRONTS SUMMARY					
Total Storefronts	238	100.0%	Convenience Goods	18	7.6%
Shopping Goods	140	58.8%	Eating and Drinking Places	23	9.7%
Blding Mtr'ls, Hardware, and Garden Supply	0	0.0%	Neighborhood Services	33	13.9%
Auto-Related	9	3.8%	Vacant Storefronts	15	6.3%
Source: AKRF, Inc., Summer 2004					

East 116th Street Between Second and Madison Avenues. Located in East Harlem in Manhattan, East 116th Street is an active retail strip providing a variety of shopping goods, neighborhood services, and convenience goods for local residents. As shown in Table 3-25, there are a total of 129 storefronts along East 116th Street between Second and Madison Avenues. The elevated tracks of the Metro North Rail Road effectively separate retail activity along this strip. The blocks east of Park Avenue are characterized by more intense activity with retail and neighborhood services located at the street level and second floors, and the block west of Park Avenue are characterized by a distinctly lighter concentration of stores, in addition to 3 vacant lots. Many stores market primarily to the local Hispanic community.

Shopping goods are prominent on East 116th Street, featured in 43 stores or about 33 percent of the total storefronts along the strip. Of these, 16 sell apparel and accessories, such as shoes and women's clothing, including Regines and Victoria Fashions; 15 feature miscellaneous shopping goods, such as jewelry and religious articles; 2 are general merchandise stores, including the visually prominent Numero Uno Department Store; and 10 are furniture and home furnishings stores. Neighborhood services account for approximately 26 percent of storefronts, providing banking, medical and other professional services. Convenience goods account for 16 percent of total storefronts. An Associated Supermarket is located centrally on the north side of the street. Eating and drinking places account for 23 storefronts or about 18 percent of the total inventory, including a pizza shop, luncheonette, and a cuchifritos shop. There are 8 vacant storefronts, a rate of about 6 percent.

West 116th Street Between Malcolm X and Frederick Douglass Boulevards. The portion of West 116th Street between Malcolm X and Frederick Douglass Boulevards serves the Central Harlem community. Retail activity is concentrated on the eastern portion of this strip, anchored by the Malcolm-Shabazz Harlem Market, a covered market with vendors selling primarily shopping goods.

Overall, there are 86 storefronts located along this strip (see Table 3-26). Neighborhood services dominate the inventory with 22 stores, accounting for almost 26 percent of the storefronts. Of these, 10 provide hair and nail care, and 2 provide other neighborhood services. There are 8 convenience goods stores, making up 9 percent of the total storefront inventory. Although shopping goods stores represent only 17 percent of the total storefronts, the percentage of shopping goods retailers is likely to be higher, since the Malcolm-Shabazz Harlem Market contains several vendors selling a variety of shopping goods, including apparel and accessories and home furnishings, many of which are African goods reflective of neighborhood culture. There are a large number of vacant storefronts (29) along this strip, accounting for nearly 34 percent of total storefronts. Although the retail vacancies are relatively high, there are several vacant storefronts in the ground floor of abandoned buildings that are potential development sites, including two sites on the north side of West 116th Street between St. Nicholas Avenue and Frederick Douglass Boulevard, and one site on the south side of West 116th Street between Malcolm X Boulevard and St. Nicholas Avenue.

Table 3-25

East 116th Street Between Second and Madison Avenues

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	43	33.3%	CONVENIENCE GOODS	21	16.3%
General Merchandise Stores	2	1.6%	Food Stores	16	12.4%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	10	
Department Stores, discount national chains			Supermarkets	1	
Miscellaneous general merchandise stores	2		Meat and fish markets	1	
Apparel and Accessory Stores	16	12.4%	Retail bakeries	2	
Men's and boy's clothing	2		Fruit and vegetable markets	1	
Women's and girl's clothing	3		Candy, nut, and confectionary	1	
Family clothing	4		Miscellaneous/specialty foods		
Children's clothing			Miscellaneous Convenience Goods	5	3.9%
Shoes	5		Drug and proprietary stores	3	
Other apparel and accessories	1		Liquor stores		
Furniture, Home Furnishings, and Equipment Stores	10	7.8%	Florists	2	
Furniture stores			Cigar stores and stands		
Floor covering stores	1		Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores			Photocopy stores		
Household appliance stores			Photo development		
Audio and video electronics (beepers, cell phones)	3		Other miscellaneous convenience goods		
Records and musical instruments	6		Eating and Drinking Places	23	17.8%
Computer			Restaurants/Luncheonettes	10	
Miscellaneous Shopping Goods Stores	15	11.6%	Refreshments/"Fast food" places	13	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery			Neighborhood Services	34	26.4%
Jewelry	3		Video rentals	1	
Hobby, toy, and games	2		Banks	1	
Camera and photographic supplies			Cleaners and tailors	1	
Gifts, novelties, and souvenirs	1		Hair and nail care	7	
Luggage and leather goods			Laundry	1	
Sewing, needlework, and piece goods			Travel agencies	3	
Religious articles	2		TV/Audio/Appliance repair		
Optical goods	1		Shoe repair		
Used merchandise			Medical offices	6	
Other misc shopping goods	6		Other professional offices (City and State officers, taxes, attorneys)	7	
BLDG MTR'LS, HARDWARE & GARDEN SUPPLY	0	0.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services	1	
Hardware			Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service	2	
Lumber and other building materials			Other neighborhood services (money transfer)	2	
AUTO-RELATED TRADE	0	0.0%	Communications Center	2	
Motor vehicle dealers					
Auto supplies					
Gasoline and service stations					
Car rental					
STOREFRONTS SUMMARY					
Total Storefronts	129	100.0%	Convenience Goods	21	16.3%
Shopping Goods	43	33.3%	Eating and Drinking Places	23	17.8%
Bldg Mtr'ls, Hardware, and Garden Supply	0	0.0%	Neighborhood Services	34	26.4%
Auto-Related	0	0.0%	Vacant Storefronts	18	6.2%
Source: AKRF, Inc., Summer 2004					

Table 3-26

West 116th Street Between Malcolm X and Frederick Douglas Boulevards

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	15	17.4%	CONVENIENCE GOODS	8	9.3%
General Merchandise Stores	6	7.0%	Food Stores	5	5.8%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	3	
Department Stores, discount national chains			Supermarkets		
Miscellaneous general merchandise stores	6		Meat and fish markets	2	
Apparel and Accessory Stores	5	5.8%	Retail bakeries		
Men's and boy's clothing	1		Fruit and vegetable markets		
Women's and girl's clothing	1		Candy, nut, and confectionary		
Family clothing	2		Miscellaneous/specialty foods		
Children's clothing			Miscellaneous Convenience Goods	3	3.5%
Shoes			Drug and proprietary stores	1	
Other apparel and accessories	1		Liquor stores		
Furniture, Home Furnishings, and Equipment Stores	4	4.7%	Florists	1	
Furniture stores			Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands	1	
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores			Photocopy stores		
Household appliance stores			Photo development		
Audio and video electronics (beepers, cell phones)	4		Other miscellaneous convenience goods		
Records and musical instruments			Eating and Drinking Places	11	12.8%
Computer			Restaurants/Luncheonettes	10	
Miscellaneous Shopping Goods Stores	0	0.0%	Refreshments/"Fast food" places	1	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery			Neighborhood Services	22	25.6%
Jewelry			Video rentals		
Hobby, toy, and games			Banks		
Camera and photographic supplies			Cleaners and tailors	2	
Gifts, novelties, and souvenirs			Hair and nail care	10	
Luggage and leather goods			Laundry	1	
Sewing, needlework, and piece goods			Travel agencies	1	
Religious articles			TV/Audio/Appliance repair		
Optical goods			Shoe repair	1	
Used merchandise			Medical offices	1	
Other misc shopping goods			Other professional offices	1	
BLDG MTR'LS, HARDWARE & GARDEN SUPPLY	1	1.2%	Home improvement services		
Paint, glass, and wallpaper	1		Funeral services		
Hardware			Health/Fitness club	1	
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (taxes, check cashing)	2	
AUTO-RELATED TRADE	0	0.0%	Communications Center	2	
Motor vehicle dealers					
Auto supplies					
Gasoline and service stations					
Car rental					
Pay Parking					
STOREFRONTS SUMMARY					
Total Storefronts	86	100.0%	Convenience Goods	8	9.3%
Shopping Goods	15	17.4%	Eating and Drinking Places	11	12.8%
Bldg Mtr'ls, Hardware, and Garden Supply	1	1.2%	Neighborhood Services	22	25.6%
Auto-Related	0	0.0%	Vacant Storefronts	29	33.7%

Source: AKRF, Inc., Summer 2004

Lexington Avenue (Between East 116th and 125th Streets). Lexington Avenue between East 116th and 125th Streets is primarily oriented to neighborhood services and shopping needs. There are 59 storefronts in the retail inventory (see Table 3-27), with several mixed-use buildings. Community use of outdoor space and community gardens help to create a lively residential feel along this street.

Neighborhood services dominate this mixed-use strip, with 18 storefronts or about 31 percent of the total inventory. Of these storefronts, 8 are hair and nail care shops, 2 are other neighborhood services, 3 are professional services, and 3 are cleaners and tailors. There are 16 convenience goods stores, representing about 27 percent of total storefronts, including a liquor store and 14 food stores, consisting of 10 bodegas, 2 retail bakeries, 1 supermarket, and 1 confectionary. At the intersection with East 125th Street, the Pathmark Supermarket adds a great deal of shopping activity to the neighborhood orientation of this corridor. Shopping goods stores account for a small portion of the inventory with 11 stores, representing 18 percent of total storefronts. The number of vacancies along the strip is unusually high, with 7 vacant stores, representing nearly 12 percent of the total inventory.

La Marqueta. La Marqueta is an enclosed market located under the elevated tracks of the Metro North Rail Road on Park Avenue between East 111th and 116th Streets. The market was opened in 1936, and soon became the principal food market in East Harlem, carrying a wide range of products aimed principally at the local Hispanic population. After a period of decline, a portion of the market was reopened in 1993. Currently an open-air market and a 10,000-square-foot building have been renovated.

The enclosed space is occupied by approximately 8 vendors in spaces ranging from 90 to 250 square feet, selling goods such as fresh fish, cell phones, apparel, candy, craft supplies and fabric. A small farmers' market operates on weekends in the open-air portion of La Marqueta.

East 125th Street (Between Second Avenue and Frederick Douglass Boulevard). The East 125th Street corridor is the historic heart of Harlem. It is the location of such landmark businesses as the Apollo Theater, which is currently undergoing renovation, and continues to serve as a busy east-west transportation route, linking the FDR Drive and the Triborough Bridge with the Henry Hudson Parkway. Pedestrian traffic is also generally heavy along most of the corridor. Metro North Rail Road operates a commuter rail station at East 125th Street and Park Avenue.

Among the more notable commercial developments during the past several years is the Adam Clayton Powell, Jr., State Office Building, located between Malcolm X Boulevard and Adam Clayton Powell, Jr., Boulevard. More recently, retail activity has accelerated with the opening of national chains such as Blockbuster Video, Starbucks, The Body Shop, Dunkin Donuts, Duane Reade, Rite Aid, and Pathmark. The location of several national and local apparel chains, such as Lane Bryant, H&M, Payless Shoes, A Children's Place, and Jimmy Jazz, indicate that shopping goods retailing (and retailing, in general) is stronger toward the west of the corridor.

As shown in Table 3-28, there are a total of 249 storefronts along East 125th Street between Frederick Douglass Boulevard and Second Avenue. Shopping goods stores are predominant, making up 41 percent of the total inventory. Apparel and accessories make up a majority of shopping goods with 51 stores, or about 21 percent of the total inventory. Neighborhood services occupy about 20 percent of the total storefronts. Convenience goods stores represent 10 percent of the inventory. The current vacancy rate is 9 percent, with 22 vacant storefronts along the corridor.

Table 3-27
Lexington Avenue Between East 116th and 125th Streets

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	11	18.6%	CONVENIENCE GOODS	16	27.1%
General Merchandise Stores	2	3.4%	Food Stores	14	23.7%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	10	
Department Stores, discount national chains			Supermarkets	1	
Miscellaneous general merchandise stores	2		Meat and fish markets		
Apparel and Accessory Stores	4	6.8%	Retail bakeries	2	
Men's and boy's clothing			Fruit and vegetable markets		
Women's and girl's clothing	1		Candy, nut, and confectionary	1	
Family clothing	1		Miscellaneous/specialty foods		
Children's clothing			Miscellaneous Convenience Goods	2	3.4%
Shoes	1		Drug and proprietary stores	1	
Other apparel and accessories	1		Liquor stores	1	
Furniture, Home Furnishings, and Equipment Stores	3	5.1%	Florists		
Furniture stores			Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores			Photocopy stores		
Household appliance stores			Photo development		
Audio and video electronics (beepers, cell phones)	2		Other miscellaneous convenience goods		
Records and musical instruments	1		Eating and Drinking Places	7	11.9%
Computer			Restaurants/Luncheonettes	2	
Miscellaneous Shopping Goods Stores	2	3.4%	Refreshments/"Fast food" places	5	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery			Neighborhood Services	18	30.5%
Jewelry	1		Video rentals		
Hobby, toy, and games			Banks		
Camera and photographic supplies			Cleaners and tailors	3	
Gifts, novelties, and souvenirs			Hair and nail care	8	
Luggage and leather goods			Laundry		
Sewing, needlework, and piece goods			Travel agencies		
Religious articles			TV/Audio/Appliance repair		
Optical goods			Shoe repair		
Used merchandise			Medical offices	2	
Other misc. shopping goods	1		Other professional offices (check cashing, taxes)	3	
BLDG MTR'LS, HARDWARE & GARDEN SUPPLY	0	0.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware			Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (rehab, cabinetry)	2	
AUTO-RELATED TRADE	0	0.0%	Communications Center		
Motor vehicle dealers					
Auto supplies					
Gasoline and service stations					
Car rental					
STOREFRONTS SUMMARY					
Total Storefronts	59	100.0%	Convenience Goods	16	27.1%
Shopping Goods	11	18.6%	Eating and Drinking Places	7	11.9%
Bldg Mtr'ls, Hardware, and Garden Supply	0	0.0%	Neighborhood Services	18	30.5%
Auto-Related	0	0.0%	Vacant Storefronts	7	11.9%
Source: AKRF, Inc., Summer 2004					

Table 3-28
East 125th Street Between Second Avenue and Frederick Douglass Boulevard

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	102	41.0%	CONVENIENCE GOODS	25	10.0%
General Merchandise Stores	5	2.0%	Food Stores	15	
Department Stores, conventional national chains	1		Grocery stores, delis, bodegas	10	
Department Stores, discount national chains			Supermarkets	1	
Miscellaneous general merchandise stores	4		Meat and fish markets		
Apparel and Accessory Stores	51	20.5%	Retail bakeries	1	
Men's and boy's clothing	6		Fruit and vegetable markets		
Women's and girl's clothing	14		Candy, nut, and confectionary		
Family clothing	14		Miscellaneous/specialty foods (Health Fd.)	3	
Children's clothing	3		Miscellaneous Convenience Goods	10	4.0%
Shoes	8		Drug and proprietary stores	6	
Other apparel and accessories	6		Liquor stores	1	
Furniture, Home Furnishings, and Equipment Stores	21	8.4%	Florists		
Furniture stores	4		Cigar stores and stands		
Floor covering stores	1		Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops	1	
Miscellaneous home furnishing stores	5		Photocopy stores	1	
Household appliance stores	2		Photo development	1	
Audio and video electronics (beepers, cell phones)	8		Other miscellaneous convenience goods		
Records and musical instruments	1		Eating and Drinking Places	44	17.7%
Computer			Restaurants/Luncheonettes	27	
Miscellaneous Shopping Goods Stores	25	10.0%	Refreshments/"Fast food" places	17	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books	1		Drinking places (alcohol)		
Stationery	2		Neighborhood Services	49	19.7%
Jewelry	5		Video rentals	1	
Hobby, toy, and games	2		Banks	10	
Camera and photographic supplies			Cleaners and tailors	1	
Gifts, novelties, and souvenirs	3		Hair and nail care	23	
Luggage and leather goods			Laundry		
Sewing, needlework, and piece goods	1		Travel agencies		
Religious articles			TV/Audio/Appliance repair		
Optical goods	2		Shoe repair		
Used merchandise			Medical offices	4	
Other misc. shopping goods	9		Other professional offices	5	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	2	0.8%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware	2		Health/Fitness club	1	
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Pawn service	1	
AUTO-RELATED TRADE	5	2.0%	Other neighborhood services (check cashing)	3	
Motor vehicle dealers					
Auto supplies					
Gasoline and service stations					
Car rental					
Car rental/Paid Parking					
STOREFRONTS SUMMARY					
Total Storefronts	249	100.0%	Convenience Goods	25	10.0%
Shopping Goods	102	41.0%	Eating and Drinking Places	44	17.7%
Blding Mtr'ls, Hardware, and Garden Supply	2	0.8%	Neighborhood Services	49	19.7%
Auto-Related	5	2.0%	Vacant Storefronts	22	8.8%

Source: AKRF, Inc., Summer 2004

West 125th Street (Between Frederick Douglass Boulevard and Broadway). The West 125th Street corridor changes course west of Frederick Douglass Boulevard, both in terms of its geographic direction and its retail character. As the road bends to the northwest, the retail changes to more neighborhood-oriented businesses. In place of shopping goods, neighborhood services dominate the mix, accounting for 32 of the 96 businesses in this segment of the corridor (see Table 3-29). Nearly half of these service establishments are hair and nail care salons. Almost 13 percent of the storefronts in this segment of West 125th Street sell convenience goods, including 1 supermarket, 7 grocery stores and bodegas, 1 drug store, a liquor store, and a florist. There are 14 eating and drinking places, representing about 15 percent of the storefronts, and 2 hardware stores, accounting for only 2 percent of the business inventory. Apparel and accessories stores dominate the shopping goods merchants, accounting for 10 of the 22 shopping goods retailers. The remaining 12 shopping goods stores are a mix of home furnishing stores, miscellaneous shopping goods stores, 3 electronics stores and one records/music store. The vacancy rate is high, with 13 vacant storefronts, which represent 14 percent of the total business inventory.

Third Avenue (Between East 110th and 125th Streets). As shown in Table 3-30, Third Avenue between East 110th and 125th Streets has a total of 143 storefronts, largely oriented toward shopping goods which make up 43 percent of the total storefronts. Apparel and accessories dominate the retail mix, with 19 stores accounting for about 13 percent of the total inventory. The remainder of the shopping goods stores offer a wide range of shopping goods, including 16 miscellaneous shopping goods stores which account for 11 percent of total storefronts, and 5 general merchandise stores which make up about 4 percent of the inventory. Furniture and home furnishings stores are very prominent in this area, with 22 furniture and home furnishings stores representing 15 percent of the total storefronts. Most of these are furniture stores (9), with only 1 floor-covering store, 1 drapery and curtain stores, 4 audio stores, 1 record and tape shop, and 4 miscellaneous home furnishing stores.

Convenience goods represent about 18 percent of storefronts, including 5 drug and proprietary stores and 3 supermarkets. Neighborhood services make up about 15 percent of storefronts, providing banking, hair and nail, cleaners and tailors, and medical services. A number of national chains such as Blockbuster Video, Rite Aid and McDonalds are represented along this strip. There are 9 vacant storefronts, accounting for 6 percent of the total inventory. There are a variety of neighborhood service establishments in 22 storefronts that account for about 15 percent of the businesses, as well as 16 eating and drinking places. The retail activity along the Third Avenue corridor is interrupted for a short distance between East 112th and 115th Streets by the Jefferson Houses to the east and J.W. Johnson Houses to the west.

Malcolm X Boulevard (Between West 115th and 135th Streets). Malcolm X Boulevard between West 115th and 135th Streets is a wide street with a mix of residential and retail uses. Some blocks, like the one between 120th and 121st Streets, are almost entirely residential. The vacancy rate along this strip is high, with 27 vacant storefronts, accounting for nearly 16 percent of the total inventory. Clusters of active storefronts are located at the intersection of 125th and 135th Streets. The intersection of 125th Street and Malcolm X Boulevard is the location of several well-known Harlem businesses, such as the Lenox Lounge and Sylvia's Restaurant. As shown in Table 3-31, there are a total of 174 storefronts along this 20-block segment of Malcolm X Boulevard. Neighborhood services dominate the mix, with 61 storefronts, or 35 percent of the inventory, including 31 hair and nail stores and 5 funeral parlors. Convenience goods are found in 35 stores, or about 20 percent of the inventory. Among these are 18 bodega-style groceries, 2 fish and meat markets, 2 liquor stores, and 3 supermarkets. There are 24 eating and drinking

places, representing nearly 14 percent of the total inventory, including 12 refreshment or fast food places, 11 luncheonettes, and 1 drinking place, some of which have entertainment. Shopping goods stores account for 14 percent of total storefronts.

Adam Clayton Powell, Jr. Boulevard (Between West 116th and 148th Streets) Adam Clayton Powell, Jr. Boulevard between West 116th and 148th Streets is a long, wide strip with intermittent retail and commercial activity. Currently, the high number of vacancies gives the strip an underutilized look, except near the intersection with 134th Street where the storefronts are in generally better condition. Of the total 301 storefronts, 96 stores are vacant, about 32 percent of the total inventory (see Table 3-32). Among the occupied storefronts neighborhood services predominate, representing about 28 percent of the total inventory. Of the 80 neighborhood services establishments, 33 are hair and nail salons, 6 are laundromats, 3 are funeral parlors, 17 are professional services, and 10 are other neighborhood services. Convenience goods stores account for about 19 percent of all storefronts. In this 32-block stretch of Adam Clayton Powell, Jr. Boulevard there are 57 convenience goods stores, including 34 small corner grocers, 4 supermarkets, and 4 meat and fish markets. Restaurants and luncheonettes and fast food places account for almost 10 percent of the storefronts. Shopping goods occupy nearly 10 percent of the total inventory on this strip, with 29 store fronts. Although the retail vacancy rate is high, there are signs of revitalization along Adam Clayton Powell, Jr. Boulevard that may reduce retail vacancies in the future. Several abandoned buildings are already undergoing renovation, including a site on the northwest corner of Adam Clayton Powell, Jr. Boulevard and West 117th Street. Other buildings further north on the boulevard have already been rehabilitated for residential reuse with new ground floor retail storefronts, including sites on the west side of the boulevard between West 136th and 137th Streets (where there is a new H & R Block tax office), as well as on the eastside of the boulevard between West 145th and 146th Streets where buildings have been renovated under HPD's New Housing Marketplace program with new ground floor retail spaces that are currently being leased. In addition, there are several sites where abandoned buildings could potentially be redeveloped with residential units and ground floor retail spaces, including the eastside of Adam Clayton Powell, Jr Boulevard between West 123rd and 124th Streets, and the east side of the boulevard between West 137th and 138th Streets.

Frederick Douglass Boulevard (Between West 116th and 135th Streets). Frederick Douglass Boulevard is a wide north-south avenue with commercial and residential uses. There are several segments of almost exclusively residential uses along this 19-block stretch of Frederick Douglass Boulevard, including St. Nicholas Houses between 127th and 131st Streets. The commercial mix and vacancy rate vary dramatically along the length of Frederick Douglass Boulevard. The area around 135th Street is in the best condition, including several new or newly renovated commercial spaces, as well as a number of neighborhood services, such as a branch of the Chase Manhattan Bank. Vacancies and deteriorated storefronts are more prevalent to the north and south of the redeveloped 135th Street hub. For instance, the stretch from 118th Street to 121st Street is mostly vacant

As shown in Table 3-33, there are 155 storefronts on Frederick Douglass Boulevard between West 116th and 135th Streets. Convenience goods predominate, occupying 40 storefronts and accounting for about 26 percent of all storefronts. Of these, 22 are food stores, and of these 16 are small groceries, 3 are supermarkets, and 2 are meat and fish markets. There are 30 neighborhood services stores, the majority of these service establishments are hair and nail care salons, and other services such as laundromats, banks, shoe repair, and medical offices. Vacant

storefronts outnumbered all other categories, with 45 storefronts, representing 29 percent of the total inventory on the strip.

The most recent changes to the retail inventory along Frederick Douglass Boulevard are in the vicinity of West 119th Street to West 121st Street. Harriet Tubman Gardens presents 5 new storefronts on the west side of the boulevard between West 120th and 121st Streets, including a wine store, cosmetics store, realtor and contractors office, dry cleaner, and a math and reading center. Just to the south of Harriet Tubman Gardens residential buildings are undergoing renovation with new storefronts, including a new office for Councilman Bill Perkins and his campaign for Manhattan Borough President. Several new retail storefronts are being leased in the ground floor of a renovated residential building on the east side of Frederick Douglass Boulevard between West 133rd and 134th Streets. Other sites where potential redevelopment could revitalize retail storefronts are located along the west side of Frederick Douglas Boulevard between West 128th and 129th Streets and on the east side of the boulevard between West 118th and 119th Streets.

Broadway (Between West 114th and 152nd Streets). This segment of Broadway primarily serves local retail needs of Manhattanville residents. The commercial strip is characterized by smaller stores and busy pedestrian and vehicular traffic. Storefronts become more upscale south of Tiemann Place because of the influence of higher income customers and students associated with Columbia University.

Table 3-34 shows that there are a total of 359 storefronts on Broadway between West 114th and 152nd Streets. Of these, 95 provide neighborhood services, accounting for about 27 percent of all storefronts, including 38 hair and nail care establishments, and 13 other professional services, such as check cashing. Shopping goods and convenience goods also have a substantial presence on the strip, representing about 24 percent and 22 percent of total storefronts, respectively. These include national chains such as Foot Locker, Starbucks, and Cohen Optical, as well as local stores such as the El Mundo Department Store, a large store in the northern segment of this strip selling a wide assortment of home furnishings and apparel. Broadway has 36 vacant storefronts, accounting for about 10 percent of all commercial establishments.

Broadway (Between West 155th and 166th Streets). Broadway between West 155th and 166th Streets is an active local retail strip primarily serving lower Washington Heights, as well as the demand for goods and services generated by Columbia Presbyterian Medical Center, which anchors the north end of this segment. In fact, the hospital interrupts retail activity along Broadway between West 164th and 168th Streets. South of the hospital, the variety of businesses is nearly equally distributed among shopping goods, convenience goods, and neighborhood services. The majority of stores are local businesses that cater to the largely Hispanic local community, although national chains are also represented. Most stores are small to medium size, and generally well kept. There is some second-story retail activity, and there is moderate to heavy pedestrian traffic.

Of the 198 storefronts on Broadway between West 155th and 166th Streets, 50 (or 27 percent) are shopping goods stores, including family clothing, shoes, women's and girl's clothing, and jewelry (see Table 3-35). There are 37 convenience goods stores, including 21 food stores, of which 14 are bodegas, and 3 are supermarkets. Neighborhood services, such as hair and nail care, travel agencies, and dry cleaners are found in 53 storefronts, representing about 28 percent of the commercial inventory. Two hardware stores are also located in this neighborhood strip. The vacancy rate along this portion of Broadway is relatively low comparable to the segments to

Gateway Center at Bronx Terminal Market DEIS

the south. Between West 155th and 166th Streets, there were 18 vacant storefronts or nearly 10 percent of the total.

Table 3-29
West 125th Street Between Frederick Douglas Blvd. and Broadway

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	22	22.9%	CONVENIENCE GOODS	12	12.5%
General Merchandise Stores	2	2.1%	Food Stores	8	8.3%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	7	
Department Stores, discount national chains			Supermarkets	1	
Miscellaneous general merchandise stores	2		Meat and fish markets		
Apparel and Accessory Stores	10	10.4%	Retail bakeries		
Men's and boy's clothing	1		Fruit and vegetable markets		
Women's and girl's clothing	2		Candy, nut, and confectionary		
Family clothing	2		Miscellaneous/specialty foods		
Children's clothing			Miscellaneous Convenience Goods	4	4.2%
Shoes	2		Drug and proprietary stores	1	
Other apparel and accessories (leather jackets, wigs)	3		Liquor stores	1	
Furniture, Home Furnishings, and Equipment Stores	7	7.3%	Florists	1	
Furniture stores	1		Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands	1	
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores	2		Photocopy stores		
Household appliance stores			Photo development		
Audio and video electronics (beepers, cell phones)	3		Other miscellaneous convenience goods		
Records and musical instruments	1		Eating and Drinking Places	14	14.6%
Computer			Restaurants/Luncheonettes	1	
Miscellaneous Shopping Goods Stores	3	3.1%	Refreshments/"Fast food" places	12	
Sporting goods and bicycle	1		Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)	1	
Stationery			Neighborhood Services	32	33.3%
Jewelry			Video rentals		
Hobby, toy, and games			Banks	3	
Camera and photographic supplies			Cleaners and tailors	1	
Gifts, novelties, and souvenirs			Hair and nail care	14	
Luggage and leather goods			Laundry	2	
Sewing, needlework, and piece goods			Travel agencies		
Religious articles			TV/Audio/Appliance repair		
Optical goods			Shoe repair		
Used merchandise			Medical offices	3	
Other misc. shopping goods	2		Other professional offices	3	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	2	2.1%	Home improvement services		
Paint, glass, and wallpaper	1		Funeral services		
Hardware	1		Health/Fitness club	1	
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Pharmacy	3	
AUTO-RELATED TRADE	1	1.0%	Pawn Shop	1	
Motor vehicle dealers			Paid Parking		
Auto supplies	1		Other neighborhood services	1	
Gasoline and service stations					
Car rental					
STOREFRONTS SUMMARY					
Total Storefronts	96	100.0%	Convenience Goods	12	12.5%
Shopping Goods	22	22.9%	Eating and Drinking Places	14	14.6%
Blding Mtr'ls, Hardware, and Garden Supply	2	2.1%	Neighborhood Services	32	33.3%
Auto-Related	1	1.0%	Vacant Storefronts	13	13.5%

Source: AKRF, Inc., Summer 2004.

Table 3-30
Third Avenue Between East 110th and 125th Streets

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	62	43.4%	CONVENIENCE GOODS	26	18.2%
General Merchandise Stores	5	3.5%	Food Stores	19	13.3%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	11	
Department Stores, discount national chains			Supermarkets	3	
Miscellaneous general merchandise stores	5		Meat and fish markets	3	
Apparel and Accessory Stores	19	13.3%	Retail bakeries	1	
Men's and boy's clothing	1		Fruit and vegetable markets	1	
Women's and girl's clothing	1		Candy, nut, and confectionary		
Family clothing	5		Miscellaneous/specialty foods		
Children's clothing	1		Miscellaneous Convenience Goods	7	4.9%
Shoes	6		Drug and proprietary stores	5	
Other apparel and accessories	5		Liquor stores	1	
Furniture, Home Furnishings, and Equipment Stores	22	15.4%	Florists		
Furniture stores	9		Cigar stores and stands		
Floor covering stores	1		Newsdealers and newsstands		
Drapery, curtain, and upholstery stores	1		Pet shops		
Miscellaneous home furnishing stores	4		Photocopy stores		
Household appliance stores	1		Photo development	1	
Audio and video electronics (beepers, cell phones)	4		Other miscellaneous convenience goods		
Records and musical instruments	1		Eating and Drinking Places	16	11.2%
Computer	1		Restaurants/Luncheonettes	5	
Miscellaneous Shopping Goods Stores	16	11.2%	Refreshments/"Fast food" places	11	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books	1		Drinking places (alcohol)		
Stationery	1		Neighborhood Services	22	15.4%
Jewelry	2		Video rentals		
Hobby, toy, and games	4		Banks	1	
Camera and photographic supplies			Cleaners and tailors	3	
Gifts, novelties, and souvenirs	1		Hair and nail care	8	
Luggage and leather goods			Laundry	3	
Sewing, needlework, and piece goods			Travel agencies		
Religious articles	1		TV/Audio/Appliance repair		
Optical goods			Shoe repair		
Used merchandise			Medical offices	3	
Other misc. shopping goods	6		Other professional offices	2	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	3	2.1%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware	2		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials	1		Other neighborhood services (body piercing electrical supply)	2	
AUTO-RELATED TRADE	5	3.5%			
Motor vehicle dealers					
Auto supplies	2				
Gasoline and service stations	1				
Paid Parking	2				
STOREFRONTS SUMMARY					
Total Storefronts	143	100.0%	Convenience Goods	26	18.2%
Shopping Goods	62	43.4%	Eating and Drinking Places	16	11.2%
Blding Mtr'ls, Hardware, and Garden Supply	3	2.1%	Neighborhood Services	22	15.4%
Auto-Related	5	3.5%	Vacant Storefronts	9	6.3%
Source: AKRF, Inc., Summer 2004.					

Table 3-31
Malcolm X Boulevard Between West 115th and 135th Streets

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	25	14.4%	CONVENIENCE GOODS	35	20.1%
General Merchandise Stores	6	3.4%	Food Stores	24	38.8%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	18	
Department Stores, discount national chains			Supermarkets	3	
Miscellaneous general merchandise stores	6		Meat and fish markets	2	
Apparel and Accessory Stores	9	5.2%	Retail bakeries	1	
Men's and boy's clothing	1		Fruit and vegetable markets		
Women's and girl's clothing			Candy, nut, and confectionary		
Family clothing	4		Miscellaneous/specialty foods		
Children's clothing			Miscellaneous Convenience Goods	11	6.3%
Shoes	2		Drug and proprietary stores	3	
Other apparel and accessories	2		Liquor stores	2	
Furniture, Home Furnishings, and Equipment Stores	2	1.1%	Florists	3	
Furniture stores			Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands	1	
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores	1		Photocopy stores	1	
Household appliance stores			Photo development	1	
Audio and video electronics (beepers, cell phones)			Other miscellaneous convenience goods		
Records and musical instruments	1		Eating and Drinking Places	24	13.8%
Computer			Restaurants/Luncheonettes	11	
Miscellaneous Shopping Goods Stores	8	4.6%	Refreshments/"Fast food" places	12	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books	1		Drinking places (alcohol)	1	
Stationery			Neighborhood Services	61	35.1%
Jewelry	1		Video rentals	2	
Hobby, toy, and games			Banks	3	
Camera and photographic supplies			Cleaners and tailors	4	
Gifts, novelties, and souvenirs	1		Hair and nail care	31	
Luggage and leather goods			Laundry	5	
Sewing, needlework, and piece goods			Travel agencies	1	
Religious articles			TV/Audio/Appliance repair		
Optical goods	2		Shoe repair	1	
Used merchandise			Medical offices		
Other misc. shopping goods (African mkt)	3		Other professional offices (architect, tax, check cashing)	7	
BLDNG MTR'LS, HARDWARE & GARDEN SUPPLY	2	1.1%	Home improvement services		
Paint, glass, and wallpaper			Funeral services	5	
Hardware	2		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (Harlem Children's zone, family counseling)	2	
AUTO-RELATED TRADE	0	0.0%	Communications Center		
Motor vehicle dealers					
Auto supplies					
Gasoline and service stations					
Car rental					
STOREFRONTS SUMMARY					
Total Storefronts	174	100.0%	Convenience Goods	35	20.1%
Shopping Goods	25	14.4%	Eating and Drinking Places	24	13.8%
Bldg Mtr'ls, Hardware, and Garden Supply	2	1.1%	Neighborhood Services	61	35.1%
Auto-Related	0	0.0%	Vacant Storefronts	27	15.5%
Source: AKRF, Inc., Summer 2004.					

Table 3-32
Adam Clayton Powell Jr. Boulevard Between West 116th and 148th Streets

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	29	9.6%	CONVENIENCE GOODS	57	18.9%
General Merchandise Stores	8	2.7%	Food Stores	46	15.3%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	34	
Department Stores, discount national chains			Supermarkets	4	
Miscellaneous general merchandise stores	8	-	Meat and fish markets	4	
Apparel and Accessory Stores	12	4.0%	Retail bakeries	1	
Men's and boy's clothing	1		Fruit and vegetable markets	2	
Women's and girl's clothing	3		Candy, nut, and confectionary	1	
Family clothing			Miscellaneous/specialty foods		
Children's clothing			Miscellaneous Convenience Goods	11	3.7%
Shoes	1		Drug and proprietary stores	3	
Other apparel and accessories	7		Liquor stores	2	
Furniture, Home Furnishings, and Equipment Stores	1	0.3%	Florists	2	
Furniture stores			Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands	1	
Drapery, curtain, and upholstery stores			Pet shops	1	
Miscellaneous home furnishing stores			Photocopy stores	2	
Household appliance stores			Photo development		
Audio and video electronics (beepers, cell phones)	1		Other miscellaneous convenience goods		
Records and musical instruments			Eating and Drinking Places	28	9.3%
Computer			Restaurants/Luncheonettes	13	
Miscellaneous Shopping Goods Stores	8	2.7%	Refreshments/"Fast food" places	12	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)	3	
Stationery			Neighborhood Services	85	28.2%
Jewelry	3		Video rentals		
Hobby, toy, and games			Banks	3	
Camera and photographic supplies			Cleaners and tailors	5	
Gifts, novelties, and souvenirs	1		Hair and nail care	33	
Luggage and leather goods			Laundry	6	
Sewing, needlework, and piece goods			Travel agencies	1	
Religious articles	1		TV/Audio/Appliance repair		
Optical goods	1		Shoe repair		
Used merchandise			Medical offices	2	
Other misc. shopping goods	2		Other professional offices (real estate broker, insurance)	17	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	6	2.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services	3	
Hardware	5		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (architect & planning, real estate, state offices, union, accountant, tax, driving school)	10	
Construction Company	1		Skin spa	1	
AUTO-RELATED TRADE	0	0.0%	Church	4	
Motor vehicle dealers			Communications Center		
Auto supplies					
Gasoline and service stations					
Car rental					
Pay Parking					
STOREFRONTS SUMMARY					
Total Storefronts	301	100.0%	Convenience Goods	57	18.9%
Shopping Goods	29	9.6%	Eating and Drinking Places	28	9.3%
Blding Mtr'ls, Hardware, and Garden Supply	6	2.0%	Neighborhood Services	80	28.2%
Auto-Related	0	0.0%	Vacant Storefronts	96	31.9%
Source: AKRF, Inc., Summer 2004.					

Table 3-33
Frederick Douglass Boulevard Between West 116th and 135th Streets

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	17	11.0%	CONVENIENCE GOODS	40	2.5%
General Merchandise Stores	2	1.3%	Food Stores	22	14.2%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	16	
Department Stores, discount national chains			Supermarkets	3	
Miscellaneous general merchandise stores	2		Meat and fish markets	2	
Apparel and Accessory Stores	4	2.6%	Retail bakeries	1	
Men's and boy's clothing			Fruit and vegetable markets		
Women's and girl's clothing	1		Candy, nut, and confectionary		
Family clothing	2		Miscellaneous/specialty foods		
Children's clothing			Miscellaneous Convenience Goods	18	11.6%
Shoes			Drug and proprietary stores	15	
Other apparel and accessories	1		Liquor stores	1	
Furniture, Home Furnishings, and Equipment Stores	5	3.2%	Florists	1	
Furniture stores			Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands	1	
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores	2		Photocopy stores		
Household appliance stores			Photo development		
Audio and video electronics (beepers, cell phones)	1		Other miscellaneous convenience goods		
Records and musical instruments	1		Eating and Drinking Places	20	12.9%
Computer	1		Restaurants/Luncheonettes	9	
Miscellaneous Shopping Goods Stores	6	3.9%	Refreshments/"Fast food" places	8	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books	1		Drinking places (alcohol)	3	
Stationery			Neighborhood Services	30	19.4%
Jewelry			Video rentals	1	
Hobby, toy, and games	2		Banks	1	
Camera and photographic supplies			Cleaners and tailors	5	
Gifts, novelties, and souvenirs			Hair and nail care	10	
Luggage and leather goods			Laundry	2	
Sewing, needlework, and piece goods			Travel agencies		
Religious articles			TV/Audio/Appliance repair		
Optical goods			Shoe repair	1	
Used merchandise			Medical offices	1	
Other misc. shopping goods	3		Other professional offices	3	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	0	0.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services	2	
Hardware			Health/Fitness club	1	
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (check cashing, movie theater)	2	
AUTO-RELATED TRADE	3	1.9%	Internet Cafe	1	
Motor vehicle dealers			Communications Center		
Auto supplies	1				
Gasoline and service stations	1				
Car rental					
Paid Parking	1				
STOREFRONTS SUMMARY					
Total Storefronts	155	100.0%	Convenience Goods	40	25.8%
Shopping Goods	17	11.0%	Eating and Drinking Places	20	12.9%
Blding Mtr'ls, Hardware, and Garden Supply	0	0.0%	Neighborhood Services	30	19.4%
Auto-Related	3	1.9%	Vacant Storefronts	45	29.0%

Source: AKRF, Inc., Summer 2004.

Table 3-34
Broadway Between West 114th and 152nd Streets

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	86	24.0%	CONVENIENCE GOODS	80	22.3%
General Merchandise Stores	8	2.2%	Food Stores	55	15.3%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	40	
Department Stores, discount national chains			Supermarkets	6	
Miscellaneous general merchandise stores	8		Meat and fish markets	3	
Apparel and Accessory Stores	28	7.8%	Retail bakeries	1	
Men's and boy's clothing	5		Fruit and vegetable markets	1	
Women's and girl's clothing	1		Candy, nut, and confectionary	2	
Family clothing	9		Miscellaneous/specialty foods	2	
Children's clothing			Miscellaneous Convenience Goods	25	7.0%
Shoes	8		Drug and proprietary stores	10	
Other apparel and accessories	5		Liquor stores	6	
Furniture, Home Furnishings, and Equipment Stores	24	6.7%	Florists	1	
Furniture stores	3		Cigar stores and stands	1	
Floor covering stores	2		Newsdealers and newsstands	1	
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores	4		Photocopy stores	1	
Household appliance stores			Photo development	5	
Audio and video electronics (beepers, cell phones)	11		Other miscellaneous convenience goods		
Records and musical instruments	4		Eating and Drinking Places	52	14.5%
Computer			Restaurants/Luncheonettes	18	
Miscellaneous Shopping Goods Stores	26	7.2%	Refreshments/"Fast food" places	32	
Sporting goods and bicycle			Other eating places--caterers, catering halls		
Books	1		Drinking places (alcohol)	2	
Stationery	2		Neighborhood Services	95	26.5%
Jewelry	9		Video rentals		
Hobby, toy, and games	2		Banks	5	
Camera and photographic supplies			Cleaners and tailors	12	
Gifts, novelties, and souvenirs	4		Hair and nail care	38	
Luggage and leather goods			Laundry	6	
Sewing, needlework, and piece goods	1		Travel agencies	6	
Religious articles			TV/Audio/Appliance repair		
Optical goods	2		Shoe repair		
Used merchandise			Medical offices	2	
Other misc. shopping goods	5		Other professional offices (insurance, taxes, money trans, check cashing)	13	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	5	1.4%	Home improvement services	2	
Paint, glass, and wallpaper			Funeral services		
Hardware	5		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (driving school, passport)	2	
AUTO-RELATED TRADE	5	1.4%	Communications Center	9	
Motor vehicle dealers					
Auto supplies	2				
Gasoline and service stations	2				
Car rental	1				
STOREFRONTS SUMMARY					
Total Storefronts	359	100.0%	Convenience Goods	80	22.3%
Shopping Goods	86	24.0%	Eating and Drinking Places	52	14.5%
Blding Mtr'ls, Hardware, and Garden Supply	5	1.4%	Neighborhood Services	95	26.5%
Auto-Related	5	1.4%	Vacant Storefronts	36	10.0%
Source: AKRF, Inc., Summer 2004.					

Broadway (Between West 168th and 182nd Streets). There are 191 storefronts on the segment of Broadway between West 168th and 182nd Streets in the heart of Washington Heights. This active retail strip stretches from Columbia Presbyterian Hospital in the south, under the ramps to the George Washington Bridge and Port Authority Bus Station at West 178th Street, to West 181st Street in the north, which is itself a major retail strip. Buildings along this stretch of Broadway tend to be 5-story residential with ground floor commercial uses. The storefronts themselves tend to be small local businesses, with a few notable exceptions, primarily in the vicinity of West 181st Street and the George Washington Bridge where there is a Blockbuster Video, Rite Aid, and Apple Bank. Overall, business activity appears to be brisk and healthy, though there are signs of some marginal businesses between Columbia Presbyterian Hospital and West 177th Street. Pedestrian traffic is heaviest close to the hospital and north of West 177th Street.

This portion of Broadway has a balanced mix of shopping goods, convenience goods and neighborhood services. Shopping goods represent 24 percent of storefronts, including 19 apparel and accessory stores, 11 furniture and home furnishings stores, and 14 miscellaneous retail stores (see Table 3-36). Neighborhood services make up 28 percent of storefronts, providing hair and nail care, travel services, check cashing, international telephoning, and banking. Convenience goods are found in 42 stores, accounting for 22 percent of the inventory, including 15 small grocery stores and bodegas, 11 drug stores, 3 supermarkets, including a Gristedes, and 2 meat and fish markets. There are also 2 hardware stores and an auto-related business in this area. Only 13 storefronts were observed to be vacant, representing just 7 percent of total storefronts along this strip.

West 181st Street (Between Cabrini Boulevard and Amsterdam Avenue). West 181st Street between Cabrini Boulevard and Amsterdam Avenue is a neighborhood and community shopping strip with a total of 148 stores in a range of sizes from small to large. The 181st Street strip west of Broadway provides convenience goods and neighborhood services for local residents, such as small groceries, hair salons, and dry cleaners. East of Broadway the strip has a more regional shopping character, anchored at the intersection of St. Nicholas Avenue, with stores such as Duane Reade, Foot Locker, Banco Popular, Payless, and Chase Manhattan bank. Vehicular and pedestrian traffic is heavy in this area, as a result of its proximity to the approaches to the George Washington Bridge, and its importance as a shopping resource for upper Manhattan and the Bronx.

There are 44 shopping goods stores in this area, representing almost 30 percent of the 148 total storefronts (see Table 3-37). Shopping goods retailers include 29 apparel and accessory stores, 12 furniture, home furnishings, and equipment stores, and 14 miscellaneous shopping goods stores. There are 41 neighborhood service establishments that constitute about 28 percent of storefronts, with more than half providing hair and nail care, as well as dry cleaning and travel services. Convenience goods account for only 18 percent of the storefronts, including 9 smaller groceries and bodegas. In addition to shopping and convenience goods retailers, the strip has 3 hardware stores and 3 auto-related stores. There are 13 vacant storefronts along this strip, representing 9 percent of the total commercial inventory.

Table 3-35
Broadway Between West 155th and 166th Streets

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	50	26.5%	CONVENIENCE GOODS	37	19.6%
General Merchandise Stores	6	3.2%	Food Stores	21	11.1%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	14	
Department Stores, discount national chains			Supermarkets	3	
Miscellaneous general merchandise stores	6		Meat and fish markets	4	
Apparel and Accessory Stores	21	11.1%	Retail bakeries		
Men's and boy's clothing			Fruit and vegetable markets		
Women's and girl's clothing	8		Candy, nut, and confectionary		
Family clothing	4		Miscellaneous/specialty foods		
Children's clothing	1		Miscellaneous Convenience Goods	16	8.5%
Shoes	7		Drug and proprietary stores	7	
Other apparel and accessories	1		Liquor stores	2	
Furniture, Home Furnishings, and Equipment Stores	10	5.3%	Florists	2	
Furniture stores	2		Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores			Photocopy stores	1	
Household appliance stores			Photo development	3	
Audio and video electronics (beepers, cell phones)	6		Other miscellaneous convenience goods	1	
Records and musical instruments	2		Eating and Drinking Places	28	14.8%
Computer			Restaurants/Luncheonettes	13	
Miscellaneous Shopping Goods Stores	13	6.9%	Refreshments/"Fast food" places	14	
Sporting goods and bicycle			Other eating places—caterers, catering halls		
Books	2		Drinking places (alcohol)	1	
Stationery	1		Neighborhood Services	53	28.0%
Jewelry			Video rentals		
Hobby, toy, and games	1		Banks	3	
Camera and photographic supplies			Cleaners and tailors	4	
Gifts, novelties, and souvenirs	1		Hair and nail care	16	
Luggage and leather goods			Laundry	2	
Sewing, needlework, and piece goods			Travel agencies	7	
Religious articles	3		TV/Audio/Appliance repair		
Optical goods	1		Shoe repair		
Used merchandise			Medical offices	2	
Other misc. shopping goods (Pet Store)	4		Other professional offices (money orders, lawyer, real estate)	12	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	2	1.1%	Home improvement services	1	
Paint, glass, and wallpaper			Funeral services		
Hardware	2		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service	1	
Lumber and other building materials			Other neighborhood services		
AUTO-RELATED TRADE	1	0.5%	Communications Center	5	
Motor vehicle dealers					
Auto supplies					
Gasoline and service stations	1				
Car rental					
STOREFRONTS SUMMARY					
Total Storefronts	189	100.0%	Convenience Goods	37	19.6%
Shopping Goods	50	26.5%	Eating and Drinking Places	28	14.8%
Blding Mtr'ls, Hardware, and Garden Supply	2	1.1%	Neighborhood Services	53	28.0%
Auto-Related	1	0.5%	Vacant Storefronts	18	9.5%
Source: AKRF, Inc., Summer 2004.					

Table 3-36
Broadway Between West 168th and 182nd Streets

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	46	24.1%	CONVENIENCE GOODS	42	22.0%
General Merchandise Stores	2	1.0%	Food Stores	22	11.5%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	15	
Department Stores, discount national chains			Supermarkets	3	
Miscellaneous general merchandise stores	2		Meat and fish markets	2	
Apparel and Accessory Stores	19	9.9%	Retail bakeries	1	
Men's and boy's clothing	2		Fruit and vegetable markets		
Women's and girl's clothing	9		Candy, nut, and confectionary	1	
Family clothing	4		Miscellaneous/specialty foods		
Children's clothing	2		Miscellaneous Convenience Goods	20	10.5%
Shoes	1		Drug and proprietary stores	11	
Other apparel and accessories	1		Liquor stores	2	
Furniture, Home Furnishings, and Equipment Stores	11	5.8%	Florists	4	
Furniture stores	2		Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores	2		Photocopy stores		
Household appliance stores			Photo development	2	
Audio and video electronics (beepers, cell phones)	6		Other miscellaneous convenience goods	1	
Records and musical instruments	1		Eating and Drinking Places	33	17.3%
Computer			Restaurants/Luncheonettes	15	
Miscellaneous Shopping Goods Stores	14	7.3%	Refreshments/"Fast food" places	16	
Sporting goods and bicycle	1		Other eating places—caterers, catering halls	1	
Books			Drinking places (alcohol)	1	
Stationery	1		Neighborhood Services	54	28.3%
Jewelry	2		Video rentals	1	
Hobby, toy, and games	4		Banks	5	
Camera and photographic supplies			Cleaners and tailors	5	
Gifts, novelties, and souvenirs	2		Hair and nail care	17	
Luggage and leather goods			Laundry		
Sewing, needlework, and piece goods			Travel agencies	5	
Religious articles			TV/Audio/Appliance repair		
Optical goods	2		Shoe repair	1	
Used merchandise			Medical offices	5	
Other misc. shopping goods (pawn shop, perfume store)	2		Other professional offices (driving school, money transfer)	7	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	2	1.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware	2		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services		
AUTO-RELATED TRADE	1	0.5%	Paid Parking	2	
Motor vehicle dealers	1		Communications Center	6	
Auto supplies					
Gasoline and service stations					
Car rental					
STOREFRONTS SUMMARY					
Total Storefronts	191	100.0%	Convenience Goods	42	22.0%
Shopping Goods	46	24.1%	Eating and Drinking Places	33	17.3%
Blding Mtr'ls, Hardware, and Garden Supply	2	1.0%	Neighborhood Services	54	28.3%
Auto-Related	1	0.5%	Vacant Storefronts	13	6.8%
Source: AKRF, Inc., Summer 2004.					

Table 3-37
West 181st Street Between Amsterdam Avenue and Cabrini Boulevard

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	44	29.7%	CONVENIENCE GOODS	27	18.2%
General Merchandise Stores	5	3.4%	Food Stores	14	9.5%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	9	
Department Stores, discount national chains			Supermarkets	1	
Miscellaneous general merchandise stores	5		Meat and fish markets	1	
Apparel and Accessory Stores	29	19.6%	Retail bakeries	2	
Men's and boy's clothing	7		Fruit and vegetable markets		
Women's and girl's clothing	6		Candy, nut, and confectionary	1	
Family clothing	1		Miscellaneous/specialty foods		
Children's clothing	1		Miscellaneous Convenience Goods	13	8.8%
Shoes	8		Drug and proprietary stores	4	
Other apparel and accessories	6		Liquor stores	2	
Furniture, Home Furnishings, and Equipment Stores	12	8.1%	Florists		
Furniture stores	4		Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops	1	
Miscellaneous home furnishing stores			Photocopy stores	1	
Household appliance stores			Photo development	1	
Audio and video electronics (beepers, cell phones)	8		Other miscellaneous convenience goods	4	
Records and musical instruments			Eating and Drinking Places	17	11.5%
Computer			Restaurants/Luncheonettes	8	
Miscellaneous Shopping Goods Stores	14	9.5%	Refreshments/"Fast food" places	9	
Sporting goods and bicycle	1		Other eating places—caterers, catering halls		
Books			Drinking places (alcohol)		
Stationery	1		Neighborhood Services	41	27.7%
Jewelry	2		Video rentals		
Hobby, toy, and games			Banks	3	
Camera and photographic supplies			Cleaners and tailors	6	
Gifts, novelties, and souvenirs	1		Hair and nail care	14	
Luggage and leather goods			Laundry	1	
Sewing, needlework, and piece goods	1		Travel agencies	4	
Religious articles	1		TV/Audio/Appliance repair		
Optical goods	4		Shoe repair	1	
Used merchandise	1		Medical offices	2	
Other misc. shopping goods	2		Other professional offices (real estate broker, insurance)	3	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	3	2.0%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware	3		Health/Fitness club	1	
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Other neighborhood services (check cashing, movie theater, learning center, rent-a-center)	6	
AUTO-RELATED TRADE	3	2.0%	Church		
Motor vehicle dealers			Communications Center	3	
Auto supplies					
Gasoline and service stations	1				
Car rental	1				
Pay Parking	1				
STOREFRONTS SUMMARY					
Total Storefronts	148	100.0%	Convenience Goods	27	18.2%
Shopping Goods	44	29.7%	Eating and Drinking Places	17	11.5%
Blding Mtr'ls, Hardware, and Garden Supply	3	2.0%	Neighborhood Services	41	27.7%
Auto-Related	3	2.0%	Vacant Storefronts	13	8.8%

Source: AKRF, Inc., Summer 2004.

Table 3-38
Dyckman Street Between Tenth Avenue and Payson Avenue

Category	Establishments		Category	Establishments	
	No.	Percent		No.	Percent
SHOPPING GOODS	49	42.6%	CONVENIENCE GOODS	19	16.5%
General Merchandise Stores	0	0.0%	Food Stores	12	10.4%
Department Stores, conventional national chains			Grocery stores, delis, bodegas	9	
Department Stores, discount national chains			Supermarkets		
Miscellaneous general merchandise stores			Meat and fish markets	1	
Apparel and Accessory Stores	27	23.5%	Retail bakeries	2	
Men's and boy's clothing	4		Fruit and vegetable markets		
Women's and girl's clothing	5		Candy, nut, and confectionary		
Family clothing	6		Miscellaneous/specialty foods		
Children's clothing	2		Miscellaneous Convenience Goods	7	6.1%
Shoes	7		Drug and proprietary stores	4	
Other apparel and accessories (Bridal Shop)	3		Liquor stores		
Furniture, Home Furnishings, and Equipment Stores	11	9.6%	Florists		
Furniture stores	1		Cigar stores and stands		
Floor covering stores			Newsdealers and newsstands		
Drapery, curtain, and upholstery stores			Pet shops		
Miscellaneous home furnishing stores	1		Photocopy stores	2	
Household appliance stores	1		Photo development		
Audio and video electronics (beepers, cell phones)	7		Other miscellaneous convenience goods	1	
Records and musical instruments	1		Eating and Drinking Places	14	12.2%
Computer			Restaurants/Luncheonettes	7	
Miscellaneous Shopping Goods Stores	11	9.6%	Refreshments/"Fast food" places	6	
Sporting goods and bicycle	1		Other eating places—caterers, catering halls		
Books	1		Drinking places (alcohol)	1	
Stationery			Neighborhood Services	2	19.1%
Jewelry	3		Video rentals	1	
Hobby, toy, and games	2		Banks	3	
Camera and photographic supplies			Cleaners and tailors	3	
Gifts, novelties, and souvenirs			Hair and nail care	5	
Luggage and leather goods			Laundry	1	
Sewing, needlework, and piece goods			Travel agencies	1	
Religious articles			TV/Audio/Appliance repair		
Optical goods	1		Shoe repair		
Used merchandise			Medical offices	6	
Other misc. shopping goods	3		Other professional offices (taxes)	2	
BLDING MTR'LS, HARDWARE & GARDEN SUPPLY	1	0.9%	Home improvement services		
Paint, glass, and wallpaper			Funeral services		
Hardware	1		Health/Fitness club		
Retail nurseries, lawn, and garden supply stores			Car service		
Lumber and other building materials			Money Transfer		
AUTO-RELATED TRADE	3	2.6%	Communications Center	2	
Motor vehicle dealers			Other neighborhood services (Club, check cashing)	2	
Auto supplies	1				
Gasoline and service stations	2				
Car rental					
STOREFRONTS SUMMARY					
Total Storefronts	115	100.0%	Convenience Goods	19	16.5%
Shopping Goods	49	42.6%	Eating and Drinking Places	14	12.2%
Blding Mtr'ls, Hardware, and Garden Supply	1	0.9%	Neighborhood Services	22	19.1%
Auto-Related	0	0.0%	Vacant Storefronts	10	8.7%
Source: AKRF, Inc., Summer 2005.					

Dyckman Street Between 10th Avenue and Payson Avenue. Dyckman Street is an active commercial strip located in the northern tip of Manhattan. Concentrated between Broadway and Nagle Avenue, the retail businesses serve the Inwood community as well as residents of Washington Heights. As shown in Table 3-38, there are approximately 115 storefronts located

within a six block stretch along Dyckman Street. Typical of a major shopping area, almost 43 percent (or 49 storefronts) of the total storefronts sell shopping goods such as apparel, furniture and home furnishings, miscellaneous shopping goods, hardware, and auto related goods. Apparel such as Jimmy Jazz and accessory businesses selling shoes and handbags make up the majority of the shopping goods stores, followed by electronics and cell phone stores.

Neighborhood services accounted for 19 percent (or 22 businesses) of the 115 storefronts along Dyckman Street. Most of the business establishments that dominate neighborhood services include hair and nail shops, medical offices, banks, and dry cleaners. Making up almost 17 percent of the total storefronts, convenience goods stores included grocery stores/delis, fish market, bakeries, and pharmacies. Eating and drinking establishments were the least represented retail category, making up only 12 percent of the total storefronts. Within this category, sit-down restaurants and fast food businesses such as McDonald's and Subway make up the majority. Although Dyckman Street is an active strip with well established businesses, almost 9 percent (or 10 businesses) of the storefronts were vacant.

FUTURE WITHOUT THE PROPOSED ACTIONS

Conditions on the project site and within the study area in the future without the proposed actions would be as discussed above under "Direct Business Displacement."

Trade Area Market Condition and Capture Rates

The primary changes that may affect retail market conditions in the trade area in the future without the proposed actions are population changes, which could increase the household expenditure potential within the trade area and generate additional demand for retail goods; and new retail projects, which would expand the retail inventory in the trade area. Changes in household expenditures, retail sales, and capture rates for the Primary Trade Area and 3-Mile Trade Area are described below.

Primary Trade Area

Based on 2010 forecasts generated by the New York Metropolitan Transportation Council in 2004, the population of the Primary Trade Area is expected to grow to approximately 3.0 million people by 2009. Assuming that the average household size remains at 2.9 persons per household in the Bronx and 2.1 persons per household in Manhattan, the trade area would contain approximately 376,662 households in 2009. According to expenditure data from Claritas, households located in the Bronx spend approximately \$20,512 per household per year on retail goods and households located in the Manhattan portion of the trade area spend roughly \$20,042 per household per year on retail goods. Assuming that Primary Trade Area households continue spending in those amounts, expenditure potential for retail goods would be \$13.6 billion in 2009.

At the same time, retail sales in the Primary Trade Area would also increase, as new retail projects known to be planned for the trade area are completed. Table 3-39 shows the capture rate in 2009 with the addition of several retail projects (and mixed-use projects that contain a retail component): the East River Plaza development (475,000 square feet of retail space); the Yankee Stadium project (19,000 square feet of retail space); a 48,500-square-foot retail project planned for Washington Avenue and East 164th Street; a proposed 130,000-square-foot BJ's Wholesale Club at 900 Brush Avenue, and a 31,000-square-foot retail development planned for 3rd Avenue between 161st and 163rd Streets. Based on sales estimates obtained from the *East River Plaza Final Environmental Impact Statement* (FEIS) and from the Urban Land Institute's 2004 *Dollars and Cents of Shopping Centers*, annual sales to household consumers at these developments

would total approximately \$640 million. Assuming that 80 percent of those sales (\$512 million) would be captured within the Primary Trade Area, these projects would collectively increase total trade area retail sales for the categories analyzed from \$6.3 billion under current conditions to \$6.8 billion in 2009.

Table 3-39
Estimated Capture Rates in the Future Without the Proposed Action by 2009
Primary Trade Area

Retail Category	Estimated Expenditure (Millions)	Estimated Sales (Millions)	Capture Rate
Shopping Goods	\$ 4,574	\$ 2,197	48.0%
<i>Department Stores</i>	\$ 1,442	\$ 385	26.7 %
Convenience Goods	\$ 6,199	\$ 3,423	55.2%
<i>Food Stores</i>	\$ 3,596	\$ 1,662	46.2%
Eating & Drinking	\$ 2,778	\$ 967	34.8%
Building Materials	\$ 387	\$ 205	52.9%
Total	\$ 13,938	\$ 6,792	48.7%
<p>Notes: All dollar values are presented in 2005 dollars. Projects included in the future without the proposed action are: the East River Plaza development (475,000 square feet of retail space); the Yankee Stadium project (19,000 square feet of retail space); a 48,500-square-foot retail project planned for Washington Avenue and East 164th Street; a proposed 130,000-square-foot BJ's Wholesale Club at 900 Brush Avenue, and a 31,000-square-foot retail development planned for 3rd Avenue between 161st and 163rd Streets. Projected sales from the planned Home Depot at East River Plaza were distributed between shopping goods (25 percent of sales) and building materials goods (75 percent of sales). Approximately 35 percent of the building materials portion of Home Depot sales were deducted to account for contractor (non-household) sales.</p> <p>Sources: 2002 Census of Retail Trade, Claritas, Inc. 2004 Retail SIC Summary data and 2004 Consumer Spending Patterns data; Urban Land Institute's 2004 <i>Dollars and Cents of Shopping Centers</i>; 2010 population projections issued by NYMTC in 2004, AKRF, Inc.</p>			

Table 3-39 summarizes the retail expenditure potential, sales, and capture rates for the Primary Trade Area in 2009 without the proposed action. The capture rates are based on the assumption that 80 percent of the sales from new retail projects would come from households living in the Primary Trade Area. In addition, it was assumed that 65 percent of the retail sales within the Primary Trade Area from the Home Depot planned for the East River Plaza retail development would come from households, with the remaining 35 percent discounted to reflect sales from contractors. Overall, with annual sales of approximately \$6.8 billion and annual household expenditure potential of \$13.9 billion, the capture rate for the Primary Trade Area would be approximately 48.7 percent by 2009—approximately 3 percentage points higher than it was in 2004. Convenience goods would continue to have the highest capture rate—55.2 percent, compared to 52.9 percent for building materials goods, 48.0 percent for shopping goods and 34.8 percent for eating and drinking places. Within the convenience goods category, the capture rate for food stores would increase by just under 4 percentage points, from 42.3 percent in 2005 to 46.2 percent in 2009. Within the shopping goods category, the department store capture rate would decrease slightly (from 27.0 percent to 26.7 percent) as population grows and no new department stores are added to the trade area.

3-Mile Trade Area

Based on 2010 forecasts generated by the New York Metropolitan Transportation Council in 2004 and the current average household sizes for Manhattan and the Bronx, the 3-Mile Trade Area would contain approximately 380,760 households in 2009. If households located in the Bronx portion of the trade area spend roughly \$18,633 per household per year on retail goods and households located in the Manhattan portion of the trade area continue to spend roughly \$20,436 per household per year on retail goods (Claritas, 2004), the household expenditure potential for those goods would be \$7.3 billion in 2009. This represents a 3 percent increase over household expenditures in 2005.

Retail projects known to be planned for the 3-Mile Trade Area include East River Plaza and the Yankee Stadium development described above. Conservatively assuming that 80 percent of all sales would be derived from households within the 3-Mile Trade Area (as opposed to the larger Primary Trade Area), sales from those developments within the Primary Trade Area are estimated to be \$155 million, which would increase sales in the 3-Mile Trade Area from approximately \$4.2 billion in 2005 to \$4.3 billion in 2009.

Table 3-40 summarizes the retail expenditure potential, sales, and capture rates for the 3-Mile Trade Area in 2009 without the proposed action. Even with the conservative assumption that 80 percent of the new sales would come from households living in the 3-Mile Trade Area, the overall retail capture rate would increase only slightly compared to the existing condition—from 58.1 percent in 2005 to 58.4 percent in 2009. The only increase would be in shopping goods sales, which would go from capturing roughly 63.5 percent of expenditure potential in 2005 to 65.5 percent in 2009.

Table 3-40
Estimated Capture Rates in the Future Without the Proposed Action by 2009
3-Mile Trade Area

Retail Category	Estimated Expenditure (Millions)	Estimated Sales (Millions)	Capture Rate
Shopping Goods	\$ 2,387	\$ 1,563	65.5%
<i>Department Stores</i>	\$ 769	\$ 264	34.3%
Convenience Goods	\$ 3,447.4	\$ 2,017	58.5%
<i>Food Stores</i>	\$ 2,043.0	\$ 1,120	54.8%
Eating & Drinking	\$ 1,466.9	\$ 682	46.5%
Total	\$ 7,301	\$ 4,261	58.4%
Note: All dollar values are presented in 2005 dollars. 25 percent of projected sales from the planned Home Depot at East River Plaza were distributed to shopping goods.			
Sources: 2002 Census of Retail Trade, Claritas, Inc. 2004 Retail SIC Summary data and 2004 Consumer Spending Patterns data, Urban Land Institute's 2004 <i>Dollars and Cents of Shopping Centers</i> ; 2010 population projections issued by NYMTC in 2004; AKRF, Inc.			

As noted above in Existing Conditions, a capture rate was not calculated for the building materials category in the 3-Mile Trade Area because these stores tend to have a regional draw far beyond the bounds of the 3-Mile Trade Area. Existing building materials stores deal primarily with professional builders and maintenance contractors, rather than do-it-yourself

homeowners and condominium owners (which is a very limited market within the 3-Mile Trade Area). In addition, none of the existing stores serve as anchors to major shopping streets.

PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The issue of competition as described in the *CEQR Technical Manual* is whether a project could affect neighborhood character by affecting the viability of neighborhood shopping areas through competition, thereby becoming an environmental concern. If an impact on any individual retailer or group of retailers is found to be great enough to undermine the viability of existing neighborhood shopping strips or shopping centers, and that effect may, in turn, alter neighborhood character, then the impact would be considered to be adverse.

As described in Chapter 1, "Project Description," on the eastern side of Exterior Street the Proposed Project would include a series of five 1-story retail buildings of approximately 19,820 gsf in size—collectively referred to as Retail Building E; a four-story, approximately 499,630-gsf building with 401,765 gsf of retail (Retail Building B/F); a six-level parking garage with 22,485 gsf of retail on Exterior Street (Retail Building C) and 8,015 gsf of retail on River Avenue (Retail Building D); and a 3-story, approximately 436,480-gsf retail building (Retail Building A). On the western side of Exterior Street, the Proposed Project would include a 2-story, approximately 264,170-gsf building with 140,435 gsf of retail (Retail Building G). In total, the project would comprise approximately 1.1 million gsf of new retail use on the site (see Table 3-41 below).

**Table 3-41
Retail Component of Proposed Project**

Building	Square Footage
Retail Building A	436,480 gsf
Retail Building B/F	401,765 gsf
Retail Building C	22,485 gsf
Retail Building D	8,015 gsf
Retail Building E	19,280 gsf
Retail Building G	140,435 gsf
Galleries	39,930 gsf
Total	1,068,390 gsf
Source: BTM Development Partners	

Total retail sales resulting from the proposed Gateway Center at Bronx Terminal Market are projected to be approximately \$472.8 million annually (see Table 3-42), generated by 755,990 gross square feet of large-scale retail space, 262,620 gross square feet of medium-scale retail stores, and 49,780 gross square feet of restaurants and small retailers. The total square footage was divided and categorized into retail space selling shopping goods, convenience goods, building materials, and eating and drinking establishments based on information provided by the project sponsor. For purposes of analysis, it is assumed that the Proposed Project may include: one large-scale building materials/home improvement store and one wholesale club, each approximately 130,000 square feet in size; one large-scale department store approximately 115,793 square feet in size; and one supermarket approximately 65,888 square feet in size. The estimated size and estimated sales allocated to convenience goods stores (shown in the table below) include the potential supermarket and the portion of the wholesale club that would be devoted to food and other convenience items. For example, of the \$120 million in estimated

convenience goods sales (including sales from outside the Primary Trade Area), approximately \$56.6 million would be generated by the potential supermarket and \$63.7 million by the potential wholesale club. It should be noted that although sales per square foot figures are typically lower for wholesale clubs than for supermarkets, this analysis conservatively assumes that the potential wholesale club would perform as well on a sales per square foot basis as the potential supermarket. The analysis further assumes that the potential supermarket, food component of the wholesale food store, and department store would perform as well as the top two percent of comparable stores in the United States (with the wholesale club and supermarket generating sales of \$859 per square foot and the department store generating sales of \$416 per square foot).

**Table 3-42
Estimated Retail Sales for Proposed Project**

Gateway Center at Bronx Terminal Market	Square Feet	Sales Per Square Foot	Total Estimated Household Sales (Millions)	Sales attributed to 3-Mile trade area (Millions) ⁵	Sales attributed to Primary Trade Area (Millions)
Shopping Goods	805,362	\$ 400	\$ 322.1	\$ 132.3	\$ 257.7
Department Stores	115,793	\$ 416	\$ 48.1	\$ 20.2	\$ 38.5
Convenience Goods (food sales from wholesale club and supermarket) ¹	139,988	\$ 859	\$ 120.3	\$ 52.7	\$ 96.2
Eating & Drinking ²	24,890	\$ 347	\$ 8.6	\$ 3.6	\$ 6.9
Building Materials (portion of home improvement store) ³	98,150	\$ 475	\$ 32.6	\$ 10.4	\$ 26.1
Total⁴	1,068,390		\$ 472.8	\$ 210.3	\$ 378.2

Notes:

- 1 The project is assumed to include a 65,888-square-foot supermarket and a 130,000-square-foot wholesale club. Based on wholesale club sales data from selected 2003 annual reports, 57% of the wholesale club sales are assumed to be from groceries.
- 2 Half of the 50,320 square feet of small-scale retail/restaurant space is assumed to be restaurants.
- 3 25 percent of the home improvement store square footage was allocated to the shopping goods category, as this is the estimated amount of shopping goods merchandise typically found in home improvement stores. Of the remaining building materials sales, 35 percent were attributed to contractor sales, and thus were not included in household sales.
- 4 Summing the square footage for the five categories will yield a total that is higher than the total amount of development planned. This is because the department stores category is a sub-set of the shopping goods category. Sales from the department store were counted in both the department store category and the shopping goods category.
- 5 The percent of total project sales applied to the 3-Mile Trade Area (for the purpose of calculating capture rates) was determined based on the current ratio, for each retail category, of 3-Mile Trade Area to Primary Trade Area expenditure potential.

Sources: Project plan for Gateway Center; Urban Land Institute, *Dollars & Cents of Shopping Centers, 2004*; proprietary sales data from department stores and shopping centers in the New York Metropolitan Area, AKRF, Inc

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Sales at the building materials store that would stem from retail goods such as carpets, lamps and furniture (as opposed to non-retail goods such as lumber and plumbing supplies) were counted in the shopping goods sales figure, and all sales at the department store were counted in the department store sales figure as well as the shopping goods sales figure. This means that those sales are essentially counted twice—once under the department store category and again under the shopping goods category. It should be noted that the totals presented in Table 3-42 are actual totals, which factor out the conservative double-counting.

Primary Trade Area Capture Rates

As shown in Table 3-43, the introduction of the Gateway Center at Bronx Terminal Market would increase the overall retail capture rate within the Primary Trade Area from 48.7 percent in the future without the proposed actions to approximately 51.3 percent in the future with the proposed project. (This calculation is based on the assumption that 80 percent of the household sales from the Proposed Project would come from households living in the Primary Trade Area.) The 51.3 percent capture rate indicates that even with the addition of 1.1 million gross square feet of retail shopping uses on the project site, a substantial percentage of the shopping goods buying power (48.7 percent) would continue to flow out of the Primary Trade Area.

Shopping goods stores would experience the greatest change in capture rate, with the capture rate increasing from approximately 48 percent in the future without the proposed project to nearly 54 percent in the future with the proposed project. The convenience goods, food store, and eating and drinking capture rates would all increase by less than three percentage points compared to the future without the proposed project. Projected capture rates for all types of retail goods would continue to fall below the 70 to 80 percent rate that is typical for Primary Trade Areas, indicating that the Proposed Project would not over-saturate the retail market in the Primary Trade Area.

Given that the proposed actions would not substantially raise the capture rate within the Primary Trade Area, the Proposed Project would not have the potential to adversely affect competitive stores throughout the trade area.

In the future without the proposed actions, growth in population and associated expenditure potential would outpace growth in retail sales, and retail expenditures would continue to leak out of the borough and New York City as a whole. The Proposed Project would divert a portion of trade area residents' retail sales dollars that might otherwise be spent outside the borough, and would enhance the retail selection available to residents. In addition, in recapturing sales outflows, the proposed actions would provide sales tax revenues to New York City and employment opportunities to the Bronx that might otherwise have been realized in another borough or outside New York City.

Table 3-43

**Comparison of Estimated Retail Capture Rates in Primary Trade Area:
Existing Conditions, Future Without the Proposed Actions, and
Future With the Proposed Actions**

	Retail Sales in Primary Trade Area (Millions)	Retail Expenditures by Primary Trade Area Households (Millions)	Primary Trade Area Capture Rate
Existing Conditions			
Shopping Goods	\$2,104	\$4,518	46.6%
<i>Department Stores</i>	\$385	\$1,424	27.0%
Convenience Goods	\$3,024	\$6,123	49.4%
<i>Food Stores</i>	\$1,503	\$3,551	42.3%
Eating & Drinking	\$966	\$2,743	35.2%
Building Materials	\$186	\$382	48.7%
Total	\$6,280	\$13,766	45.6%
2009 Without the Proposed Project			
Shopping Goods	\$2,197	\$4,574	48.0%
<i>Department Stores</i>	\$385	\$1,441	26.7%
Convenience Goods	\$3,423	\$6,199	55.2%
<i>Food Stores</i>	\$1,661	\$3,596	46.2%
Eating & Drinking	\$967	\$2,778	34.8%
Building Materials	\$205	\$387	52.9%
Total	\$6,792	\$13,938	48.7%
2009 With the Proposed Project			
Shopping Goods	\$2,455	\$4,574	53.7%
<i>Department Stores</i>	\$423	\$1,442	29.4%
Convenience Goods	\$3,520	\$6,199	56.8%
<i>Food Stores</i>	\$1,758	\$3,596	48.9%
Eating & Drinking	\$973	\$2,778	35.0%
Building Materials	\$231	\$387	59.6%
Total	\$7,179	\$13,551	51.5%
Note: All dollar values are presented in 2005 dollars.			
Sources: 2002 Census of Retail Trade, Claritas, Inc. 2004 Retail SIC Summary data and 2004 Consumer Spending Patterns data, AKRF, Inc			

3-Mile Trade Area Capture Rates

Capture rates for the three major categories of shopping goods were calculated under the assumption that only a proportion of sales from the Proposed Project would be generated by households living in the 3-Mile Trade Area. These proportions were based on current expenditure data (Claritas, 2004) for the Primary Trade Area and 3-Mile Trade Area. According to those data, 51.3 percent of Primary Trade Area shopping goods expenditure potential, 54.7 percent of Primary Trade Area convenience goods expenditure potential, and 52.0 percent of Primary Trade Area eating and drinking expenditure potential are located in the 3-Mile Trade

Area. Sales projected for the retail uses included in the Proposed Project were allocated to the 3-Mile Trade Area in these same proportions.

As shown in Table 3-44, the Proposed Project would increase the overall retail capture rate within the 3-Mile Trade Area from 58.4 percent in the future without the proposed actions to 60.9 percent. The 60.9 percent capture rate would still fall below the 70 to 80 percent rate that is typical for trade areas that are satisfying local retail demand.

Table 3-44

**Comparison of Estimated Retail Capture Rates in 3-Mile Trade Area:
Existing Conditions, Future Without the Proposed Actions, and Future With the
Proposed Actions**

	Retail Sales in 3-Mile Area (Millions)	Retail Expenditures by 3-Mile Area Households (Millions)	3-Mile Area Capture Rate
Existing Conditions			
Shopping Goods	\$1,473	\$2,319	63.5%
<i>Department Stores</i>	\$264	\$747	35.3%
Convenience Goods	\$1,971	\$3,350	58.8%
<i>Food Stores</i>	\$1,093	\$1,986	55.0%
Eating & Drinking	\$681	\$1,425	47.8%
Total	\$4,125	\$7,095	58.1%
2009 Without the Proposed Project			
Shopping Goods	\$1,563	\$2,387	65.5%
<i>Department Stores</i>	\$264	\$769	34.3%
Convenience Goods	\$2,017	\$3,447	58.5%
<i>Food Stores</i>	\$1,120	\$2,043	54.8%
Eating & Drinking	\$682	\$1,467	46.5%
Total	\$4,261	\$7,301	58.4%
2009 With the Proposed Project			
Shopping Goods	\$1,696	\$2,387	71.0%
<i>Department Stores</i>	\$284	\$769	37.0%
Convenience Goods	\$2,069	\$3,447	60.0%
<i>Food Stores</i>	\$1,172	\$2,043	57.4%
Eating & Drinking	\$684	\$1,467	46.7%
Total	\$4,449	\$7,301	60.9%
Note: All dollar values are presented in 2005 dollars.			
Source: 2002 Census of Retail Trade, Claritas, Inc. 2004 Retail SIC Summary data and 2004 Consumer Spending Patterns data, AKRF, Inc.			

Shopping goods stores would experience the greatest increase in capture rate, with the capture rate changing from approximately 65.5 percent in the future without the proposed project to 71.0 percent in the future with the proposed project. The department store capture rate would increase by less than the capture rate for all shopping goods, increasing from 34.3 percent in the future without the proposed project to 37.0 percent in the future with the proposed project.

The convenience goods capture rate would increase by 1.5 percentage points (from 58.5 percent to 60.0 percent), and the capture rate for the food store subset of the convenience goods category would increase by 2.6 percentage points (from 54.8 percent to 57.4 percent). The eating and drinking capture rate would increase by less than half of a percentage point (from 46.5 percent to 46.7 percent). Thus, in the future with the proposed project, the capture rates for all three major categories of retail goods would fall below the 70-80 percent rate that is typical for areas that are satisfying the local demand for retail goods.

As noted above in Future Without the Proposed Actions, a capture rate was not calculated for the building materials category in the 3-Mile Trade Area because these stores tend to have a regional draw far beyond the bounds of the 3-Mile Trade Area. Existing building materials stores deal primarily with professional builders and maintenance contractors, rather than do-it-yourself homeowners and condominium owners (which is a very limited market within the 3-Mile Trade Area). In addition, none of the existing stores serve as anchors to major shopping streets.

Given that the proposed actions would not substantially raise the capture rate within the 3-Mile Trade Area, the Proposed Project would not have the potential to adversely affect competitive stores throughout the trade area.

Potential Impacts on Local Shopping Areas

As described in the *CEQR Technical Manual*, competitive effects on stores closest to a project site can occur even when there are still substantial unspent dollars within a trade area. While competition does not constitute a significant adverse impact under CEQR guidelines, when competition adversely affects neighborhood character, it could constitute a significant adverse impact. If anchor stores have the potential to affect the operations of competitive stores located on neighborhood commercial strips, and if these competitive stores are the anchor stores on neighborhood commercial strips, there would be the potential for neighborhood character impacts. The *CEQR Technical Manual* also states that the number and variety of proposed non-anchor stores could accentuate the potential for impacts. The following section focuses on the expected overlap between the anticipated retail uses and the existing retail base in the 3-Mile Trade Area, evaluates the potential for indirect business displacement due to competition, and determines whether potential indirect business displacement could undermine the viability of retail concentrations, thereby leading to significant adverse impacts.

Given the broad range of product offerings anticipated at the Proposed Project, there would be overlap with the existing retail base of the 3-Mile Trade Area, as well as in the broader Primary Trade Area. The most significant overlap would exist in shopping goods categories; within the 3-Mile Trade Area, there are approximately 840 storefronts within major retail corridors (29 percent of all storefronts), including discount general merchandise stores, that primarily sell shopping goods. The existing retail centers offer a broad range of mid-priced and discount apparel and department store merchandise and, because of their close proximity to the Proposed Project, draw their sales from a similar regional trade area. In addition, the small and mid-sized non-anchor stores introduced by the project could include merchandise such as electronics and home goods, which could compete with stores in the retail strips of the 3-Mile Trade Area. Due to the projected increases in population and retail expenditures in the Bronx market and their strong competitive position in the market at present, effects on these retail corridors would likely be limited to diversion of some future sales growth rather than cutting into the existing levels of

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sales. In addition, any diverted sales could be lessened by the positive sales effects generated by intensifying the regional drawing power of the South Bronx.

Nevertheless, the overlap in product offerings between anticipated retail uses and existing retailers would increase local competition, which in turn could lead to the indirect displacement of some existing local retail stores. The retail concentrations outside of the 3-Mile Trade Area (but within the Primary Trade Area) would experience substantially smaller competitive pressures from the Proposed Project, as geographic markets served by each of these retail corridors would have only limited overlap with the Primary Trade Area for the Proposed Project. For reasons described below, the amount of indirect business displacement due to competition would be minimal, is not anticipated to jeopardize the viability of any neighborhood retail strips, is not expected to diminish the level of services provided, and therefore is not anticipated to result in significant adverse impacts due to competition.

There is outflow of consumer spending. The capture rate analyses for the 3-Mile Trade Area and the Primary Trade Area as a whole show substantial outflow of consumer spending, particularly for shopping goods, and that sales from the Proposed Project would not represent significant increases in capture rates for convenience goods, food stores, eating and drinking places, or building materials. Instead of diverting sales from the Bronx or Northern Manhattan, the Proposed Project would allow the potential for the Bronx to recapture much of its business from shopping goods sales dollars currently flowing out of the borough and out of New York City as a whole (principally to big box stores and wholesale clubs in other boroughs, Westchester, and New Jersey).

Local shopping areas have a higher percentage of convenience goods and neighborhood service stores compared to anticipated retail uses under the proposed actions Most of the retail that is proposed for the Gateway Center at Bronx Terminal Market would be destination-oriented shopping (i.e. largely shopping goods in big stores). Because many of the commercial retail strips in the 3-Mile Trade Area cater to a local community, the commercial strips tend to have a higher percentage of neighborhood retail and services stores. Local shopping areas that are neighborhood oriented (i.e., with a higher percentage of neighborhood services or convenience goods) would not compete with the destination retail in the Proposed Project. In most cases, convenience goods stores consist of items that are readily purchased in stores more convenient to home or work and generally do not require comparison shopping.

As shown in Table 3-45, within the Bronx sub-area, retail strips such as Third Avenue, The Hub, and Fordham Road have the highest percentage of shopping goods stores (at least 43 percent) compared to other retail strips which have shopping goods stores making up less than 25 percent of their total stores. Much of the retail found in these areas include local or national stores that merchandise to the local market such as VIM, Foot Locker, Modell's, and Payless Shoe Source.

Table 3-45
Retail Mix in the 3-Mile Trade Area

Retail Area	Shopping Goods	Bldg Materials, Hardware, Garden Supplies	Auto-Related Trade	Convenience Goods	Eating and Drinking Places	Neighborhood Services	Vacant Stores
East 138th Street, BX	19.7%	0.7%	1.3%	22.4%	12.5%	22.4%	17.0%
The Hub/149th Street, BX	51.2	0.5	1.4	6.1	8.9	16.0	16.0
East 161st Street, BX	19.6	0.0	3.9	9.8	25.5	29.4	11.8
Concourse Plaza Mall, BX	64.7	0.0	0.0	17.6	5.9	11.8	0.0
Fordham Road, BX	58.8	0.0	3.8	7.6	9.7	13.9	6.3
East 116th Street	32.6	0.0	0.0	15.5	17.8	26.4	6.2
West 116th Street	17.4	1.2	0.0	9.3	12.8	25.6	33.7
East 125th Street	41.0	0.8	2.0	10.0	17.7	19.7	8.8
West 125th Street	22.9	2.1	1.0	12.5	14.6	33.3	13.5
Third Avenue	43.4	2.1	3.5	18.2	11.2	15.4	6.3
Malcolm X Boulevard	14.4	1.1	0.0	20.1	13.8	35.1	15.5
Adam Clayton Powell, Jr. Boulevard	9.6	2.0	0.0	18.9	9.3	28.2	31.9
Frederick Douglass Boulevard	11.0	0.0	1.9	25.8	12.9	19.4	25.8
Broadway (Manhattanville)	24.0	1.4	1.4	22.3	14.5	26.5	10.0
Broadway (Hamilton Heights)	26.5	1.1	0.5	19.6	14.8	28.0	9.5
Broadway (Washington Heights)	24.1	1.0	0.5	22.0	17.3	28.3	6.8
West 181st Street	29.7	2.0	2.0	18.2	11.5	27.7	8.8
Dyckman Street	42.6	0.9	0.0	16.5	12.2	19.1	8.7

Notes: Tabulation includes storefronts along major retail corridors within the 3-Mile Trade Area. More detailed retail survey data are provided in Tables 3-20 through 3-34.

Source: Field surveys conducted by AKRF, Inc. in Summer 2004 and Summer 2005.

West 125th Street in Manhattan also has several shopping goods stores such as H&M, Marshall's, Nine West, Ann Taylor, and Staples that largely cater to local area residents. Consumers will continue to be drawn to these retail concentrations because of the high density of shopping goods stores that provide a wider variety of product selection and price points, particularly with respect to apparel, than is typical of larger discount department stores. In addition, those retail strips that do contain a high percentage of shopping goods stores—including Third Avenue, The Hub, Fordham Road, and 125th Street—have historically withstood competitive pressures created by substantial additions of destination retail in the surrounding areas.

Many local shopping areas cater to specific ethnic groups. Many neighborhoods in the 3-Mile Trade Area have a distinct character in terms of income levels and ethnic background of their residents. These shopping strips reflect the income and ethnic patterns of their local neighborhoods, with local retailers specializing in specialty goods and services familiar to specific ethnic community and frequently doing business in a foreign language. For example, shopping areas such as those found in East Harlem, Central Harlem, and Washington Heights cater to ethnic populations, respectively Hispanic, West African, and Dominican. By focusing on a specific, and in some cases, geographically small local market area, these retail concentrations in the 3-Mile Trade Area have maintained strong local support.

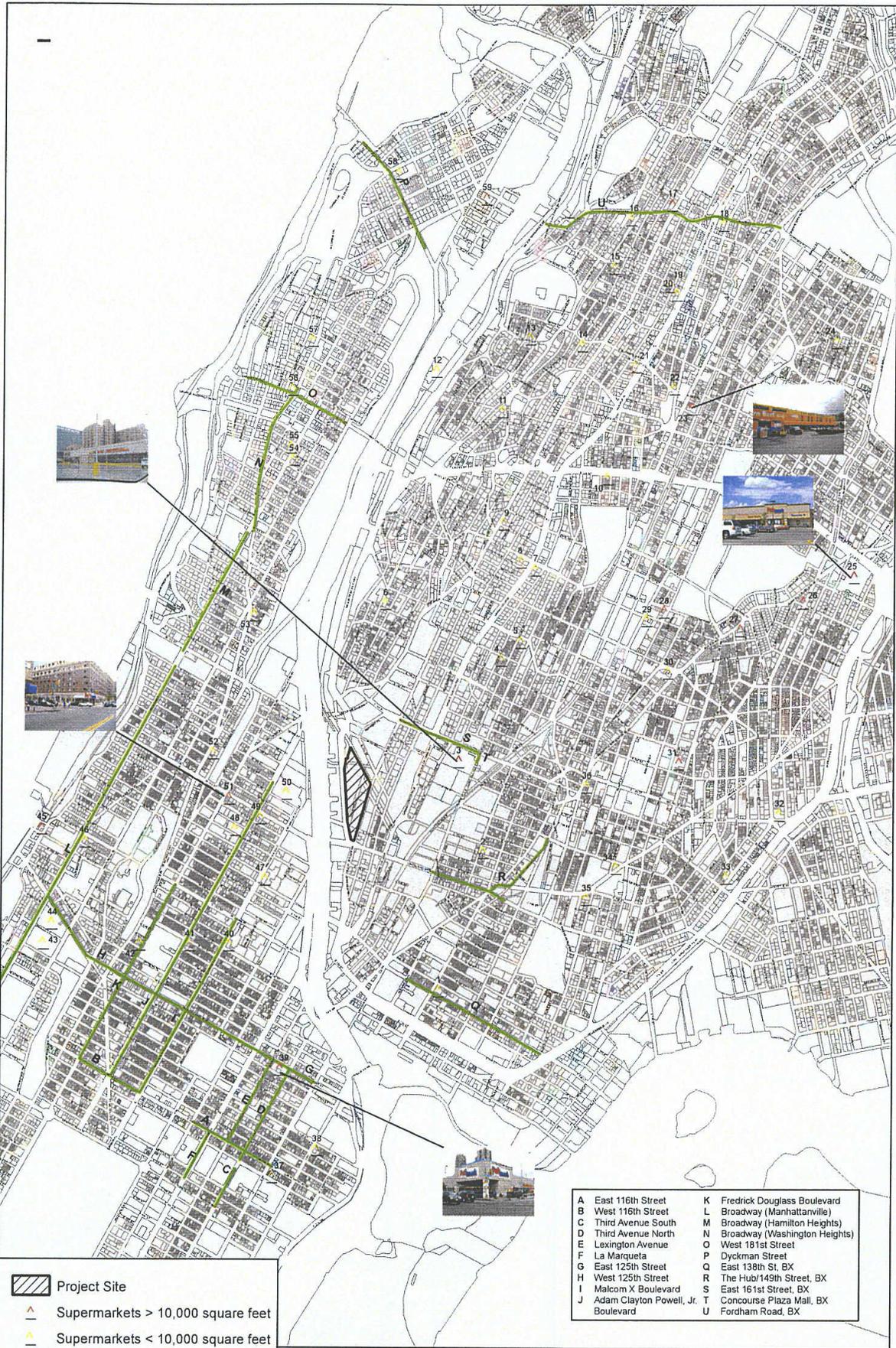
Many local shopping areas are located in close proximity to transportation hubs. Retail areas such as The Hub, 125th Street, and Fordham Road, in addition to being located near residential areas, are also located at or near transportation hubs, and draw business from foot traffic to and from the transportation hub. With their close proximity to bus routes and subway lines, these areas would not be significantly impacted by the proposed actions as the residential and commuter population would continue to find it convenient to shop along these corridors.

Many retail strips are located within major residential areas or central business districts. Many of the commercial retail strips in the 3-Mile Trade Area, such as the Hub and 149th Street, East 161st Street, Fordham Road, and 125th Street are also surrounded by dense residential neighborhoods and will continue to draw significant numbers of customers from the local population. In addition, the commercial districts associated with these retail concentrations include major office, institutional, and community uses that will continue to generate an employee population that supports these shopping areas. Thus, it is unlikely that they would be significantly impacted by the Proposed Project.

Effect on Local Food Stores

As described in the "Existing Conditions" section, the 3-Mile Trade Area contains a wide variety of food and beverage stores, including a number of large chain supermarkets as well as smaller independent stores such as delis and grocery stores, meat and fish markets, fruit and vegetable markets, and retail bakeries. Supermarkets and grocery stores in the 3-Mile Trade Area include a few large chain supermarkets, such as Pathmark and Western Beef. Most of these supermarkets are not part of major retail concentrations and some are located in free-standing buildings in primarily residential neighborhoods. In addition, there are many smaller supermarket chains, such as Met Food, Associated, and C-Town, that are often located on major shopping streets (although some, like the larger supermarkets) are located in the ground floor of residential buildings not associated with major retail concentrations). Based on retail surveys conducted, there are approximately 311 food stores in the 3-Mile Trade Area. Of those, roughly 247 are grocery stores, bodegas, or supermarkets selling a variety of grocery items, and 64 are specialty stores such as meat and fish stores and bakeries. Figure 3-4 shows the location of selected supermarkets in the 3-Mile Trade Area, and their geographic relationship to the major retail corridors surveyed as part of this study. The names and addresses of each supermarket are provided in Table 3-46.

The development of a supermarket or wholesale club as part of the retail mix of the Proposed Project would not be expected to have an adverse effect on the area's small and medium-sized food and beverage stores. Specialty stores like meat and fish stores and bakeries are generally patronized by neighborhood residents who value the convenience of shopping at a smaller store located near to their home, and the high quality of goods and personal service that can be offered by stores that specialize in certain food products. A wholesale club or chain supermarket would not offer this same convenience or specialized service, and business at specialty food and beverage stores is not expected to be significantly affected by either a wholesale club or a chain supermarket.



Selected Supermarkets
in the 3-Mile Trade Area
Figure 3-4

Table 3-46
Selected Supermarkets in the 3-Mile Trade Area

NUMBER	NAME	ADDRESS
1	Met	250 Willis Ave
2	Bravo	640 Courtlandt Ave
3	Food Bazaar	214 E 161st St
4	Associated	Sherman Ave & McCleallan St
5	Met	256 E 167th St
6	Associated	1136 Ogden Ave
7	Bravo	208 E 170th St
8	Associated	148 E 170th St
9	C Town	1468 Jerome Ave
10	Bravo	248 E 174th St
11	C Town	1750 University Blvd
12	C Town	35 Richman Plz
13	Bravo	127th W Burnside Ave
14	Associated	40 W Burnside Ave
15	Bravo	60 W 183rd St
16	C Town	2358 university Ave
17	Associated	2467 Jerome Ave
18	Bravo	2481 Valentine Ave
19	C Town	183rd St & Creston
20	Bravo	2285 Grand Concourse
21	Associated	148 E Burnside Ave
22	C Town	309 E Burnside Ave
23	Western Beef	4269 Park Ave
24	C Town	668 Crescent Ave
25	Pathmark	961 E 174th St
26	Western Beef	Southern Blvd & 173rd St
27	Fine Fare	1472 Boston Rd
28	Food Bazaar	Fulton Ave & St. Paul's Pl
29	C Town	3690 3rd Ave
30	C Town	630 E 169th St
31	Western Beef	1041 Prospect Ave
32	Fine Fare	1065 E 163rd St
33	C Town	809 Southern Blvd
34	Bravo	745 Westchester Ave
35	Met Food	Westchester Ave & Trinity Pl
36	C Town	3220 3rd Ave
37	C Town	309 E 115th St
38	Fine Fare	2330 1st Ave
39	Pathmark	160 E 125th St
40	Associated	448 Lenox Ave
41	C Town	2217 7th Ave
42	Bravo	2395 Frederick Douglas Blvd

Table 3-46 (cont'd)
Selected Supermarkets in the 3-Mile Trade Area

NUMBER	NAME	ADDRESS
43	Met	1316 Amsterdam Ave
44	C Town	560 W 125th St
45	Fairway	2350 12th Ave
46	C Town	3320 Broadway
47	Met	592 Lenox Ave
48	Fine Fare	2444 7th Ave
49	Pioneer	2497 Adam Clayton Powell
50	Met	2541 7th Ave
51	Pathmark	145th St & 8th Ave
52	Foodtown	148th St & St. Nicholas
53	C Town	1016 St Nicholas Ave
54	C Town	1314 St. Nicholas Ave
55	Bravo	1331 St Nicholas Ave
56	Bravo	4261 Broadway
57	Key Food	4365 Broadway
58	International Fine Food	4776 Broadway
59	Pathmark	410 W 207th St
<p>Notes: Supermarkets greater than 10,000 square feet are listed in bold. Sources: AKRF Field Survey, June 2005.</p>		

Small- to medium-sized, independently-owned grocery stores, bodegas, and delis serve a retail function similar to specialty food stores, though they offer a wider variety of food items. In general, these smaller supermarkets tend to act as convenience stores, where customers make frequent trips and purchase fewer items that are in immediate demand, such as milk or bread, or housekeeping supplies such as light bulbs. While shoppers may sometimes purchase these types of goods at wholesale clubs or large chain supermarkets, they typically do not make frequent trips for convenience goods to wholesale clubs or large supermarkets that are long distances from their homes. Instead, they are likely to continue to fill their more frequent convenience food and beverage needs at smaller, nearby grocery stores.

This tendency to make frequent convenience shopping trips to smaller stores would be reinforced by the fact that the project site is not immediately proximate to public transit and that approximately 76 percent of household members in the 3-Mile Trade Area do not have a vehicle available to them (compared to 62 percent for Bronx County as a whole). The 24 percent automobile ownership rate indicates that while many local households may make trips to a wholesale club that would be part of the Proposed Project once in a while (in cars with friends or family, or by private car service), they are not likely to do their more frequent grocery shopping there. In general, smaller grocery stores would continue to meet the demand by local residents in the 3-Mile Trade Area for convenience food purchases, and these stores would not be affected by competition from a wholesale club at the project site.

Stores that are most likely to experience competitive pressure from a wholesale club or large chain supermarket are other large chain supermarkets. This is because some local residents who currently shop in bulk or "stock up" at existing local supermarkets could decide to do their bulk

shopping at the potential Gateway Center at Bronx Terminal Market supermarket or wholesale club instead. However, there are a number of reasons why the supermarket and wholesale club contemplated under the proposed actions would not result in significant adverse impacts to neighborhood character due to competition:

Some portion of sales at wholesale club would be diverted from sales at other wholesale clubs. Although specific tenants have not been confirmed for the Proposed Project, it could potentially produce the first major wholesale club in the Bronx. As shown in Figure 3-5, there are 13 national wholesale clubs (BJ's Wholesale Club, Costco and SAM's Club) located in areas surrounding the Bronx, including Westchester County, Queens, and nearby parts of New Jersey, but no major wholesale club in the borough itself. Some residents of the Bronx currently shop at wholesale clubs outside of the borough—particularly those located nearby in Westchester and Queens. If the Proposed Project is built, many of these residents would shop at the new store more conveniently located in the Bronx, rather than traveling to stores outside of the borough. Therefore, some portion of sales at the Proposed Project's wholesale club would represent sales that have been diverted from other wholesale clubs, not from local supermarkets.

There is an outflow of consumer spending. The capture rate analyses for the 3-Mile Trade Area and the Primary Trade Area as a whole show that sales from a new supermarket and wholesale club would increase the capture rates for food stores only modestly. As discussed earlier, it is common for convenience goods stores in general and food stores in particular to have higher capture rates than shoppers' goods stores because people tend to purchase convenience goods at stores that are close to home. As shown in tables 3-43 and 3-44, the food store capture rates for both trade areas change very little from existing conditions to the future without the proposed project to the future with the proposed project are low even in the future with the proposed project—48.9 percent and 57.4 percent for the Primary and 3-Mile Trade Areas, respectively. Overall, the Proposed Project would allow the borough to recapture some of its business from sales dollars currently flowing out of the Bronx and out of New York City as a whole, particularly to those wholesale stores depicted in Figure 3-5.

Local grocery stores will remain more convenient to many shoppers. As described above, approximately 76 percent of residents in the 3-Mile Trade Area do not have access to a car. These people will likely continue to do a majority of their food shopping at grocery stores closest to their homes and closest to public transportation. It is therefore unlikely that a large portion of their sales would be diverted from local grocery stores to a wholesale club or major supermarket at the project site. In addition, the central locations of local grocery stores put them at an advantage over the project site in some respects. Residents are likely to combine shopping trips for groceries with errands such as trips to the bank or dry cleaner, and may also shop for retail goods such as clothing, shoes, or books on the same trip. Many of the smaller grocery stores in the 3-Mile Trade area are located along major commercial corridors that offer a variety of convenience goods, shopping goods, and neighborhood services, or in small retail clusters that include other basic convenience goods stores. Many residents, even those with access to a car, would continue to do the majority of their grocery shopping at these supermarkets because of the opportunity they provide for easily combining trips.

Supermarkets offer a broader selection of merchandise compared to a wholesale club. The selection of grocery items at the wholesale club would not be comparable to the selection offered at supermarkets within the 3-Mile Trade Area. As an example, according to the BJ's Wholesale Club's 2004 SEC Filing (Form 10-K), the corporation limits the number of different items offered in each product line, carrying an average of approximately 7,500 active stockkeeping

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units (SKU's) at any one time. In contrast, the filing indicates, supermarkets normally stock between 30,000 and 52,000 SKU's. Shoppers who prefer to have a wide assortment of items to choose from will continue to shop at area supermarkets.

Cost of membership will discourage some from shopping at a wholesale club. Households are required to purchase a wholesale club membership card in order to shop at the store. The cost of a membership card at wholesale clubs is typically about \$40 per household. This may serve as a barrier to some households in the 3-Mile Trade Area. Households who are not able, or choose not to pay a \$40 membership fee will continue to shop at local supermarkets.

Individual supermarkets in the 3-Mile Trade Area are not critical to the survival of local shopping centers. As described above, existing supermarkets are unlikely to experience a significant decrease in sales as a result of competition from a potential wholesale club or supermarket in the proposed Gateway Center at Bronx Terminal Market for a variety of reasons. As also described above, indirect displacement due to competition in itself does not constitute a significant adverse impact under CEQR guidelines. Only if proposed stores have the potential to affect neighborhood character by affecting the viability of neighborhood shopping areas is there a potential for significant adverse impacts. As shown in Figure 3-4, the 3-Mile Trade Area contains approximately 59 supermarkets, of which 12 are large chain supermarkets. As noted above, smaller supermarkets such as Met Food and C-Town typically with less than 10,000 square feet of space primarily serve the convenience shopping needs of local residents, i.e., frequent trips for smaller purchases, and so would not directly compete with the food stores in the Proposed Project. Even though one or more of these smaller supermarkets may be present on a local shopping street, they do not typically anchor the commercial mix and are not critical to the survival of surrounding stores, and so would not adversely alter neighborhood character even if they were to be negatively affected by competition. The section below evaluates the extent to which large chain supermarkets might be vulnerable to competition from a potential wholesale club and supermarket at the Gateway Center at Bronx Terminal Market, and whether or not these supermarkets are critical to the survival of the neighborhood commercial strips or shopping centers in which they are located. Overall, the proposed project is not expected to alter the number of businesses and services that are located on commercial corridors. The number of food stores or vacant storefronts is not expected to change as a result of the proposed actions.

Associated Supermarket on Jerome Avenue between Fordham Road and West 190th Street in the Bronx: Located just north of the Fordham Road retail corridor, this Associated supermarket primarily serves the dense residential neighborhoods immediately to the north and south of Fordham Road. As described above, Fordham Road is a major shopping destination with a total of 238 stores including a variety of shopping goods stores selling furniture, clothing, and electronics, but only a limited number of convenience goods stores. It is likely that many of the nearby residents purchase their convenience goods at this Associated supermarket, and would continue to do so with or without the addition of a supermarket or wholesale club at the Gateway Center at Bronx Terminal Market. The Associated supermarket is approximately 3 miles from the project site, lessening the likelihood that customers would travel this distance for convenience purchases. In addition, the Associated store is at the far western end of the Fordham Road shopping district, and any potential change in its viability would not jeopardize the overall vitality of the Fordham Road commercial district.

Western Beef on East 178th Street between Webster and Park Avenues in the Bronx: This Western Beef in the Tremont section of the Bronx is a free-standing store with a parking lot in front. The supermarket is north of the Tremont Avenue commercial corridor, and so it does not



Warehouse Clubs Within
Vicinity of Project Site
Figure 3-5

serve as an anchor for other retail stores in the area. As shown on Figure 3-4, this Western Beef is the only large supermarket serving the neighborhoods of Bathgate, Belmont, and East Tremont, which are situated east of Webster Avenue and north of 174th Street. Therefore it is unlikely that the store would lose a significant amount of sales to a potential wholesale club or supermarket in the proposed Gateway Center at Bronx Terminal Market, given the residential density in the area, the demand for convenience shopping, and distance from the project site,

Pathmark, Western Beef, and Fine Fare in Crotona Park East in the Bronx: Identified as numbers 25, 26, and 27 on Figure 3-4, these three large supermarkets are all located just east of Edward Stevenson Boulevard (Boston Road) in the Crotona Park East neighborhood of the Bronx. Pathmark is located on East 174th Street and Vyse Avenue; Western Beef is located at Southern Boulevard and East 173rd Street; and Fine Fare is located at Boston Road and James Polite Avenue. None of the stores are located within major commercial corridors. All three stores serve the densely populated residential neighborhood of Crotona Park East. The Pathmark is a large store situated in a small strip center that includes several small stores, but does not anchor nearby commercial areas on Boston Road and Tremont Avenue. Like Pathmark, Western Beef and Fine Fare are large stores with ancillary parking lots. Because these stores are situated in such a densely populated residential area, it is very likely that would continue to experience high demand for food and grocery items from the surrounding neighborhoods. In addition, these stores are located between approximately 2 and 3 miles from the project site, a distance that would deter shopping trips for convenience items. Overall, it is not expected that these supermarkets would experience detrimental competitive effects from a new supermarket or wholesale club at the Gateway Center at Bronx Terminal Market.

Food Bazaar on Fulton Avenue and St. Paul's Place in the Bronx: Located just outside Crotona Park in the Claremont section of the Bronx, the Food Bazaar on Fulton Avenue and St. Paul's Place is a large one-story store with a parking lot. The supermarket is not situated on a major retail corridor and does not serve as an anchor for other neighborhood retail. In addition, the density of residential development in the surrounding neighborhood assures that the store would continue to experience demand for food and other convenience items, supporting its continued viability.

Western Beef on Prospect Avenue between East 165th and 166th Streets in the Bronx: Similar to the other Western Beef stores in the 3-Mile Trade Area, this Western Beef is a large one-story store with a parking lot near a small cluster of retail stores including a Dunkin' Donuts, a Laundromat, and a 99 Cent store. However, the store is several blocks from Westchester Avenue which is a major retail corridor in the Morrisania section of the Bronx. It is likely that a large portion of the store's customer base comes from the public housing complex that occupies three blocks just west of the Western Beef—between East 161st Street and 166th Streets, Trinity and Tinton Avenues—and contains approximately 2,290 housing units. With such a large concentration of population located within blocks of the store, it is not likely that this Western Beef would be negatively affected by competitive pressure from the potential food stores at the Gateway Center at Bronx Terminal Market.

Food Bazaar at Concourse Plaza in the Bronx: This Food Bazaar, formerly the location of a Waldbaum's supermarket) is located in the Concourse Plaza Mall, one of the few destination shopping centers in the Bronx portion of the 3-Mile Trade Area. The shopping center itself contains a multiplex cinema, food court, several other retail and service establishments, and a parking deck. While the Concourse neighborhood surrounding the mall contains high-rise residential towers to the north and south, and dense mid-rise residential development to the east,

the principal activity in the immediate area is the Bronx courthouse complex and Bronx Borough Hall. Despite its relative proximity to the project site, the adjacent residential development is likely to continue to provide a viable convenience market for the Food Bazaar. In addition, the immediate presence of the courthouses generates a large number of workers and visitors who would very likely continue to patronize the Food Bazaar because of its extremely convenient access to the court complex.

Pathmark on West 207th Street and 10th Avenue in Manhattan: Pathmark on 207th Street is free-standing store with a parking lot, surrounded primarily by industrial uses. For example, New York City Transit's 207th Street Subway Shops and Yards is directly north of the Pathmark. While there is some retail activity along West 207th Street as it rises west of 10th Avenue, the Pathmark does not serve as a critical anchor to the area. In fact, because of its parking lot and proximity to the 207th Street Bridge, the supermarket attracts customers from throughout the Inwood neighborhood and beyond, including the University Heights neighborhood across the Harlem River in the Bronx. Thus, any potential competitive pressures from the Proposed Project would not result in significant adverse impacts to the nearby retail activity.

Pathmark on West 145th Street and Frederick Douglass Boulevard in Manhattan: Located in the ground floor of the recently constructed Bradhurst Court, this Pathmark serves the Manhattanville and Hamilton Heights neighborhoods which are targets for HPD's Neighborhood Entrepreneur Program (NEP) and Neighborhood Revitalization Program (NRP). The store does not have its own parking lot, but with proof of purchase from Pathmark, shoppers can park for free in the parking garage that serves the residential development. West 145th Street is not a major commercial strip, nor is Frederick Douglass Boulevard in this area. In addition, the anticipated development of new residential uses in the area would increase demand for the Pathmark, and buffer it from any potential competitive pressure from a potential wholesale club and supermarket in the proposed Gateway Center at Bronx Terminal Market.

Fairway on Twelfth Avenue and West 133rd Street in Manhattan: The Fairway located on Twelfth Avenue and West 133rd Street is situated near the Hudson River waterfront and is surrounded primarily by industrial and transportation-related uses. Its fame as a retailer of high quality foods at reasonable prices, and its parking lot allows the store to attract customers from a broad region that includes Manhattan, the Bronx and beyond. Upper West Side patrons, in particular, would continue to frequent Fairway rather than the potential wholesale club or supermarket at the Gateway Center at Bronx Terminal Market because of the store's reputation for value and quality, and its convenient location and easy accessibility via Riverside Drive or the No. 1 subway line. The store does not serve as an anchor to any neighborhood retail concentration. Therefore, it is unlikely that the store would be negatively affected by competition from the proposed project.

Pathmark on East 125th Street between Lexington and Third Avenues in Manhattan: The East 125th Street Pathmark is located between Lexington and Third Avenues, at the crossroads of the Lexington Avenue retail corridor and the 125th Street retail corridor. As described earlier, the Lexington Avenue retail corridor is primarily oriented to neighborhood services and shopping needs. Due in part to this neighborhood services orientation and the density of residential development in the surrounding area, Pathmark will continue to attract local shoppers who will look to combine shopping for groceries with trips for other services such as banking, beauty parlors, and medical offices. In addition, the location of this Pathmark is a particularly desirable one, since 125th Street is one of the most active retail corridors in the 3-Mile Trade

Area. As described earlier, 125th Street has a variety of chain retail stores such as H&M, Payless Shoes, The Body Shop, Duane Reade, and Rite Aid. The presence of other major brand shoppers and convenience goods stores and the high level of retail activity in the area indicate that even in the unlikely event that this Pathmark were displaced due to competition, it would not have an adverse impact on neighborhood character; with such a high density of residents and commercial foot traffic in the area, another retail tenant would re-tenant the vacated space quickly.

In conclusion, the retail that would be introduced by the proposed actions would overlap with the existing retail base in the 3-Mile Trade Area and in the Primary Trade Area as a whole, which in turn could lead to some indirect business displacement due to competition. However, the competitive pressure generated by the proposed actions would not jeopardize the viability of any retail strips in the area, and no significant adverse socioeconomic impacts would result. The capture rate analysis indicates that there is still a substantial outflow of consumer expenditure such that the proposed actions would not generate a critical mass that would adversely affect competitive stores. To the contrary, the proposed actions would help retain retail sales dollars, tax revenues, and employment opportunities in New York City while enhancing the retail selection available to its residents.

Trends have shown that retail strips have maintained strong customer bases even with the introduction of large amounts of destination retail in the trade area (e.g., the existing Concourse Plaza Mall, Fordham Road, The Hub in the Bronx, and 125th Street in Harlem). Local shopping areas have exhibited an ability to adapt to changing demographics and consumer bases over time, and businesses that are indirectly displaced would be replaced with other retail uses that can better capitalize on changed market conditions. While the composition of the retail mix continually changes to adapt to changing demand, the viability of shopping areas has been maintained. Large discount department stores exist in the trade area, and shopping goods continue to be sold on these local strips. There are many neighborhood shopping streets throughout New York City where local and national chains (similar to those located on shopping streets in the Bronx Terminal Market trade area) are found in close proximity to major shopping centers with no apparent negative impacts. For example, Austin Street in Queens contains many local and national retailers such as Banana Republic that are also found within Queens Center Mall. Other similar examples include Harlem USA on West 125th Street in Manhattan and the Atlantic Center Mall along Atlantic Avenue in Brooklyn. Harlem USA, which is a retail and entertainment complex with retail stores such as Old Navy, The Disney Store, HMV Records, Modell's Sporting Goods, and the New York Sports Club, is located in close proximity to other major local and national retailers on West 125th Street such as Marshall's, Ann Taylor, Nine West, and H&M. The 400,000 square foot Atlantic Center Mall, which includes tenants such as Old Navy, Pathmark, and Burlington Coat Factory, is located among other Atlantic Avenue retailers such as P.C. Richards, Modell's Sporting Goods, Walgreens, Duane Reade. In addition, adjacent to the Atlantic Center Mall is the recently-opened Atlantic Terminal Mall, which includes retail tenants such as Target, Gap, Victoria's Secret, and Children's Place.

Competitive pressure generated by a chain supermarket or wholesale club would be felt most strongly by major supermarkets in the 3-Mile Trade Area. Smaller food stores and shopping goods stores would experience more moderate competitive pressure, if any, and neighborhood services stores and eating and drinking places would not be adversely affected. Local residents would continue to shop at existing food stores and shopping goods stores for reasons cited above—convenience, variety and selection of items, public transit accessibility, and absence of membership fees. Furthermore, some proportion of shoppers at the Proposed Project's wholesale club would be Bronx residents who currently shop at wholesale clubs outside of the borough.

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Purchases from these households would represent sales captured from other wholesale clubs, rather than local supermarkets or general merchandise stores. Finally, the capture rate analysis indicates that the incremental sales captured by the potential supermarket and wholesale club would not generate a critical mass that would adversely affect competitive stores. The proposed project is not expected to alter the number of businesses and services that are located on commercial corridors in the Primary or 3-Mile Trade Area, and vacancy rates are not expected to change in the future (with the exception of a few locations in Harlem, where vacancies are expected to decrease as a result of redevelopment). While the possibility of some limited indirect business displacement due to competition can not be ruled out, any displacement that might occur would not jeopardize the viability of any local retail strips, and therefore would not be considered to be a significant adverse impact under CEQR. *

A. INTRODUCTION

The Proposed Project would result in the permanent closing of the Bronx House of Detention, a New York City Department of Correction (NYCDOC) facility, which is in reserve status and is currently closed. In addition, the Proposed Project would introduce new people—employees and shoppers of retail spaces, hotel guests and employees, and users of the proposed public open space and waterfront esplanade—to the study area. These new daytime populations would increase demands on the area's community facilities and services, including police and fire protection services. This chapter considers the potential effects of the Proposed Project on the operations and performance of these community services. Following the methodology of the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, this analysis focuses on public community facilities; private facilities and services are not assessed. Potential impacts on open space and recreational facilities are analyzed separately in Chapter 5, "Open Space."

CEQR methodology calls for detailed assessments in areas where a project may have an impact on the provision of public or publicly funded services available to the community. The *CEQR Technical Manual* provides thresholds that can be used to make an initial determination of whether a detailed study is necessary to determine potential impacts. With respect to public schools, libraries, health care facilities, and day care centers, the Proposed Project would not add any residential units to the area, and therefore would not meet the threshold for analysis. With respect to other community facilities such as jails, police and fire services, homeless shelters, colleges, and religious institutions, CEQR guidelines require a detailed assessment only when a project would have a direct effect on those services (i.e., would physically alter the facility, whether by displacement or other physical change). The Proposed Project would result in the permanent closing of the Bronx House of Detention, an NYCDOC facility. This facility is in reserve status, and is currently closed. An assessment of the effects of the displacement of the correctional facility on NYCDOC operations are presented in this chapter. The Proposed Project would not directly affect any police precinct houses or fire stations. Although a detailed assessment is not required, for the purpose of providing a more comprehensive analysis of the Proposed Project's effects on community services, this chapter provides a screening-level assessment of police and fire protection services.

Based on the following analysis, community facilities and services in and around the project area are considered to be sufficient to meet any increased demand that would result from the Proposed Project. The New York City Police Department (NYPD) and New York City Fire Department will continue to evaluate the need for personnel and equipment and make any necessary adjustments to adequately serve the area. Given the need for a continued presence in the Bronx and the need to dry-dock the Vernon C. Bain Center in the near future, NYCDOC would need a new site in the Bronx to build a new facility to replace the Bronx House of Detention.

B. EXISTING CONDITIONS

BRONX HOUSE OF DETENTION

The Bronx House of Detention is located on River Avenue at East 151st Street. The facility can accommodate up to 469 inmates. When in use, the facility primarily handles detainees awaiting, or on, trial in Bronx County. The Bronx House of Detention is currently closed. It was put into reserve status because its age, size, and physical layout make it more expensive to operate than other NYCDOC facilities.

POLICE SERVICES

The project area is served by the 44th Precinct of the NYPD. With headquarters located at 1 East 169th Street, the 44th Precinct serves an area of 1.97 square miles following the boundaries of Community District 4, roughly bounded by Cross Bronx Expressway/George Washington Bridge to the north, Webster and Park Avenues to the east, 149th Street to the south, and the Harlem River to the west. The precinct serves the neighborhoods of West Haven, Concourse Village, Concourse, High Bridge, and Mount Eden, and includes waterfront, Yankee Stadium, and the Criminal and Supreme Courts. Currently, staffing levels are sufficient to meet the needs of the community.

FIRE PROTECTION

There are presently four New York City Fire Department fire stations located in the Bronx within an approximately 1-mile radius from the project site: Engine Company 71/Ladder Company 55, located at 720 Melrose Avenue; and Engine Company 41, located at 330 East 150th Street; Engine Company 60/Ladder Company 17, located at 341 East 143rd Street; and Engine 68, Ladder 49 at 1160 Ogden Avenue.

Units responding to a fire are not limited to those closest to it, and several other fire houses are located within a 1-mile radius of the project site in Manhattan. Normally, a total of three engine companies and two ladder companies respond to each call. Engine companies carry hoses, while ladder companies provide search, rescue, and building ventilation functions. In addition, rescue companies are called for fires or emergencies in high-rise buildings. The Fire Department can also call on units in other parts of the City as needed.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

BRONX HOUSE OF DETENTION

In the future without the proposed actions, NYCDOC will have a need to replace a substantial portion (23 percent) of its existing bed capacity based on current jail occupancy projections. Building the new jail capacity will require either the construction of new facilities, so that the oldest and least efficient units can be eliminated, or the reopening of the less efficient facilities that are now in reserve.

Construction on Rikers Island incurs substantial penalty costs due to security needs, access limits, and utility issues. NYCDOC's capital budget includes approximately \$1 billion over the next ten years for capacity replacement. Choices from among alternative approaches to implement this replacement program have not yet been made. The replacement program is an

opportunity to build state-of-the-art, staff-efficient facilities and an opportunity to reduce the unsupportable concentration of capacity on Rikers Island.

POLICE SERVICES

The NYPD typically adjusts its allocation of personnel as the need arises. Staffing needs will continue to be evaluated and personnel will be assigned based on population growth, area coverage, crime levels, and other local factors. It is NYPD policy not to make adjustments in advance of planned or potential development. Each year, the precinct may be assigned new recruits, but there are also losses due to retirements, transfers, and promotions. While no change is expected, adjustments to the size and deployment of the police force based on budgetary factors or other policy decisions may be made by 2009 or 2014 in the future without the Proposed Project.

FIRE PROTECTION

Like NYPD, the Fire Department does not allocate personnel based on proposed or potential developments, but responds to demonstrated need. The Fire Department has no immediate plans to make any changes in stations or equipment in the area. In 2009 and 2014, the Fire Department will continue to evaluate the need for personnel and equipment and make necessary adjustments to adequately serve the area.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

BRONX HOUSE OF DETENTION

The proposed actions include the disposition of the Bronx House of Detention for redevelopment. This action would reduce NYCDOC's reserve capacity by approximately 30 percent. Fewer beds would be available to be reopened when NYCDOC eventually replaces the 4,800 temporary beds on Rikers Island that are approaching the end of their useful lives. Therefore, the Proposed Project would reduce the options available to NYCDOC as it chooses among several capacity replacement configurations. The Proposed Project would also reduce the number of jail beds available in Bronx County, where 22 percent of the City-wide inmate population is now arraigned. Given the need for a continued presence in the Bronx and the need to dry-dock the Vernon C. Bain Center in the near future, NYCDOC would need a new site in the Bronx to build a new facility to replace the existing Bronx House of Detention and to provide improved access to jail facilities to families of inmates, defense attorneys, and other members of the community. The siting of any new facility will be subject to its own discretionary approval and its CEQR review.

POLICE SERVICES

The introduction of new retail, hotel, and open space uses to the project site may necessitate the assignment of additional personnel, resources, and equipment to the area. Typically, a commitment of resources would be based on demonstrated need. Overall, the role of NYPD in providing effective, efficient service is not expected to be adversely affected by the Proposed Project.

FIRE PROTECTION

The Proposed Project would be constructed in accordance with all applicable fire and safety codes. Therefore, there would be no direct effects on the physical operations of, or access to, Fire Department facilities.

Overall, the response time of local emergency services is not expected to be significantly affected by the Proposed Project in either 2009 or 2014. The Fire Department would continue to provide adequate fire protection services to the project area and surrounding neighborhoods. *

A. INTRODUCTION

This analysis of potential open space impacts followed the methodologies contained in the *City Environmental Quality Review (CEQR) Technical Manual*. According to the *CEQR Technical Manual*, the first step is to take an inventory of all publicly accessible recreational facilities within a defined study area. The study area is based on the distance a person is assumed to walk to reach a neighborhood open space. Workers or other daytime populations are assumed to walk about a ¼-mile and residents are assumed to walk about a ½-mile to reach neighborhood open spaces.

The Proposed Project would result in the development of approximately 1.1 million gross square foot (gsf) of retail uses, which would introduce a sizable daytime population in excess of 500 workers and a substantial number of shoppers to the project site. Therefore, a commercial open space analysis covering a ¼-mile study area was prepared to determine whether the added workers and visitors brought to the neighborhood by the Proposed Project would significantly increase the demands for local parks and recreational facilities. The assessment does not include an analysis of residential open space ratios within a ½-mile area because the proposed actions would not introduce new residents to the area.

The Proposed Project would not displace any existing open space resources. In addition, it would create approximately two acres of new publicly accessible open space on the Harlem River shoreline. The ratio of passive open space for the daytime population would remain above the CEQR guideline of 0.15 acres per 1,000 workers for the daytime population in both the 2009 and 2014 Build years; therefore, there would be no significant adverse impact to passive open space for the daytime population. The passive open space ratio per 1,000 residents and workers combined would increase by approximately 8.35 percent in 2009 and 6.16 percent in 2014 from No Build conditions and would remain above the recommended weighted average (of CEQR guidelines) ratio of 0.38 acres per 1,000 residents and workers.

As the passive open space ratio for workers would remain above CEQR guidelines and the combined passive open space ratio for workers and residents would increase from the No Build condition and remain above guidelines, the Proposed Project would not result in significant adverse impacts to open space.

B. METHODOLOGY

The open space study area comprises all census tracts that have 50 percent of their area located within ¼-mile of the project site. Within the open space study area, all publicly accessible open spaces are inventoried to determine their character, condition, and acreage. Open spaces located within ¼-mile of the project site, but within a census tract having less than 50 percent of its area located within ¼-mile of the project site, are not included quantitatively in the open space assessment but are discussed qualitatively. A portion of the study area is located within

Manhattan. The Manhattan open spaces are accessible via the Macombs Dam and 145th Street Bridges located within the study area, and are thus considered in the quantitative assessment.

Open spaces within the study area are differentiated between acreage dedicated to active and passive recreation. Active open spaces have facilities for organized games, children's equipment, basketball, handball, fields, and playgrounds. Passive open spaces are characterized by gardens, walkways, and benches, perhaps with tables and board games (e.g., chess tables). The open space analysis for the commercial population focuses on impacts to passive open space.

Next, the number of potential users of these open spaces is determined based on the most recent (2000) census data for the residential population and on (2000) reverse journey to work data compiled by the United States Department of Transportation.

With an inventory of available resources and potential users, the adequacy of open space is then assessed both quantitatively and qualitatively. The quantitative analysis computes the ratio of open space acreage to the population and compares this ratio with CEQR guidelines. For nonresidential populations, the City considers 0.15 acres of open space per 1,000 workers to represent a reasonable amount of open space resources for that population. The needs of the residential population are also considered in combination with that of the nonresidential population because it is assumed that both residents and workers will use the same passive open spaces. Therefore, a weighted average of the amount of open space necessary to meet the CEQR guideline of 0.50 acres of passive open space per 1,000 residents and the aforementioned guideline of 0.15 acres of passive open space per 1,000 workers is considered in this analysis. This ratio changes depending on the proportion of residents and workers in each study area. It is recognized that these goals are not feasible for many areas of the City, and they are not considered impact thresholds. Rather, these are benchmarks indicating how well an area is served by open space.

C. EXISTING CONDITIONS

OPEN SPACE USER POPULATION

Population data for the study area is presented in Table 5-1. As shown below, under existing conditions, there are approximately 14,679 residents and 5,547 workers in the open space study area.

**Table 5-1
Existing Resident and Daytime Populations**

Tract	Resident Population	Worker Population
214	3,161	268
236	5,688	428
57	858	2483
59.01	4,972	2368
Total Population (study area)	14,679	5,547
Source: U.S. Census of Population and Housing, 2000; Reverse Journey to Work Data, compiled by NYSDOT		

OPEN SPACE INVENTORY

The open space study area contains a total of nine open spaces, with approximately 27.61 acres of active and passive open space. The open space resources within the study area are listed in Table 5-2 and are shown on Figure 5-1. Of this total, 14.89 acres are active and 12.72 acres are passive space (see Table 5-1). The open spaces are primarily City parks and playgrounds operated by the New York City Department of Parks and Recreation (NYCDPR). Two open spaces located within private residential complexes and one open space located within a New York City Housing Authority (NYCHA) complex are also open to the general public. The major open spaces in the study area are described below.

Table 5-2
Existing Open Space Inventory

Map Ref.	Name	Borough	Owner/ Agency	Acres of Passive Open Space	Acres of Active Open Space
1	Colonel Charles Young Triangle	MN	NYCDPR	1.15	0
2	Harlem River Houses	MN	NYCHA	0.12	0.08
3	Bill 'Bojangle' Robinson Playground	MN	NYCDPR	0.02	0.15
4	Frederick Johnson Playground	MN	NYCDPR	0.61	1.83
5	Esplanade Gardens Open Space	MN	Private	0.4	0.04
6	Colonel Charles Young Playground	MN	NYCDPR	0.64	5.78
7	Delano Village Open Space	MN	Private	0.05	0.05
8	Garrison Playground	BX	NYCDPR	0.14	0.56
9	Franz Sigel Park	BX	NYCDPR	9.59	6.4
Total				12.72	14.89
Source: New York City Department of Parks and Recreation open space database, AKRF, Inc. field surveys, August 2004.					

FRANZ SIGEL PARK

This facility on the Grand Concourse between 151st Street and 158th Street has a mix of active and passive recreational facilities. The 16-acre park contains basketball and handball courts, baseball fields, jungles gyms, a comfort station, and landscaped hills.

COLONEL CHARLES YOUNG PLAYGROUND

This 6.4-acre park is located between West 143rd and 145th Streets, east of Seventh Avenue in Manhattan. The park contains a mix of active and passive recreational facilities, such as swings, basketball courts, handball courts, baseball fields, play equipment, spray showers, a comfort station, benches, and trees.

FREDERICK JOHNSON PARK

This 2.4 acre park is located between West 150th and 151st Streets, east of Seventh Avenue in Manhattan. The park contains largely active recreational facilities, such as handball courts, tennis courts, and play equipment. Passive recreational amenities include benches and game tables.

QUANTITATIVE ASSESSMENT

Within the open space study area there are 27.61 acres of total open space, of which 12.72 acres are passive space. As described above, the non-residential population focuses on passive open space, as that is the type of open space typically used by daytime populations. Based on a 2000 worker population of 5,547, the passive open space ratio is 2.29 acres per 1,000 workers; well above the guideline of 0.15 acres per 1,000 workers. As shown in Table 5-3 below, the suggested combined ratio of acres of passive open space to residents and workers in the existing condition is 0.40 acres per 1,000 workers and residents. The ratio of passive open space to the existing combined population is 0.63 acres per 1,000 residents and workers, well above the suggested guideline.

QUALITATIVE ASSESSMENT

As described above, there is enough passive open space in the study area to serve the nonresidential population and when the residential population is considered along with the daytime population the study area still has sufficient passive open space to serve both populations simultaneously. In addition, a portion of Macombs Dam Park, a largely active recreational space with some passive recreational amenities, such as a lawn, is located within ¼-mile of the project site. Although it provides recreational facilities to the daytime and residential populations, Macombs Dam Park is not included in the quantitative assessment because it is within a census tract having less than 50 percent of its area located within ¼-mile of the project site. Summit Avenue Park is a 0.06-acre park located just outside the ¼-mile perimeter. This park contains a hillside lawn area with a small playground. These open spaces supplement the publicly-accessible open spaces located within the study area.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

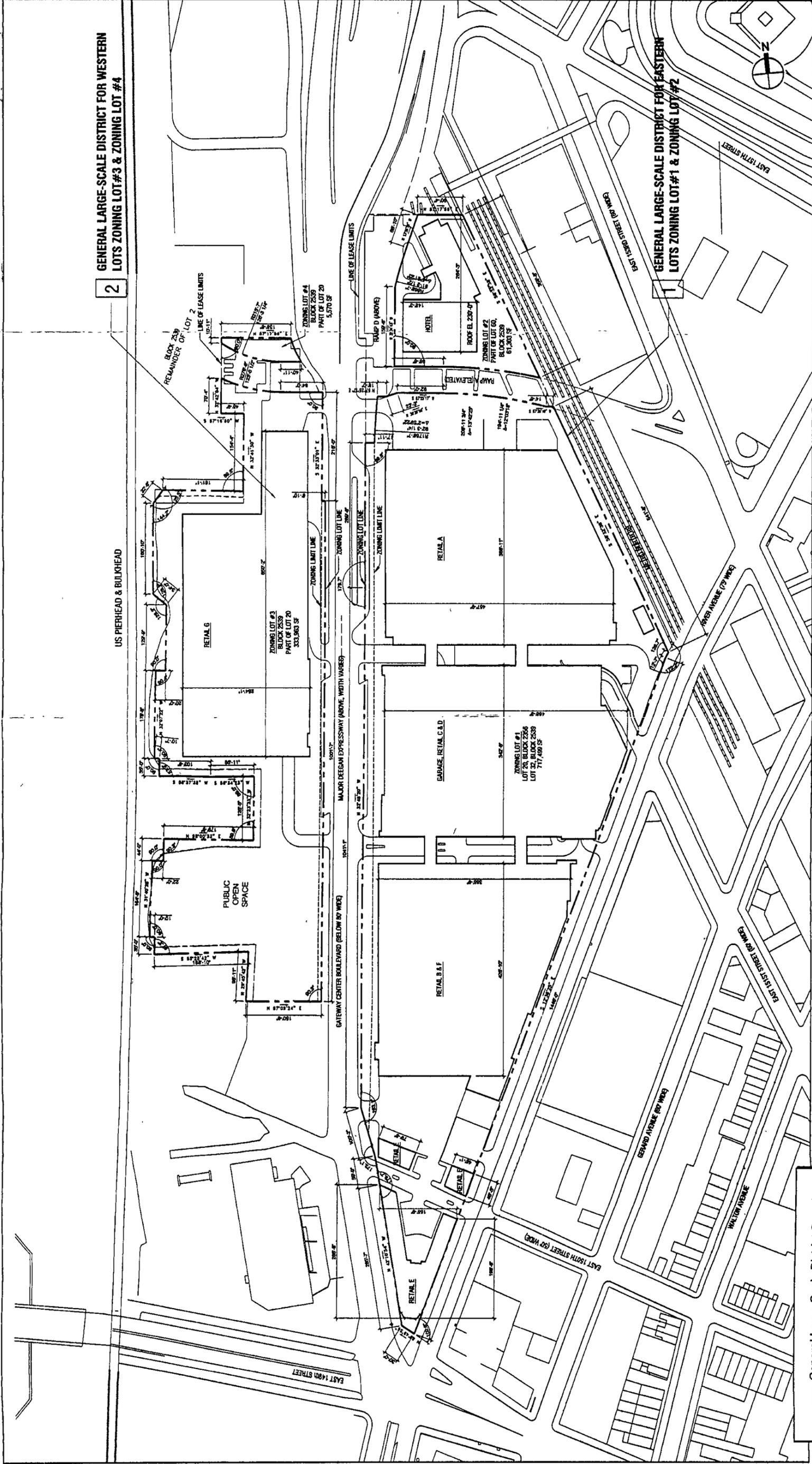
2009

STUDY AREA POPULATION

No new major real estate development projects that would introduce new residents to the study area are expected to be completed in the No Build condition by 2009. One project that would introduce a new worker population is expected. Lincoln Hospital has plans to construct new facilities, including a 30,000 sf labor and delivery center and a 2,000 sf MRI unit. These facilities are expected to introduce an additional 71 workers to the study area by 2009. It is also expected that the population would continue to grow as a result of additional development projects that are not planned at this time. Thus, a growth rate of 0.5 percent per year has been assumed. It is expected that the 2009 population would be approximately 15,050 for the residential population and 5,758 for the daytime population. The renovation of the Hostos Community College building, the replacement of the existing New York City Department of Homeless Services Emergency Assistance Unit, and the reconstruction of 149th Street would not introduce new residential or worker populations to the study area.

STUDY AREA OPEN SPACES

In the future without the proposed actions, no new open space projects are expected to be completed in the study area by 2009. However, a new Yankee Stadium could be constructed within Macombs Dam Park, just north of the existing stadium. As noted above, Macombs Dam



2
 GENERAL LARGE-SCALE DISTRICT FOR WESTERN
 LOTS ZONING LOT #3 & ZONING LOT #4

1
 GENERAL LARGE-SCALE DISTRICT FOR EASTERN
 LOTS ZONING LOT #1 & ZONING LOT #2

--- General Large-Scale District Boundary

Site Plan
 Figure S-2

Park is not included within the open space study area because it is located in a census tract that does not have half of its area within ¼-mile of the project site. The potential open space impacts of this No Build project are discussed in Chapter 22, “Future Conditions with a Relocated Yankee Stadium.” As noted in that chapter, the Yankee Stadium project is expected to develop a 4.8-acre portion of the western side of the Gateway Center at Bronx Terminal Market project site as a public open space with active uses, as part of a parkland replacement program to offset the loss of Macombs Dam Park land to be used for the new stadium site.

In this scenario, it is expected that the project sponsor would return its leasehold interest in the western portion of the Gateway Center at Bronx Terminal Market site, and the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site. Instead, it is anticipated that the City—with contributions from the project sponsor—would develop a public open space, which would be maintained by NYCDPR. However, even without the Proposed Project’s development of a 2-acre park on the west side of the project site, the conclusions of the open space analysis would not change, as the passive open space ratios for workers, as well as workers and residents combined, in the area would continue to exceed DCP’s guidelines. The Proposed Project’s workers and visitors would enjoy proximity to the new open space developed in conjunction with the Yankee Stadium project.

ADEQUACY OF OPEN SPACES

In the open space study area, the residential population is expected to increase to approximately 15,050 and the daytime population is expected to increase to approximately 5,758. The acreage of passive open space is expected to remain at 12.72 acres. The worker population will continue to be well-served by the passive open space inventory. With an inventory of 12.72 acres, the passive open space ratio will be 2.21 acres per 1,000 workers, which is above the guideline of 0.15 acres per 1,000 workers. While the change in the residential and worker population in the future without the proposed actions alters the weighted average passive open space guidance value, the new measure changes by a negligible amount and when rounded remains at 0.40 acres of passive open space per 1,000 workers and residents. The combined passive open space ratio per 1,000 workers and residents in the future without the proposed actions would be 0.61, and would remain above this guideline.

The surrounding area parks will continue to provide additional open space for area residents and workers.

2014

STUDY AREA POPULATION

No major development projects that would introduce new residential or worker populations in the study area are expected to be completed in the No Build condition by the 2014 build year. The anticipated growth rate of 0.5 percent per year is projected to continue, resulting in a residential population of approximately 15,430 and a worker population of approximately 5,901 persons.

STUDY AREA OPEN SPACES

No new open space projects are expected to be completed in the open space study area by 2014.

ADEQUACY OF OPEN SPACES

In the open space study area, the residential population is expected to increase to approximately 15,430 and the daytime population is expected to increase to approximately 5,901. The acreage of passive open space will remain at 12.72 acres. With a ratio of 2.16 acres per 1,000 workers, the worker population will continue to be well-served by the passive open space inventory. The combined worker and residential populations will have 0.60 acres of passive open space per 1,000 persons and would remain above the combined ratio of 0.40.

The study area currently has sufficient passive open space to serve the daytime and combined residential and daytime populations.

E. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

2009

STUDY AREA POPULATION

By 2009, the Proposed Project would provide approximately 1.1 million gross square feet (gsf) of retail space and would employ approximately 2,191 workers. Approximately 297 workers currently working on the project site would be displaced. Thus, the net daytime population in the future with the Proposed Project would total approximately 7,652 in the 2009 Build year, for a total population of 22,702.

STUDY AREA OPEN SPACES

The Proposed Project would create approximately two acres of publicly accessible passive open space on the project site along the Harlem River. The open space would contain a waterfront esplanade along with a larger area on the southern edge of the project site along the waterfront that contains benches and landscaping.

ADEQUACY OF OPEN SPACES

A comparison of open space ratios in the existing, No Build, and Build conditions is shown in Table 5-3. With the Proposed Project, the daytime population in the study area would total approximately 7,652 persons. The acreage of passive open space would increase to 14.72 acres. The ratio of passive open space for the daytime population would decrease by 13.1 percent to 1.92 acres per 1,000 workers, which is still well above the guideline of 0.15 for the daytime population; therefore, there would be no significant adverse impact to passive open space for the daytime population. The passive open space ratio per 1,000 residents and workers would increase by approximately 5.9 percent to 0.65 acres per 1,000 persons and would remain above the recommended weighted average ratio of 0.38 acres per 1,000 residents and workers in the future with the proposed actions. As the passive open space ratio for workers and the combined passive open space ratio for workers and residents would remain above recommended guidelines, the Proposed Project would not have significant adverse impacts to open space in 2009.

**Table 5-3
Analysis of Adequacy of Public Open Space Resources
in the 1/4-Mile Study Area**

	Existing Conditions	No Build Conditions 2009	No Build Conditions 2014	With the Project 2009	With the Project 2014
Study Area Population:					
Residents	14,679	15,050	15,430	15,050	15,430
Workers	5,547	5,758	5,901	7,652	8,300
Total	20,226	20,808	21,331	22,702	23,730
Open Space Acreage:					
Total	27.61	27.61	27.61	29.59	29.59
Active	14.89	14.89	14.89	14.89	14.89
Passive	12.72	12.72	12.72	14.72	14.72
Open Space Ratios (acres per 1,000 residents and/or workers):					
Passive	2.29/1,000 workers	2.21/1,000 workers	2.16/1,000 workers	1.92/1,000 workers	1.77/1,000 workers
Recommended Weighted Average Ratio for Passive	0.40/1,000 residents and workers	0.40/1,000 residents and workers	0.40/1,000 residents and workers	0.38/1,000 residents and workers	0.38/1,000 residents and workers
Combined Passive	0.63/1,000 residents and workers	0.61/1,000 residents and workers	0.60/1,000 residents and workers	0.65/1,000 residents and workers	0.62/1,000 residents and workers
Percent Change:		Existing to No Build		No Build to Project	
Passive	N/A	-3.67	-6.01	-13.07	-17.87
Combined Passive	N/A	-2.80	-5.18	5.88	3.84
Notes: Planning Goal Ratios 0.15 acres/1,000 workers, 0.50 acres/1,000 residents of passive open space. A weighted average ratio is used combining DCP's goals of 0.50 acres/1,000 residents and 0.15 acres/1,000 workers.					
Source: 2000 U.S. Census of Population and Housing					

2014

STUDY AREA POPULATION

By 2014, the Proposed Project would construct a 250-room hotel that would employ approximately 155 workers. In addition, based on a rate of 1.5 guests per room the hotel would also introduce approximately 350 guests to the area. Thus, the net daytime population in the future with the proposed actions would total approximately 8,300 in 2014 for a total population of approximately 23,730.

STUDY AREA OPEN SPACES

No additional open space would be created on the project site by 2014.

ADEQUACY OF OPEN SPACES

With the completion of the Proposed Project, the daytime population in the study area would total approximately 8,300 persons. The acreage of passive open space would remain at 14.72 acres. The ratio of passive open space for the daytime population would decrease from the 2014 No Build condition to 1.77 acres per 1,000 workers, which is still well above the guideline of

Gateway Center at Bronx Terminal Market DEIS

0.15 for the daytime population. The passive open space ratio per 1,000 residents and workers would increase from the 2014 no build condition to 0.62, and would remain above the recommended weighted average ratio of 0.38 acres per 1,000 residents and workers in the future with the proposed actions. As the passive open space ratio for workers and the combined passive open space ratio for workers and residents would remain above recommended guidelines, the proposed actions would not have significant adverse impacts to open space in 2014. Overall, the Proposed Project would not have any significant adverse impacts on open space. *

A. INTRODUCTION

The Proposed Project would create a series of retail buildings of up to four stories in height, a six-level parking garage, a hotel, and a publicly accessible open space and waterfront esplanade totaling approximately two acres. This chapter describes the potential effect of the incremental shadows from the proposed buildings on surrounding open spaces and sun-sensitive historic resources.

As described below, the analysis shows that the Proposed Project would have no significant adverse shadow impacts. The proposed buildings would cast shadows on Macombs Dam Park, but these shadows would be cast during the midday hours of the winter months and would mostly fall on paved areas, and thus would not affect park usage or vegetation growth. The open space to be created by the Proposed Project would receive incremental shadows throughout the year, however, the majority of the open space would be only covered by project-generated shadows in the early morning hours. The portion of the waterfront esplanade to the west of the proposed Retail Building G would continue to receive shadows through the early afternoon, but it would receive full sun in the early evening until sunset in the late spring and through the summer. Open space users could utilize the southern portion of the open space if they desired a sunny seating area when the esplanade would be in shadow, but most esplanade users are expected to walk, bike, or run through this area (rather than sit), and thus would not be affected by the shadows. As necessary, plantings on the esplanade will conform to any New York City Department of Parks and Recreation (NYCDPR) requirements for shade-tolerant species. In addition, this new open space would not exist without the proposed building to be constructed adjacent to it. Incremental shadows would not meet any of the criteria that would lead to a significant adverse impact based on shadow coverage.

B. METHODOLOGY

Following the guidelines of the 2001 *New York City Environmental Quality Review (CEQR) Technical Manual*, this analysis considers shadows on four representative days of the year: March 21st/September 21st, the equinoxes; May 6th/August 6th, the midpoints between the summer solstice and the equinox; June 21st, the summer solstice and the longest day of the year; and December 21st, the winter solstice and shortest day of the year. In identifying potential effects, CEQR focuses on uses and users of the open space, landscaping and vegetation, and, if there are historic resources, features or details that are both sunlight-dependent and make such resources significant. The CEQR methodology does not consider shadows and incremental increases in shadows within 1½ hours of sunrise or sunset. Therefore, the analysis period is between 1½ hours after sunrise and 1½ hours before sunset.

The *CEQR Technical Manual* identifies the following as situations when a significant shadow impact may occur:

- Substantial reduction in sunlight where a sensitive use is already subject to substandard sunlight (i.e., less than the minimum time necessary for survival);
- Reduction in sunlight available to a sensitive use from more to less than the minimum time necessary for its survival;
- Substantial reduction in sunlight to a sun-sensitive use or feature; and
- Substantial reduction in the usability of the open space.

C. SHADOW SCREENING

Because of the heights of the proposed buildings and the location of several open spaces near the project site, a shadow screening analysis was performed to identify those open spaces or historic resources that could be affected by shadows from the Proposed Project. Following the guidelines of the *CEQR Technical Manual*, a complete list of all sun-sensitive historic resources and open spaces was created within the area of the potential shadow sweep of the proposed buildings.

To identify resources of concern, the potential maximum length of the shadows is first considered. A building has a maximum shadow length factor equal to 4.3 times its height during the December analysis. This occurs during the beginning and end of the analysis period when shadows are cast in a west and east direction, respectively. Towards midday, the shadow length factor becomes smaller as the sun rises in the sky and at noon shadows are cast 2.07 times the height of the building. For example, since the proposed hotel would be approximately 230 feet in height, it would have a maximum shadow length factor of approximately 989 feet at the beginning and end of the analysis period and approximately 476 feet at noon. In general, shadow length factors for the remainder of the analysis periods are shorter than they are in December. However, the days are longer, resulting in a larger analysis period and thus a larger shadow sweep. This means that during the December analysis period, shadows can only be cast up to 43 degrees east and west, and in June, the longest analysis period, shadows can be cast up to 108 degrees, allowing for open spaces to have a potential effect in June that would not be reached by shadow in December. After the maximum shadow length of the Proposed Project was determined, open spaces and sun-sensitive historic resources within the shadow sweep were identified.

OPEN SPACES & HISTORIC RESOURCES

Table 6-1 lists all of the open spaces that fall within the ¼-mile open space study area. Eliminated from further analysis are open spaces that would be out of shadow range of the proposed buildings (e.g., any resources directly south of the project site) or that would not be affected by project shadows because they are already covered by shadows from existing buildings.

For a complete list and description of the open spaces and historic resources in the area see Chapter 5, "Open Space" and Chapter 7, "Historic Resources," respectively. There are no historic resources with sun-sensitive features or historic landscapes expected to be affected by the shadow sweep of the Proposed Project.

D. RESOURCES OF CONCERN FOR FURTHER ANALYSIS

The only publicly accessible open space that was identified as being potentially affected by project shadows was Macombs Dam Park.

Table 6-1
Shadows Screening:
Open Spaces Within Maximum Shadow Distance

Map Ref.	Open Spaces Within ¼-Mile Study Area	Outside Reach of Potential Shadows
Open Spaces Included in Analysis		
2	Macombs Dam Park	NO
Open Spaces Screened out of Analysis		
1	Joyce Kilmer Park	YES
3	John Mullaly Park	YES
4	Franz Sigel Park	YES

Macombs Dam Park is divided into several segments. The segment north of East 161st Street contains a track, a football field with bleachers, and two baseball fields. South of East 161st Street adjacent to Yankee Stadium, the park contains handball courts, basketball courts, a baseball field with bleachers, a comfort station, and several paved plazas with benches. The eastern portion of the park is a parking area. Along East 161st Street west of Jerome Avenue are several small landscaped areas that are part of Macombs Dam Park. The triangle between the Macombs Dam Bridge approach and Jerome Avenue contains trees and a lawn area with a walking path. The portion of the park between Anderson and Woodcrest Streets contains benches and a game table; the portion between Woodcrest and Ogden Streets contains a grassy hill slope, game tables, and benches; and the portion between Ogden Street and Summit Avenue contains Summit Playground and a grassy hill.

The Proposed Project will also create a new publicly accessible waterfront open space south of the proposed Retail Building G on the west side of Exterior Street, and an esplanade west of Retail Building G along the Harlem River that would be impacted by project-related shadows.

E. ASSESSMENT OF SHADOW IMPACTS

The sun rises in the east and casts its earliest (and longest) shadows towards the west. Later in the morning, the sun rises higher in the sky, casting shorter shadows towards the northwest. At noon (1:00 PM DST), the sun is at its highest point in the sky and casts the shortest shadows of the day to the north. In the afternoon, the sun continues to move west and begins to descend, casting longer shadows toward the northeast and east.

In its yearly cycle, the height of the sun in the sky and the time and directional location at which it rises and sets varies by season. In the winter, the sun travels in a low arc across the southern sky, rising late in the southeast and setting early in the southwest. Because it is so low in the sky, it casts longer shadows. In the spring and fall, the sun arcs through the sky at a somewhat higher angle, rises earlier in the east, and sets later in the west. In these seasons, shadows are of moderate length. In the summer, the sun arcs through the sky at its highest angle, rising almost directly overhead at noon. For this reason, summer shadows are shortest. However, in the summer, the sun rises earliest and sets latest; it also travels farther, from the northeast to the northwest. Thus, the summer sun casts shadows in more directions than those seen in other

Gateway Center at Bronx Terminal Market DEIS

seasons and its late sunset and early sunrise creates shadows earlier in the morning and later in the evening than in other seasons.

MARCH 21/SEPTEMBER 21 ANALYSIS PERIOD: 7:36 AM TO 4:29 PM EASTERN STANDARD TIME (EST)

On the equinoxes (March 21 and September 21), shadows from the Proposed Project would not create incremental shadows on Macombs Dam Park. The proposed buildings' shadows would not reach the park.

The Proposed Project would begin to cast shadows on the project-generated open space and waterfront esplanade starting at 7:36 AM (see Table 6-2). By 8:15 AM the shadows would have moved off of the open space, but would remain on the esplanade. The amount of incremental shadows would decrease throughout the day, as the shadows begin to move closer to the proposed buildings and north (see Figures 6-1 and 6-2). A small portion of the esplanade would be in shadow until the end of the analysis period.

**Table 6-2
Project Shadow Durations**

	March 21/ September 21 7:36 AM – 4:29 PM EST	May 6/August 21 7:27 AM – 6:18 PM DST	June 21 6:57 AM – 7:01 PM DST	December 21 8:51 AM – 2:53 PM EST
Open Space				
Macombs Dam Park	—	—	—	11 AM – 2:30 PM EST
Proposed Open Space and Waterfront Esplanade	7:36 AM – 4:29 PM EST	7:27 AM – 3:15 PM DST	6 57 AM – 3:45 PM DST	8:51 AM – 2:53 PM EST
Notes: September 21 is the equivalent of March 21, but one hour later. August 6 is the equivalent of May 6.				

MAY 6/AUGUST 6 ANALYSIS PERIOD: 7:27 AM TO 6:18 PM DAYLIGHT SAVINGS TIME (DST)

During this analysis period, shadows from the Proposed Project would not create incremental shadows on Macombs Dam Park. The proposed buildings' shadows would not reach the park.

The project-generated open space and waterfront esplanade would be in shadow from Retail Buildings B and G of the Proposed Project starting at 7:27 AM (see Table 6-2). By 8:00 AM the shadows from the proposed Retail Building B would have moved off of the open space. The incremental shadows from Retail Building G would remain on the esplanade, but would decrease throughout the day as the shadows begin to move closer to the proposed buildings and north (see Figures 6-3 and 6-4). Incremental shadows would remain on the esplanade until 3:45 PM.

JUNE 21 ANALYSIS PERIOD: 6:57 AM TO 7:01 PM DST

On the summer solstice, the longest day of the year, the Proposed Project would not cast incremental shadows on Macombs Dam Park. The proposed buildings' shadows would not reach the park.

The Proposed Project would begin to cast shadow on the project-generated open space and waterfront esplanade starting at 6:57 AM (see Table 6-2). By 8:00 AM the shadows would have moved off of the open space, but would remain on the esplanade. The incremental shadows would decrease throughout the day as they begin to move closer to the proposed buildings and north (see Figures 6-5 and 6-6). Incremental shadows would remain on the esplanade until 4:15 PM.

DECEMBER 21 ANALYSIS PERIOD: 8:51 AM TO 2:53 PM EST

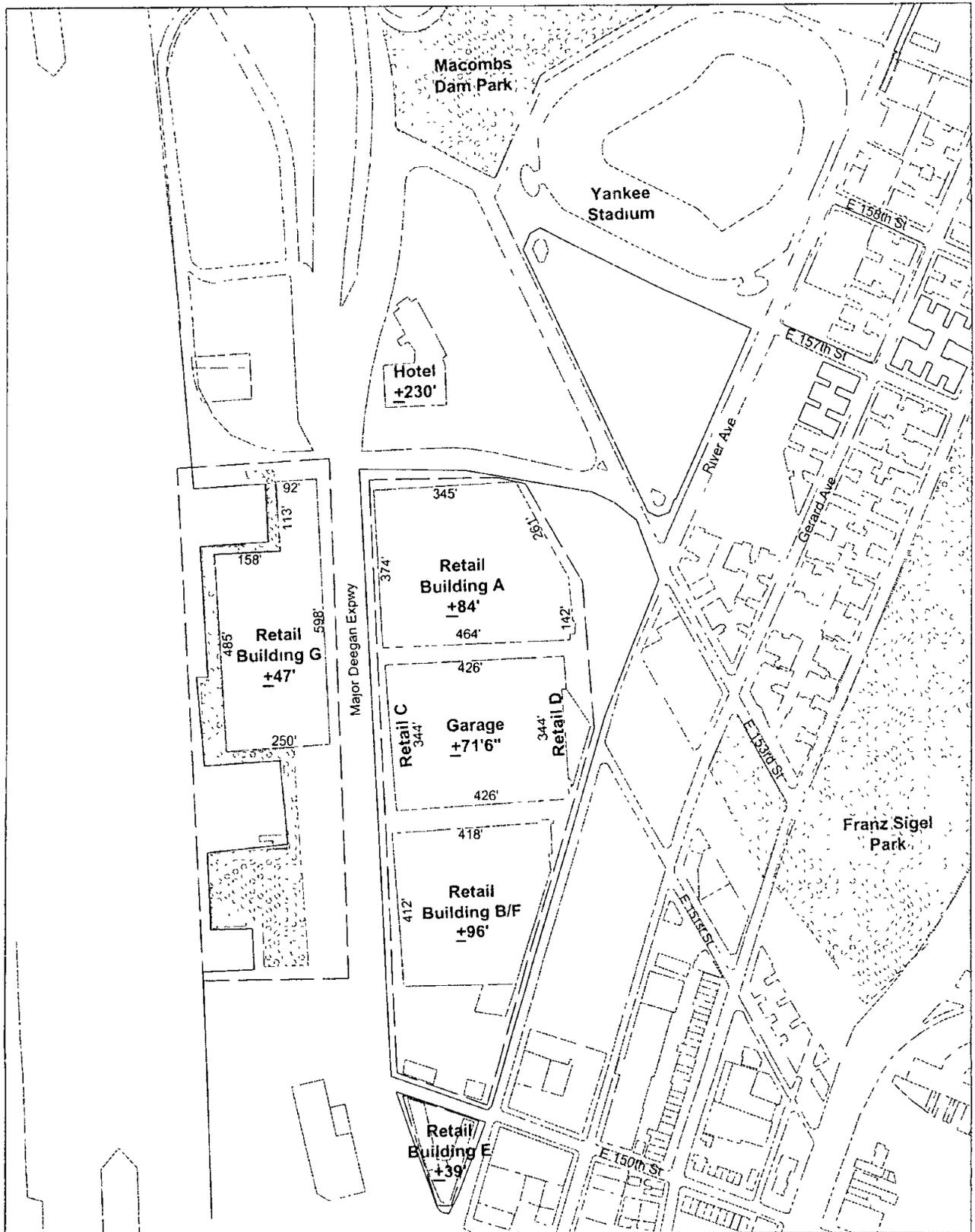
On the shortest day of the year, the winter solstice, the proposed hotel would begin to cast shadows on the southwest corner of Macombs Dam Park (below East 161st Street) at 11:45 AM (see Table 6-9 and Figure 6-8). The incremental shadows would increase in size as they move across the bottom of the park (see Figure 6-9). By 2:30 PM, the last of the incremental shadow would be off the park (see Figure 6-10).

The proposed open space and waterfront esplanade would be cast into shadow throughout the December analysis period. By 8:15 AM the incremental shadows would have moved off of the open space, but would remain on the esplanade. Throughout the day, as the shadows move north and east, the shadow coverage on the esplanade would be decreased though a small portion at the north would remain in shadow throughout the analysis period (see Figures 6-7 through 6-10).

CONCLUSIONS

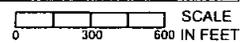
Based on the guidelines of the *CEQR Technical Manual*, the Proposed Project would have no significant adverse shadow impacts. There would be new shadow increments on Macombs Dam Park during the midday hours in the December analysis period, but not so much of an increase as to cause a substantial reduction of usage for the open space or to limit the available sunlight so that vegetation would not be able to survive. These shadows would mostly fall on paved areas. The open space and waterfront esplanade to be created by the Proposed Project would receive incremental shadows throughout the year; however, the majority of the open space would only be covered by project-generated shadows in the early morning hours. The portion of the waterfront esplanade to the west of the proposed Retail Building G would continue to receive shadows through the early afternoon, but it would receive full sun in the early evening until sunset in the late spring and through the summer.¹ As necessary, plantings on the esplanade will conform to any NYCDPR requirements for shade-tolerant species. In addition, this new open space would not exist without the proposed building to be constructed adjacent to it. In summary, incremental shadows would not meet any of the criteria that would lead to a significant adverse impact based on shadow coverage. *

¹ Open space users could utilize the southern portion of the open space if they desired a sunny seating area when the esplanade would be in shadow, but most esplanade users would be expected to walk, bike, or run through this area (rather than sit), and thus would not be affected by the shadows.

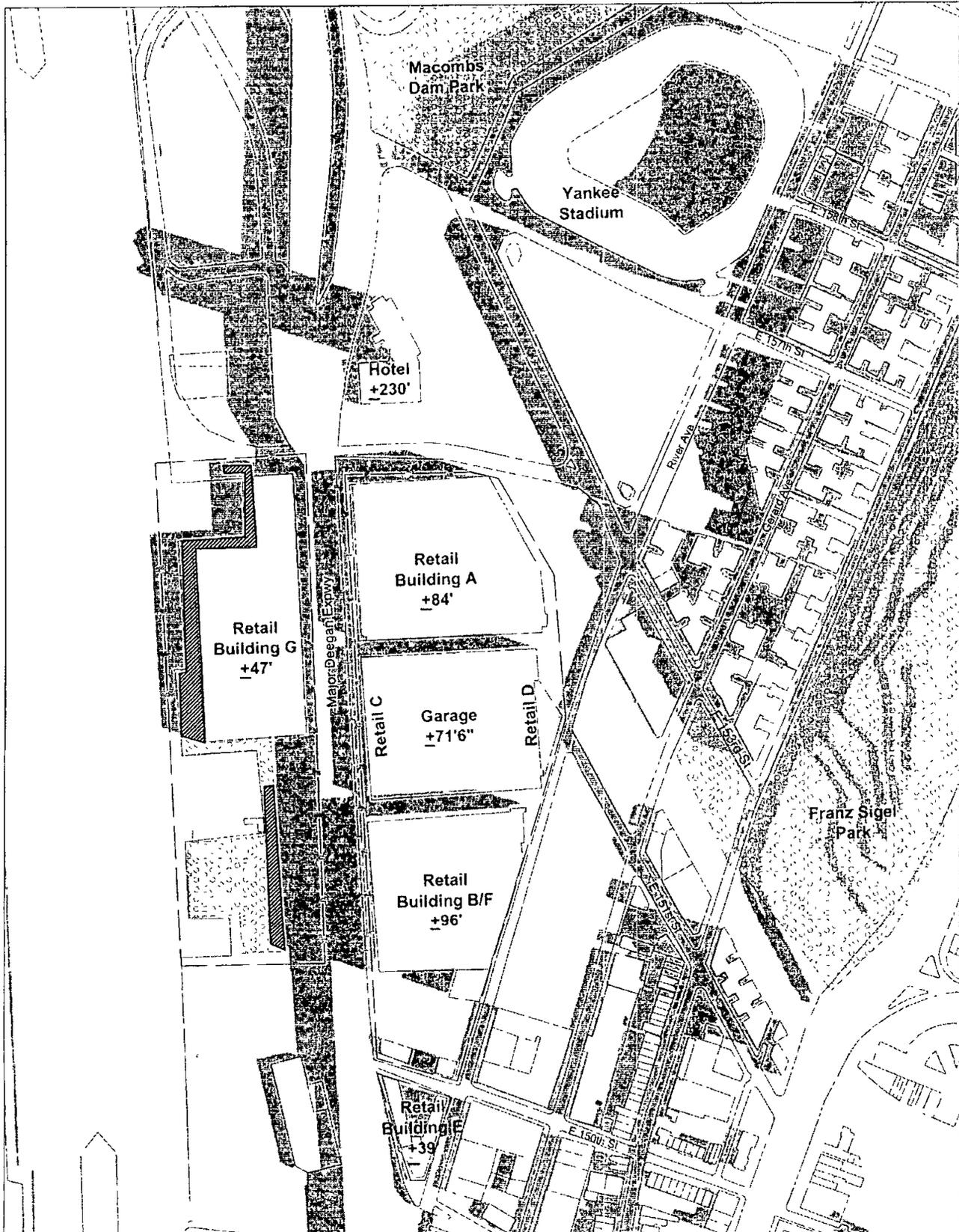


LEGEND

- Project Site
- ◻ Open Space

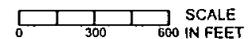


Approximate Heights and Dimensions of
Proposed Buildings
Figure 6 - 1

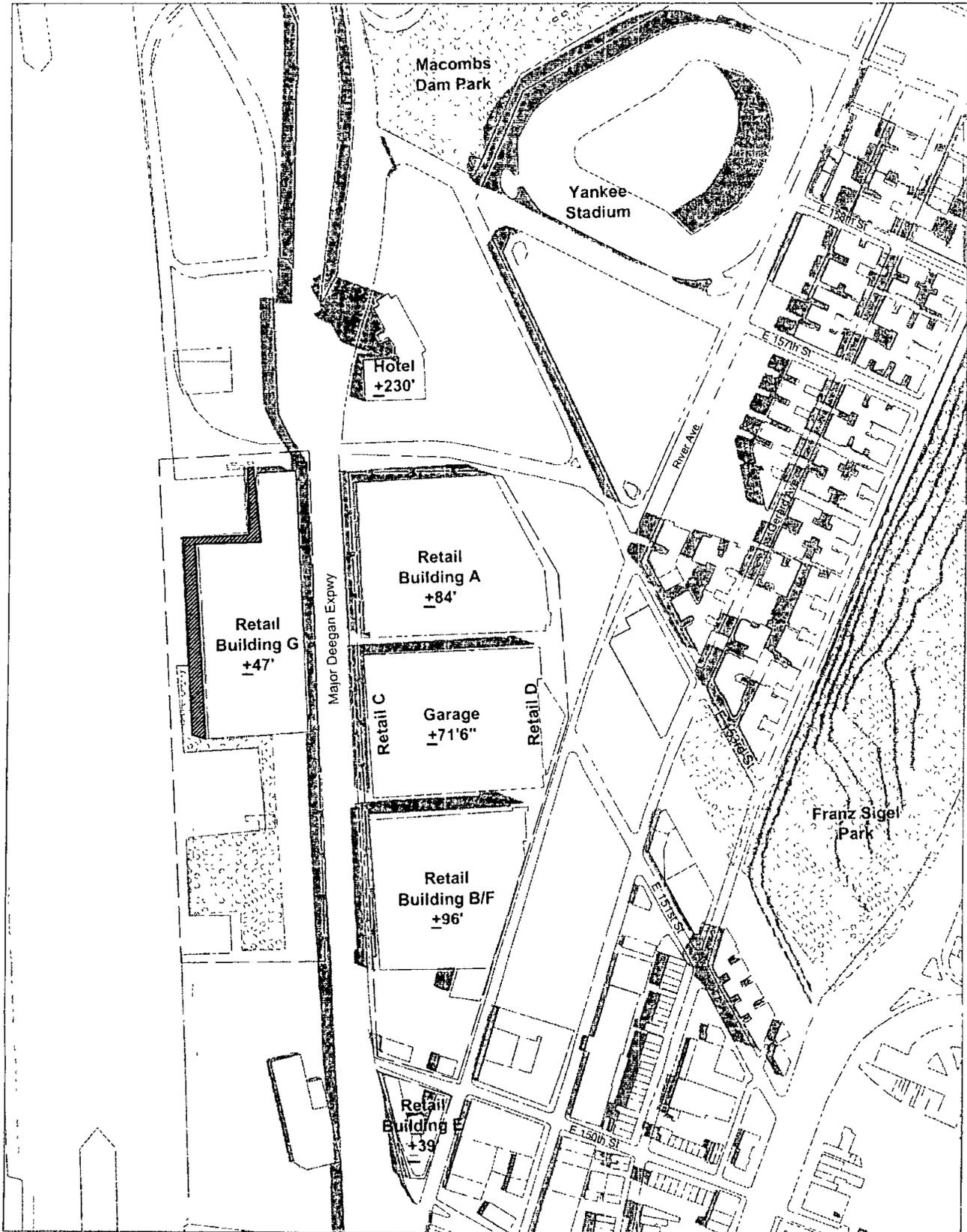


LEGEND

- Project Site
- ◻ Open Space
- ◼ Shadows
- ◼ Incremental Shadows on Open Space

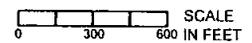


Shadow Diagrams
 March 21 - 7:45 AM EST
 Figure 6 - 2

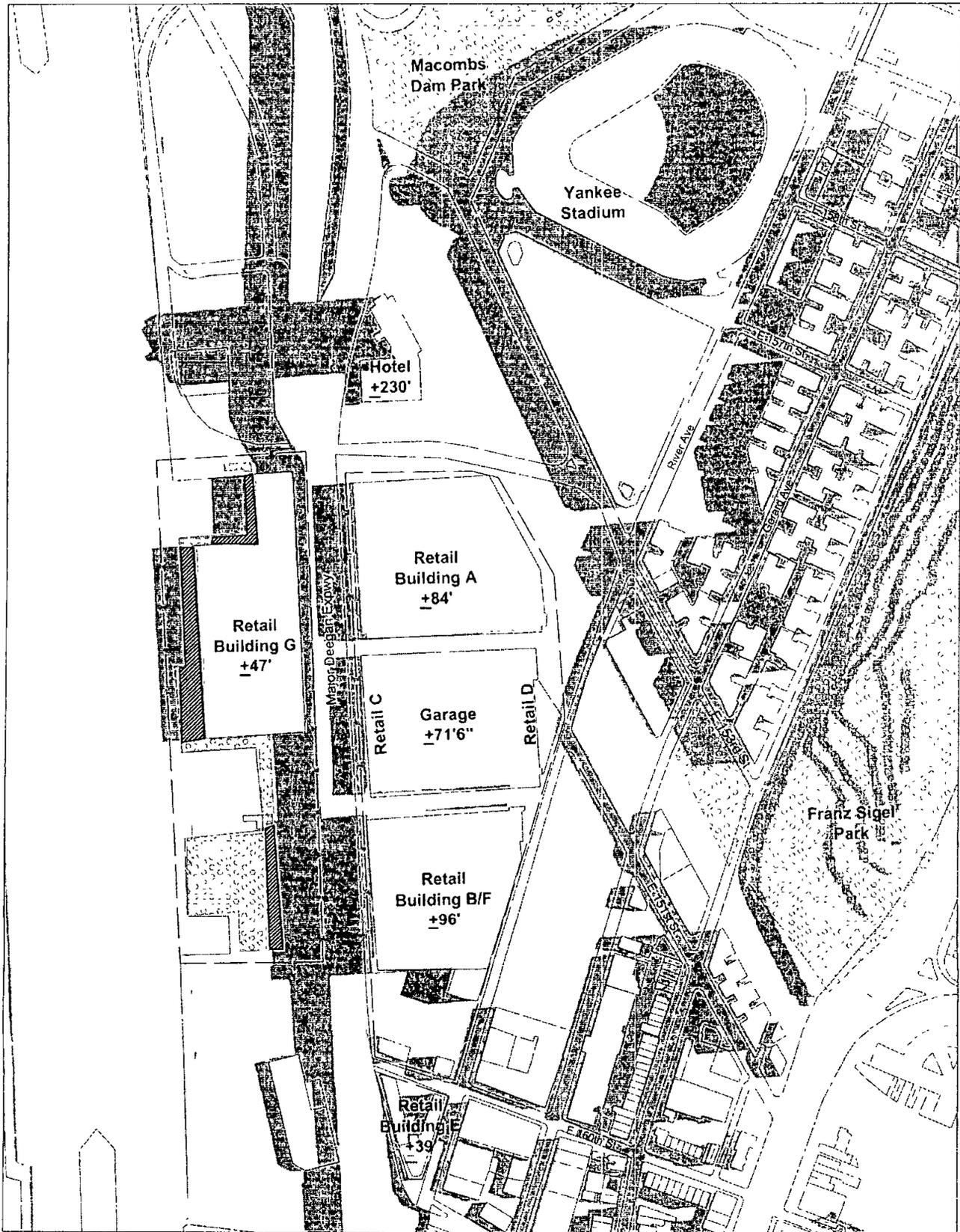


LEGEND

- Project Site
- Open Space
- Shadows
- ▨ Incremental Shadows on Open Space

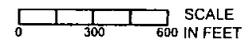


Shadow Diagrams
 March 21 - 10:00 AM EST
 Figure 6 - 3

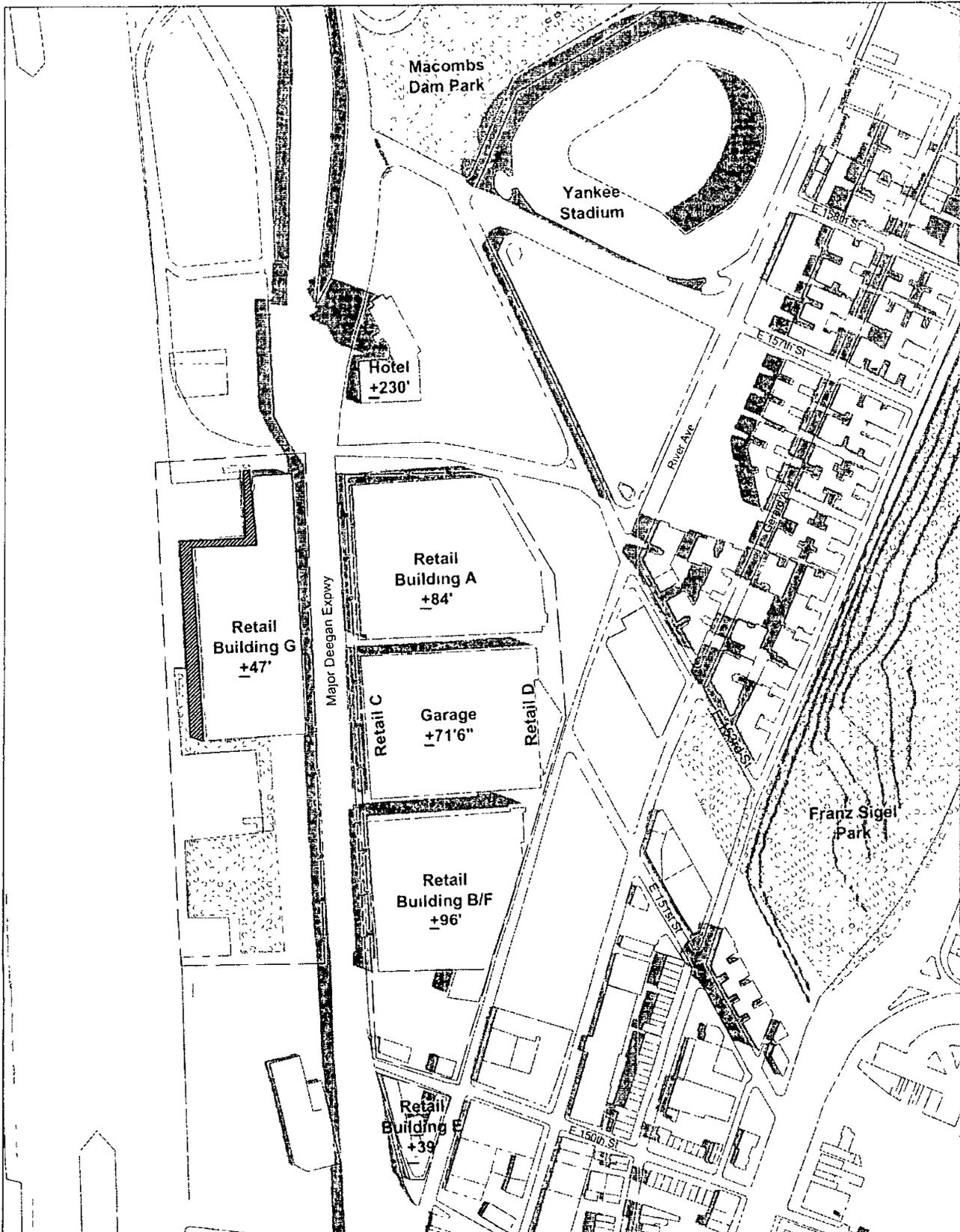


LEGEND

- Project Site
- ◻ Open Space
- ▨ Shadows
- ▩ Incremental Shadows on Open Space

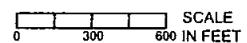


Shadow Diagrams
 May 6 - 7:45 AM DST
 Figure 6 - 4

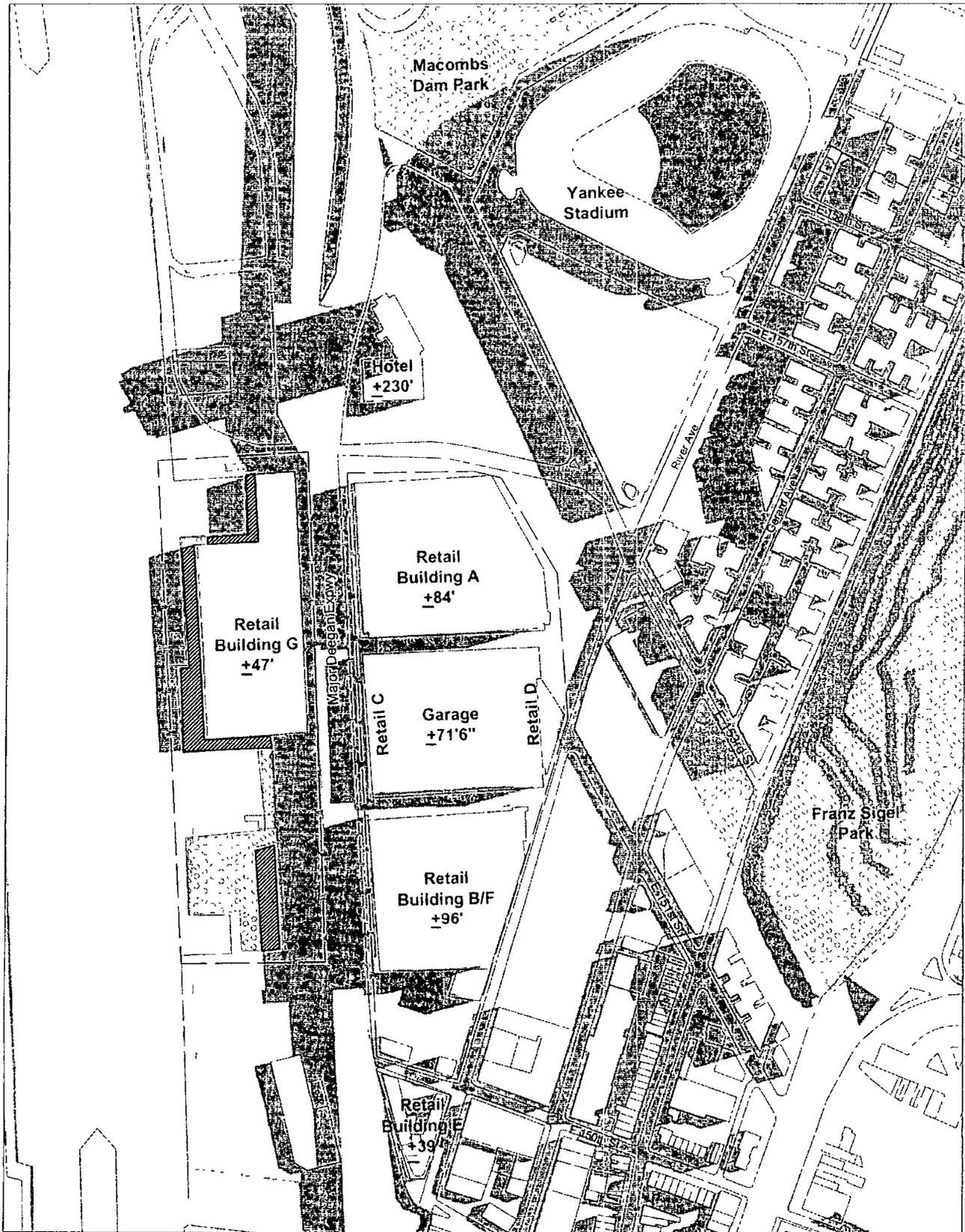


LEGEND

- Project Site
- ◻ Open Space
- ▨ Shadows
- ▩ Incremental Shadows on Open Space

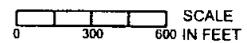


Shadow Diagrams
 May 6 - 10:00 AM DST
 Figure 6 - 5

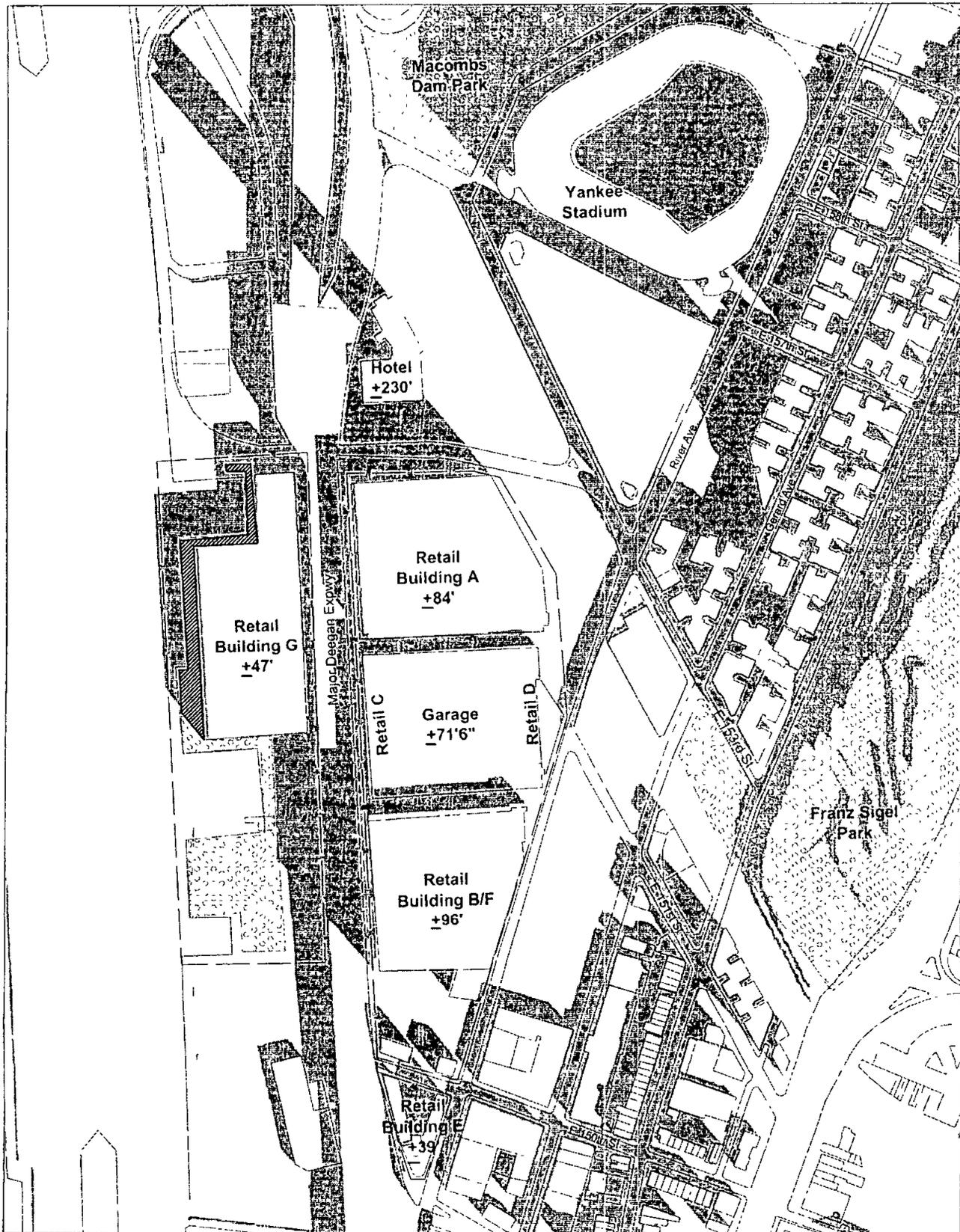


LEGEND

- Project Site
- Open Space
- Shadows
- ▨ Incremental Shadows on Open Space



Shadow Diagrams
 June 21 - 7:15 AM DST
 Figure 6 - 6

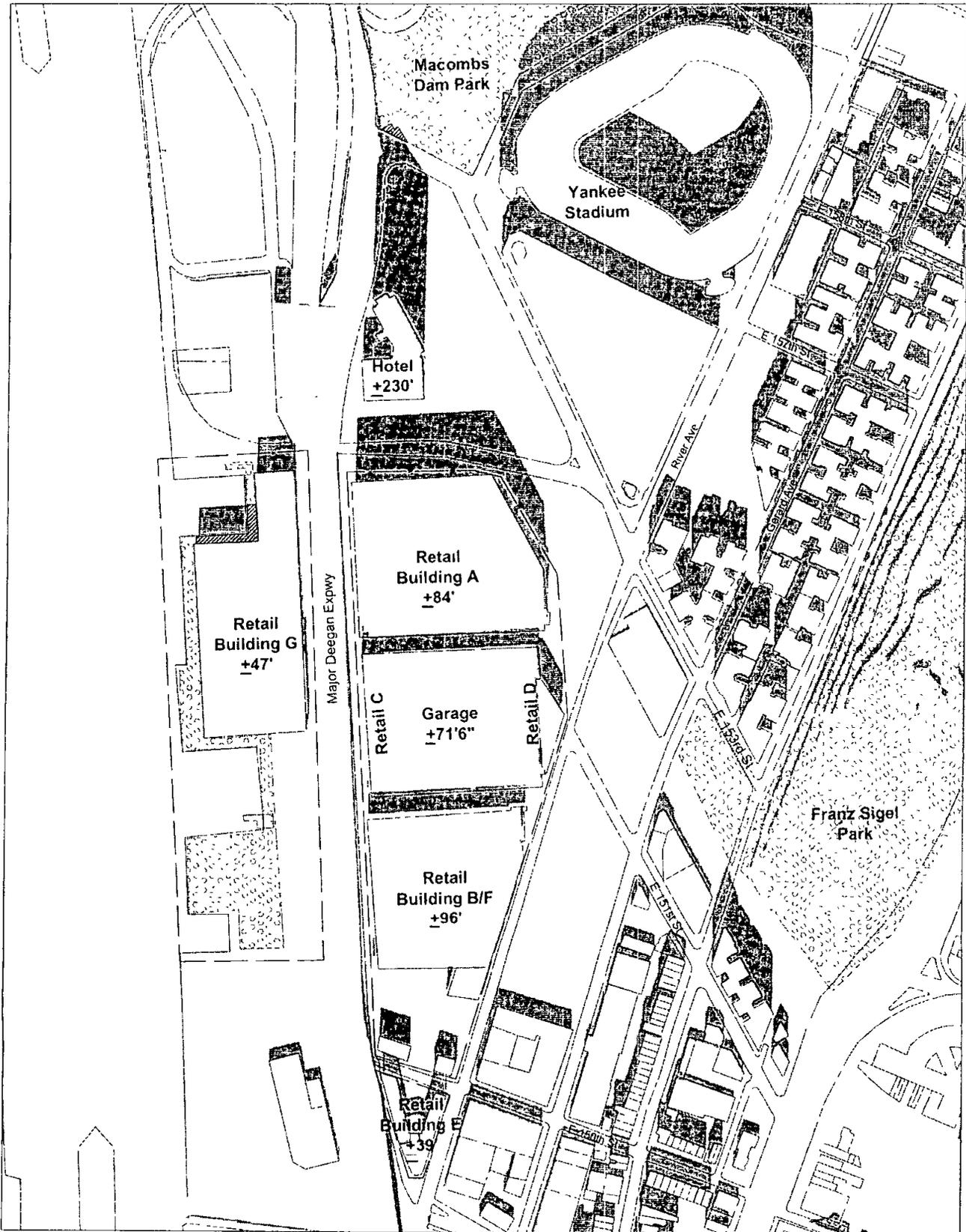


LEGEND

- Project Site
- Open Space
- Shadows
- ▨ Incremental Shadows on Open Space

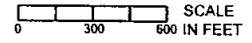
SCALE
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Shadow Diagrams
December 21 - 9:00 AM EST
Figure 6 - 8

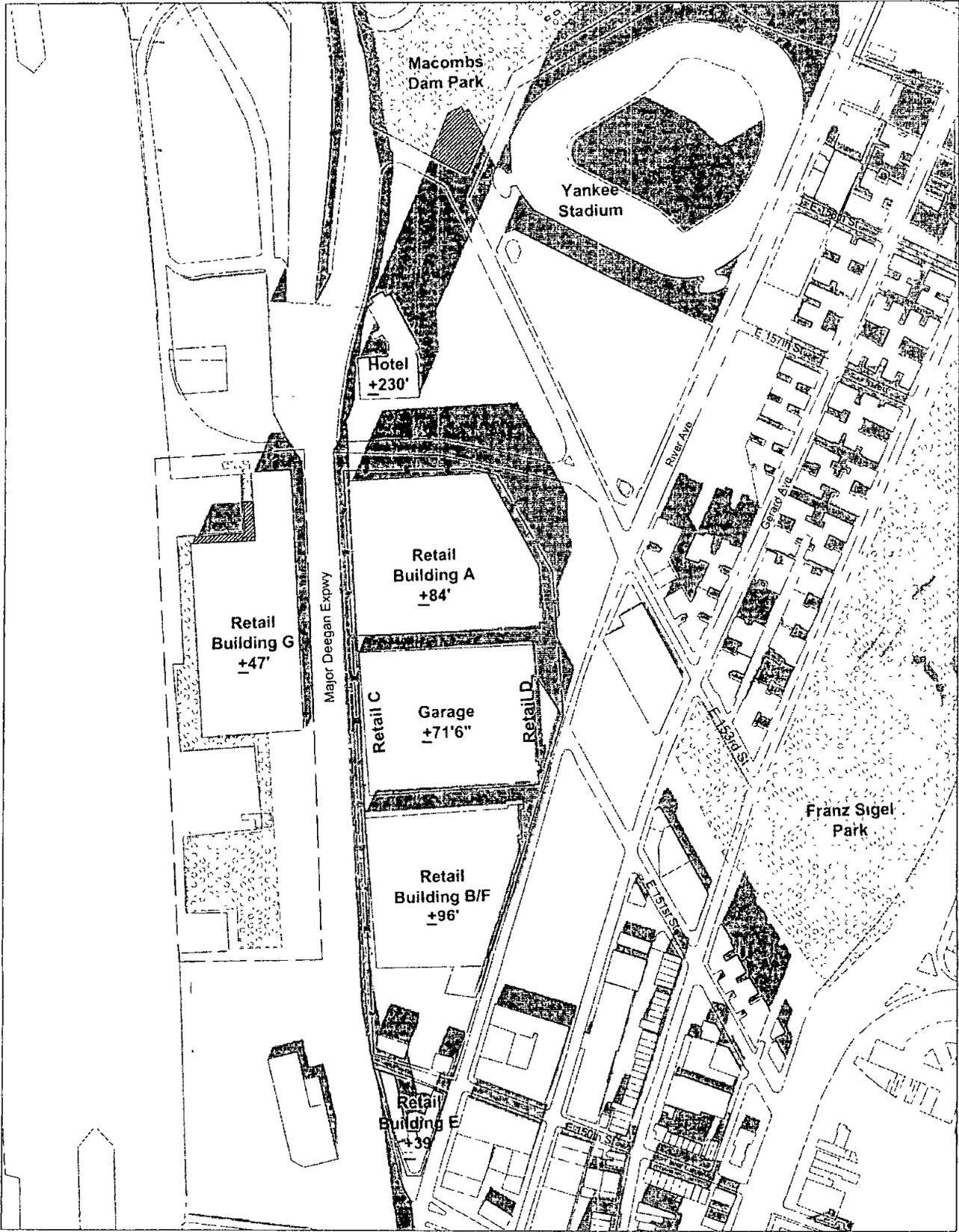


LEGEND

- Project Site
- ◻ Open Space
- ▨ Shadows
- ▩ Incremental Shadows on Open Space



Shadow Diagrams
 December 21 - 12:00 PM EST
 Figure 6 - 9

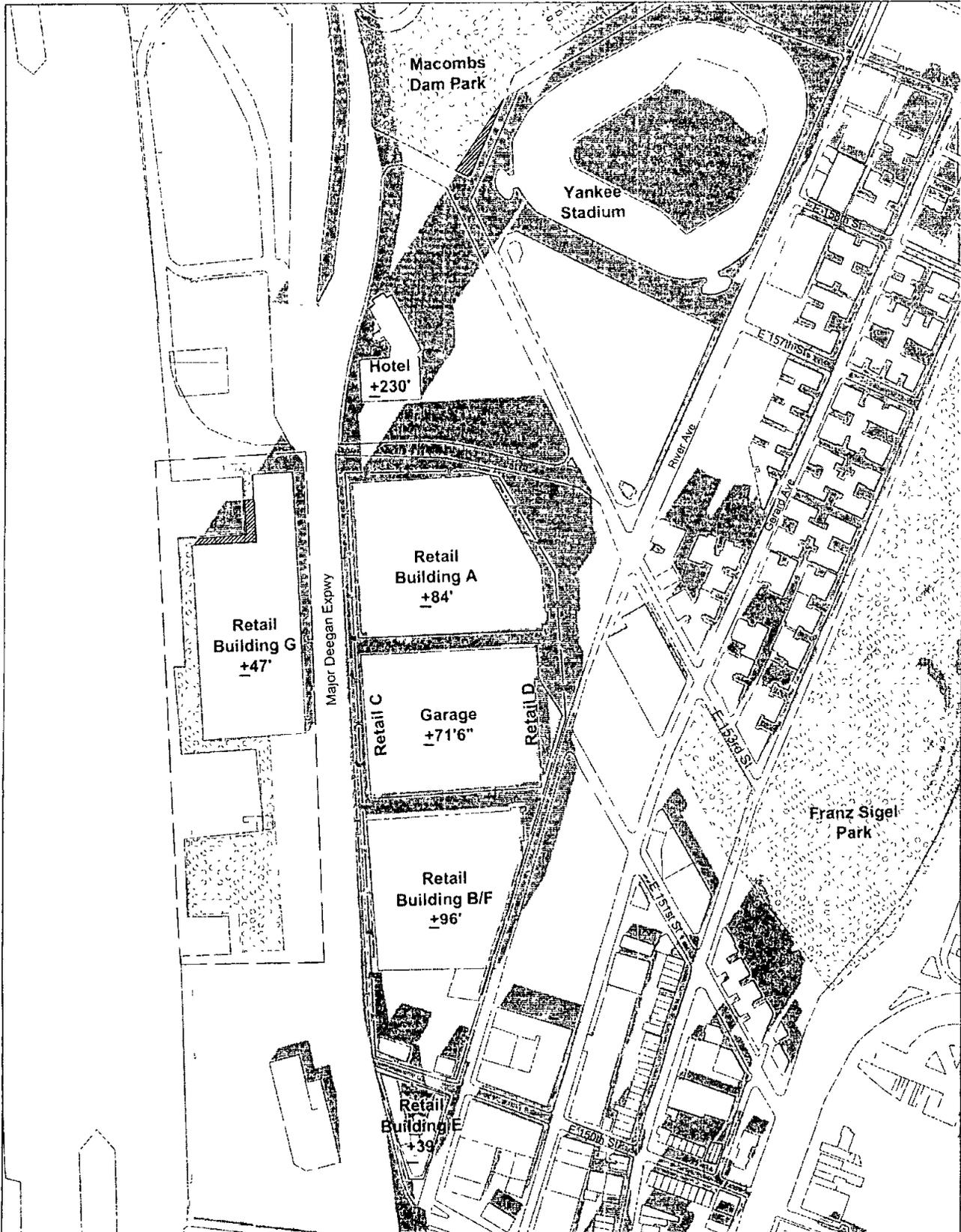


LEGEND

- Project Site
- ◻ Open Space
- ▒ Shadows
- ▨ Incremental Shadows on Open Space

SCALE
0 300 600 IN FEET

Shadow Diagrams
December 21 - 1:30 PM EST
Figure 6 - 10



LEGEND

- Project Site
- ◻ Open Space
- ◻ Shadows
- ◻ Incremental Shadows on Open Space

SCALE
0 300 600 IN FEET

Shadow Diagrams
December 21 - 2:15 PM EST
Figure 6 - 11

A. INTRODUCTION

This section considers the potential of the Proposed Project to affect architectural and archaeological resources on the project site and in the surrounding area. The project site is a 26-acre parcel in the West Haven neighborhood of the Bronx that is bordered by Metro North Rail Road tracks to the north, River Avenue to the east, 149th Street to the south, and the Harlem River to the west.

Based on potential effects due to on-site construction activities, and also to account for visual or contextual impacts, the study area was defined as extending 400 feet from the project site (see Figure 7-1). Within the study area, the historic resources considered comprise properties listed on the State or National Registers of Historic Places (S/NR) or determined eligible for such listing, and New York City Landmarks (NYCL) and Historic Districts or properties determined eligible for landmark status.

The study area for archaeological resources is the Area of Potential Effect (APE), the area of planned construction and disturbance on the project site. At the request of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), a Phase IA Archaeological Assessment was prepared for the project site by Historical Perspectives, Inc in October 2004. As described in more detail below, the Phase IA assessment concluded that although northern portions of the APE contain the potential for precontact archaeological resources to be located beneath a layer of peat found under fill deposits and river mud, the excavation required for the Proposed Project will not reach the peat layer or below the peat layer, except for building pilings. Due to the depth of the potential precontact resources and the difficulty in accessing the potentially sensitive strata, which are well below the water table, no archaeological field investigations are recommended for precontact resources. If future specifications for the proposed hotel indicate that deep excavation will be necessary (i.e., excavation that would penetrate/impact the peat layer or below the peat layer), archaeological field investigations or monitoring for the recovery of precontact resources would be considered. Historic period archaeological sensitivity for the project APE is low, and no archaeological field investigations are recommended for historic period resources.

The analysis concludes that the proposed demolition of the historic resources on the project site—Buildings B, D, F, G, H, and J, and the Bronx House of Detention—would constitute a significant adverse impact. Measures to further mitigate this adverse impact are discussed in Chapter 23, “Mitigation.”

The project site is located far enough away from the known and potential historic resources in the study area (the 145th Street Bridge, 691 Gerard Avenue/109 153rd Street, and 690 Gerard Avenue) not to have any direct, physical effects on these off-site resources. The new, modern development on the project site would be expected to alter the context of the historic resources in the surrounding area. However, these resources already exist in an environment that is

predominantly industrial, and this change is not considered a significant adverse impact. Furthermore, the Proposed Project would provide new views to the historic Macombs Dam and 145th Street Bridges spanning the Harlem River, by providing public access to the project site waterfront in the form of a public open space and waterfront esplanade. Therefore, the Proposed Project would not have any significant adverse impacts on historic resources in the study area.

B. BACKGROUND HISTORY

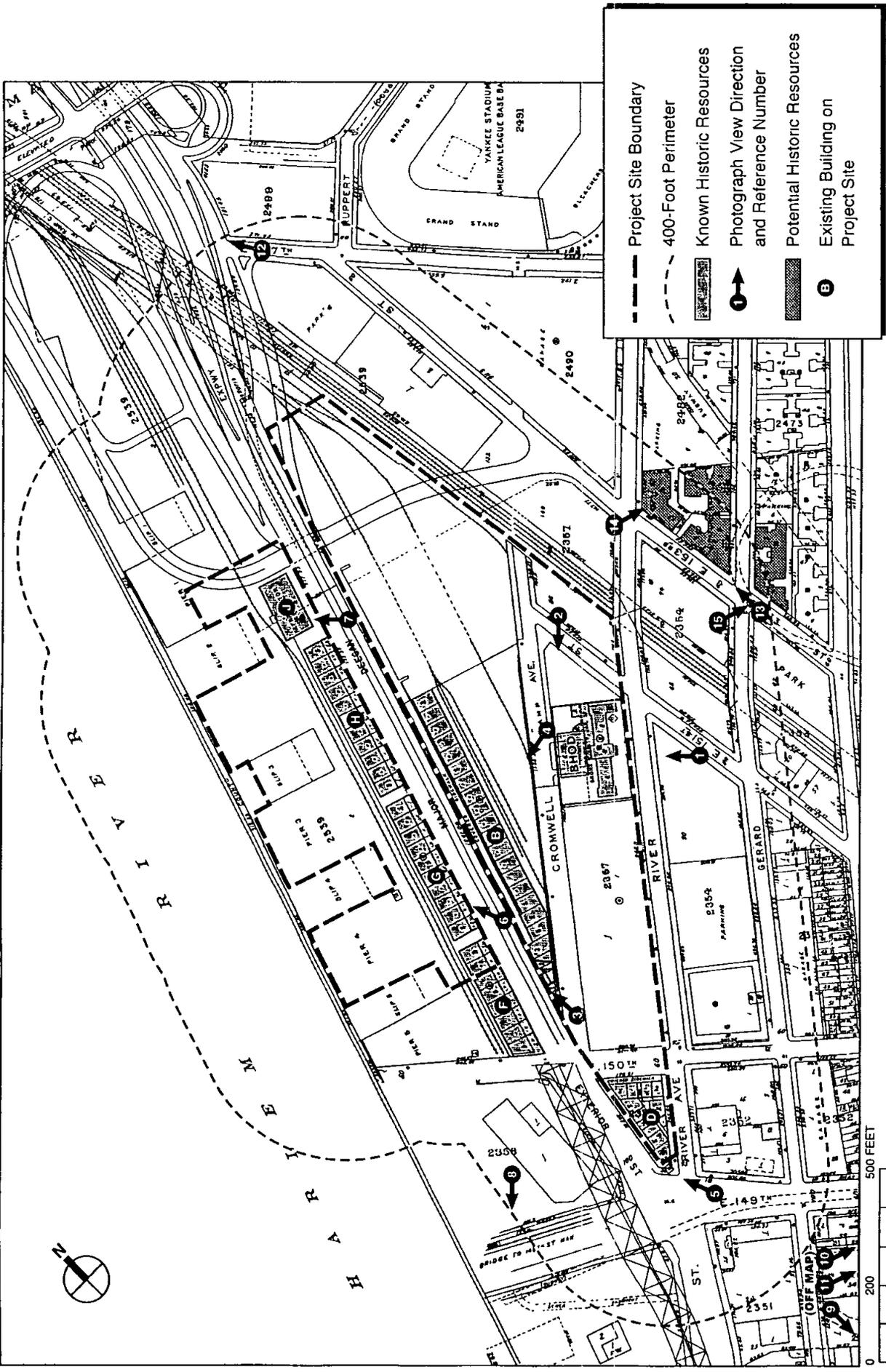
Prior to landfilling in the late nineteenth century, only portions of the eastern side of the project site were on fast land; the remainder of the project site was designated "mud flats," which were filled with water from the Harlem River during high tide and exposed at low tide. The area was landfilled and the piers and bulkheads constructed in the 1890s.

The first buildings on the project site were erected in the 1880s. These included a refrigerator manufacturing building at the northwest corner of River Avenue and 150th Street, and a saw mill at the southwest corner of the same intersection. During the early 1890s, Exterior Street and the area west of the roadway were formed. By 1900, a plant for the Barber Asphalt Paving Company was located on Pier 4; a coal yard was situated east of Slip 5; and an ice plant was located north of the refrigerator (later toy) plant on the block bounded by River and Cromwell Avenues and 150th and 151st Streets, within the current footprint of Building C. By 1905, the saw mill was removed, and by 1908 waterfront businesses had grown to include the Fireproofing Manufacturing and Valvoline Oil Companies on Pier 2 and a contractor's store yard on Pier 3. Building H now covers the area once occupied by the Valvoline Oil Company's storage facility and part of the Fireproofing Manufacturing Company. East of Cromwell Street, in the area now covered by Building C, the ice plant was demolished by 1908 and a photographic mounts plant had been built in its place.

The development of the Bronx Terminal Market was an outgrowth of the concept of municipal wholesale produce markets for the city, which was developed by a special commission appointed by Mayor William Gaynor in the early 20th century. The terminal market, which was to have connections to rail and water, was intended to facilitate the distribution of wholesale food products throughout the city and minimize transportation and transfer charges, thereby reducing food costs. The commission's final report (1913) advocated the creation of a terminal market in each of the five boroughs, as well as the selection of the site of the current Bronx Terminal Market.

The creation of the Bronx Terminal Market began under Mayor John F. Hylan in the late 1910s and early 1920s. In the first stage of the Market's development, a 2-story power house (Building J) and 6-story, brick cold storage warehouse (Building A) were built in the 1920s (see discussion below). However, according to the *WPA Guide to New York City*, for many years the market was known as "Hylan's Folly;" the annual cost of maintenance was in excess of \$160,000, and the annual income from rentals was only \$26,000. The expansion of the Market was undertaken by Mayor Fiorello H. LaGuardia as part of his program to eliminate pushcarts. Under Mayor LaGuardia, existing Buildings B, D, F, G, and H were constructed, along with similarly-configured buildings north of Buildings A and J. With this expansion, the Market finally became successful, and served as a receiving point for the city's fruit and vegetables.

In addition, by 1933, a Department of Public Markets weights and measures building was constructed on Pier 2, replacing the former industrial structures located there; this structure was later used by the American Banana Corporation. By 1947, a group of eight long, steel sheds



Historic Resources
Figure 7-1

were built north of 150th Street, between River and Cromwell Avenues, in the area formerly occupied by the photographic mounts plant. These sheds have since been replaced by Building C as well as the Bronx House of Detention. By 1947, Pier 3 housed the Colonial Sand and Stone Company, and Pier 4 continued to support a coal yard. Today, all of the piers within the project site are vacant, and the slip between Piers 2 and 3 has been filled in.

The last major change to the project site came with construction of the Major Deegan Expressway. The section of the Expressway linking the Grand Concourse with the Westchester County border and Interstate 87, which includes the portion of the Expressway within the project site, was not undertaken until 1950 and was completed in 1956. Ramps leading from the Expressway were later built north of Buildings A and J, necessitating the demolition of the Bronx Terminal Market buildings formerly located in these areas. In the mid-1990s, the Oak Point Link rail connection was built on a trestle along the Harlem River parallel to the shoreline and the project site.

C. EXISTING CONDITIONS

ARCHAEOLOGICAL RESOURCES

As described above, a Phase IA Archaeological Assessment was prepared for the project site by Historical Perspectives, Inc. at the request of OPRHP.¹ In a letter dated October 22, 2004, LPC made a finding of no archaeological concerns for the project site, but deferred to OPRHP on archaeological resource findings. The report is summarized below.

SITE HISTORY

As described above, prior to landfilling in the late nineteenth century, only portions of the eastern side of the APE were on fast land; the remainder of the APE fell within an area designated "mud flats." The portions of the APE that were inboard of the historic Harlem River shoreline include areas east of Cromwell Avenue, south of the Metro North Rail Road tracks, and north of 150th Street. The shoreline ran across the area now occupied by Building C and included portions of the modern Cromwell Avenue streetbed and a small area now occupied by the parking area behind Building B, just west of Cromwell Avenue. The shoreline area appears to have been somewhat sloped; River Avenue had an elevation of about 20 feet near its intersection with 151st Street, and the area now occupied by the Bronx House of Detention was about 10 feet in elevation, whereas the Cromwell Avenue area was at about 0 elevation. Today, what is left of this former slope is contained behind concrete retaining walls, and the mud flats have been filled to the edge of the pier and bulkhead line, with several slips interspersed between the piers.

The overall soil profile for the APE consists of miscellaneous historic fill overlying soft organic clayey silt (the "river mud"), then a layer of peat (at the northern end of the APE only), layers of interlayered silt, clay and sand, silty sand and gravel, decomposed rock, and finally bedrock. According to a report prepared by Langan Engineering & Environmental Services (2004), historic fill covers the entire APE; no natural soils remain, even in the area that was once fast

¹ *Phase IA Archaeological Assessment, Proposed Gateway Center at Bronx Terminal Market, NYSOPRHP Project Review Number 04PR02034* Prepared by Historical Perspectives, Inc., October 2004.

land, where the original upper stratum appears to have been graded away. In some instances, the ground surface is mounded or uneven, and concrete slabs representing the remnant foundations of former buildings are visible on the surface. Slip 3 has been backfilled. The slips are no longer in use: any areas once dredged to allow docking of vessels have since become resilted, and the shallow mud flats are once again visible at low tide. The history of building construction on the site is described above.

ARCHAEOLOGICAL POTENTIAL

No precontact period archaeological sites were identified within the APE or its immediate vicinity, although reportedly there was an Indian trail three to four blocks east of the APE, following roughly the route of the current Walton Avenue. Six precontact archaeological sites have been documented within two miles of the APE by the New York State Museum. During the Paleo-Indian and Early to Middle Archaic periods (ca. 12,500 to 4,000 B.P.), the majority of the project APE would have been located along the Harlem River shoreline, instead of under mud flats. Particularly with Cromwell's Creek located so close to the north, which would have provided an additional fresh water source, the project APE would have been an attractive settlement site to early peoples. Archaeologists have shown that a settlement pattern exists in the sites that were located along streams and tidal marshes, both of which existed in or adjacent to the APE.

According to Boesch, areas along the Harlem River that contain peat deposits may preserve precontact archaeological resources dating from the Paleo-Indian to the Middle Archaic periods beneath this layer. The top of the peat layer in the northern portion of the APE varies in depth from approximately 20 feet below grade in the vicinity of the former Building A, to approximately 70 feet below grade at the pier and bulkhead line. The peat layer varies in thickness from only a few feet (in the vicinity of the former Building A) to nearly 20 feet (on the west side of Exterior Street). Archaeologists also use the presence of marine shell as a potential indicator of precontact site presence. According to a report prepared by Langan Engineering and Environmental Services, trace shells have been encountered just beneath the peat layer in soil borings south of the former Building A, further suggesting the potential for precontact resources on the property.

Based on this information, there is the potential for precontact archaeological resources to exist within those portions of the APE that contain a layer of peat and that have not been previously disturbed from deep piles or other building episodes. These include the area surrounding the former Building A on the north, east, and south, and areas west of Exterior Street, including Piers 1 and 2 (but excluding the footprints of Buildings H and J and the former buildings on Pier 2). The former Bronx Terminal Market buildings once located north of the former Building A and Building J were not set on top of deep piles, and as such should not have impacted the peat layer or the strata below the peat layer. Although portions of the Harlem River have been dredged periodically over the years, soil borings indicate that peat still exists within at least one of the pier footprints, suggesting that any dredging here seemingly did not reach deep enough to affect potential archaeological deposits. Areas now containing supports for the Major Deegan Expressway ramps are disturbed and would not retain any archaeological potential.

No historic period archaeological sites were identified within the APE or its immediate vicinity. Two historic period archaeological sites, the Mott Haven Canal and the J.L. Mott Iron Works, are located north of the intersection of Bruckner Boulevard and Third Avenue, nearly one mile south of the APE. The buildings associated with the Bronx Terminal Market (Buildings B, D, F,

DEVELOPMENT OF EASTERN PROJECT SITE ONLY ALTERNATIVE

Under the terms of an agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site to the City. In this case, the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop a 2-acre public open space. The City would be responsible for developing the remainder of the western portion of the site, but has not yet determined what the potential use of that site would be. In any case, development of the west side of the project site would be dependent on approvals from the NYSDEC and possibly the USACOE.

As the City has not yet determined what the potential use of the remainder of the western portion of the site could be, this scenario assumes that this portion of the west side of the project site would be undeveloped. As with the Retention of Expanded Market Alternative, it is assumed that approximately 64,000 gross square feet of additional retail space would be developed within Retail Buildings A and B/F, but otherwise the proposed program for the east side development would remain the same.

While the impacts of this alternative would be similar to those of the Proposed Project, some of the visual and economic benefits associated with the Proposed Project would not be realized. Public access to the waterfront could be provided by a park to be developed by the City and funded by the project sponsor, rather than by the Proposed Project. Because the Proposed Project's total program would be reduced by approximately 8 percent, the project's positive impacts on the local socioeconomic character and local and state revenue would be somewhat lessened.

Peak hour traffic volumes are projected to be slightly lower (generally about 4 to 4.5 percent) under this alternative when compared to the Proposed Project. Traffic assignments would only differ from the Proposed Project at the Exterior Street access points to the proposed garage between Exterior Street and River Avenue. Vehicle trips on Exterior Street would all enter the garage east of Exterior Street, and the garage intersections would continue to operate at acceptable levels of service when compared to the Proposed Project. The project's marginal impact on the Bx19 bus line would probably not occur with this alternative.

NO SIGNIFICANT ADVERSE UNMITIGATED IMPACTS ALTERNATIVE

Most of the potential impacts identified for the Proposed Project could be fully mitigated, as described in Chapter 23, "Mitigation."

Historic Resources

The demolition of structures on the project site identified as historic resources would constitute a significant adverse impact on historic resources. Measures to mitigate this impact are being developed in consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP). With these measures, the adverse impact on historic resources would be partially mitigated. However, in order to eliminate the adverse impact to historic resources, this alternative would require the retention of all the historic resources on the project site. The reduced development program that would result from the elimination of the existing buildings' land area for use by the Proposed Project would not fulfill the goals of the project and it would not be built at this location. Therefore, there is no feasible alternative that would eliminate the adverse impact on historic resources.

Traffic

For the northbound Major Deegan Expressway approaching 149th Street, widening of the exit ramp would be needed in order to mitigate the Proposed Project's impacts at the local street intersection of the northbound exit ramp with 149th Street, Exterior Street, River Avenue, and the 145th Street Bridge approach to the intersection. In order to fully mitigate conditions along the northbound Expressway, it

would also be necessary to widen the approach to the exit ramp in order to provide a deceleration lane leading to the exit ramp. The New York State Department of Transportation (NYSDOT) has indicated its interest in improving conditions by widening the exit ramp as part of a larger Major Deegan Expressway widening and improvement project being planned by NYSDOT; however, it is uncertain at this time whether NYSDOT would also be able to create a widening along the highway mainline to provide a fully acceptable deceleration lane. Therefore, it is possible that only partial mitigation of potential impacts at the northbound exit would be accomplished by 2009 or 2014.

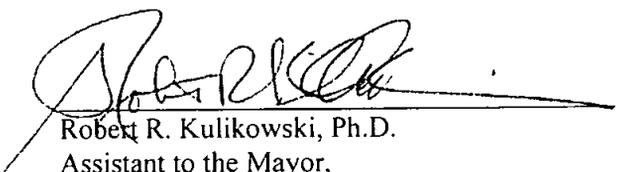
Noise

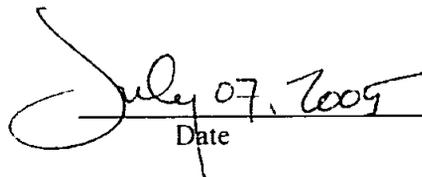
As discussed above, noise levels in the western portion of the public open space that would be developed as part of the Proposed Project would be higher than the 55 dBA $L_{10(1)}$ noise level for outdoor areas requiring serenity and quiet contained in the Noise Exposure Guidelines for City Environmental Impact Review. There are no practical and feasible mitigation measures that could be implemented to mitigate this impact, as a sound barrier on Exterior Street would present problems with respect to aesthetics and safety. Unless such a barrier extended well above the height of the elevated roadway, it would not be effective in reducing noise from the Major Deegan Expressway. Although the noise levels constitute a significant adverse impact, they would be comparable to noise levels in a number of well-used and attractive open spaces in New York City that are also located adjacent to heavily trafficked roadways.

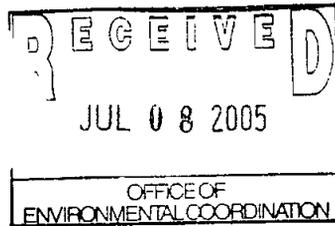
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for Economic Development and Rebuilding


Date



GATEWAY CENTER @ BRONX TERMINAL MARKET

Draft Environmental Impact Statement

CEQR No.: 04DME017X

Prepared for:
The Office of the Deputy Mayor for Economic Development and Rebuilding

Prepared by:
AKRF, Inc.
with
Eng-Wong Taub & Associates
Langan Engineering and Environmental Services
Wachtel & Masyr, LLP
Sive, Paget & Riesel, P.C.

July 6, 2005

A public hearing on the Draft Environmental Impact Statement (DEIS)
will be held at a later date to be announced

**Gateway Center at Bronx Terminal Market
Draft Environmental Impact Statement**

July 6, 2005

CEQR No.: 04DME017X

Project Location: Bronx, New York

Lead Agency: The Office of the Deputy Mayor for Economic Development
and Rebuilding

Lead Agency Contact: Robert R. Kulikowski, Ph.D.

Prepared by: AKRF, Inc.
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*

A. PROJECT IDENTIFICATION

The Gateway Center at Bronx Terminal Market is a proposal to redevelop a 26-acre portion of the current Bronx Terminal Market site along with an adjacent parcel currently housing the Bronx House of Detention (BHOD), with approximately 1.1 million gross square feet (gsf) of retail establishments, 3,216 parking spaces in a multi-level parking garage and at-grade parking, a 250-room hotel, and a public open space and waterfront esplanade totaling approximately 2 acres (the Proposed Project).

The Proposed Project would be located in the West Haven neighborhood of the Bronx on Block 2356, Lot 20; Block 2357, Lots 1 and 86; and Block 2359, Lots 2 (part), 32, and 60 (part). The site is bordered by River Avenue to the east, 149th Street to the south, and the Harlem River to the west (see Figure S-1). The project site's northern boundary is different on the east and west sides of Exterior Street. On the east side, the northern boundary is the Metro North Rail Road tracks. On the west side, the northern boundary is located just north of Ramp A (the East 161st Street exit from the Major Deegan Expressway). The Oak Point Link rail connection runs on a trestle along the Harlem River parallel to the shoreline and the project site. The Major Deegan Expressway and Exterior Street (the street under the Expressway) bisect the project site. The parcels east of the Expressway would be merged with portions of 150th and 151st Streets and Cromwell Avenue to form the eastern section of the project site. The project site is owned by the City of New York, except for one parcel on the west side of the project site that is owned by the New York State Department of Transportation (NYSDOT).

As shown in Table S-1 and Figure S-2, the eastern side of Exterior Street would include a series of five 1-story retail buildings approximately 19,820 gsf in size—collectively referred to as Retail Building E—with an adjacent surface parking lot of approximately 22 spaces; a 4-story, approximately 499,630-gsf building with 401,765 gsf of retail and 256 parking spaces at the ground floor (Retail Building B/F); a six-level, approximately 920,632-gsf parking garage with a capacity of approximately 2,342 spaces and 22,485 gsf of retail on Exterior Street (Retail Building C) and 8,015 gsf of retail on River Avenue (Retail Building D); a 3-story, approximately 436,480-gsf retail building (Retail Building A); and a hotel approximately 247,500 gsf in size, with 250 rooms, a 30,000-gsf banquet facility, and approximately 225 parking spaces. At each level of the parking garage would be galleria spaces, totaling 39,930 gsf, leading to either Retail Building A or Retail Building B/F. A fee would be charged for parking in the proposed parking garage. On the western side of Exterior Street, the Proposed Project would include a public open space and waterfront esplanade totaling approximately 2 acres, and a 2-story, approximately 264,170-gsf building with 140,435 gsf of retail and 344 parking spaces at the ground floor (Retail Building G) as well as 27 spaces in a surface parking lot to the north of the proposed building. In total, the project would comprise approximately 2,427,162 gsf of new development on the site. The Proposed Project is expected to be complete and operational in 2009, except for the hotel, which would not be completed until 2014. Figure S-3 presents an illustrative rendering of the proposed project.

**Table S-1
Program Summary**

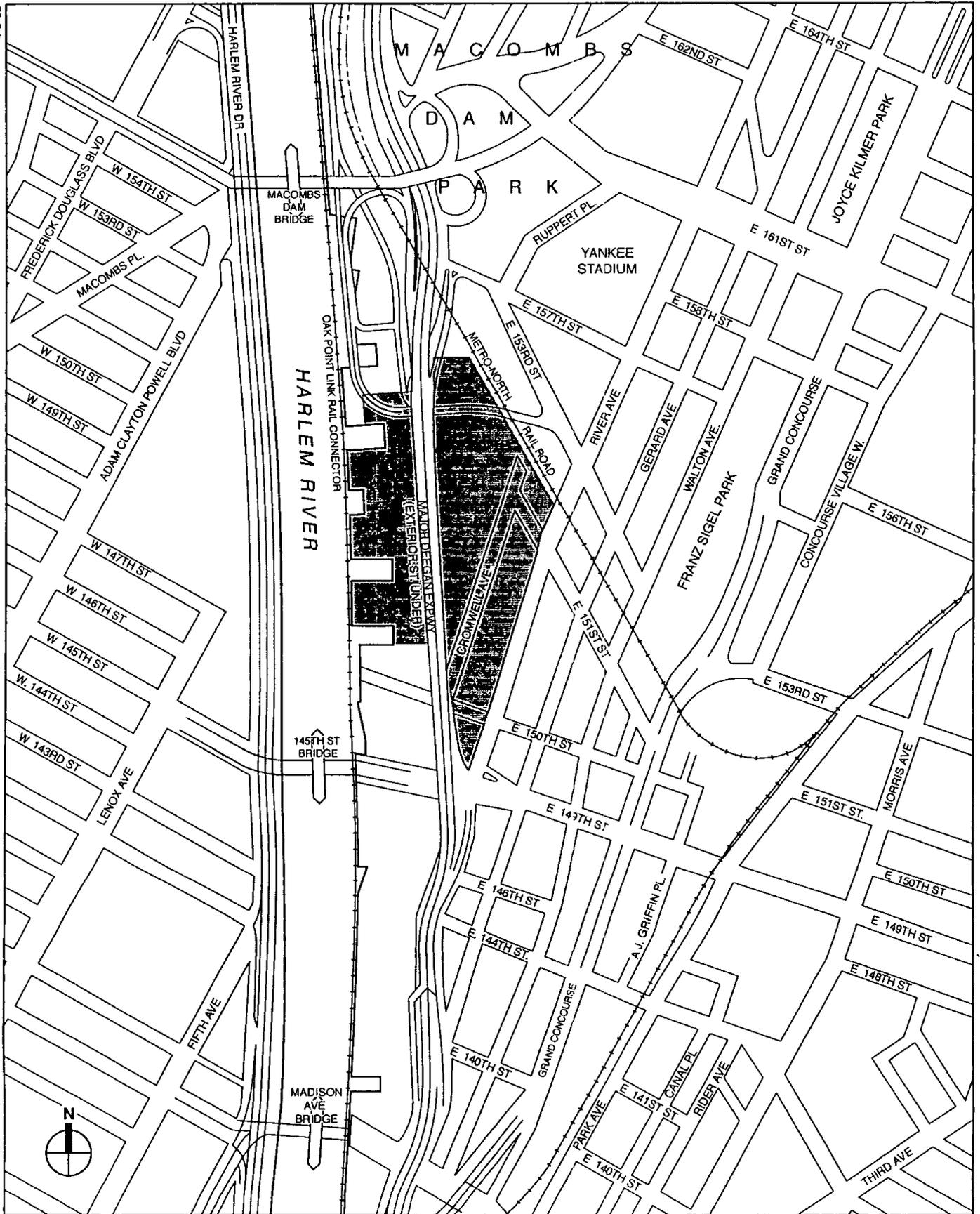
Building	No. of Stories	Gross Square Footage	Retail GSF	Parking Spaces	Other Description
WEST SIDE					
				344	Parking at ground floor of building
Retail Building G	2	±264,170 gsf	±140,435 gsf	±27	Surface parking lot to north of building
Public open space/ Waterfront Esplanade	—	—	—	—	Approximately 2 acres in size
EAST SIDE					
Retail Building A	3	±436,480 gsf	±436,480 gsf		
Retail Building B/F	3	±499,630 gsf	±401,765 gsf	256	Parking at ground floor of building
Retail Building E	1	±19,820 gsf	±19,820 gsf	22	Parking at adjacent surface lot
Parking Garage and Retail Buildings C/D	6	±920,632 gsf	±30,500 gsf	2,342	
Galleries	N/A	±39,930 gsf	±39,930 gsf	-	
Hotel	TBD	±247,500 gsf		225	250 rooms and 30,000 sf banquet facility
TOTAL		±2,428,162 gsf	±1,068,390 gsf	3,216	

B. SITE CONDITIONS

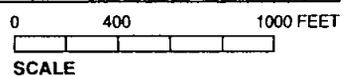
The project site is currently used for wholesale food markets, a farmer’s market (on weekdays), and parking. A portion of the project site is also used seasonally as parking for games at Yankee Stadium. The project site is currently occupied by seven buildings and a portion of an eighth, referred to as Buildings B-D, F-H, and J, and BHOD. Another building on the site, the former Building A, was recently demolished. The west side of the project site contains Pier 4, combined Piers 2 and 3, and a portion of Pier 1 on the Harlem River.

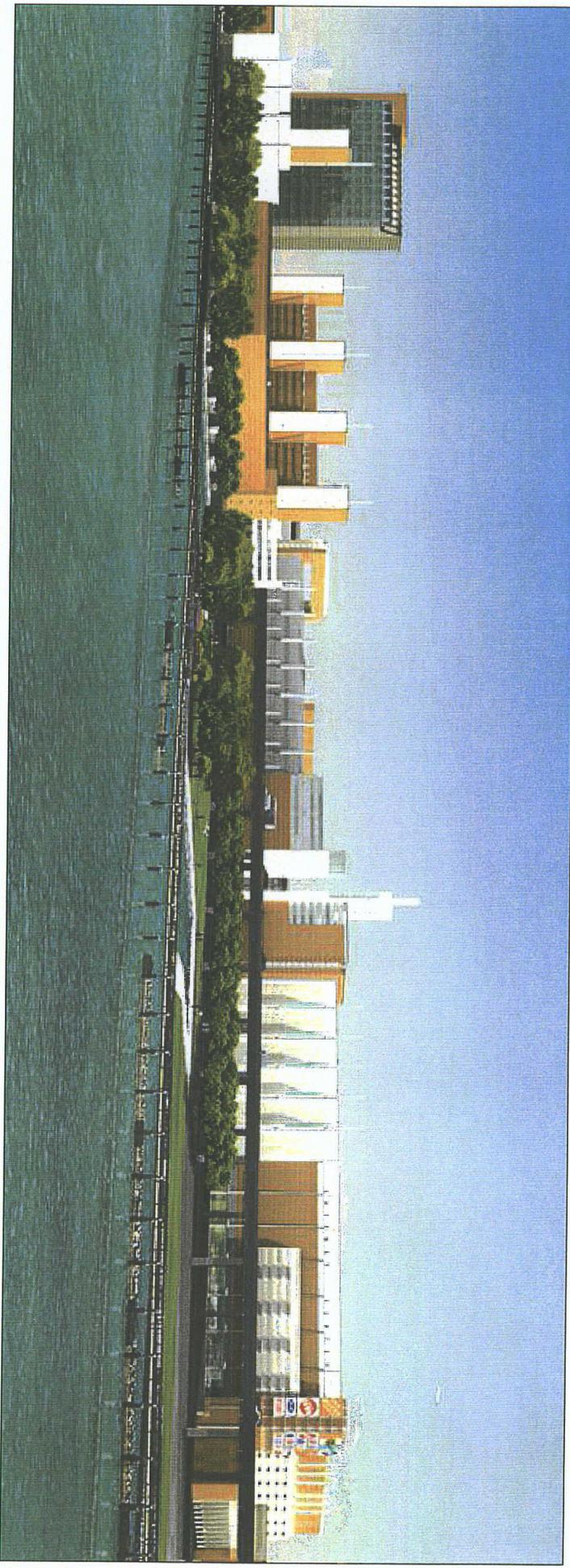
As shown in Figure S-4, the project site is made up of two parcels separated by Exterior Street. The first parcel, located west of Exterior Street along the Harlem River, currently contains four 2-story buildings (Buildings G, H, J, and part of F). Directly across Exterior Street is the second parcel, which is bounded by Exterior Street to the west, River Avenue to the east, and the Metro-North Railroad to the north. The second parcel contains four buildings: two 2-story buildings (Buildings B and D), one 1-story building (Building C), and the 8- and 10-story BHOD, which is in reserve status and is currently closed. The buildings within the project site range in size from approximately 26,000 sf to 612,000 sf (see Table S-2). Because of its poor condition, demolition of the former Building A, which was located on the east side of the project site, was required by the New York City Economic Development Corporation (NYCEDC), acting on the behalf of the Office of the Deputy Mayor for Economic Development and Rebuilding (ODMEDR) through prior arrangement with the applicant. The remainder of the buildings on the project site would be demolished as part of the Proposed Project.

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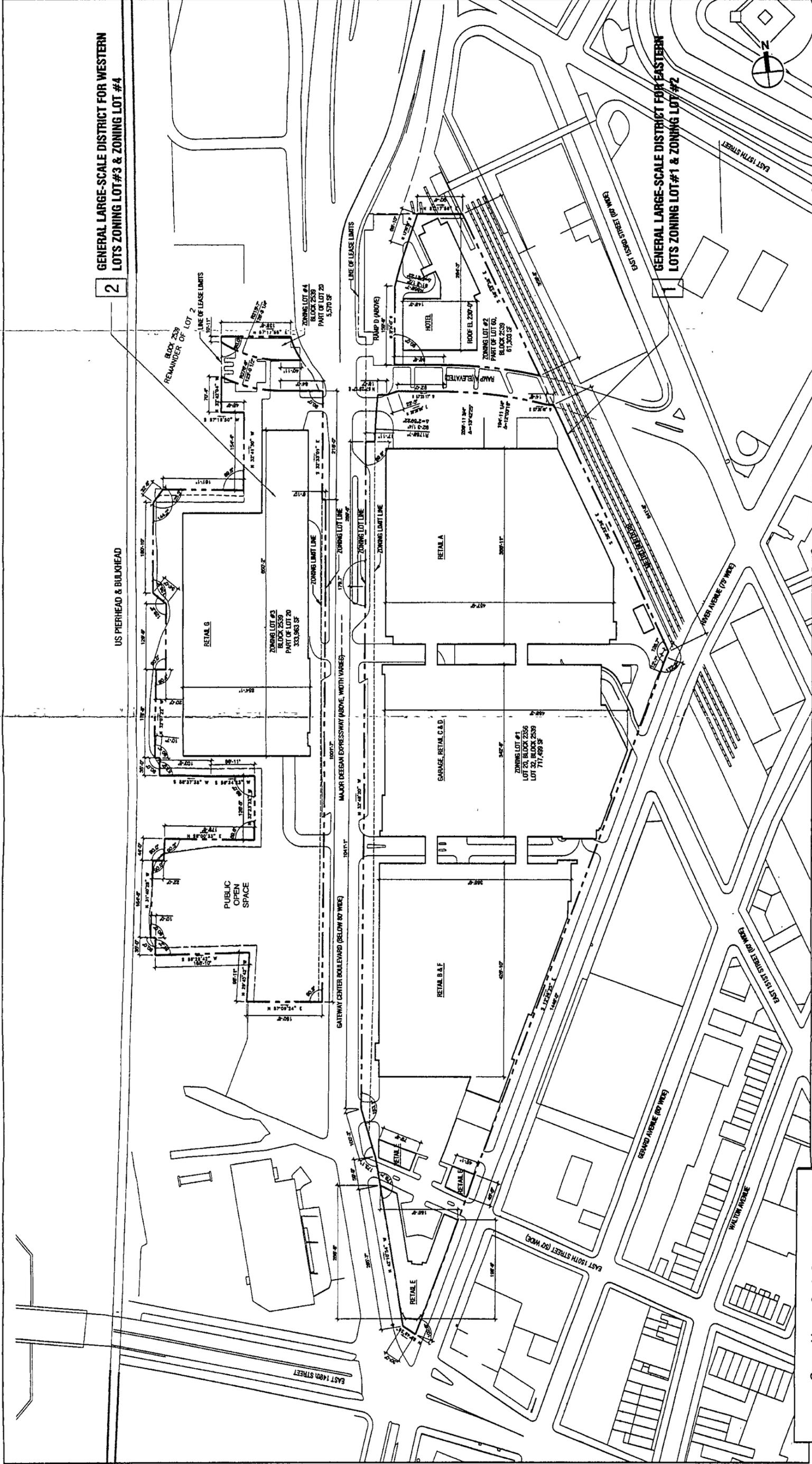


 Project Site





Rendering of Proposed Project from Harlem River
Figure S-3

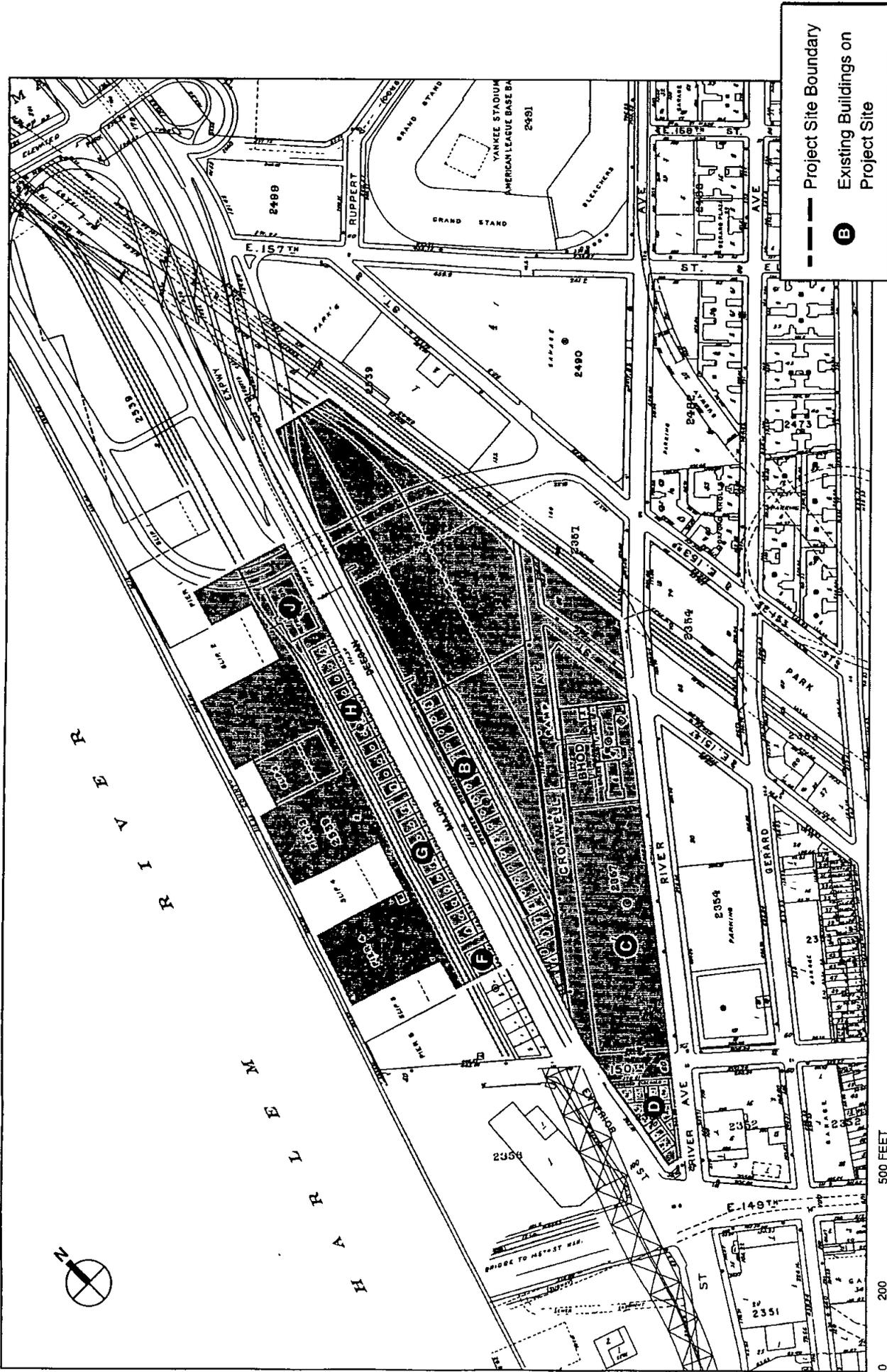


- - - - - General Large-Scale District Boundary

2
 GENERAL LARGE-SCALE DISTRICT FOR WESTERN
 LOTS ZONING LOT #3 & ZONING LOT #4

1
 GENERAL LARGE-SCALE DISTRICT FOR EASTERN
 LOTS ZONING LOT #1 & ZONING LOT #2

Site Plan
 Figure 1-2



Project Site Layout
Figure S-4

Table S-2
Existing Structures on Project Site

Building Letter	Date of Construction	Number of Stories	Approx. Size (in sf)	Current Use
WEST SIDE				
Building F	1935	2	±47,900	Partially occupied/ wholesale food
Building G	1935	2	±58,900	Partially occupied/ wholesale food
Building H	1935	2	±65,600	Partially occupied/ wholesale food
Building J	1935	2	±26,000	Partially occupied as site manager's office
EAST SIDE				
Building B	1925	2	±111,800	Partially occupied/ wholesale food
Building C	1961	1	±132,300	Warehouse/ rooftop parking
Building D	1935	2	±51,200	Partially occupied/ wholesale food
Bronx House of Detention	1938/1963	8 and 10	±300,000	In reserve status, currently closed

C. PROJECT PURPOSE AND NEED

The Proposed Project would support the economic revitalization of the West Haven neighborhood of the Bronx by converting a large underused site into a productive retail use. The development would represent a dramatic change to the project site, replacing underutilized and dilapidated buildings with a major retail center, new waterfront public open space, and the only hotel in this area of this city. The Proposed Project would create new employment opportunities, convenient shopping and dining opportunities, and create economic and fiscal benefits to the City in the form of economic revitalization and tax revenue. The Proposed Project provides an important new community amenity in the approximately 2-acre public open space and waterfront esplanade, which would serve the surrounding neighborhood and create public recreational access to the Harlem River.

D. DESCRIPTION OF PROPOSED ACTIONS

The Proposed Project involves the disposition of City-owned property (a long-term lease) by the New York City Department of Citywide Administrative Services (NYCDCAS) and the New York City Department of Small Business Services (NYCSBS) to a private developer. The following City-owned properties would be disposed of, first to the New York City Economic Development Corporation, and then to BTM Development Partners: Block 2356, Lot 20; Block 2357, Lots 1 and 86; Block 2539, Lots 2 (part), 32, and 60 (part); and portions of East 150th Street, East 151st Street and Cromwell Avenue. In addition, the project site includes Block 2539, part of Lot 20 and part of Lot 50, the areas under ramps A and D of the Major Deegan Expressway. These parcels are owned by the New York State Department of Transportation. The City of New York retains an easement to utilize these properties underneath the ramps. The easement under the ramps will be included in the disposition.

The current market lease includes portions of State-owned property (portions of Block 2539, Lots 20 and 50) that currently maintain a lease for area underneath ramps. The continuation of those leases is included in the disposition.

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Disposition will require approval through the Uniform Land Use Review Procedure (ULURP) under City Charter Section 197(c). In addition, a number of other discretionary actions subject to ULURP will be required, as follows:

- A zoning map amendment from M2-1 to C4-4;
- Elimination of portions of the following City streets:
 - East 150th Street between River Avenue and Exterior Street;
 - East 151st Street between River and Cromwell Avenues; and
 - Cromwell Avenue between Exterior Street and the Metro North Rail Road tracks.

EASTERN PORTION OF PROJECT SITE

- A special permit pursuant to ZR Section 74-512 to permit a public parking garage in excess of 150 spaces;
- A General Large-Scale District will be declared for the area east of Exterior Street. Several special permits will be required, including:
 - A special permit pursuant to Zoning Resolution (ZR) Section 74-743 for bulk modifications for height and setback waivers along River Avenue and Exterior Street, distribution of floor area within the general large-scale district, and a yard waiver adjacent to the Metro North Rail Road tracks; and
 - A special permit pursuant to ZR Section 74-744(c) for signs not otherwise permitted under the Zoning Resolution.

WESTERN PORTION OF PROJECT SITE

- A General Large-Scale District will be declared for the area west of Exterior Street. Several special permits will be required, including:
 - A special permit pursuant to ZR Section 74-53 to permit an increase in accessory parking above that permitted by the Zoning Resolution; and
 - A special permit pursuant to ZR Section 74-744(c) for signs not otherwise permitted under the Zoning Resolution.
- Waivers and modifications of the waterfront regulations will be required for the development of the western side of the project site, as follows:
 - Authorization pursuant to ZR Section 62-722(a) for modification of public access and visual corridors;
 - Authorization pursuant to ZR Section 62-722(b) for modification of design standards for the waterfront area;
 - Certification for a zoning lot subdivision pursuant to ZR Section 62-712; and
 - Certification for compliance with waterfront public access and visual corridors pursuant to ZR Section 62-711.

BTM Development Partners will initiate each of the above actions as a co-applicant with EDC.

The project site is comprised of a western and an eastern portion divided along Exterior Street. The portion of the site west of Exterior Street is considered the western portion, and the area east

of Exterior Street is the eastern portion. Under the terms of its agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site. In this case, the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop a 2-acre public open space. The City would be responsible for developing the remainder of the western portion of the site, but has not yet determined what the potential use of that site would be. It could be used as a public park or recreational space, or parking; however, prohibited uses would include noxious uses and uses similar to those proposed for the eastern portion of the project site. As discussed in detail below, remediation of this site would need to be implemented before redevelopment and would be the responsibility of the City or a designated developer. The project sponsor would retain the option to renew the leasehold interest in the future. Should the City determine that retail development of the western portion of the site is in its best interest, the project sponsor could renew its leasehold interest and develop the western portion of the site. The scenario in which only the eastern side of the project site is developed and the leasehold interest in the western side of the site is returned to the City is analyzed in Chapter 24, "Alternatives." This Environmental Impact Statement (EIS) analyzes the Proposed Project as the reasonable worst-case scenario for both portions of the project site.

In addition to the above, the disposition of the long term lease will require approval pursuant to Section 384(b)(4) of the City charter, which requires Borough Board and mayoral approval. The proposed actions are limited and restricted by the terms and conditions of these approvals. The project sponsor will seek financing for the Proposed Project from the New York City Industrial Development Agency (NYCIDA). The project has applied for and been accepted into the Brownfield Cleanup Program (BCP) by the New York State Department of Environmental Conservation (NYSDEC). The project site is divided into two sites for the BCP: the east side of the site and the public open space west of Exterior Street; and the remaining part of the west side of the site. Project site remedial activities under the BCP are subject to review under the State Environmental Quality Review Act (SEQRA). The project would also require a NYSDEC State Pollution Discharge Elimination System (SPDES) permit for stormwater discharges associated with construction activities.

One or more additional outfalls for stormwater discharge into the Harlem River may need to be installed if the project site's existing outfalls cannot be used. If the construction of new outfalls is necessary, an amendment of the City's SPDES permit would be required, as well as Tidal Wetlands and Protection of Waters permits from NYSDEC, a U.S. Army Corps of Engineers (USACOE) permit, an amendment to the City's drainage plan, and possibly a Water Quality Certification. If the existing outfalls can be used and no new outfalls are needed, the City's drainage plan and SPDES permit would need to be amended, which would require NYSDEC approval. If use of the existing outfall requires the removal of sedimentation from the mouths of the outfall and placement of related structures, Tidal Wetlands and Protections of Waters permits from NYSDEC, and an USACOE permit, would be needed. The project may also require NYSDEC and USACOE permits for removal of debris from interpier areas, and a USACOE permit for work on platforms above the River. All of the forgoing activities (except possibly work on platforms over the River) are expected to qualify for a Nationwide Permit from USACOE.

The Proposed Project is within the boundaries of the coastal zone and will require a New York State Department of State (NYS DOS) determination of consistency with New York City's Local Waterfront Revitalization Program. The project may also involve a land transfer from NYSDOT to the City of New York, and a revocable consent for utility lines underneath Exterior Street.

The potential widening of the 149th Street exit ramp from the Major Deegan Expressway may require approval from NYSDOT.

To the extent the Proposed Project will involve discretionary actions by a federal agency, it will include a review under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as implemented by federal regulations appearing at 36 Code of Federal Regulations (CFR) Part 800.

In disclosing impacts, the EIS considers the proposed action's adverse impacts on the environmental setting. Because the Proposed Project would be operational in 2009 and 2014, its environmental setting is not the current environment, but the future environment. Therefore, the technical analyses and consideration of alternatives assess current conditions and forecast these conditions to 2009 and 2014 (the two analysis years that were determined appropriate for this project) for the purposes of determining potential impacts. The reasonable worst-case scenario, to be updated between the DEIS and FEIS, analyzes both the No Build and Build conditions and also includes other future developments, as identified in Chapter 2, "Land Use, Zoning, and Public Policy." The New York Yankees recently announced plans to build a new stadium on the north side of East 161st Street between River Avenue and Jerome Avenues within Macombs Dam Park, directly north of the current Yankee Stadium. Given its prominence in the neighborhood and the uncertainty of its planning status, the Yankee Stadium proposal is considered separately from the No Build condition presented in the remainder of this EIS. Because the relocation of Yankee Stadium would alter conditions in the study area, Chapter 22, "Future Conditions with a Relocated Yankee Stadium," provides an assessment of how the project could be expected to change background conditions by 2009 and 2014, and discusses any concomitant changes to the impacts identified for the Proposed Project.

E. PROJECT SCHEDULE AND STATUS

The parking spaces on the roof of Building C are currently used during games at Yankee Stadium. This use is required by an existing agreement for Yankee parking. To avoid disrupting the availability of parking spaces during games, the Proposed Project would be completed in two phases. Building C would be demolished as part of the first phase of the project and its current parking use would be relocated to the proposed hotel's portion of the project site, which would be constructed as the second phase of the project. The first phase would comprise the development of the retail, parking, and public open space portions of the project. The construction period for this phase would be approximately 24 months. The second phase would include the development of the hotel. The construction period for the second phase would be approximately 24 months. If the proposed actions are approved, it is anticipated that site preparation and construction for the first phase would begin in 2007, and the development would be complete and operational in 2009. Site preparation and construction for the second phase would begin in 2012, and the building would be complete in 2014.

F. RELOCATION PLAN

EDC has hired a relocation consultant to provide assistance to the current market tenants of the project site. This is being done independently of the Proposed Project and is not subject to any discretionary approvals. EDC, Bronx Empowerment Zone, and the project sponsor will provide various benefits to assist tenants in their relocation efforts. The relocation package includes the following benefits:

- EDC will provide Bronx Terminal Market tenants payments of \$10 per square foot towards expenses;
- Tenants who relocate to a building within or near the Bronx Empowerment Zone will be eligible to borrow up to \$500,000, at 0 percent interest rate for a maximum of 10 years, for the purchase of fixtures and equipment or for working capital;
- The project sponsor will provide incentive payments equal to half of the net rental payments paid by each tenant and received by the project sponsor from the date the tenant accepts the relation offer to the date the tenant vacates;
- EDC's relocation consultant will provide relocation services at no cost to Bronx Terminal Market tenants; and
- In addition, other government programs such as tax incentives, energy discounts, and financing programs are also available to eligible tenants.

As additional details become available, they will be incorporated into the EIS.

G. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

LAND USE

2009

Project Site

The Proposed Project would represent a dramatic change in land use on the project site, replacing underutilized and dilapidated buildings with a major shopping center of approximately 1.1 million gross square feet (gsf) of retail; a multi-level parking garage and at-grade parking totaling approximately 3,216 spaces; and an important new community amenity—the approximately 2-acre public open space and waterfront esplanade—which would serve the surrounding neighborhood and create recreational public access to the Harlem River. The parcels east of the Major Deegan Expressway would be merged with portions of 150th and 151st Streets and Cromwell Avenue to form a superblock on the eastern section of the project site. The current tenants of the Bronx Terminal Market would be required to relocate, and the Bronx House of Detention would be closed as a result of the Proposed Project. A new site for the Bronx House of Detention has not been selected. The bulk of the Proposed Project would be completed and operational by the 2009 Build year.

Study Area

The change in primary use of the project site from predominantly wholesale commercial to retail with parking would not result in a significant adverse impact on the adjacent land uses. The Proposed Project continues the mixed-use quality of the study area by introducing retail uses in close proximity to residential areas and to Yankee Stadium—a major attraction drawing visitors to the area. The retail center would act as a transitional area between the existing residential uses to the north and east of the project site and the remaining heavy commercial and light industrial uses to the south. The New York Yankees recently announced a proposal to construct a new Yankee Stadium to the north of the site with four new parking garages and a capacity for 54,000 spectators. The Proposed Project would be compatible with and complement the proposed new Yankee Stadium, as the proposed retail uses would likely be used by visitors to the stadium.

The addition of an approximately 2-acre waterfront esplanade and public open space would provide substantial new open space and access to the waterfront, which currently does not exist on the site and would improve the visual quality of the Harlem River shoreline.

A portion of the project site is currently used for parking and the site would continue to have a large parking element with the completion of the first phase of the Proposed Project. The existing streets that would be closed as a result of the proposed actions (150th Street between River Avenue and Exterior Street; 151st Street between River and Cromwell Avenues; and Cromwell Avenue between Exterior Street and Metro North Rail Road tracks) are currently not through streets and are used almost exclusively by workers and patrons of the Bronx Terminal Market and any potential workers at the Bronx House of Detention and receive minimal additional traffic. The elimination of these streets would therefore have no major impact on area visitors or residents and would allow for a cohesive site plan.

The existing Bronx Terminal Market tenants would be required to relocate as a result of the project. Relocation assistance would be provided to the tenants.

Overall, the first phase of the Proposed Project would provide a major retail facility that would serve the local residents and workers as well as residents and workers in surrounding communities and would be compatible with the surrounding residential and commercial land uses. The Proposed Project is compatible with the proposed roadway infrastructure improvements planned for the study area that would improve access to the area, as well as with the planned community facility projects described above in Section C, including the expansions of Hostos Community College and Lincoln Hospital. It is not expected that the Proposed Project would result in additional changes to land use. Given the overall compatibility of land uses and the proposed public open space, the project would not result in significant adverse land use impacts in 2009.

2014

Project Site

The second phase of the Proposed Project would introduce a new approximately 247,500 gsf hotel—the only hotel in this area of the city—with 250 rooms, a 30,000 gsf banquet facility, and approximately 225 parking spaces to the project site. The introduction of the hotel use would be compatible with the other uses to be developed on the project site, which by 2014 would be a large-scale retail center.

Study Area

The hotel would be compatible with surrounding residential and commercial uses as well as with the proposal to construct a new Yankee Stadium to the north of the site. The Proposed Project would be compatible with and complement the proposed new Yankee Stadium. The hotel component of the Proposed Project would likely serve users of the proposed new stadium.

ZONING AND PUBLIC POLICY

2009

The Proposed Project requires a number of discretionary actions including a zoning map change, declaration of a General Large Scale District, special permits related to the creation of the General Large Scale District, waivers and modifications of waterfront regulations, and the

elimination of sections of several streets. Together, the proposed actions would allow development of commercial uses and waterfront public access on the project site.

The proposed actions, if approved, would represent a change in zoning on the project site from an M2-1 medium manufacturing district to a C4-4 general commercial district. C4 districts are major commercial centers. The zoning change would be compatible with land use designations in the area, including the R8 and R6 districts to the east. The C4-4 district would also be compatible with the M1-2 district to the east, which typically borders residential and commercial districts, as it currently does in this case to the north, south, and east.

The New York City Zoning Resolution allows the City Planning Commission to permit bulk modifications for height, setback, and yards within a general large-scale development. The proposed actions include special permits that would allow greater height and distribution of floor area on the eastern portion of the project site than would otherwise be permitted under zoning regulations. The requested special permits would allow the modification of the underlying height and setback requirements on the River Avenue frontage to permit Retail Building B/F and the public parking garage to be constructed without the required setback at 60 feet above curb level. Retail Building B/F would rise without setback to a height of approximately 96 feet along River Avenue, and the parking garage would rise without setback to approximately 84 feet along its River Avenue frontage. The height and setback modifications would allow a greater portion of the retail development to occur on the widest portion of the project site and are necessary to provide floor plates that are regular in configuration to meet the needs of the proposed large- and medium-scale retail tenants. The distribution of floor area to the portion of the project site north of the Major Deegan Expressway ramp would allow a hotel of sufficient size to accommodate the project program while complying with required height and setback requirements on this portion of the site.

The proposed actions would include a special permit pursuant to ZR Section 74-512 to allow a parking garage with approximately 2,339 spaces, 1,553 of which would be public parking spaces. This exceeds the 150 spaces permitted in a parking garage by the Zoning Resolution without the special permit. The remaining spaces in the garage would be accessory parking spaces. The Proposed Project also requires a special permit pursuant to ZR Section 74-53 to allow an increase spaces in an accessory group parking facility above that permitted as-of-right. The Proposed Project would include an accessory group parking facility of 344 spaces, 204 spaces above what is permitted as-of-right by the Zoning Resolution.

These changes do not constitute a significant adverse impact to the City's framework for zoning within large scale developments. Furthermore, the project site currently contains several large paved areas that are used for parking for Yankee Stadium, as well as 50 parking spaces adjacent to the Bronx House of Detention and approximately 423 rooftop parking spaces. The proposed parking would therefore be a continuation of uses that currently exist on the site.

In addition, the proposed actions include a special permit that would increase the permitted surface area of accessory signs and allow them to be located above a height of 40 feet. Along River Avenue, signs on the proposed parking garage would reach a height of approximately 100 feet. Along the eastern side of Exterior Street on the proposed Retail Building B/F, signage would rise on stanchions to a maximum height of approximately 155 feet. Signage would rise to a height of approximately 87 feet on the proposed Retail Building G on the western side of Exterior Street. The increased height and area of the signs is necessary due to the presence of the elevated structure of the Major Deegan Expressway over Exterior Street and the change in elevation of approximately 29 feet from Exterior Street to River Avenue.

As per the New York City Zoning Resolution, special regulations guide development along the City's waterfront in order to, among other reasons, maintain and re-establish physical and visual public access to and along the waterfront; to promote a greater mix of uses in waterfront developments in order to attract the public and enliven the waterfront; and to create a desirable relationship between waterfront development and the water's edge, public access areas, and adjoining upland communities. The Proposed Project would create an approximately 2-acre waterfront public esplanade and open space fronting on the Harlem River that would provide access to the waterfront where it is currently not available, and would thus be consistent with the goals of the Zoning Resolution as they pertain to waterfront areas.

Waterfront zoning also allows an applicant to modify the Zoning Resolution's bulk, visual corridor, and public access requirements by obtaining authorizations. The applicant would require such approvals to facilitate a feasible site plan. While the applicant is requesting authorizations to modify waterfront public access, waterfront yards, visual corridors, and design standards for a waterfront area, and a certification for a zoning lot subdivision, the modifications proposed are necessary for the Proposed Project to provide a functional size and shape of the proposed retail uses. The project's waterfront improvements have been designed to provide public access, views, and enjoyment of the waterfront. The modifications that would be allowed by the authorizations and certification include a reduction in the required 40-foot shore public walkway and waterfront yards and a change in the location of visual corridors, which are required by the Zoning Resolution to be located at maximum intervals of 600 feet. Retail Building G on the western side of Exterior Street would encroach approximately 3 to 19 feet upon the required shore public walkway at various locations. Additionally, the two required visual corridors to the Harlem River would be spaced approximately 885 feet apart from one another due to the locations of the Retail Building G and the proposed parking garage. However, the approximately 2-acre public open space that would be created on the southern portion of the project site would compensate for the slight decrease in visual and pedestrian access to the waterfront on the northern part of the site. Therefore, these changes do not constitute a significant adverse impact to the City's framework for zoning on the waterfront.

The Proposed Project would be consistent with the public policies that govern the site and surrounding area. The Proposed Project would be consistent with the goals of the *2002 New York State Open Space Conservation Plan*, as the plan seeks to provide urban open space and waterfront access on the site; this will be accomplished with the creation of the approximately 2-acre public waterfront esplanade and open space. The Proposed Project would also be consistent with the Bronx Borough President's new Bronx Waterfront Plan, as it would create a year-round commercial center that would employ Bronx residents and provide publicly accessible waterfront recreational space, thereby achieving several of the plan's goals. Finally, the proposed amendments to the City Map that would eliminate portions of 150th Street, 151st Street, and Cromwell Avenue would follow the procedures of the City's ULURP process, which permits such amendments. The proposed map changes would not conflict with public policy.

2014

No additional zoning actions would be required for the completion of the second phase of the Proposed Project. The special permit for bulk waivers included in the proposed actions would allow the distribution of floor area to the hotel site from elsewhere on the project site.

Overall, the Proposed Project would be consistent with land use, zoning, and public policy.

SOCIOECONOMIC CONDITIONS

DIRECT RESIDENTIAL DISPLACEMENT

The project site currently contains no residential units. Therefore, the proposed actions would not directly displace any residential population, and no significant adverse impacts would result from direct residential displacement.

INDIRECT RESIDENTIAL DISPLACEMENT

Indirect residential displacement is the involuntary displacement of residents that can result from a change in socioeconomic conditions created by a proposed action. In most cases, the issue for indirect residential displacement is whether an action would increase property values, leading to higher rents throughout the study area, making it difficult for some residents to afford their homes. A proposed action can increase residential property values in several ways: it can introduce a substantial new residential population, or directly displace existing residents, such that the socioeconomic characteristics of an area are changed; it can introduce a more costly type of housing to an area; it can directly displace a property or use that has had a blighting effect on residential property values; and it can introduce a "critical mass" of non-residential uses such that the surrounding area becomes more attractive as a residential neighborhood complex.

The proposed actions would not have a substantial influence on residential property values, and no significant adverse impacts would result from indirect residential displacement. The Proposed Project would not directly displace a residential population, nor would it introduce new housing or residents to the study area. Considering that rents in the study area are similar to other neighborhoods bordering the ¼-mile boundary, and that there are physical barriers that separate the project site from residential areas, it appears that the presence of the Bronx Terminal Market has not had a blighting effect on the value of residential properties in the study area.

While the Proposed Project would introduce a critical mass of non-residential uses to the study area, it is not expected to make the surrounding residential neighborhoods more attractive for residential use. The project site is relatively isolated from the residential areas within the study area. Existing residential buildings located north of the project site are separated from the project site by the Metro North Rail Road tracks and Yankee Stadium. Residential concentrations to the east of the project site along Walton Avenue are separated from the project site by an approximately 29-foot change in grade between Exterior Street and River Avenue. These barriers create a residential environment that is separate and distinct from the project site. In addition, the ¼-mile study area is fully developed with no vacant land available for redevelopment, and zoning regulations in the manufacturing areas restrict as-of-right residential development or conversions without a discretionary action from the New York City Department of City Planning (NYCDCP). Finally, many of the residential units within the study area are either owner-occupied or rent-regulated, which means their tenants would not be affected by potential increases in market rate rents. In total, approximately 98 percent of the residential units found in the study area are protected against any unregulated or market-driven rental increases.

DIRECT BUSINESS DISPLACEMENT

The *CEQR Technical Manual* defines direct business displacement as the involuntary displacement of businesses from the site of (or a site directly affected by) a proposed action. The analysis of direct business displacement examines the employment and business value characteristics of the affected businesses to determine the significance of the potential impact. A

significant direct displacement impact may occur if the businesses in question have substantial economic value to the City or region, are the subject of regulations or publicly adopted plans to preserve, enhance, or otherwise protect them, or substantially contribute to a defining element of the neighborhood character. As set forth in the *CEQR Technical Manual*, the consideration of the economic value of a business is based on: (1) its products and services, (2) its location needs (particularly whether those needs can be satisfied at other locations), and (3) the potential effects on business or consumers of losing the displaced business as a product or service.

The analysis finds that the proposed actions would not result in significant adverse impacts due to the direct business displacement. All of the 23 businesses currently operating on the project site—engaged either in food wholesaling or sale of related restaurant or grocery products—would be displaced by the Proposed Project. The displaced businesses represent about 4 percent of the wholesale food employment in the Bronx and only 1 percent of the wholesale food employment in New York City. In addition, all of the foods sold at the Bronx Terminal Market, including West African, Caribbean, and Hispanic specialty items, are available through other wholesale distributors and retailers in New York City, as well as in New Jersey.

The impact of displacing existing merchants in Bronx Terminal Market on local businesses and consumers is also not expected to be significant. Many of the West African businesses and grocery stores in northern Manhattan and the South Bronx either directly import their goods from West Africa or use wholesale distributors in New Jersey to stock their inventories. In addition, online research and telephone interviews confirmed that there are at least 16 African grocery stores located in the Bronx that deal in both wholesale and retail of West African specialty food items, as well as the two wholesale/retail purveyors of African foods and specialty products in Brooklyn and Queens. Although there are some restaurants and retailers of African foods who use the Bronx Terminal Market, it is not their only supply source. Thus, the direct displacement of African food merchants in the Bronx Terminal Market will not completely eliminate sources of African food products in the Bronx and other parts of New York City. All of the above factors combined with the availability of approximately 472,550 sf of ground-floor industrial space within the Bronx show that the Bronx Terminal Market businesses do not have a unique or substantial economic value to the city or regional area and can be relocated without great difficulty.

EDC has hired a relocation consultant to provide assistance to the current market tenants of the project site. This is being done independently of the Proposed Project and is not subject to any discretionary approvals. EDC, Bronx Empowerment Zone, and the project sponsor will provide various benefits to assist tenants in their relocation efforts, as described above under "Relocation Plan."

INDIRECT BUSINESS AND INSTITUTIONAL DISPLACEMENT

Indirect Displacement Due to Changes in Property Values and Rent

One issue for indirect business and institutional displacement is whether an action would increase property values and thus rents in the study area, making it difficult for some categories of business or institutions to remain at their current locations.

The ¼-mile study area would not result in significant indirect business displacement as a result of increased property values and rents. Despite the decline in manufacturing employment between 1990 and 2000, the real estate market for industrial properties within the Bronx has been strong. According to real estate firm CB Richard Ellis, prices for industrial properties over the past few years have been increasing with the vacancy rate currently at approximately 8

percent. Current industrial rents in the study area are about \$8-10 per square foot, which is comparable to other industrial areas in the Bronx. The low vacancy rate combined with high industrial rents makes it unlikely that the Proposed Project would create indirect displacement of industrial properties within the ¼-mile study area. In addition, the potential for development of additional retail uses similar or complementary to the Proposed Project is severely limited by the presence of institutional uses east of the project site, Yankee Stadium to the north, the Hudson River to the west, the development constraints imposed by highway ramps, as well as the existing zoning in the study area which would limit any potential impacts by the need for a discretionary action by the City Planning Commission.

Indirect Displacement Due to Competition (Primary Trade Area and 3-Mile Trade Area)

The issue of competition as described in the *CEQR Technical Manual* is whether the Proposed Project could affect neighborhood character by affecting the viability of neighborhood shopping areas through competition, thereby becoming an environmental concern. A detailed competition analysis was performed for two areas: a Primary Trade Area defined as the borough of the Bronx as well as Manhattan north of 110th Street, and a smaller 3-Mile Trade Area, from which the Proposed Project would be expected to draw a large portion of its repeat business as a result of more convenient access, shorter travel time and distance, and propensity to take advantage of a major shopping resource close to home.

The analysis finds that the Proposed Project would not substantially raise retail capture rates within the Primary Trade Area or the 3-Mile Trade Area and therefore, would not have the potential to adversely affect competitive stores in the trade areas. Because the Proposed Project may include a supermarket, department store, or wholesale club, special attention was given to food stores and department stores. The analysis concluded that within the Primary Trade Area and 3-Mile Trade Area the Proposed Project would increase the food store capture rate by only 2.7 percentage points and 2.6 percentage points, respectively, compared to the future without the Proposed Project.* The department store capture rate would increase by less than the capture rate for all shopping goods, increasing from 34.3 percent in the future without the Proposed Project to 35.9 percent in the future with the Proposed Project. In the 3-Mile Trade Area, the department store capture rate would increase from 34.3 percent to 37.0 percent.

Given that the Proposed Project would not substantially raise retail capture rates within the Primary Trade Area or 3-Mile Trade Area, it would not have the potential to adversely affect competitive stores in the trade areas. To the contrary, the proposed actions would help retain retail sales dollars, tax revenues, and employment opportunities in the Bronx and New York City while enhancing the retail section available to trade area residents.

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

According to the *CEQR Technical Manual*, a significant adverse impact may occur if an action affects the operation and viability of a specific industry that has substantial economic value to the City's economy. The analysis of this Proposed Project focuses on the project's implications

* In the future with the Proposed Project, the capture rate for food stores in the Primary Trade Area would be only 48.9 percent—well below the 70 to 80 percent rate that is typical for trade areas that are satisfying local retail demand. Similarly, the food store capture rate in the 3-Mile Trade Area would be only 57.4 percent in the future with the Proposed Project.

for the wholesale food industry in New York City and concludes that the project would not result in a significant adverse impact to the industry.

This conclusion is based on the findings that the Proposed Project would not substantially reduce employment in the wholesale food industry in the city or impair the economic viability of the wholesale food industry in the Bronx or the city as a whole. Employees currently working at businesses on the project site represent only 4 percent of all wholesale food employees in the Bronx and roughly 1 percent of wholesale food employees in New York City. Furthermore, all of the products sold at the Bronx Terminal Market are available through other wholesale distributors and retailers in New York City that do not depend solely on the Bronx Terminal Market for their supply, as well as through two major wholesalers in New Jersey (one of which supplies the Bronx Terminal Market).

COMMUNITY FACILITIES

BRONX HOUSE OF DETENTION

The proposed actions include the disposition of the Bronx House of Detention for redevelopment. This action would reduce the New York City Department of Correction's (NYCDOC) reserve capacity by approximately 30 percent. Fewer beds would be available to be reopened when NYCDOC eventually replaces the 4,800 temporary beds on Rikers Island that are approaching the end of their useful lives. Therefore, the Proposed Project would reduce the options available to NYCDOC as it chooses among several capacity replacement configurations. The Proposed Project would also reduce the number of jail beds available in Bronx County, where 22 percent of the City-wide inmate population is now arraigned. Given the need for a continued presence in the Bronx and the need to dry-dock the Vernon C. Bain Center in the near future, NYCDOC would need a new site in the Bronx to build a new facility to replace the existing Bronx House of Detention and to provide improved access to jail facilities to families of inmates, defense attorneys, and other members of the community.

POLICE SERVICES

The introduction of new retail, hotel, and open space uses to the project site may necessitate the assignment of additional personnel, resources, and equipment to the area. Typically, a commitment of resources would be based on demonstrated need. Overall, the role of NYPD in providing effective, efficient service is not expected to be adversely affected by the Proposed Project.

FIRE PROTECTION

The Proposed Project would be constructed in accordance with all applicable fire and safety codes. Therefore, there would be no direct effects to the physical operations of, or access to, Fire Department facilities. Overall, the response time of local emergency services is not expected to be significantly affected by the Proposed Project in either 2009 or 2014. The Fire Department would continue to provide adequate fire protection services to the project area and surrounding neighborhoods.

OPEN SPACE

2009

The Proposed Project would create approximately two acres of publicly accessible passive open space on the project site along the Harlem River. The open space will contain a waterfront esplanade along with a larger open space area on the southern edge of the project site along the waterfront that contains benches and landscaping.

Adequacy of Open Spaces

With the Proposed Project, the daytime population in the study area would total approximately 7,652 persons. The acreage of passive open space would increase to 14.72 acres. The ratio of passive open space for the daytime population would decrease by 13.1 percent to 1.92 acres per 1,000 workers, which is still well above the guideline of 0.15 for the daytime population; therefore, there would be no significant adverse impact to passive open space for the daytime population. The passive open space ratio per 1,000 residents and workers would increase by approximately 5.9 percent to 0.65 acres per 1,000 persons and would remain above the recommended weighted average ratio of 0.38 acres per 1,000 residents and workers in the future with the proposed actions. As the passive open space ratio for workers and the combined passive open space ratio for workers and residents would remain above recommended guidelines, the Proposed Project would not have significant adverse impacts to open space in 2009.

2014

No additional open space would be created on the project site by 2014.

Adequacy of Open Spaces

With the completion of the Proposed Project, the daytime population in the study area would total approximately 8,300 persons. The acreage of passive open space would remain at 14.72 acres. The ratio of passive open space for the daytime population would decrease from the 2014 No Build condition to 1.77 acres per 1,000 workers, which is still well above the guideline of 0.15 for the daytime population. The passive open space ratio per 1,000 residents and workers would increase from the 2014 no build condition to 0.62, and would remain above the recommended weighted average ratio of 0.38 acres per 1,000 residents and workers in the future with the proposed actions. As the passive open space ratio for workers and the combined passive open space ratio for workers and residents would remain above recommended guidelines, the proposed actions would not have significant adverse impacts to open space in 2014. Overall, the Proposed Project would not have any significant adverse impacts on open space.

SHADOWS

Overall, the Proposed Project would have no significant adverse shadow impacts. The proposed buildings would cast shadows on Macombs Dam Park, but these shadows would be cast during the midday hours of the winter months and would mostly fall on paved areas, and thus would not affect park usage or vegetation growth. The open space to be created by the Proposed Project would receive incremental shadows throughout the year; however, the majority of the open space would be only covered by project-generated shadows in the early morning hours. The portion of the waterfront esplanade to the west of the proposed Retail Building G would continue to receive shadows through the early afternoon, but it would receive full sun in the

early evening until sunset in the late spring and through the summer. Open space users could utilize the southern portion of the open space if they desired a sunny seating area when the esplanade would be in shadow, but most esplanade users are expected to walk, bike, or run through this area (rather than sit), and thus would not be affected by the shadows. As necessary, plantings on the esplanade will conform to any New York City Department of Parks and Recreation requirements for shade-tolerant species. In addition, this new open space would not exist without the proposed building to be constructed adjacent to it. Incremental shadows would not meet any of the criteria that would lead to a significant adverse impact based on shadow coverage.

HISTORIC RESOURCES

ARCHAEOLOGICAL RESOURCES

The study area for archaeological resources is the Area of Potential Effect (APE), the area of planned construction and disturbance on the project site. At the request of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), a Phase IA Archaeological Assessment was prepared for the project site by Historical Perspectives, Inc.

2009

Portions of the APE at the northern end of the project site contain the potential for precontact archaeological resources to be located beneath the layer of peat found under fill deposits and river mud. However, project specifications indicate that future excavation would only extend to the depth of these potential resources (i.e., to below the peat layer) in the form of building pilings. Due to the depth of the potential precontact resources and the difficulty in accessing the potentially sensitive strata, which are well below the water table, no archaeological field investigations are recommended for precontact resources at this time. Full excavation for the proposed buildings would only extend approximately three to four feet below grade, for the construction of pile caps within the proposed buildings' footprints; this depth would not reach the peat layer or below. Future utilities planned for the site would not be located any deeper than existing utilities on the property. The area of the project site that would require deeper excavation as part of the project does not contain a layer of peat, being just at the edge of the original shoreline and not within a former marshy area, and has been previously disturbed from earlier construction. Therefore, any potential precontact period archaeological resources in this area would already have been destroyed, and no archaeological field investigations are recommended.

Historic period archaeological sensitivity for the project APE is low, and no archaeological field investigations are recommended for historic period resources. Therefore, the project is not expected to have any significant adverse impacts on archaeological resources.

2014

The future hotel site falls within the area of precontact archaeological sensitivity. While construction specifications for the proposed hotel have not yet been determined, it is expected that the excavation for the hotel would be consistent with that of the other proposed buildings. Therefore, the project is not expected to have any significant adverse impacts on archaeological resources. If future project specifications for the proposed hotel indicate it would require deep excavation instead (i.e., excavation that would penetrate/impact the peat layer or below the peat layer), then archaeological field investigations or monitoring for the recovery of precontact resources would be undertaken.

ARCHITECTURAL RESOURCES

2009

Project Site. All of the buildings on the project site would be demolished for the Proposed Project by 2009. The demolition of the buildings identified as historic resources—Buildings B, D, F, G, H, and J, and the Bronx House of Detention—would constitute a significant adverse impact. Measures to mitigate the effect of the proposed project on historic resources are being developed, in consultation with OPRHP. Potential mitigation measures are discussed in the “Mitigation” section.

Study Area. The project site is located far enough away (i.e. more than 90 feet) from the known and potential historic resources in the study area (the 145th Street Bridge, 691 Gerard Avenue/109 153rd Street, and 690 Gerard Avenue) not to have any direct, physical effects on these resources from ground-borne vibrations or other potential construction-related issues.

The new, modern development on the project site would be expected to alter the context of the historic resources in the surrounding area. However, these resources already exist in an environment that is predominantly industrial, and this change is not considered a significant adverse impact. In addition, the bulk of the project development would be somewhat less noticeable from the resources along the Grand Concourse, which is at a higher elevation than the project site. While the project site buildings would be more noticeable from the Macombs Dam and 145th Street Bridges, they would not block views from those bridges to any historic resource. The Proposed Project would provide new views to the historic bridges spanning the Harlem River, by providing public access to the project site waterfront in the form of a public open space and waterfront esplanade.

2014

Project Site. There are no historic resources on the area of the project site to be developed as a hotel by 2014, and there would be no historic resources on the remainder of the project site by 2014. Therefore, the development of the proposed hotel would not affect any historic resources on the project site.

Study Area. The proposed hotel site is located far enough away (i.e. more than 90 feet) from the known and potential historic resources in the study area not to have any direct, physical effects on these resources from ground-borne vibrations or other potential construction-related issues. The development of a new, modern hotel on the project site would be expected to alter the context of the historic resources in the surrounding area. However, these resources already exist in an environment that is predominantly industrial, and this change is not considered a significant adverse impact.

URBAN DESIGN AND VISUAL RESOURCES

2009

Project Site

Urban Design. The Proposed Project would alter the street pattern of the project site by demapping East 150th Street between River Avenue and Exterior Street, and eliminating East 151st Street between River and Cromwell Avenues and Cromwell Avenue between Exterior Street and the Metro North Rail Road tracks. This change is not considered to be adverse, as

these streets are currently underutilized and are not a defining element of the area's urban design. The Proposed Project also would substantially alter the appearance of the project site by replacing the existing one- and two-story, long, narrow industrial buildings and the 8- and 10-story Bronx House of Detention with a series of retail establishments of up to 96 feet in height, a 6-level parking garage, and a landscaped open space and waterfront esplanade. The proposed buildings would be larger and squarer in form than the existing buildings, and their expected materials, coloration, and style would be different and more modern than those of the existing buildings on the project site. Building materials could include pre-cast concrete and brick, and the buildings are expected to have a warehouse aesthetic incorporating a variety of storefronts with industrial lighting and signage. While the proposed buildings would be considerably different than the existing buildings, the existing buildings are currently unutilized or underutilized and have a neglected quality, and the proposed buildings would be expected to improve the visual quality of the site. The proposed buildings also would maintain the existing streetwalls on Exterior Street and River Avenue. The proposed retail and parking uses would be expected to generate more pedestrian activity than the existing wholesale and retail uses. The signage to be erected on the sides of the proposed buildings would include elements intended to create a visual rhythm along the Major Deegan Expressway.

The Proposed Project would create landscaped passageways between the proposed buildings, allowing for better pedestrian access, and would introduce street lighting and trees to improve the visual appearance of the project site. The landscaped passageways would not be built upon and would be available for public use, facilitating access to the public open space to be created on the west side of the project site. It would also create a public open space and waterfront esplanade, which would enhance the project site's piers and make the Harlem River waterfront both visually and physically more accessible. The Belgian block paving on Exterior Street would be removed as part of the Proposed Project; however, it is possible that the pavers would be incorporated into the design of the public open space. In summary, the Proposed Project is not expected to have a significant adverse impact on the urban design of the project site.

Visual Resources. The demolition of the Bronx House of Detention could create new views to Yankee Stadium from the project site; however, the construction of the proposed buildings could eliminate other views of the stadium from the project site. Views of Bronx House of Detention from the project site are mainly of the rear or western façade which is not original to the building. Views of the Harlem River from the project site would be improved with the creation of the public open space and waterfront esplanade.

Study Area

Urban Design. The Proposed Project would not alter the street pattern, block shapes, or natural features of the Bronx or East Harlem study area.

The Proposed Project would enhance the vitality of streets in the study area by introducing new commercial and parking uses and pedestrian activity to the project site. It would also improve the appearance of the area's streetscape by adding street lighting and landscaping. The lighting of the pedestrian walkways could include industrial light fixtures as well as decorative accent lighting. The Proposed Project would include signs that would be visible from the surrounding area. Illuminated signs identifying retail tenants would be located on Retail Buildings A, B/F, and G and would be located along the public streets that run through and along the project site. Taller backlit signs approaching heights of approximately 155 feet, 87 feet, and 100 feet respectively would be located along Exterior Street at the corners of Retail Buildings B/F and G, and along River Avenue on the proposed parking garage. The proposed signage would draw

attention to the retail development and the surrounding recreational space and would create visual interest along the Major Deegan Expressway. The Proposed Project would not affect other streetscape elements within the Bronx study area.

The Proposed Project would not affect streetscape elements in the East Harlem study area.

The Proposed Project would introduce a land use that is complimentary to the surrounding area, as it would create major retail facilities which would serve residents in the Bronx and northern Manhattan. The height of the proposed buildings would be similar to that of the residential buildings located along East 153rd Street and along Gerard and Walton Avenues north of East 153rd Street. In addition, Hostos Community College, located at East 145 Street and the Grand Concourse, is comprised of buildings of a similar height and bulk, and Yankee Stadium, to the north of the project site, is approximately 138 feet tall. Therefore, the proposed buildings would be in keeping with the height and bulk of some of the existing structures in the study area. The expected design of the buildings could be referential to the surrounding industrial scale buildings along the waterfront.

The Proposed Project would not affect building uses, bulk or arrangements in the East Harlem study area.

Visual Resources. While the Proposed Project would result in the demolition of the Bronx House of Detention, this resource is only visible from specific locations within the study area and from the elevated Expressway. Additionally, views of the resource are mainly of the rear or western façade which is not original to the building. The removal of the Bronx House of Detention could also allow for new views of Yankee Stadium from the study area. The proposed signage at the corners of the proposed buildings could obstruct some views from the Major Deegan Expressway to the surrounding area; however, because they are available only from passing vehicles, such views are of short duration and are not considered significant.

2014

Project Site

The second phase of the Proposed Project would involve the development of a hotel on the northern portion of the project site by the 2014 Build year. This would be a new use on the project site and in the study area; however, it would be compatible with the retail center which would already exist on the project site by 2014. The development of the proposed hotel would not alter any street patterns, block shapes, natural features, or adversely affect views to visual resources from the project site.

Study Area

Urban Design. The construction of the hotel would not alter any street patterns, block shapes, or natural features within either study areas.

The proposed hotel would not adversely affect the streetscape of the study area. It is anticipated that development of the hotel would bring greater activity to the streets of the project site and the study area in the Bronx. The proposed hotel would not impact the streetscape of the East Harlem study area.

The proposed hotel use would be compatible with the retail center which would already exist on the project site by 2014. At approximately 230 feet in height, the hotel would be taller than the buildings currently on the project site and in the study area; however, it would occupy a much

smaller footprint than the proposed retail buildings. Therefore, its bulk would be most noticeable from across the Harlem River or along East 153rd Street near the project site.

Visual Resources. The proposed hotel would not have significant adverse impacts on the visual resources within the study area. Since the hotel would be located west of East 153rd Street, it would not block existing views of Yankee Stadium and the Bronx County Courthouse from the majority of the study area. Some views of the Bronx County Courthouse from across the Harlem River in Manhattan could be eliminated; however, these are very distant views, and other, closer views to the courthouse would not be affected. Therefore no significant adverse effects to the visual resources of either study area are expected from the second phase of the Proposed Project.

NEIGHBORHOOD CHARACTER

2009

The first phase of the Proposed Project would result in a major change in land use on the project site. This change is considered to be complementary to the area, as it would create a major retail facility that would serve the residents, workers, and visitors of surrounding communities and Yankee Stadium. Wholesale commercial uses, vacant space, and an unused detention center would be removed from the site to allow for development of active retail uses, parking, and a public open space/waterfront esplanade. The project site is currently underutilized, and the Proposed Project would bring a greater intensity of use to the project site.

The Proposed Project would substantially improve the condition of the shoreline and waterfront edge. The Harlem River waterfront would be both visually and physically more accessible. The project would provide substantial access to the waterfront, which currently does not exist on the site or at very many locations within the study area. Views from and through the project site to the waterfront and the surrounding area would be improved with the provision of the waterfront open space and promenade. There would also be a notable improvement in the amount of open space in the neighborhood for use by visitors to the project site and the surrounding community, compared to conditions without the proposed actions. Therefore, the proposed actions are expected to have a beneficial effect on the waterfront and open space in the study area.

The proposed buildings would be larger and squarer in form than the existing buildings, and their expected materials, coloration, and style would be different and more modern than those of the existing buildings on the project site. The buildings would, however, be similar in height to the residential buildings located along East 153rd Street and along Gerard and Walton Avenues north of East 153rd Street, the buildings at Hostos Community College, and Yankee Stadium. Therefore, the proposed buildings would be in keeping with the height and bulk of some of the existing structures in the study area. As the existing buildings on the project site are currently unutilized or underutilized and have a neglected quality, the proposed buildings would be expected to improve the visual quality and the character of the area.

The Proposed Project would modify the shapes of the project blocks by demapping portions of several streets to create a superblock. These streets are currently underutilized and form blocks with unusual shapes. The change would not result in a negative neighborhood character impact related to urban design, as it would not significantly alter the basic street pattern or block shapes of the study area.

In general, the Proposed Project is expected to enhance the vitality of the surrounding streets by introducing active retail uses and increasing visitation to the project site. The Proposed Project

would also add to the visual quality of the surrounding area, by creating landscaped passageways between buildings, introducing street lighting and trees, and opening up views from the project site to the Harlem River. Although the context of surrounding views would be altered by the introduction of taller, modern buildings to the area, this change is not considered to be adverse, as these buildings would replace underutilized, deteriorating buildings and the project would create new waterfront access and views to the Harlem River. Yankee Stadium would continue to be a prominent feature in surrounding views. Some existing views to the stadium would be eliminated, but other new views would be created with the removal of the detention center.

Although the Proposed Project would require the demolition of the historic resources on the project site (Buildings B, D, F, G, H, and J, and the Bronx House of Detention)—this impact would be lessened by mitigation that is being developed in consultation with OPRHP. Other known and potential historic resources are located far enough away from the project site to not experience any direct physical effects from the Proposed Project. While the Proposed Project would be expected to alter the context of the historic resources in the surrounding area, these resources already exist in an environment that is predominantly industrial, and there would be no significant adverse neighborhood character impact related to changes to views of historic resources. The proposed buildings would not block views from the area bridges to any historic resource, yet would provide new views to the historic bridges from the project site waterfront, thus providing heightened visibility for these historic resources. Overall, the Proposed Project would not have an historic resources-related impact on neighborhood character.

The Proposed Project would displace some existing businesses; however, the businesses on the project site are not dependent upon siting on the waterfront and do not substantially contribute to defining the neighborhood, and thus removal would not result in a significant adverse impact to the neighborhood character of the area. The Proposed Project would not have the potential to adversely affect competitive stores throughout the study area. The project's destination retail would not compete with local shopping areas that are neighborhood-oriented and would not jeopardize the viability of any retail strips in the study area.

The Proposed Project would include several improvements to the roadway network. Exterior Street between 149th Street and its northern terminus and River Avenue between 149th and 153rd Streets would be substantially upgraded to include pavement resurfacing, dedicated turning lanes into the site, and widening along certain sections to provide two full travel lanes in each direction. New traffic signals would also be installed at parking garage driveways on Exterior Street in order to facilitate vehicle access in and out of the proposed parking garages. Yankee Stadium parking facilities would be displaced by the Proposed Project; however, the Proposed Project's parking facilities would provide capacity for the displaced Yankee Stadium parking activity. Although there would be significant increases in traffic volumes in the surrounding neighborhood, including along the Major Deegan Expressway, street network and Expressway capacities would be sufficient to accommodate traffic from the Proposed Project with the proposed mitigation measures, which include standard traffic engineering improvements as well as the widening of the northbound Major Deegan Expressway ramp at 149th Street. The Proposed Project is expected to generate a number of pedestrian trips to and from the site. The neighborhood's sidewalks are expected to have sufficient capacity to accommodate this increase in demand. Therefore, the Proposed Project should not have a pedestrian-related impact on neighborhood character.

The Proposed Project is also expected to generate a number of pedestrian trips to and from the site and to increase public transportation demand in the area. All subway station stairways would

operate at LOS D or better during all peak periods, with the exception of several stairways at the 161st Street-Yankee Stadium Station during game day peak periods. During non-game day Saturday midday peak periods, the Bx19 local bus route would operate above its guideline capacity in the eastbound direction. Also during Saturday midday game and non-game peak periods, the north crosswalk at 149th Street and River Avenue would experience decreases in levels of service. However, the neighborhood's sidewalks, subways, and buses are expected to have sufficient capacity to accommodate these increases in demand with the mitigation measures proposed. Therefore, the Proposed Project should not have traffic- or transit-related impacts on neighborhood character. With the Proposed Project, changes in noise levels would be barely perceptible and there would be no resulting noise-related neighborhood character impacts.

The first phase of the Proposed Project would not significantly adversely affect the combined elements contributing to the neighborhood character of the study area. No significant adverse impacts to neighborhood character would result from the Proposed Project.

2014

The second phase of the Proposed Project would introduce a new hotel use to the project site. The hotel would be compatible with the retail center that would already exist on the project site by 2014. No businesses would be displaced by the construction of the hotel, which would be constructed on a vacant part of the project site, and it would be the only such facility in the study area. Activity would be increased on the currently vacant northern portion of the project site and the visual quality of this area would be enhanced by the addition of a modern building and landscaping. The development of the hotel would not alter any street patterns, block shapes, or natural features on the project site or in the study area, or have any significant adverse effects on views to visual resources from the project site. There would be no significant adverse impacts on open spaces from the second phase of the project.

The proposed hotel would continue to bring greater activity to the streets of the project site and the study area, and the building form would be compatible with the previously developed retail center. At approximately 230 feet in height, the hotel would be taller than the buildings currently on and proposed for the project site, as well as existing buildings in the study area; moreover it would occupy a much smaller footprint than the proposed retail buildings, and therefore its bulk would be most noticeable from across the Harlem River or along 153rd Street near the project site. The proposed hotel would also not have significant adverse impacts on the visual resources within the study area; it would not block existing views of Yankee Stadium from the majority of the study area.

There are no historic resources on the area of the project site to be developed as a hotel, and there would be no historic resources on the remainder of the project site by 2014. Therefore, the development of the proposed hotel would not affect any historic resources on the project site. Construction of the proposed hotel would be far enough away from the known and potential historic resources in the study area so as not to have any direct, physical effects on these resources. While the development of a new, modern hotel on the project site would be expected to alter the context of the historic resources in the surrounding area, these resources already exist in an environment that is predominantly industrial, and this change is not considered a significant adverse impact.

The majority of the increases in traffic and pedestrian volumes and public transportation demand would be generated by the retail portion of the Proposed Project to be developed by 2009. Therefore, the proposed hotel would generate smaller increases in traffic, pedestrians, and public transportation demands, and the Proposed Project would not have any traffic- or transit-related

neighborhood character impacts by 2014. Noise levels with the completion of the Proposed Project would change imperceptibly and would have no resulting impact on neighborhood character.

In summary, the completion of the Proposed Project would not adversely affect the combined elements contributing to the neighborhood character of the study area. No significant adverse impacts to neighborhood character would result from the Proposed Project.

NATURAL RESOURCES

CONSTRUCTION IMPACTS

Currently, the project site provides minimal wildlife habitat other than small areas with ruderal vegetation along the waters edge, the small woodlot in the eastern portion of the site, and vacant buildings that may be used by urban wildlife typical of highly developed portions of cities such as pigeons, starlings, house sparrows, and rodents. Therefore, the Proposed Project would have no significant impacts on the limited terrestrial natural resources occurring on the site.

Portions of the existing timber bulkheads within the interpier areas would be removed at or just above spring high tide and replaced by a softer, sloped, and more stable rip-rap edge. The affected areas would be portions of: the northern bulkhead along the southern interpier area, both bulkheads along the middle interpier area, and the southern bulkhead along the northern interpier area. The project involves no filling of state-regulated Tidal Wetlands or U.S. waters. Adjacent area disturbance would occur during construction and would include mainly the new rip-rap replacing portions of bulkhead in the interpier areas, replacement of existing-disturbed sparsely vegetated adjacent area with a landscaped public open space and esplanade in the south and esplanade in the north, as well as possibly some covering of adjacent areas with impervious material (asphalt or concrete) for parking and a retail building. The project is expected to have no significant impacts on wetlands and may have a beneficial ecological affect on the adjacent area.

The proposed ground elevations would remain close to the existing elevations. As discussed above, this area is subjected to coastal flooding, not riverine flooding. Because a major component of coastal flooding is caused by tides, this type of flooding can be predicted. Typically, several days of notice are available for coastal flooding. In that time, the project site could be secured to any damage from the flooding. The proposed buildings would not cause additional flooding because they would not block water from flowing around the area and would not reduce the ability of the floodplain to store water nor increase flooding risks to the surrounding area. Best engineering practices would be used to minimize flood damages to the buildings, roadways, and utilities located in the floodplain.

Water quality changes associated with increases in suspended sediment and re-suspension of contaminated sediments from construction would be minimal and are expected to dissipate shortly after the structures are installed. A stormwater pollution prevention plan (SWPPP) would be prepared for the Proposed Project in accordance with established engineering practices as part of the SPDES permitting process. Implementation of best management practices for erosion and sediment control and other measures of the SWPPP would minimize potential water quality effects associated with the discharge of stormwater during construction activities. The stormwater management program would contain appropriate requirements for erosion and sedimentation controls to be used during construction.

The Proposed Project involves substantial improvements to the water's edge, including the partial replacement of existing timber bulkhead and creation of a waterfront open space and

esplanade. In addition to these activities, the applicant would also remove and properly dispose of all debris along the shoreline, as well as debris accumulated on the mudflats.

The proposed improvements to the shoreline (bulkhead removal and replacement with rip-rap, and removal of accumulated debris found on the mudflats of the interpiers) would disturb a small area of benthic habitat. Benthic organisms would be expected to recolonize these areas. Disturbance to benthic communities during construction would be minimal and would not significantly impact the food supply for fish foraging in the area. In fact, a larger area of benthic habitat would be created through the replacement of portions of the vertical timber bulkheads with the sloped, rip-rapped edge.

The Proposed Project would employ best management practices to prevent potential disturbances from any work below mean high water, and therefore no significant impacts to endangered, threatened, and special concern species would be expected during construction activities.

OPERATIONAL IMPACTS

The Proposed Project would add vegetated areas within the two-acre waterfront esplanade and open space area of the site that have the potential to provide some limited habitat to bird species and other wildlife. Construction of the Proposed Project would result in an increase in the amount of green space on the site. Further, the newly created rip-rapped tidal areas have the potential to provide feeding and resting areas for aquatic bird species.

No adverse impacts to wetlands are expected to occur from operation of the Proposed Project. The coverage of a portion of regulated adjacent area with impervious material would not have a significant impact, as such area provides very limited protection of the wetlands.

The Proposed Project's buildings, roadways, and utilities would be located within the 100-year floodplain. The proposed ground elevations would remain close to the existing elevations, but the buildings would be built to above the floodplain level. Generally, the first floor elevation of the proposed buildings would be approximately 10 feet above Bronx Borough Datum and more than one foot above the 100-year floodplain elevation, complying with Local Law 33 of 1988. Therefore, operation of the Proposed Project would not be expected to result in significant adverse impacts to floodplains.

The proposed development would result in a five percent reduction in developed stormwater discharge to the Harlem River. It is also anticipated, due to the cleaning up of debris, operational controls incorporated into the design of the proposed facilities, and increases in landscaped areas, that stormwater runoff quality will improve.

The New York City Department of Parks and Recreation implements an Integrated Pest Management (IPM) strategy for the management of all turf within its facilities. The IPM results in healthy grass areas with minimal use of fertilizers, pesticides, and herbicides and thus minimizes the discharge of pesticides to surface water from stormwater runoff generated within these open space areas. Implementation of the IPM strategy within the proposed open space would minimize potential adverse impacts to surface water quality from the discharge of stormwater generated within the project site.

The New York Natural Heritage Program and the United States Fish and Wildlife Service have determined that there are no known occurrences of threatened or endangered species on the project site and there are no areas within the project area that are considered "critical habitat." The National Marine Fisheries Service has determined that shortnose sturgeon may be present in

the project area as possible (likely rare) transients. As transients, the shortnose sturgeon would be unlikely to regularly occur in the project area. In any case, the Proposed Project would employ best management practices to prevent potential disturbance from any work below mean high water, and therefore no significant impacts would be expected.

MEASURES TO MINIMIZE IMPACTS

As required for construction activities that disturb one acre or more of land, a SWPPP would be prepared in accordance with established engineering practices. Implementation of best management practices for erosion and sediment control and other measures of the SWPPP would minimize potential water quality effects associated with the discharge of stormwater during upland construction activities. Best management practices would be used to prevent, or minimize, the potential disturbance from any work below mean high water. The addition of landscaped areas mainly along the waterfront would result in a decrease in the amount of impervious surface on the project site and increase the amount of permeable landscape by over 367 percent site-wide. The addition of pervious surfaces should increase filtering of runoff as well as decrease the amount of stormwater runoff from the project site. The Proposed Project would also involve removal of accumulated debris from the intertidal, interpier areas.

HAZARDOUS MATERIALS

The project sponsor has entered into agreements with NYSDEC under the auspices of the New York State Brownfield Cleanup Program (BCP) to investigate and, where necessary, remediate contamination on large portions of the site as part of its redevelopment. There are two Brownfield Cleanup Agreements, for two portions of the project site—an area east of Exterior Street plus the area planned for the open space, and the area north of the proposed open space and west of Exterior Street. Under this program, a draft Remedial Work Plan (RWP) would be submitted to NYSDEC and the New York State Department of Health (NYSDOH) after the completion of an Investigation Report describing and characterizing the environmental conditions of the project site. The RWP would include remedial actions, as necessary, to be performed before, during, and/or after construction of the Proposed Project. NYSDEC, NYSDOH and NYCDEP would review this plan; the public would be provided the opportunity to submit comments. The RWP would include a Health and Safety Plan (HASp), CAMP, Soil Management Plan (SMP) and a description of site engineering controls to include surface cover requirements and building vapor barriers. Following approval, NYSDEC would monitor implementation of the RWP in accordance with the terms of the Brownfield Cleanup Agreements. Upon completion of the remedial action consistent with the Remedial Work Plan (RWP) a final engineering report will be submitted for NYSDEC's approval.

The BCP is designed to encourage the private sector to acquire and reuse contaminated real estate through a comprehensive program of rigorous investigation to document the environmental conditions on a site, detailed remedial design and remedial action oversight, along with a public participation element. To meet the BCP requirements for public participation, the sponsor has developed and submitted a Community Participation Plan (CPP) to NYSDEC for each area included in the BCP.

Without appropriate controls, there would be a potential for adverse impacts resulting from the presence of subsurface contamination, as well as asbestos-containing materials (ACMs) and lead-based paint in the site's buildings, since demolition, excavation and construction activities could disturb hazardous materials and increase pathways for human exposure. However, impacts

would be avoided by performing construction activities in accordance with the following protocols that will be detailed in a RWP:

- Prior to construction or as part of initial construction activities for the project, additional investigation (if necessary) and/or remediation of all identified areas of contaminated soil and removal of all remaining petroleum storage tanks (and any associated dispensers, piping, fill ports and contaminated soil) found to require remediation or removal by the project sponsor in conjunction with NYSDEC, NYSDOH and NYCDEP, would be performed in accordance with applicable federal, state, and local requirements. At this time, the available data suggest that remediation will consist of excavation and proper off-site disposal of petroleum contaminated soil and other non-reusable petroleum contaminated fill materials, and removal of all above and below ground storage tanks in accordance with NYSDEC regulations. After excavation of the impacted soil and the underground storage tanks, soil samples will be collected in accordance with NYSDEC requirements to confirm that remedial objectives have been met.

The only exception to this removal will be the area underlying the foundation of the existing WH-1 warehouse building, as the existing foundation will remain and become an integral part of the foundation for the planned retail building. The piles and pile caps must remain in place because possible dewatering and excavation under pile caps would require dangerous, confined space hand work and would risk damage to the piles. This limited area of petroleum contaminated soil can be safely left in place, because the new concrete floor slab and a vapor barrier will protect future occupants from potential exposure. Additionally, the monitoring well downgradient of WH-1 indicates that contaminants are not migrating from this area.

- In addition, there is a potential need for a vapor barrier under certain buildings (in addition to the WH-1 building), which will be determined (in consultation with the appropriate agencies) upon evaluation of soil gas, groundwater and soil remedial investigation results. A determination will be made as to the necessity of an appropriate vapor barrier, which would sustain long-term exposure to soil gas constituents. Any necessary vapor barrier would be incorporated into the design plan for all enclosed structures during the proposed construction project. The conceptual design of the vapor barrier system will be provided in the RWP and submitted to the NYSDEC, NYSDOH, and NYCDEP for review and approval.
- If dewatering were required for construction, there would be a potential for contact with contaminated groundwater. Although testing to date indicates that the majority of the project site's groundwater would meet NYCDEP sewer discharge requirements, additional testing would be performed, as conditions may vary around the site, and if necessary pretreatment would be conducted prior to the water discharge to the City's sewer system, as required by NYCDEP permit/approval requirements.
- Since much of the soil sampled does not meet the most stringent guidelines for unrestricted use, any areas of exposed soil would be capped with imported acceptable soil. The proposed open space area west of Exterior Street and any other landscaped areas of the proposed development would be capped with at least two feet of imported acceptable soil.
- All activities involving disturbance of existing soils would be conducted in accordance with a HASP that would detail measures, including health and safety guidelines and work practices, to reduce the potential for exposure. The procedures would be developed through evaluation of the suspect contaminants and the work to be performed. Contingencies to

address potential hazards would be included. Workers that have the potential to come in contact with contaminated materials would be required to read, understand, and implement the procedures specified in the HASP. The HASP would include both a worker and community air monitoring plan to detect and respond to any emissions of vapors or dust from the site.

- A SMP would describe the procedures to identify and manage known contamination and unexpectedly encountered contamination. In the event that soil containing petroleum or other potentially contaminated materials is discovered during excavation activities, such soil would be segregated, stockpiled, and sampled to determine whether the non-petroleum contaminated soil could be reused on-site under impervious surfaces or the soil cap. Contaminated soils that cannot be reused in this manner would be sampled for characterization purposes sufficient to meet the requirements of the applicable disposal facility, transported off-site by a licensed transporter, and disposed of in an approved treatment or disposal facility in accordance with all applicable federal, state, and local regulations and guidelines.
- To protect workers and the general public during site preparation and construction activities, dust control measures would be undertaken. These would typically include such measures as fine sprays of water, mist curtains, or chemical foams within the excavation area. Tarpaulins can be used to cover stockpiled or staged soils. Dust generated by other construction activities would be suppressed by spraying water during dry weather, cleaning vehicles and other equipment prior to leaving the site, placing gravel on areas of exposed soil used for vehicle activities, covering the trucks with a tarp prior to leaving the site, and sequencing construction activities to minimize areas of exposed soil.
- The ACM identified in the comprehensive asbestos survey would be removed and disposed of in accordance with all federal, state, and local regulations. Any demolition activities with the potential to disturb lead-based paint would be performed in accordance with the applicable Occupational Safety and Health Administration regulation.
- Upon completion of the remedial activities described above, it is anticipated that institutional controls would be put into place to assure the long-term protection of public health and the environment. Those institutional controls would include, among other things, an environmental easement, as required by participation in the BCP, which would allow only commercial use of the site. Institutional controls would be supplemented with engineering controls to maintain the acceptable soil cover over open space/park areas, and asphalt and concrete cover over other areas, and to prevent any vapor intrusion into site buildings through the use of vapor barriers to prevent human exposure.

With the implementation of these measures, no significant adverse impacts related to hazardous materials would result from demolition and/or construction activities on the project site. Following construction, there would be no further potential for the Proposed Project to have significant adverse hazardous materials impacts.

WATERFRONT REVITALIZATION PROGRAM

The project site is located in the coastal zone designated by New York State and City and is therefore subject to their coastal zone management policies. The Proposed Project would be consistent with the policies of the city's Local Waterfront Revitalization Program (WRP) and the WRP's guiding principle of maximizing the benefits derived from economic development,

environmental preservation, and public use of the waterfront while minimizing conflicts among these objectives. It would also be consistent with the Bronx Waterfront Plan and its objectives to improve existing parkland, develop pedestrian connections to the Harlem River waterfront, and redevelop the Bronx Terminal Market to include a waterfront open space. The Proposed Project would re-establish physical and visual public access to the Harlem River waterfront and result in waterfront uses that attract the public and enliven the waterfront as well as benefit the surrounding community. The New York City Waterfront Revitalization Program Consistency Assessment Form is included in this document as Appendix D.

INFRASTRUCTURE

As part of the Proposed Project, new water lines would be installed both within the City's right of way and the project site. All new water lines would be designed and built to meet NYCDEP requirements. Water mains located within City streets proposed to be demapped would be capped and removed/abandoned in accordance with NYCDEP requirements. The additional demand is not expected to adversely affect the City's water supply or local water pressure

Sanitary sewers also would be constructed within Exterior Street as part of the Proposed Project. New sewer lines would be designed in accordance with the NYCDEP amended drainage plan for the area and will be built to meet all NYCDEP requirements. The Proposed Project would not exceed the capacity of the local sewer system. The Proposed Project is not expected to result in significant adverse impacts on the existing City's sewer system

The Proposed Project would include construction of a NYCDEP storm sewer within Exterior Street in accordance with the City's amended drainage plan for the area. The drainage plan would be amended as part of the mapping action associated with the Proposed Project. The plan would be developed to utilize the existing outfalls from the project site into the Harlem River.

New site storm sewers would be constructed to collect runoff from the buildings, parking areas, public open space, Exterior Street and the Major Deegan Expressway. These internal drains would be designed as private storm sewers and discharge into the NYCDEP storm sewer. Runoff from areas served by these stormwater sewers would not enter the combined sewers and would not flow to Ward Island WPCP. Overall, the stormwater runoff is expected to decrease from the existing 161 cfs to 157 cfs with the Proposed Project. This would not have a significant adverse impact and could have minimal water quality benefits in the Harlem River.

The existing City infrastructure has sufficient capacity to accommodate the Proposed Project without having a significant adverse impact on other users.

SOLID WASTE

The Proposed Project would increase the volume of solid waste generation at the site. It would also be required to comply with the City's recycling program. Total weekly solid waste generation with the Proposed Project would amount to 168,361 pounds per week (about 84 tons), based on the project's size and anticipated uses. All solid waste would be handled by private carters. The Proposed Project would represent a very small increase in the amount of solid waste generated, and therefore would not have an adverse impact on solid waste handling and disposal systems.

ENERGY

The Proposed Project, which would use natural gas with a minor electrical component for its HVAC systems, would create new energy demands at the site. Electricity and gas would be supplied by Consolidated Edison, which would be used to provide heating, cooling, and lighting to the Proposed Project. With the Proposed Project, at least two existing transformer substations on the site would be decommissioned, and one new transformer/network substation would be constructed to serve the proposed buildings. The operational consumption for the Proposed Project is expected to be approximately 126 billion British Thermal Units per year. Consolidated Edison could easily supply this energy without disruption to the main distribution system. Thus, there would not be any significant adverse energy impacts from the Proposed Project.

TRAFFIC AND PARKING

A traffic study area encompassing 16 intersections was analyzed. The locations analyzed in the study area currently operate at levels of service ranging from extremely favorable (LOS A) at River Avenue and 157th Street (for example), to poor (LOS F) at the multi-legged intersection of 149th Street, the Major Deegan Expressway's northbound exit ramp, Exterior Street, and River Avenue. Generally, unacceptable levels of service prevail at the aforementioned 149th Street intersection for all peak periods. Traffic conditions were analyzed under both non-Yankee game scenarios (weekday midday and PM peak hours and Saturday midday peak hour) and game day scenarios (weeknight pre-game peak hour, Saturday midday pre-game peak hour, and Saturday PM post-game peak hour).

Nineteen public parking facilities surveyed within ½-mile of the project site contain approximately 8,070 spaces. On a typical non-game day peak hour during a weekday or Saturday, the occupancy level is less than seven percent, leaving about 7,500 unoccupied spaces available. On a typical weeknight game day, between 7-8 PM, occupancy peaks at about 75 percent; on a typical Saturday game day between 2-3 PM, the occupancy peaks at approximately 91 percent. Approximately 1,200 on-street parking spaces are available within ½-mile of the project site. Between 40 and 80 percent of parking spaces are occupied during non-game day and game day conditions.

TRIP GENERATION

2009

The Proposed Project retail development in 2009 can be expected to generate approximately 3,100 person trips (i.e., by all travel modes) in the non-game weekday midday peak hour, 6,800 person trips in the non-game weekday PM peak hour, and 9,200 person trips in the non-game Saturday midday peak hour. Equivalent peak hours on game days would generate slightly lower volumes of person trips, because a portion of retail shoppers would be drawn to off-peak periods to avoid peak game day traffic arrival and departure hours. The game day peak hours are expected to generate 6,100 person trips in the pre-game weekday PM peak hour compared to 6,800 in the non-game weekday PM peak hour, and 7,400 person trips in the pre-game Saturday midday peak hour compared to 9,200 in the non-game Saturday midday peak hour; the Proposed Project is estimated to generate approximately 5,500 person trips in the post-game Saturday PM peak hour.

The Proposed Project's retail development in 2009 can be expected to generate 1,032 vehicle trips (i.e., by autos, taxis, and trucks) in the non-game weekday midday peak hour, 2,145 vehicle

trips in the non-game weekday PM peak hour, and 2,434 vehicle trips in the non-game Saturday midday peak hour (it should be noted that taxis "count" as two trips—the inbound taxi with passengers and its departure either with or without passengers). The Proposed Project is estimated to generate 1,973 vehicle trips in the pre-game weekday PM peak hour, 1,946 vehicle trips in the pre-game Saturday midday peak hour, and 1,472 vehicle trips in the post-game Saturday PM peak hour. These may well be significantly conservative projections (i.e., higher than what may realistically be expected), as many more shoppers may choose to drive at times not as heavily trafficked by Yankee fans going to or leaving a game.

2014

The Proposed Project's hotel development in 2014 can be expected to generate 165 person trips (i.e., by all travel modes) in the non-game weekday midday peak hour, 214 person trips in the non-game weekday PM peak hour, and 310 person trips in the non-game Saturday midday peak hour. Equivalent peak hours on game days would generate approximately the same volumes of person trips, because hotel trips would not be significantly affected by game day traffic. The proposed hotel is estimated to generate 214 person trips in the pre-game weekday PM peak hour, 310 person trips in the pre-game Saturday midday peak hour, and 310 person trips in the post-game Saturday PM peak hour. The proposed hotel development in 2014 can be expected to generate 90 vehicle trips (i.e., by autos, taxis, and trucks) in the non-game weekday midday peak hour, 116 vehicle trips in the non-game weekday PM peak hour, and 120 vehicle trips in the non-game Saturday midday peak hour. The Proposed Project is estimated to generate 116 vehicle trips in the pre-game weekday PM peak hour, 120 vehicle trips in the pre-game Saturday midday peak hour, and 120 vehicle trips in the post-game Saturday PM peak hour.

PROGRAMMED IMPROVEMENTS, STREET CLOSURES, AND PARKING DISPLACEMENT

Exterior Street Improvements

Exterior Street, currently a wide, unstriped, cobblestone street with significant damage to the roadway surface, would be completely rebuilt with the Proposed Project. Upgrades include widening to two travel lanes per direction, dedicated turning lanes into parking areas on both sides of Exterior Street, pavement resurfacing, crosswalks at exits and entrances to parking areas, traffic signals at parking garage driveways, lane striping, signage, upgraded lighting, and aesthetically-pleasing streetscaping designs. Signal warrant analyses will be conducted during the period between certification of this DEIS and certification of the FEIS, as per NYCDOT guidelines. It is expected that traffic signals will be warranted at the two major garage driveways. However, should the analyses indicate otherwise, alternative measures would be needed in order to avoid significant impacts at those two locations.

River Avenue Improvements

River Avenue would be restriped with the Proposed Project to include crosswalks at 150th and 151st Streets and the proposed garage exit, two travel lanes per direction, shared left-turn/through lanes at 150th and 151st Streets, and streetscaping treatments. Motorists would experience improved levels of service before and after Yankee games along River Avenue due to the added capacity within the four-lane section between 149th and 151st Streets.

Major Deegan Expressway Improvements

As part of their redecking of the Major Deegan Expressway project, NYSDOT is considering widening the northbound Exit 4/149th Street off-ramp to two lanes, which would increase the

capacity of the 149th Street/Exterior Street/River Avenue intersection. Currently, the schedule and design of this improvement is being explored by NYSDOT. As it is not known when the widening would be constructed, the analyses in this chapter do not account for this improvement in the Build conditions. The traffic impacts have been assessed independent of the ramp widening.

Minor Street Closures

Portions of three streets would be closed as a result of the Proposed Project. 150th Street would be closed between River Avenue and Exterior Street, Cromwell Avenue would be closed north of 150th Street, and 151st Street west of River Avenue would become an entrance to the Proposed Project's parking garage. Of the street closures, 150th Street between River Avenue and Exterior Street is the only segment that currently carries traffic in excess of 50 vehicles per hour.

A moderate number of trips (between 50 to 80 vph per direction) on 150th Street currently use this street as a cut-through between Exterior Street and River Avenue; very few motorists are through-trips along westbound 150th Street to Exterior Street—only about 20 to 30 vph. 150th Street allows southbound River Avenue motorists to access northbound Exterior Street and vice-versa without waiting at the 149th Street/Exterior Street/River Avenue intersection's traffic signal. Also, westbound 149th Street motorists destined to northbound Exterior Street bypass the traffic signal by using the stop-controlled channelized right-turn lane and make a left onto 150th Street. So, as a result of the proposed street closure, approximately 40 to 50 vph per direction would likely divert from 150th Street to the 149th Street/Exterior Street/River Avenue intersection in the 2009 and 2014 Build conditions. This is accounted for in the Build analyses.

TRAFFIC LEVELS OF SERVICE AND IMPACTS

2009

2009 Build traffic volumes were developed by adding 2009 project-generated volumes to 2009 No Build volumes. 2009 traffic levels of service were then evaluated and compared to levels of service without the Proposed Project in order to determine where significant impacts would occur. It should be noted that three more signalized intersections and three more unsignalized intersections are evaluated in the Build condition since all access points to the project's parking and service facilities have been included (the number of traffic movements has also increased from 65 to 82 under the Build conditions). Table S-3 provides an overview of where and in what time period significant impacts would occur in the 2009 Build condition. Mitigation alternatives for significantly-impacted locations are discussed below in "Mitigation."

2014

2014 Build year traffic volumes were developed by adding 2009 and 2014 project-generated volumes to 2014 No Build volumes. Year 2014 traffic levels of service were then evaluated and compared to levels of service without the Proposed Project in order to determine where significant impacts would occur. It should be noted that three more signalized intersections and three more unsignalized intersections are evaluated in the Build condition since all access points to the project's parking and service facilities have been included (the number of traffic movements has also increased from 65 to 82 under the Build conditions). Table S-4 shows where and in what time period significant impacts would occur in the 2014 Build condition.

Table S-3
2009 Build Condition Significant Impact Summary

Intersections	Without Yankee Game			With Yankee Game		
	Non-game Weekday Midday	Non-game Weekday PM	Non-game Saturday Midday	Pre-game Weekday PM	Pre-game Saturday Midday	Post-game Saturday PM
East 138th Street at the Grand Concourse						
East 138th Street at the Grand Concourse (unsignalized)						
East 149th Street at the Grand Concourse	●	●	●	●	●	●
East 149th Street at Exterior Street/River Avenue/northbound Major Deegan Expressway	●	●	●	●	●	●
145th Street Bridge approach at Lenox Avenue		●	●	●		●
East 150th Street at Exterior Street/Cromwell Avenue (free-flow conditions in 2009 Build)						
East 150th Street at River Avenue/Bronx Terminal Market Southern "Pocket" Parking Lot				●	●	●
East 151st Street at River Avenue		●			●	●
East 153rd Street at River Avenue		●		●	●	●
East 157th Street at River Avenue						
East 161st Street at River Avenue	●	●	●		●	●
East 161st Street at the Grand Concourse	●	●	●	●		●
East 161st Street at Jerome Avenue/Woodycrest Avenue		●	●	●		
East 157th Street at the northbound Major Deegan Expressway service road		●			●	
Jerome Avenue at Ogden Avenue						
West 155th Street at Macombs Place/Macombs Dam Bridge approach	●	●	●	●	●	●
Notes:						
● Means the intersection would be significantly impacted. The six new study intersections formed by the Proposed Project are not shown; they would be designed to operate at acceptable levels of service.						

PARKING

The proposed development of the project site would result in the addition of 2,991 parking spaces in 2009 with 225 more in 2014. It is anticipated that these parking spaces will have a payment structure with lower fees for one, two, and three hour parking than for parked cars staying more than three hours, so that fees for the longer parking duration would be commensurate with fees charged for Yankee Stadium parking lots accommodating fans on game days. A similar type of fee payment structure is used today at the Concourse Plaza Shopping Center on 161st Street.

The analyses have concluded that all site-generated traffic would be accommodated by the Proposed Project's parking facilities. However, eight off-street parking facilities and on-street parking along Exterior Street currently used by Yankee fans would be displaced when

Table S-4
2014 Build Condition Significant Impact Summary

Intersections	Without Yankee Game			With Yankee Game		
	Non-game Weekday Midday	Non-game Weekday PM	Non-game Saturday Midday	Pre-game Weekday PM	Pre-game Saturday Midday	Post-game Saturday PM
East 138th Street at the Grand Concourse						
East 138th Street at the Grand Concourse (unsignalized)						
East 149th Street at the Grand Concourse	●	●	●	●	●	●
East 149th Street at Exterior Street/River Avenue/northbound Major Deegan Expressway	●	●	●	●	●	●
145th Street Bridge approach at Lenox Avenue		●	●	●		●
East 150th Street at Exterior Street/Cromwell Avenue (free-flow conditions in 2009 Build)						
East 150th Street at River Avenue/Bronx Terminal Market Southern "Pocket" Parking Lot				●	●	●
East 151st Street at River Avenue		●			●	●
East 153rd Street at River Avenue		●		●	●	●
East 157th Street at River Avenue						
East 161st Street at River Avenue	●	●	●		●	●
East 161st Street at the Grand Concourse	●	●	●	●	●	●
East 161st Street at Jerome Avenue/Woodycrest Avenue		●	●	●	●	
East 157th Street at the northbound Major Deegan Expressway service road		●	●	●	●	
Jerome Avenue at Ogden Avenue						
West 155th Street at Macombs Place/Macombs Dam Bridge approach	●	●	●	●	●	●
Notes:						
● Means the intersection would be significantly impacted. The six new study intersections formed by the proposed development are not shown; they would be designed to operate at acceptable levels of service.						

construction begins and become permanently displaced upon completion of the proposed development. Although approximately 1,925 striped parking spaces in off-street facilities and about 165 on-street spaces on Exterior Street would be displaced, observations from the 2004 season indicate that during typical Yankee games, no more than 800 to 1,200 of these parking spaces are occupied, and only the Bronx House of Detention and northern Bronx Terminal Market parking facilities are typically open.

Excess parking capacity at the project site would accommodate nearly all displaced Yankee-game parking. However, to be conservative, 20 percent of existing parking trips have been assumed to divert to available on-street parking between River Avenue and the Grand Concourse, and to an off-street parking facility at the Concourse Village Shopping Center in the weekday and Saturday pre-game and Saturday post-game peak hours, as stated in the Build analyses. The remaining 80 percent of Yankee-game parking has been assigned to the Proposed Project's parking facilities.

On a typical weekday during the Yankee baseball season, the parking need would peak from approximately 5 to 8 PM with about 65 percent of the site's facilities occupied by shoppers and Yankee-game parking. On a typical Saturday during the Yankee season, the parking facilities would peak at approximately 98 percent occupancy by shoppers and Yankee-game parking between 2 and 3 PM. The parking facilities would be sized for the peak shopping holiday season demand of approximately 2,991 spaces in December, but parking would be available on Yankee game days, which would accommodate Yankee fans.

The proposed hotel, which would be completed by 2014, would include a 225-space parking lot. Parking accumulation calculations have indicated that the planned parking lot size would be sufficient to accommodate peak weekday and weekend parking hourly accumulations of 204 vehicles at 5-6 PM and 122 vehicles at 2-3 PM, respectively. To be conservative, the traffic and parking analyses have assumed that existing Yankee Stadium Lot 13D, where the proposed hotel would be located, would be displaced in 2009. Hence, no additional displacement of Yankee stadium parking would occur between 2009 and 2014.

MAJOR DEEGAN EXPRESSWAY

Because of its importance to regional travel and proximity to the Bronx Terminal Market site, key northbound and southbound Major Deegan Expressway segments were analyzed to assess the potential impacts of the proposed development on the expressway.

Northbound Major Deegan Expressway

2009. Traffic generated by the Proposed Project would generally enter the northbound Major Deegan Expressway further south of the study area, appear as through traffic at the 138th Street on-ramp, and exit at the 149th Street off-ramp. Project-generated traffic volumes exiting the northbound Major Deegan Expressway destined to the project site in 2009 would range from approximately 120 to 280 vph during non-game peak hours and between 160 and 235 vph during Yankee game day peak hours. The additional project-generated exiting volumes at 149th Street represent approximately three to eight percent of the total northbound Major Deegan Expressway traffic.

During the non-game weekday midday peak hour, conditions just before the 149th Street off-ramp would deteriorate from LOS C in the 2009 No Build condition to LOS F in the 2009 Build condition; all other peak hours would continue to operate at LOS F conditions with additional queuing, slower speeds, and higher densities. In all peak hours, queuing would occur along the 149th Street off-ramp onto the right lane of the Major Deegan Expressway. Motorists would react to the right lane queues by slowing in the center lane, and left lane speeds would decrease somewhat as well. In the post-game Saturday peak hour conditions, speeds would continue to be below 5 mph within the segment, and queuing would occur in all three travel lanes.

NYS DOT is considering widening the 149th Street off-ramp to two lanes as part of the Major Deegan Expressway redecking project. This improvement would mitigate the 2009 Build levels of service for all peak hours to the 2009 No Build conditions just before the 149th Street off-ramp. Mitigation measures are discussed below in "Mitigation."

2014. Traffic generated by the Proposed Project would approach the study area similar to the 2009 Build conditions. Project-generated traffic volumes exiting the northbound Major Deegan Expressway destined to the site in 2014 would range from approximately 135 to 295 vph during non-game peak hours and between 175 and 250 vph during Yankee game day peak hours. The

additional project-generated exiting volumes at 149th Street represent approximately three to nine percent of the total northbound Major Deegan Expressway traffic.

During the non-game weekday midday peak hour, conditions just before the 149th Street off-ramp would deteriorate from LOS D in the 2014 No Build condition to LOS F in the 2014 Build condition; all other peak hours would continue to operate at LOS F conditions with additional queuing, slower speeds and higher densities. Similar to 2009 Build conditions, in all peak hours, queuing would occur along the 149th Street off-ramp onto the right lane of the Major Deegan Expressway. Motorists would react to the right lane queues by slowing in the center lane, and left lane speeds would decrease somewhat as well. In the post-game Saturday peak hour conditions, speeds would be below three mph within the segment, and queuing would occur in all three travel lanes.

The 149th Street off-ramp widening improvement would mitigate the 2014 Build levels of service for all peak hours to the 2014 No Build conditions just before the 149th Street off-ramp. Mitigation measures are discussed below in "Mitigation."

Southbound Major Deegan Expressway

2009. Traffic generated by the Proposed Project would enter the southbound Major Deegan further north of the study area, either in the North Bronx, Westchester, or at the Cross Bronx Expressway interchange and predominantly exit at the Bronx Terminal Market off-ramp and less frequently exit at the Macombs Dam Bridge exit. At the Bronx Terminal Market off-ramp, project-generated traffic volumes destined to the project site in 2009 would range from approximately 170 to 370 vph during non-game peak hours and between 225 and 330 vph during Yankee game day peak hours. Between 15 and 30 vph on non-game days and 5 to 10 vph on game days would exit at the Macombs Dam Bridge exit. The additional project-generated exiting volumes on the southbound Major Deegan Expressway mainline exiting at both off-ramps represent approximately five to nine percent of the total southbound Major Deegan Expressway traffic.

During the non-game weekday midday peak hour, conditions just before the Bronx Terminal Market off-ramp would deteriorate from acceptable LOS D in the 2009 No Build conditions to unacceptable LOS D in the 2009 Build conditions; the same area would be significantly impacted in all three Yankee game day peak hours as densities progressed further into LOS F conditions. Levels of service would not change just before the Macombs Dam Bridge off-ramp between 2009 No Build and Build conditions. Mitigation measures are discussed below in "Mitigation."

2014. Traffic generated by the Proposed Project would approach the site on the southbound Major Deegan in generally the same proportions in 2014 as it would in 2009. At the proposed off-ramp, project-generated traffic volumes destined to the Proposed Project in 2014 would range from approximately 175 to 360 vph during non-game peak hours and between 225 and 330 vph during Yankee game day peak hours. Between 20 and 40 vph on non-game days and 5 to 15 vph on game days would exit at the Macombs Dam Bridge exit. The additional project-generated exiting volumes on the southbound Major Deegan Expressway mainline exiting at both off-ramps would again represent approximately five to nine percent of the total southbound Major Deegan Expressway traffic.

During the non-game weekday midday peak hour, levels of service just before the Bronx Terminal Market off-ramp would deteriorate from acceptable LOS D in the 2014 No Build conditions to unacceptable LOS D in the 2014 Build conditions, similar to the 2009 Build

conditions; the same area would be significantly impacted in all three Yankee game day peak hours as densities progressed further into LOS F conditions. As was the case in the 2009 Build conditions, levels of service would not change just before the Macombs Dam Bridge off-ramp between 2014 No Build and Build conditions. Mitigation measures are discussed below in "Mitigation."

TRANSIT AND PEDESTRIANS

The Proposed Project would not result in any significant adverse impacts to subway station operations.

Impacts to bus line haul is considered significant if the Proposed Project would operate above the guideline capacity. There would be overcrowding on the Bx19 during the 2009 and 2014 Build conditions' non-game day Saturday midday peak periods. During these peak periods the eastbound Bx19 Local route would operate above its guideline capacity of 70 passengers for a standard bus, with an increase in passengers per vehicle from 41 in the No Build condition to 71 in the Build condition, at the maximum load location.

The Proposed Project is expected to result in a significant adverse impact to the operations of the north crosswalk at 149th Street and River Avenue. The decrease in the level of service from No Build to Build conditions (LOS A to LOS D) at this location would require improvements that would return the crosswalk to an acceptable level of service.

Mitigation measures for these impacts are described below in the "Mitigation" section.

AIR QUALITY

MOBILE SOURCE CO ANALYSIS

The Proposed Project would result in increased mobile source emissions in the immediate vicinity of the project site. CO concentrations with the Proposed Project were determined for the 2009 and 2014 analysis years. Tables S-5 and S-6 present the future maximum predicted 8-hour average CO concentration with the Proposed Project (i.e., 2009 and 2014 Build values) at the three intersections studied. Since no violations of the 1 hour CO standard have been measured in New York City within the last 10 years, 1-hour averages were not summarized in this report (although all 1-hour predicted CO concentrations would be well within the applicable standard).

The values shown are the highest predicted concentration for each of the time periods analyzed. The results indicate that in the future with the Proposed Project, there would be no potentially significant adverse mobile source air quality impacts. In addition, with or without the Proposed Project in 2009 or 2014, maximum predicted ambient CO concentrations at the intersections analyzed would be less than the corresponding ambient air quality standards.

MOBILE SOURCE PM₁₀ ANALYSIS

PM₁₀ concentrations with the proposed project were determined for the 2009 analysis year using the methodology previously described. As indicated in Table S-7, the Build concentrations are below the corresponding standards of 150 µg/m³ and 50 µg/m³ for the 24-hour and annual averaging periods, respectively.

**Table S-5
Future (2009) Maximum Predicted 8-Hour Average
Carbon Monoxide Project Build Concentrations (parts per million)**

Site	Location	Time Period	2009 Project Build 8-Hour Concentration ^a (ppm)	Not-To-Exceed <i>De minimis</i> Criteria ^b (ppm)
1	E. 161st Street and Grand Concourse	Weekday PM	4.0	6.35
		Saturday PM	4.4	6.40
2	E. 151st Street and River Ave	Weekday PM	3.4	5.95
		Saturday PM	3.7	6.05
3	E. 149th Street and River Ave/Exterior St.	Weekday PM	4.8	6.80
		Saturday PM	4.7	6.85

Notes:
a An adjusted ambient background concentration of 2.0 ppm is included in the project build values presented above
b The not-to-exceed value is derived by adding the minimum acceptable increase of CO concentrations (set forth in the *CEQR Technical Manual*) to the no-build concentration. 8-hour CO standard is 9 ppm.

**Table S-6
Future (2014) Maximum Predicted 8-Hour Average
Carbon Monoxide Project Build Concentrations (parts per million)**

Site	Location	Time Period	2014 Project Build 8-Hour Concentration ^a (ppm)	Not-To-Exceed <i>De minimis</i> Criteria ^b (ppm)
1	E. 161st Street and Grand Concourse	Weekday PM	3.7	6.25
		Saturday PM	4.0	6.30
2	E. 151st Street and River Ave	Weekday PM	3.2	5.80
		Saturday PM	3.4	5.90
3	E. 149th Street and River Ave/Exterior St.	Weekday PM	4.4	6.65
		Saturday PM	4.4	6.70

Notes:
a An adjusted ambient background concentration of 2.0 ppm is included in the project build values presented above.
b The not-to-exceed value is derived by adding the minimum acceptable increase of CO concentrations (set forth in the *CEQR Technical Manual*) to the no-build concentration. 8-hour CO standard is 9 ppm.

MOBILE SOURCE PM_{2.5} ANALYSIS

PM_{2.5} concentrations with and without the Proposed Project were determined for the year 2009 using the methodology previously described. The results of this analysis are presented in Table S-8 for the 24-hour and annual time periods. As indicated in the table, the predicted incremental increases of PM_{2.5} concentrations for both time periods are under the corresponding interim guidance levels. Therefore, the Proposed Project is not considered to have significant PM_{2.5} impacts.

Table S-7
Build (2009) Maximum Predicted PM₁₀ Concentrations

Site	Location	24-Hour Concentration $\mu\text{g}/\text{m}^3$	Annual Concentration $\mu\text{g}/\text{m}^3$
2	151st Street and River Avenue	53.29	24.62
Note: 24-hour standard 150 $\mu\text{g}/\text{m}^3$; Annual standard 50 $\mu\text{g}/\text{m}^3$. Includes background concentrations of 46 $\mu\text{g}/\text{m}^3$ and 22 $\mu\text{g}/\text{m}^3$ for the 24-hour and annual averaging periods, respectively.			

Table S-8
Future (2009) Maximum Predicted PM_{2.5} Incremental Increases ($\mu\text{g}/\text{m}^3$)

Site	Location	Averaging Period	Modeled Conc.		Project Increment	Interim Guidance Threshold
			With Project	Without Project		
4	Exterior Street and Garage	24-hour	1.04	0.63	0.41	5
		Annual	0.211	0.185	0.026	0.1

PARKING GARAGE

The maximum predicted 8-hour average CO concentrations from the three proposed parking facilities were analyzed using two receptor points: a near side receptor on the same side of the street as the parking facility and a far side receptor on the opposite side of the street from the parking facility. The total CO impacts included both background CO levels and contributions from traffic on adjacent roadways. When more than one roadway was adjacent to the parking facility, the roadway with higher traffic (i.e., greater CO levels) was used in the analysis.

The CO impacts from the three parking facilities were substantially below the applicable standard of 9 ppm. Therefore, it can be concluded that the parking facilities would not result in any significant adverse air quality impacts.

HVAC EQUIPMENT

The primary stationary source of air pollutants associated with the Proposed Project would be the emissions from the natural gas-fired HVAC systems. The pollutants of primary concern are nitrogen dioxide and PM_{2.5}. The maximum concentrations were estimated using peak hourly emission rates for the HVAC boilers. The modeling analysis considered the impacts of the development sources on the proposed hotel and waterfront esplanade, as well as numerous off-site receptors, previously described. The maximum predicted ambient concentration of NO₂ is below the corresponding NAAQS, and the maximum predicted PM_{2.5} is below the NYCDEP interim guidance values. Therefore, it can be concluded that the HVAC systems for the proposed retail buildings and hotel would not result in significant adverse air quality impacts.

INDUSTRIAL SOURCE IMPACTS

The results of the field survey indicated that only a single industrial facility was within 400 feet of the proposed hotel. The USEPA ISC3 dispersion model was utilized for the analysis, with the air contaminant emission rates from the nearby industrial facility and an estimated distance of 105 feet from the air emission source to the proposed hotel. A single contaminant (trichloroethylene) has the potential to exceed the New York State Department of Environmental

Conservation (NYSDEC) Air Guide-1 annual concentration based on the modeling analyses conducted. Therefore, to preclude the potential for significant adverse air quality impacts from the industrial source, an (E) designation for air quality would be incorporated into the rezoning proposal. The text of the (E) designation is as follows:

- In order to ensure there will be no potential adverse air quality impacts, if trichloroethene emissions continue at the adjacent business, all windows on the east face of the development on Block 2539, Lot 60, up to a height of 45 feet above local grade must be inoperable. Similarly, air intakes must not be placed up to a height of 45 feet above local grade in this location.

CONSISTENCY WITH NEW YORK STATE AIR QUALITY IMPLEMENTATION PLAN

Maximum predicted CO concentrations with the Proposed Project would be less than the corresponding ambient air standard. Therefore, the Proposed Project would be consistent with the New York State Improvement Plan (SIP) for the control of CO.

NOISE

Noise monitoring at three receptor locations was performed on June 4, 12, 18, and 19, 2004. At each of these sites, 20-minute spot measurements were taken during the two weekday periods and three weekend periods that reflect peak hours of trip generation: PM weekday (5:00 PM – 7:00 PM), late night (LN) weekday (10:00 PM – 11:00 PM), midday (MD) weekend (12:00 PM – 2:00 PM), PM weekend (5:00 PM – 7:00 PM) and late night (LN) weekend (10:00 PM – 11:00 PM). Given the site's proximity to Yankee Stadium and the traffic generated to and from a Yankee game, noise monitoring at the three receptor locations was performed both with and without a Yankee game in progress.

2009

Future 2009 Build noise levels at all sites both with and without a Yankee game would be less than 0.5 dBA higher than future 2009 No Build noise levels. (At Site 3 Build noise levels would be less than No Build noise levels due to the resurfacing of Exterior Street and the replacement of the cobblestone surface with asphalt.) Changes of this magnitude would be imperceptible and insignificant.

In terms of the CEQR criteria, 2009 future No Build noise levels at Sites 1 and 2 would remain in the "marginally acceptable" category and 2009 future No Build noise levels at Site 3 would remain in the "clearly unacceptable" category, both with and without a Yankee game during one or more time periods.

Noise levels in the western portion of the 2-acre public open space that would be developed as part of the Proposed Project (i.e., adjacent to Exterior Street) would be slightly less than the values at Site 3 on Exterior Street. Noise levels would decrease by approximately 3 dBA per doubling of distance going west from Exterior Street. Maximum $L_{eq(1)}$ noise levels in the proposed open space would range from approximately 75 to 76 dBA. Maximum $L_{10(1)}$ noise levels in the proposed open space would be approximately 3 dBA higher than the $L_{eq(1)}$ noise levels. Noise levels at the portions of the proposed waterfront esplanade would be lower due to the attenuation with distance from Exterior Street (and the Major Deegan Expressway) and the barrier effect of the Proposed Project's buildings. However, noise levels in the proposed public open space and waterfront esplanade would be higher than the 55 dBA $L_{10(1)}$ noise level for

outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for Use in City Environmental Impact Review." Therefore, based upon these guideline values, the Proposed Project would have a significant impact on users of this new open space. There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open space to below the 55 dBA $L_{10(1)}$ guideline noise level. A sound barrier on Exterior Street would raise aesthetic and safety issues, and unless the barrier was of excessive height, would not be effective in reducing noise from the elevated Major Deegan Expressway. While noise levels in the open space would be above the 55 dBA $L_{10(1)}$ guideline noise level, they would be comparable to noise levels in a number of existing parks in New York City which are also located adjacent to heavily trafficked roadways.

2014

Future 2014 Build noise levels at all sites both with and without a Yankee game would be less than 1.0 dBA higher than future 2014 No Build noise levels. (At Site 3 Build noise levels would be less than No Build noise levels due to the resurfacing of Exterior Street and the replacement of the cobblestone surface with asphalt.) Changes of this magnitude would be imperceptible and insignificant.

In terms of the CEQR criteria, 2014 future No Build noise levels at Sites 1 and 2 would remain in the "marginally acceptable" category and 2014 future No Build noise levels at Site 3 would remain in the "clearly unacceptable" category, both with and without a Yankee game during one or more time periods.

As discussed above, noise levels in the western portion of the 2-acre public open space to be developed as part of the Proposed Project would be slightly less than the values at Site 3 on Exterior Street. Maximum $L_{eq(1)}$ noise levels in the proposed open space would range from approximately 75 to 76 dBA. Maximum $L_{10(1)}$ noise levels in the proposed open space would be approximately 3 dBA higher than the $L_{eq(1)}$ noise levels. Noise levels in the proposed public open space and waterfront esplanade would be higher than the 55 dBA $L_{10(1)}$ noise level for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for Use in City Environmental Impact Review." Therefore, based upon these guideline values, the Proposed Project would have a significant impact on users of this new open space. There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open space to below the 55 dBA $L_{10(1)}$ guideline noise level.

NOISE ATTENUATION REQUIREMENTS

Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower, and are determined based on exterior $L_{10(1)}$ noise levels. The proposed buildings' designs include the use of well sealed double-glazed windows and central air conditioning (i.e., alternate means of ventilation). With these measures, the window/wall attenuation would provide up to 40 dBA for all facades of the building. Based upon the $L_{10(1)}$ values measured at the project site, these design measures would provide sufficient attenuation to achieve CEQR requirements. The buildings' mechanical systems (i.e., heating, ventilation, and air conditioning systems) also would be designed to meet all applicable noise regulations and to avoid producing levels that would result in any significant increase in ambient noise levels.

CONSTRUCTION IMPACTS

The construction impacts analysis concludes that there would be no significant adverse impacts during either construction phase of the Proposed Project, except for historic resources.

2009

The Bronx Terminal Market (Buildings B, D, F, G, H, and J) and the Bronx House of Detention have been determined eligible for listing on the State and National Registers of Historic Places (S/NR-eligible) by OPRHP. Therefore, the demolition of Buildings B, D, F-H, J, and the Bronx House of Detention pursuant to construction of the Proposed Project would be a significant adverse impact on historic resources. Measures to mitigate this impact are being developed with OPRHP and are discussed below in "Mitigation."

Construction of the Proposed Project is not expected to have an extensive or a long-term impact on traffic or parking conditions in the surrounding area. During the estimated peak construction year of 2008, the 149th Street at Exterior Street and River Avenue study location would be significantly impacted by the combination of about six delivery truck trips per hour and narrowed approaches due to construction on both Exterior Street and River Avenue when compared to 2008 conditions without construction. Monitoring of this intersection during construction could determine if excessive delays would actually occur.

2014

The second phase of the Proposed Project would involve the construction of a 250-room hotel at the north end of the site. Any construction impacts associated with the second phase would be less than those described for the first phase. Therefore, no significant adverse impacts are expected from the second phase of construction of the Proposed Project.

A widening of the Major Deegan Expressway is planned for completion by 2011-2012. This reconstruction would improve access to the area, including the project site. A reconstruction of the 161st Street tunnel below the Grand Concourse is planned, but NYCDOT has stated that the capacity of the 161st Street/Grand Concourse intersection would remain the same during construction and upon completion. The New York City Department of Design and Construction (NYCDDC) will be rehabilitating 149th Street between Exterior Street/River Avenue and Anthony J. Griffin Place beginning in 2005 and ending in 2007. NYCDDC has stated that this would not change the operation or capacity of the intersections within the study area, and all lanes will be maintained during construction.

The cumulative effects of the simultaneous construction projects would include street closures and narrowing of streets in the study area. During peak hours a small to moderate amount of traffic may divert during construction on or adjacent to the closed or narrowed streets, which could add traffic volumes to the Grand Concourse and minor east-west cross streets between 138th Street and 165th Street.

Additional traffic due to the cumulative effects of construction workers and construction site deliveries would mainly occur during off-peak hours and would not represent a measurable increment during peak travel periods.

FUTURE CONDITIONS WITH A RELOCATED YANKEE STADIUM

The New York Yankees recently announced plans to build a new stadium on the north side of 161st Street between River Avenue and Jerome Avenue. The existing stadium would be partially demolished and converted for use by Little League baseball, as well as other users. Plans for the new stadium are also expected to include the construction of new parking garages in the surrounding area, including one near the Gateway Center at Bronx Terminal Market project site on River Avenue. The Yankee Stadium project would incorporate a 4.8-acre portion of the west side of the Gateway Center at Bronx Terminal Market project site to create new active parkland to mitigate the loss of area from Macombs Dam Park. In that event, only the east side of the Gateway Center at Bronx Terminal Market project would be developed, and an additional approximately 64,000 square feet of retail space would be accommodated within Retail Buildings A and B/F. The Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on the western portion of the project site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop a public open space. Development of a new Yankee Stadium will require a series of public approvals. If that project moves forward, it is expected to be completed by the first Build year of the Gateway Center at Bronx Terminal Market project, 2009.

The construction of the Yankee Stadium project would not substantially alter the conclusions of the analyses presented in this EIS, with the exception of historic resources, traffic and parking, transit and pedestrians, and air quality, in which the effects of the Proposed Project could be reduced if the Yankee Stadium project were to be built.

HISTORIC RESOURCES

The relocation of Yankee Stadium would not be expected to change the future background conditions of any historic resources within the 400-foot study area, with the exception of those resources on the west side of the project site. The demolition of Buildings H and J would presumably be required if a portion of the west side of the project site were developed in conjunction with the Yankee Stadium project as a public park, and the demolition of Buildings F and G would presumably be required if the City developed the remainder of the west side of the project site as a public open space. In that event, the Proposed Project's adverse impacts on historic resources would be limited to the demolition of Buildings B and D and the Bronx House of Detention.

TRAFFIC AND PARKING

The relocation of Yankee Stadium could be expected to slightly shift traffic patterns to and from the stadium, which could in turn improve game day traffic conditions at some traffic and parking analysis locations. With the construction of several new parking facilities located along 161st Street, the south side of 164th Street, and on both sides of 151st Street on the east side of River Avenue, Yankee fans can be expected to divert at least to some degree away from the 149th Street exit towards the 161st Street exit. This would lighten the traffic burden on the ramps to the project site area along Exterior Street as well as to River Avenue below 157th Street, improving background traffic conditions in the majority of the Proposed Project's traffic study area. As a result, on game days and nights, there would be a lower level of background traffic passing through critical traffic locations such as the multi-legged intersection of East 149th Street, Exterior Street, River Avenue, the 145th Street Bridge, and the northbound Major Deegan Expressway exit ramp, and other intersections along Exterior Street and River Avenue. The diversion of some

percentage of this amount of traffic to other intersections further north would improve traffic conditions south of the stadium on gamedays with project-generated traffic passing through these streets. Since these streets are much more heavily used by project-generated traffic than streets north of East 157th Street, overall conditions with a Yankee Stadium event underway are expected to improve. In this scenario, project Build conditions along the northbound Expressway approaching its diverge to East 149th Street would also improve, as well as queuing on the northbound 149th Street ramp.

In the southbound direction along the Major Deegan Expressway, stadium traffic uses several exit ramps, primarily the ramp that leads directly to the stadium's major parking garage along its southern edge, and also the southbound exit marked "Bronx Terminal Market" and the southbound exit to 161st Street. The parking facility at the southern edge of the current stadium is expected to remain, while some of the parking facilities located further south along both River Avenue and Exterior Street would be displaced by the Proposed Project.

TRANSIT AND PEDESTRIANS

With the relocation of Yankee Stadium and the construction of several new parking facilities in the surrounding area, pedestrian trips to and from parking facilities in the surrounding area on game days would be expected to be concentrated further to the north. Therefore, background pedestrian traffic conditions in the project study area could be improved. In addition, the loss of the west side of the project site and the associated reduction in the program would result in fewer pedestrian trips from the Proposed Project. However, no pedestrian significant adverse impacts are expected with the Proposed Project, with the exception of the north crosswalk at 149th Street and River Avenue during the Saturday peak periods. Any redistribution of subway trips associated with the Yankee Stadium project would not be expected to alter the conclusions of the transit analysis.

AIR QUALITY

As described above under "Traffic and Parking," the relocation of Yankee Stadium could be expected to slightly shift traffic patterns to and from the stadium, which could, in turn, improve game day traffic conditions at some analysis locations. Therefore, the potential for the Proposed Project to have mobile source air quality impacts could be less; however, the Proposed Project is not projected to have any significant adverse mobile source air quality impacts in any case. The HVAC systems for the proposed buildings and the proposed parking facilities would not result in significant adverse air quality impacts, and these conclusions would not be altered by the new background growth project. An (E) designation would still be incorporated into the proposed rezoning of the hotel site to preclude the potential for significant adverse air quality impacts from the industrial facility located within 400 feet of the proposed hotel.

NOISE

The relocation of Yankee Stadium would not be expected to change future background conditions to the extent that the conclusions of the noise impact analysis would be altered, with the exception of the proposed public open space. As described above, if a portion of the west side of the Gateway Center at Bronx Terminal Market project site were developed by the Yankee Stadium project as a public park, and the remainder of the west side of were developed by the City as a public open space, these areas would have elevated noise levels due to the proximity of the Major Deegan Expressway.

H. MITIGATION

HISTORIC RESOURCES

The demolition of the historic buildings on the project site—Buildings B, D, F, G, H, and J, and the Bronx House of Detention—would constitute a significant adverse impact on historic resources. Measures to mitigate this impact are being developed in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The mitigation measures are anticipated to include recording Buildings B, D, F, G, H, and J, and the Bronx House of Detention through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative; publishing a pamphlet describing the historical development and significance of the Bronx Terminal Market; and creating interpretive displays or markers on the site illustrating the Market's history. The mitigation measures developed with OPRHP would be recorded in either a Memorandum of Agreement (MOA) or Letter of Resolution (LOR) and implemented in order to partially mitigate the effects of the Proposed Project on historic resources.

TRAFFIC AND PARKING

The detailed analyses of mitigation measures indicated that all significant adverse impacts on the local street network as well as on the sections of the Major Deegan Expressway could be mitigated, with one exception. The mitigation measures at most intersections would consist of traffic signal timing changes, parking prohibitions, lane re-striping, and other non-geometric improvements.

At the 149th Street intersection with the Major Deegan Expressway's northbound off-ramp, Exterior Street and River Avenue, geometric changes to the intersection would be necessary to mitigate the project's impacts. The recommended improvements include reconstruction of the intersection to bring all approaches closer to the intersection in order to concentrate turning movements and reduce driver confusion. Some approaches would be widened and restriped to gain additional capacity, and the Major Deegan Expressway's northbound off-ramp at 149th Street would be widened to two lanes. The New York State Department of Transportation is also considering widening this northbound off-ramp at 149th Street to two lanes while they rehabilitate the deck suspended over Exterior Street, but because this improvement would not likely be constructed by 2009, the at-grade portion of the off-ramp could be widened as a mitigation measure under a highway work permit.

TRANSIT AND PEDESTRIANS

NYCT BUS LINE HAUL

The proposed actions would result in adverse impacts to the operations of the eastbound Bx19 bus route during both the 2009 and 2014 Non-Game Day Saturday Midday peak periods. The Bx19 route would operate above its guideline capacity, 70 passengers for a standard bus, with an increase in passengers per vehicle from 41 in the No Build condition to 71 in the Build conditions at the maximum load location in both 2009 and 2014. In order to mitigate the impact, it is recommended that NYCT schedule one additional eastbound bus per hour during the Non-Game Day Saturday Midday peak hour. With these improvements, the Bx19 would have adequate capacity to accommodate the project-generated increase in bus ridership.

STREET-LEVEL PEDESTRAIN OPERATIONS

The Proposed Project is expected to result in a significant adverse impact to the operations of the north crosswalk at 149th Street and River Avenue. The decrease in the No Build LOS A to a Build LOS D at this location would require improvements that would return the crosswalk to an acceptable level-of-service. In order to alleviate the impact, it is recommended that north crosswalk be widened by four feet to a total width of 15 feet. With this mitigation, the north crosswalk would operate at LOS D or better during all analysis peaks.

AIR QUALITY

Tables S-9 and S-10 illustrate the effect that the proposed traffic mitigation measures developed as part of the Proposed Project's traffic analysis would have on maximum predicted CO concentrations in the 2009 and 2014 Build years. The values shown are the highest predicted concentrations for the analyzed receptor locations. The results presented in the tables demonstrate that the proposed traffic mitigation measures would not result in any violations of the CO standard or any significant impacts at the intersections analyzed.

**Table S-9
Future (2009) Maximum Predicted 8-Hour Average
Carbon Monoxide Concentrations (parts per million)**

Site	Location	Time Period	8-Hour Concentration (ppm) with Traffic Mitigation		
			2009 No Build	2009 Build	2009 Build with Mitigation
1	E. 161st Street and Grand Concourse	Weekday PM	3.7	4.0	4.0
		Saturday PM	3.8	4.4	4.0
2	E. 151st Street and River Ave	Weekday PM	2.9	3.4	3.4
		Saturday PM	3.1	3.7	3.5
3	E. 149th Street and River Ave/Exterior St.	Weekday PM	4.6	4.8	4.9
		Saturday PM	4.7	4.7	4.9

Note: 8-hour CO standard is 9 ppm.

**Table S-10
Future (2014) Maximum Predicted 8-Hour Average
Carbon Monoxide Concentrations (parts per million)**

Site	Location	Time Period	8-Hour Concentration (ppm) with Traffic Mitigation		
			2014 No Build	2014 Build	2014 Build with Mitigation
1	E. 161st Street and Grand Concourse	Weekday PM	3.5	3.7	3.8
		Saturday PM	3.6	4.0	3.8
2	E. 151st Street and River Ave	Weekday PM	2.6	3.2	3.2
		Saturday PM	2.8	3.4	3.1
3	E. 149th Street and River Ave/Exterior St.	Weekday PM	4.3	4.4	4.5
		Saturday PM	4.4	4.4	4.6

Note: 8-hour CO standard is 9 ppm.

I. ALTERNATIVES

Four alternatives to the Proposed Project are considered: the No Action Alternative, in which the site would remain in its existing condition; a Retention of Expanded Market Alternative, in which the proposed retail development would be restricted to the portion of the site east of Exterior Street, and the existing market uses would be expanded within a new facility on the west side of the project site; a Development of East Project Site Only Alternative, in which only the east side of the project site would be developed and the west side of the project site would be vacant; and a No Significant Adverse Unmitigated Impacts Alternative, in which the Proposed Project is modified to avoid any unmitigated significant adverse impacts.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the site would remain as it is in current conditions and there would be no changes to zoning or the City Map. No special permits, waivers, modifications, authorizations, or certifications from the New York City Planning Commission (CPC) would be requested, and there would be no disposition of City-owned property. No other state or federal actions would be requested. This is the same scenario that is described throughout the EIS as "The Future without the Proposed Actions."

Land Use, Zoning, and Public Policy

Under this alternative, land uses on the site would remain as they currently are, and there would be no significant adverse impact to land use and zoning. With respect to public policy, this alternative would not provide public waterfront open space and therefore would not meet the Bronx Waterfront Plan's objective to improve waterfront access.

Socioeconomic Conditions

Unlike with the Proposed Project, in the No Action Alternative the mix of 23 businesses employing approximately 297 workers on-site would be retained; however, the project's substantial economic benefits would not be realized. There would be no direct or generated construction employment and income, or the expected local and state revenue resulting from the construction activity. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would not occur.

Community Facilities

The No Action Alternative would not result in the new demands on police, fire, and emergency services associated with the Proposed Project. In this alternative, the utilization of the Bronx House of Detention would be dependent on the NYCDOC's determination of how it will meet its need to replace a substantial portion of its existing bed capacity.

Open Space

Without the Proposed Project, the passive open space ratio for workers (as well as the ratio for workers and residents combined) in the area would exceed DCP guidelines. Under this alternative, the approximately two acres of new public open space and waterfront esplanade that the Proposed Project would provide would not be created.

Shadows

In the No Action Alternative, no new shadows would be cast on Macombs Dam Park or the project-generated open space.

Historic Resources

With the No Action Alternative, the structures on the project site identified as historic resources—Buildings B, D, F, G, H, and J of the Bronx Terminal Market, and the Bronx House of Detention—would remain, and thus the significant adverse impacts on historic resources resulting from the Proposed Project would not occur. With the Proposed Project, this impact would be partially mitigated by measures developed with OPRHP. Neither this alternative nor the Proposed Project would result in significant adverse impacts to archaeological resources.

Urban Design and Visual Resources

In the No Action Alternative, the dilapidated condition and visual character of the project site would remain unchanged, and the esplanade and open space along the waterfront would not be developed. The Proposed Project's enhancement of the project site and surrounding area with active retail use and landscaping would not occur.

Neighborhood Character

The changes in neighborhood character associated with the Proposed Project would not occur with the No Action Alternative. The project site buildings would continue to block views to the waterfront from the surrounding area, and the site would not offer public access to the waterfront.

Natural Resources

With respect to natural resources, the site would maintain its current, predominantly paved condition, and the deterioration of the project site waterfront would continue. Unlike the Proposed Project, the No Action Alternative would not result in the elimination of some areas of the site that may be attractive to nuisance species, nor would it add new vegetated areas within the public open space and waterfront esplanade.

Hazardous Materials

Under the No Action Alternative, it is assumed that no remediation of hazardous materials would occur on the project site.

Waterfront Revitalization Program

The No Action Alternative would not provide new public waterfront access or recreational opportunities, nor would it establish physical and visual public access to the Harlem River waterfront.

Infrastructure

With the No Action Alternative, water consumption, sewage and solid waste generation, and stormwater runoff are not expected to change, and no impacts to these systems are expected.

Solid Waste and Sanitation Services

It is expected that the volumes of solid waste generated at the project site would not change, and no major changes are expected in the City's solid waste management handling practices.

Energy

Unlike with the Proposed Project, no new energy demands would be created with the No Action Alternative.

Traffic and Parking

The increase in vehicle trips to the project site expected with the Proposed Project would not occur with the No Action Alternative. Therefore, this alternative would not require the mitigation measures proposed for the Proposed Project, including signal phasing and timing modifications, parking prohibitions, lane re-striping and intersection channelization improvements, and pavement markings, as well as the widening of the Major Deegan Expressway ramp at 149th Street.

Transit and Pedestrians

The increases in transit and pedestrian trips to the project site expected with the Proposed Project would not occur with the No Action Alternative. Therefore, this alternative would not have any adverse impacts on pedestrian conditions at the north crosswalk at the intersection of 149th Street and River Avenue, or marginal impacts on the Bx19 local bus route.

Air Quality

Unlike with the Proposed Project, no new mobile or stationary source emissions would be created on the project site with the No Action Alternative. The (E) designation for air quality that under the Proposed Project would be incorporated into the proposed rezoning of hotel portion of the site to preclude the potential for significant adverse air quality impacts from this industrial source would not be necessary.

Noise

No new sources of noise would be created on the project site with the No Action Alternative. Neither this alternative nor the Proposed Project would result in any significant adverse noise impacts, with one exception—the Proposed Project would have a significant adverse noise impact due to the creation of public open space, a noise-sensitive receptor, in an area with high ambient noise. With the No Action Alternative, this new sensitive receptor would not be created and there would be no significant adverse impact; however, the local area would not receive the benefit of the creation of public open space.

Construction

No construction would occur on the site in the No Action Alternative. Therefore, the temporary adverse impacts associated with construction would not occur, nor would the substantial economic benefits to the local area and New York City attributable to project construction.

Public Health

Neither the No Action Alternative nor the Proposed Project is expected to result in significant adverse impacts to public health.

RETENTION OF EXPANDED MARKET ALTERNATIVE

As described above under “Socioeconomic Conditions,” no significant adverse impacts related to the Proposed Project’s displacement of the current market tenants were identified. However, in order to address comments made during the scoping of the Proposed Project, this EIS considers an alternative in which the existing wholesale market uses are retained and expanded

within a new facility on the west side of the project site. In this scenario, proposed Retail Building G would not be constructed, no public open space or waterfront esplanade would be created, and an additional approximately 64,000 gross square feet of retail space would be accommodated within Retail Buildings A and B/F, on the east side of Exterior Street. Overall, the retail program would be 7 percent smaller than with the Proposed Project.

The spatial requirements assumed for the new market facility are as noted in public scoping comments: 500,000 square feet (sf), of which 200,000 sf would be refrigerated, with room for expansion; a wide central corridor; good night-lighting; secure boundaries, loading docks above street level, contiguity along the platform; large, uninterrupted open storage areas; high-capacity, high load-carrying flat concrete floors; adequate floor drainage; industrial three-phase electric service; high ceilings; and strong poured concrete, steel-reinforced walls that are rodent resistant.

Although the Retention of Expanded Market Alternative would result in similar impacts to the Proposed Project, this alternative would not necessarily provide many of the improvements and benefits associated with the Proposed Project. This alternative would result in a greater quantity of wholesale market space on the project site, and the wholesale market uses would be directly adjacent to the new retail uses across Exterior Street. It is likely that the two uses would be incompatible when located in such close proximity, as the truck traffic for the wholesale market uses would not be pedestrian friendly, and the market uses would attract a different clientele than the proposed retail buildings on the east side of the project site. This alternative would not provide an open space or waterfront esplanade, and therefore would not meet the Bronx Waterfront Plan's objective to improve public waterfront access.

The existing jobs and businesses on the site would be retained, and the wholesale food market uses could generate slightly more economic benefits than they currently do, assuming that the entire expanded market is occupied. However, since less new retail would be developed, the amount of economic benefits from the proposed retail development would not be somewhat diminished.

Under this alternative, the approximately two acres of new public open space and waterfront esplanade that the Proposed Project would provide would not be created, and the amount of open space available for area residents and workers would continue to be below DCP guidelines. The new market facility would have to be at least five stories or 100 feet tall to create 500,000 sf of usable space; such a facility would be much larger than the proposed Retail Building G on this portion of the site, and could potentially cast additional shadows on Macombs Dam Park.

The effect on architectural resources would be the same with this alternative as with the Proposed Project, since the demolition of Buildings F, G, H, and J would be required in order to construct the new wholesale market facility on the west side of the site, and the demolition of Buildings B, D, and the Bronx House of Detention would be required to construct the retail buildings on the east side of the site.

Unlike the Proposed Project, the Retention of Expanded Market Alternative would not substantially improve access to or the condition of the Harlem River waterfront; nor would it create a new public open space amenity for the surrounding neighborhood. This alternative would introduce some active retail uses and landscaping and increase public access to the east side of the site, but these could conflict with the wholesale market, non-pedestrian-friendly activities on the west side of Exterior Street.

Under the Retention of Expanded Market Alternative, it is not expected that new habitat for terrestrial wildlife (in the form of a new public open space) would be created on the project site, and it is expected that the deterioration of the project site waterfront could continue. The new

market facility to be developed with this alternative could create additional shading on the Harlem River.

Peak hour traffic volumes are projected to be slightly lower under this alternative when compared to the Proposed Project, ranging from about 0.5 percent lower in the weekday midday peak hour to 3.5 percent lower in the non-game Saturday midday peak hour. Traffic assignments would only differ from the Proposed Project at the Exterior Street access points to the proposed garage between Exterior Street and River Avenue. Vehicle trips on Exterior Street would all enter the garage east of Exterior Street, and the garage intersections would continue to operate at acceptable levels of service when compared to the Proposed Project. The project's marginal impact on the Bx19 bus line would probably not occur with this alternative.

Given that the new wholesale market facility would be more than twice as large as the building to be constructed on the west side of the site as part of the Proposed Project (Retail Building G), it is expected that construction-period activities would be greater than those associated with the Proposed Project.

DEVELOPMENT OF EASTERN PROJECT SITE ONLY ALTERNATIVE

Under the terms of an agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site to the City. In this case, the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop a 2-acre public open space. The City would be responsible for developing the remainder of the western portion of the site, but has not yet determined what the potential use of that site would be. In any case, development of the west side of the project site would be dependent on approvals from the NYSDEC and possibly the USACOE.

As the City has not yet determined what the potential use of the remainder of the western portion of the site could be, this scenario assumes that this portion of the west side of the project site would be undeveloped. As with the Retention of Expanded Market Alternative, it is assumed that approximately 64,000 gross square feet of additional retail space would be developed within Retail Buildings A and B/F, but otherwise the proposed program for the east side development would remain the same.

While the impacts of this alternative would be similar to those of the Proposed Project, some of the visual and economic benefits associated with the Proposed Project would not be realized. Public access to the waterfront would be provided by a park to be developed by the City and funded by the project sponsor, rather than by the Proposed Project. Because the Proposed Project's total program would be reduced by approximately 8 percent, the project's positive impacts on the local socioeconomic character and local and state revenue would be somewhat lessened.

Peak hour traffic volumes are projected to be slightly lower (generally about 4 to 4.5 percent) under this alternative when compared to the Proposed Project. Traffic assignments would only differ from the Proposed Project at the Exterior Street access points to the proposed garage between Exterior Street and River Avenue. Vehicle trips on Exterior Street would all enter the garage east of Exterior Street, and the garage intersections would continue to operate at acceptable levels of service when compared to the Proposed Project. The project's marginal impact on the Bx19 bus line would probably not occur with this alternative.

NO SIGNIFICANT ADVERSE UNMITIGATED IMPACTS ALTERNATIVE

Most of the potential impacts identified for the Proposed Project could be fully mitigated, as described in Chapter 23, "Mitigation."

Historic Resources

The demolition of structures on the project site identified as historic resources would constitute a significant adverse impact on historic resources. Measures to mitigate this impact are being developed in consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP). With these measures, the adverse impact on historic resources would be partially mitigated. However, in order to eliminate the adverse impact to historic resources, this alternative would require the retention of all the historic resources on the project site. The reduced development program that would result from the elimination of the existing buildings' land area for use by the Proposed Project would not fulfill the goals of the project and it would not be built at this location. Therefore, there is no feasible alternative that would eliminate the adverse impact on historic resources.

Traffic

For the northbound Major Deegan Expressway approaching 149th Street, widening of the exit ramp would be needed in order to mitigate the Proposed Project's impacts at the local street intersection of the northbound exit ramp with 149th Street, Exterior Street, River Avenue, and the 145th Street Bridge approach to the intersection. In order to fully mitigate conditions along the northbound Expressway, it would also be necessary to widen the approach to the exit ramp in order to provide a deceleration lane leading to the exit ramp. The New York State Department of Transportation (NYSDOT) has indicated its interest in improving conditions by widening the exit ramp as part of a larger Major Deegan Expressway widening and improvement project being planned by NYSDOT; however, it is uncertain at this time whether NYSDOT would also be able to create a widening along the highway mainline to provide a fully acceptable deceleration lane. Therefore, it is possible that only partial mitigation of potential impacts at the northbound exit would be accomplished by 2009 or 2014.

Noise

As discussed above, noise levels in the western portion of the public open space that would be developed as part of the Proposed Project would be higher than the 55 dBA L10(1) noise level for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for Use in City Environmental Impact Review." There are no practical and feasible mitigation measures that could be implemented to mitigate this impact, as a sound barrier on Exterior Street would present problems with respect to aesthetics and safety. Unless such a barrier extended well above the height of the elevated roadway, it would not be effective in reducing noise from the Major Deegan Expressway. Although the noise levels constitute a significant adverse impact, they would be comparable to noise levels in a number of well-used and attractive open spaces in New York City that are also located adjacent to heavily trafficked roadways. *

A. PROJECT IDENTIFICATION

The Gateway Center at Bronx Terminal Market is a proposal to redevelop a 26-acre portion of the current Bronx Terminal Market site along with an adjacent parcel currently housing the Bronx House of Detention (BHOD), with approximately 1.1 million gross square feet (gsf) of retail establishments, 3,216 parking spaces in a multi-level parking garage and at-grade parking, a 250-room hotel, and a public open space and waterfront esplanade totaling approximately 2 acres (the Proposed Project).

The Proposed Project would be located in the West Haven neighborhood of the Bronx on Block 2356, Lot 20; Block 2357, Lots 1 and 86; and Block 2539, Lots 2 (part), 32, and 60 (part). The site is bordered by River Avenue to the east, 149th Street to the south, and the Harlem River to the west (see Figure 1-1). The project site's northern boundary is different on the east and west sides of Exterior Street. On the east side, the northern boundary is the Metro North Rail Road tracks. On the west side, the northern boundary is located just north of Ramp A (the East 161st Street exit from the Major Deegan Expressway). The Oak Point Link rail connection runs on a trestle along the Harlem River parallel to the shoreline and the project site. The Major Deegan Expressway and Exterior Street (the street under the Expressway) bisect the project site. The parcels east of the Expressway would be merged with portions of 150th and 151st Streets and Cromwell Avenue to form the eastern section of the project site. The project site is owned by the City of New York, except for one parcel on the west side of the project site that is owned by the New York State Department of Transportation (NYSDOT).

As shown in Table 1-1 and Figure 1-2, the eastern side of Exterior Street would include a series of five 1-story retail buildings approximately 19,820 gsf in size—collectively referred to as Retail Building E—with an adjacent surface parking lot of approximately 22 spaces; a 4-story, approximately 499,630-gsf building with 401,765 gsf of retail and 256 parking spaces at the ground floor (Retail Building B/F); a six-level, approximately 920,632-gsf parking garage with a capacity of approximately 2,342 spaces and 22,485 gsf of retail on Exterior Street (Retail Building C) and 8,015 gsf of retail on River Avenue (Retail Building D); a 3-story, approximately 436,480-gsf retail building (Retail Building A); and a hotel approximately 247,500 gsf in size, with 250 rooms, a 30,000-gsf banquet facility, and approximately 225 parking spaces. At each level of the parking garage would be galleria spaces, totaling 39,930 gsf, leading to either Retail Building A or Retail Building B/F. A fee would be charged for parking in the proposed parking garage.

Table 1-1
Program Summary

Building	No. of Stories	Gross Square Footage	Retail GSF	Parking Spaces	Other Description
WEST SIDE					
				344	Parking at ground floor of building
Retail Building G	2	±264,170 gsf	±140,435 gsf	±27	Surface parking lot to north of building
Public Park/Waterfront Esplanade	—	—	—	—	Approximately 2 acres in size
EAST SIDE					
Retail Building A	3	±436,480 gsf	±436,480 gsf		
Retail Building B/F	3	±499,630 gsf	±401,765 gsf	256	Parking at ground floor of building
Retail Building E	1	±19,820 gsf	±19,820 gsf	22	Parking at adjacent surface lot
Parking Garage and Retail Buildings C/D	6	±920,632 gsf	±30,500 gsf	2,342	
Galleries	N/A	±39,930 gsf	±39,930 gsf	-	
Hotel	TBD	±247,500 gsf		225	250 rooms and 30,000 sf banquet facility
TOTAL		±2,428,162 gsf	±1,068,390 gsf	3,216	

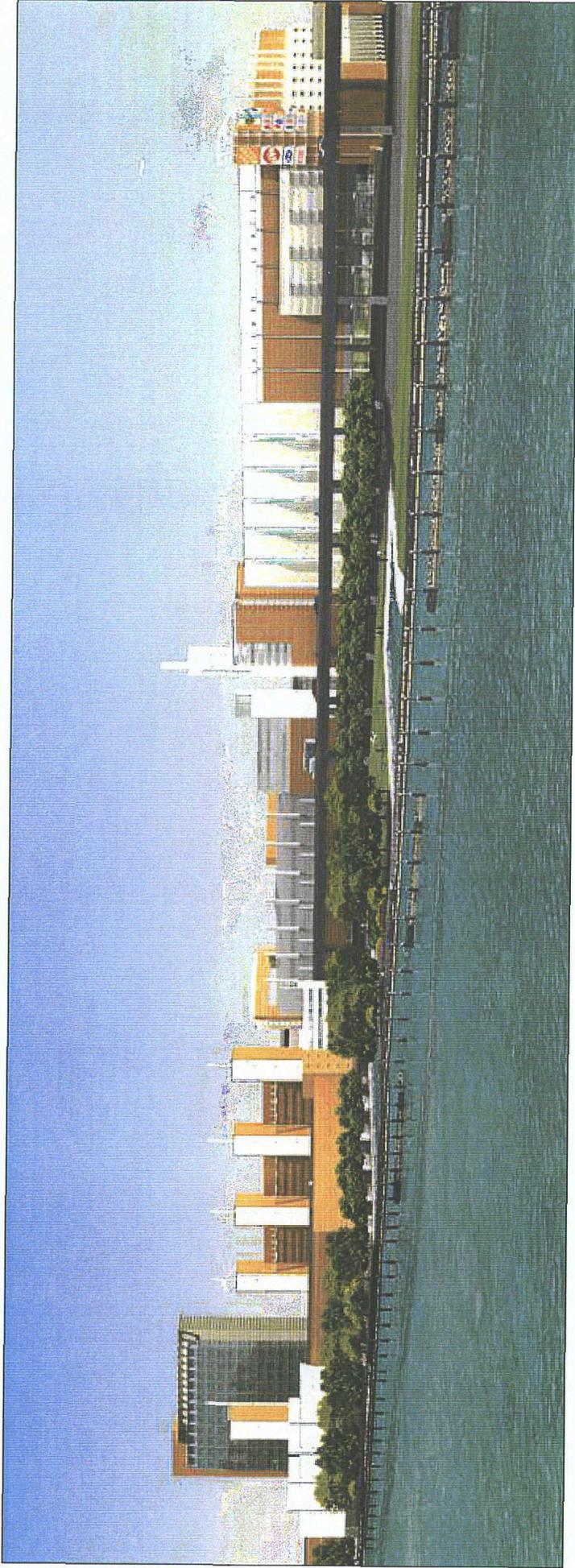
On the western side of Exterior Street, the Proposed Project would include a public open space and waterfront esplanade totaling approximately 2 acres, and a 2-story, approximately 264,170-gsf building with 140,435 gsf of retail and 344 parking spaces at the ground floor (Retail Building G) as well as 27 spaces in a surface parking lot to the north of the proposed building. In total, the project would comprise approximately 2,427,162 gsf of new development on the site. The Proposed Project is expected to be complete and operational in 2009, except for the hotel, which would not be completed until 2014. Figure 1-3 presents an illustrative rendering of the Proposed Project.

B. SITE CONDITIONS

The project site is currently used for wholesale food markets, a farmer's market (on weekdays), and parking. A portion of the project site is also used seasonally as parking for games at Yankee Stadium. The project site is currently occupied by seven buildings and a portion of an eighth, referred to as Buildings B-D, F-H, and J, and BHOD (see Table 1-2 and Figure 1-4). Another building on the site, the former Building A, was recently demolished. The west side of the project site contains Pier 4, combined Piers 2 and 3, and a portion of Pier 1 on the Harlem River.

As shown in Figure 1-4, the project site is made up of two parcels separated by Exterior Street. The first parcel, located west of Exterior Street along the Harlem River, currently contains four 2-story buildings (Buildings G, H, J, and part of F). Directly across Exterior Street is the second parcel, which is bounded by Exterior Street to the west, River Avenue to the east, and the Metro-North Railroad to the north. The second parcel contains four buildings: two 2-story buildings (Buildings B and D), one 1-story building (Building C), and the 8- and 10-story BHOD. The

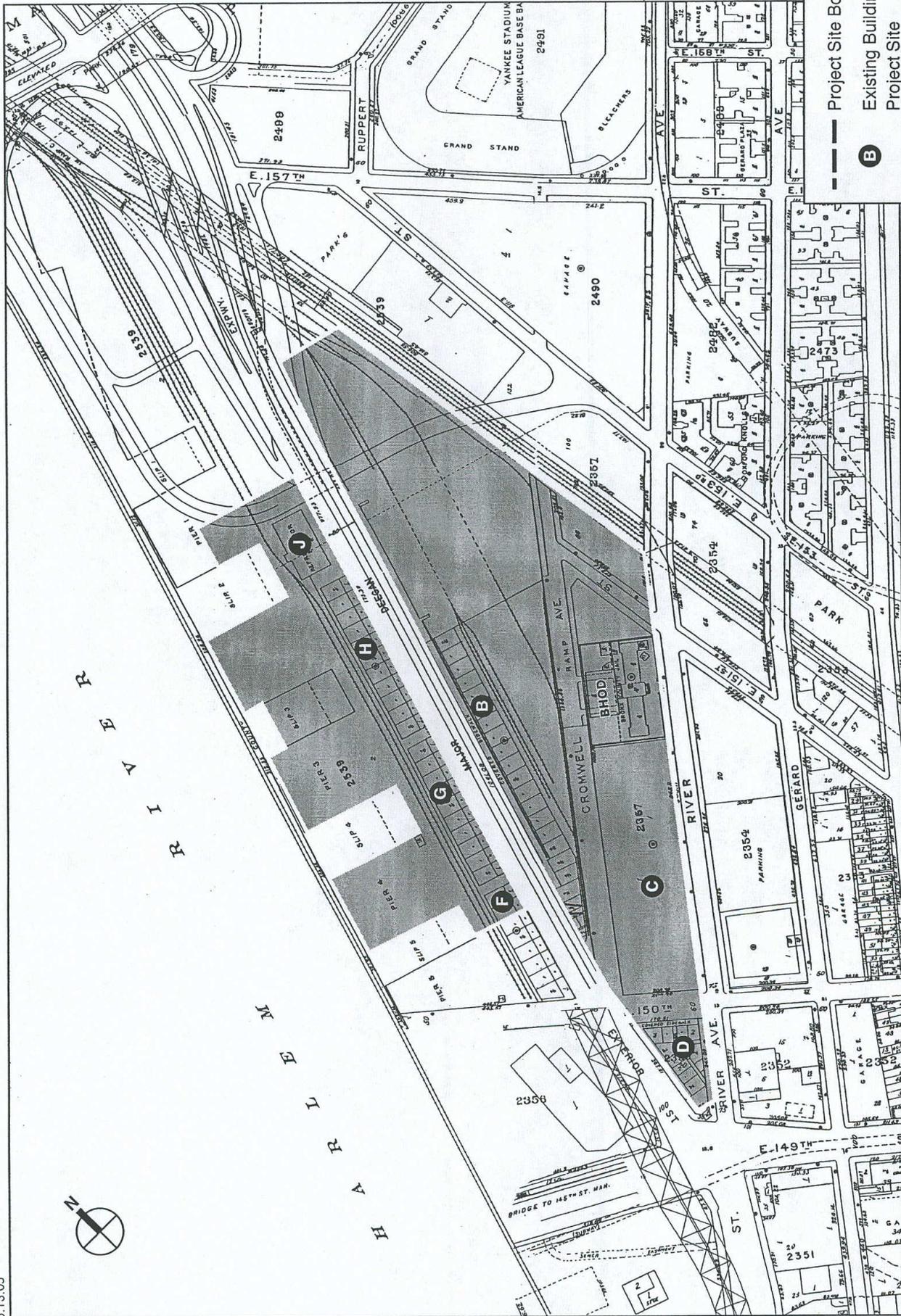
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Rendering of Proposed Project from Harlem River
Figure 1-3

GATEWAY CENTER @ BRONX TERMINAL MARKET

5.13.05



- - - Project Site Boundary
 B Existing Buildings on Project Site

Project Site Layout
Figure 1-4

GATEWAY CENTER @ BRONX TERMINAL MARKET

buildings within the project site range in size from approximately 26,000 sf to 612,000 sf (see Table 1-2). Because of its poor condition, demolition of the former Building A, which was located on the east side of the project site, was required by the New York City Economic Development Corporation (NYCEDC), acting on the behalf of the Office of the Deputy Mayor for Economic Development and Rebuilding (ODMEDR) through prior arrangement with the applicant. The remainder of the buildings on the project site would be demolished as part of the Proposed Project.

**Table 1-2
Existing Structures on Project Site**

Building Letter	Date of Construction	Number of Stories	Approx. Size (in sf)	Current Use
WEST SIDE				
Building F	1935	2	±47,900	Partially occupied/ wholesale food
Building G	1935	2	±58,900	Partially occupied/ wholesale food
Building H	1935	2	±65,600	Partially occupied/ wholesale food
Building J	1935	2	±26,000	Partially occupied as site manager's office
EAST SIDE				
Building B	1925	2	±111,800	Partially occupied/ wholesale food
Building C	1961	1	±132,300	Warehouse/ rooftop parking
Building D	1935	2	±51,200	Partially occupied/ wholesale food
Bronx House of Detention	1938/1963	8 and 10	±300,000	In reserve status, currently closed

C. BACKGROUND HISTORY

STUDY AREA

The area surrounding the project site—alternatively known as West Haven or Morrisania—was part of the Morrisania estate owned by Lewis Morris during the late 1600s. The area's prominence was established with the extension of the New York and Harlem Railroad from Manhattan to the area in 1842. The railroad linkage to Manhattan brought laborers as well as an influx of established residents to the village. Annexed to New York in 1874, the area filled with tenements after the Third Avenue elevated railroad, which entered the Bronx in 1888, made it cheap and easy for workers to commute to jobs downtown. By 1905, Morrisania's population had grown to approximately 60,000 residents. The construction of the Grand Concourse between 1902 and 1909 created a main thoroughfare that became the borough's parade route, the site of its government, and the axis of an important shopping and entertainment district. Yankee Stadium was built in 1923, north of the project site, bringing the Yankees across the Harlem River from their former home at the Polo Grounds. The construction of Yankee Stadium as well as the development of department stores, boutiques, and restaurants soon made Morrisania the civic and social center of the borough. Later additions to the area included the main Post Office in the 1930s, Eugenio Maria de Hostos Community College in the 1960s, and Lincoln Hospital in the 1970s.

PROJECT SITE

The creation of the Bronx Terminal Market began under Mayor John F. Hylan in the late 1910s and early 1920s. The first buildings to be constructed for the market consisted of a 6-story cold

storage warehouse building and a 2-story power house to support the warehouse, both built ca. 1925. For many years the market was known as "Hylan's Folly," as the annual cost of maintenance was far in excess of the annual income from rentals. During the 1930s, the market was expanded under Mayor Fiorello H. LaGuardia as part of his program to eliminate pushcarts in the City. Under LaGuardia, five additional 2-story buildings were constructed ca. 1934-35 south of the original warehouse and power house. With this expansion, the market finally became successful, becoming a receiving point for the City's produce.

The BHOD (formerly the Bronx County Jail) was constructed in 1938 as a WPA project and an addition to the rear façade of the building was constructed in 1963. There are also several modern 1-story additions to the building.

In 1972, David Buntzman acquired a 99-year lease for the Bronx Terminal Market. Since that time, the market has been underutilized and has fallen into disrepair. In 1991, the City filed a lawsuit against Buntzman over poor management of the market, unsanitary conditions, and illegal dumping on the site. In 1993, Mayor David Dinkins sought to condemn Buntzman's lease. Former Bronx Borough President Fernando Ferrer called for the reuse of the site as a retail and entertainment complex. Current Bronx Borough President Adolfo Carrion has also promoted the redevelopment of the site as a destination retail center.¹ BTM Development Partners would redevelop a portion of the current Bronx Terminal Market site along with the Bronx House of Detention. If the project is approved, BTM Development Partners' lease on the remainder of the property will be surrendered back to the City.

D. PROJECT PURPOSE AND NEED

The Proposed Project would support the economic revitalization of the West Haven neighborhood of the Bronx by converting a large underused site into a productive retail use. The development would represent a dramatic change to the project site, replacing underutilized and dilapidated buildings with a major retail center, new waterfront public open space, and the only hotel in this area of this city. The Proposed Project would create new employment opportunities, convenient shopping and dining opportunities, and create economic and fiscal benefits to the City in the form of economic revitalization and tax revenue. The Proposed Project provides an important new community amenity in the approximately 2-acre public open space and waterfront esplanade, which would serve the surrounding neighborhood and create public recreational access to the Harlem River.

E. DESCRIPTION OF PROPOSED ACTIONS

The Proposed Project involves the disposition of City-owned property (a long-term lease) by the New York City Department of Citywide Administrative Services (NYCDCAS) and the New York City Department of Small Business Services (NYCSBS) to a private developer. The following City-owned properties would be disposed of, first to the New York City Economic Development Corporation, and then to BTM Development Partners: Block 2356, Lot 20; Block 2357, Lots 1 and 86; Block 2539, Lots 2 (part), 32, and 60 (part); and portions of East 150th Street, East 151st Street and Cromwell Avenue. In addition, the project site includes Block 2539, part of Lot 20 and part of Lot 50, the areas under ramps A and D of the Major Deegan

¹ *New York Times*, March 4, 2005; Bronx Borough President's State of the Borough Address, February 2005.

Expressway. These parcels are owned by the New York State Department of Transportation. The City of New York retains an easement to utilize these properties underneath the ramps. The easement under the ramps will be included in the disposition.

The current market lease includes portions of State-owned property (portions of Block 2539, Lots 20 and 50) that currently maintain a lease for area underneath ramps. The continuation of those leases is included in the disposition.

Disposition will require approval through the Uniform Land Use Review Procedure (ULURP) under City Charter Section 197(c). In addition, a number of other discretionary actions subject to ULURP will be required, as follows:

- A zoning map amendment from M2-1 to C4-4 (see Figure 1-5);
- Elimination of portions of the following City streets:
 - East 150th Street between River Avenue and Exterior Street;
 - East 151st Street between River and Cromwell Avenues; and
 - Cromwell Avenue between Exterior Street and the Metro North Rail Road tracks.

EASTERN PORTION OF PROJECT SITE

- A special permit pursuant to ZR Section 74-512 to permit a public parking garage in excess of 150 spaces;
- A General Large-Scale District will be declared for the area east of Exterior Street. Several special permits will be required, including:
 - A special permit pursuant to Zoning Resolution (ZR) Section 74-743 for bulk modifications for height and setback waivers along River Avenue and Exterior Street, distribution of floor area within the general large-scale district, and a yard waiver adjacent to the Metro North Rail Road tracks; and
 - A special permit pursuant to ZR Section 74-744(c) for signs not otherwise permitted under the Zoning Resolution.

WESTERN PORTION OF PROJECT SITE

- A General Large-Scale District will be declared for the area west of Exterior Street. Several special permits will be required, including:
 - A special permit pursuant to ZR Section 74-53 to permit an increase in accessory parking above that permitted by the Zoning Resolution; and
 - A special permit pursuant to ZR Section 74-744(c) for signs not otherwise permitted under the Zoning Resolution.
- Waivers and modifications of the waterfront regulations will be required for the development of the western side of the project site, as follows:
 - Authorization pursuant to ZR Section 62-722(a) for modification of public access and visual corridors;
 - Authorization pursuant to ZR Section 62-722(b) for modification of design standards for the waterfront area;

Gateway Center at Bronx Terminal Market DEIS

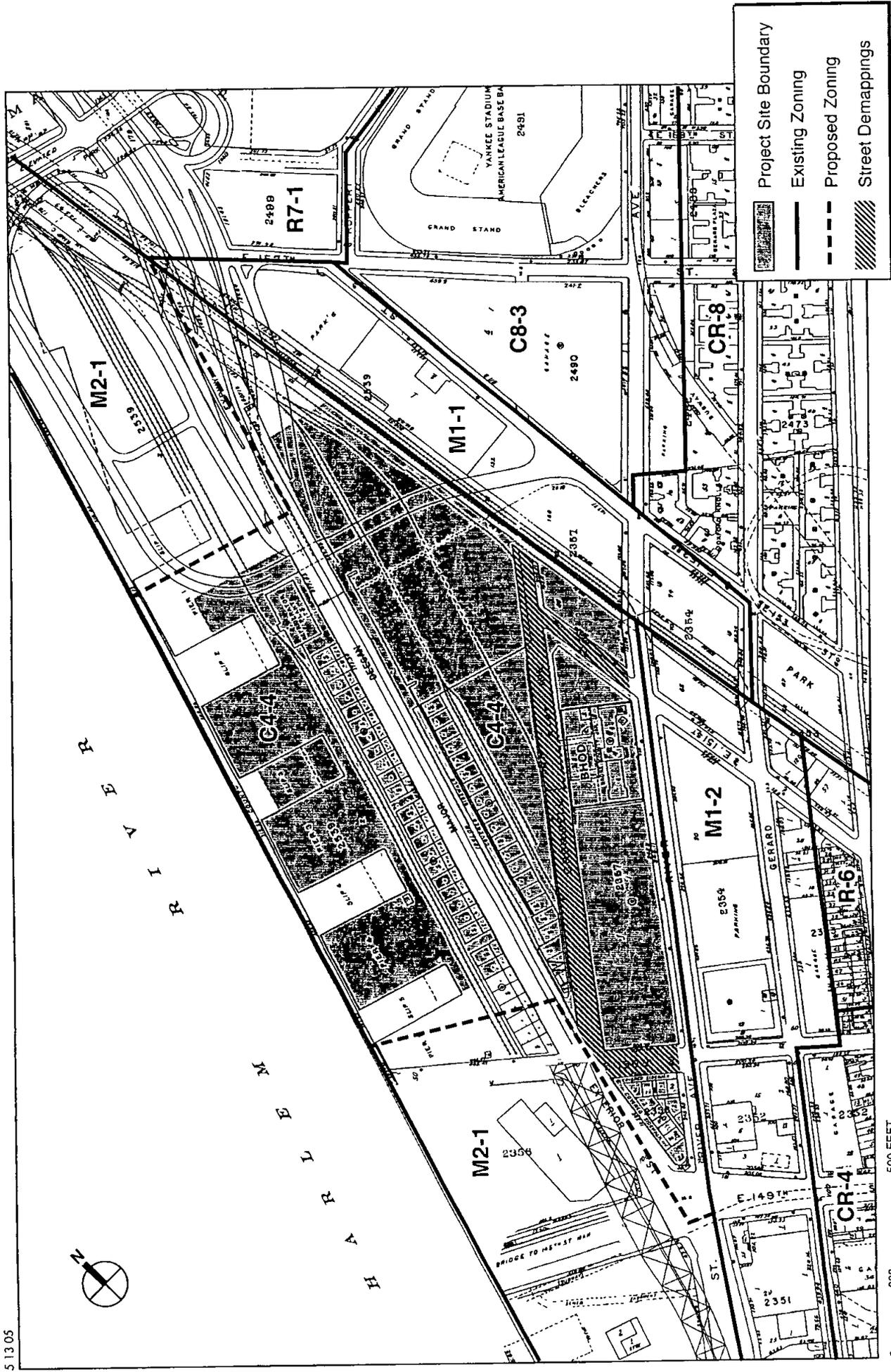
- Certification for a zoning lot subdivision pursuant to ZR Section 62-712; and
- Certification for compliance with waterfront public access and visual corridors pursuant to ZR Section 62-711

BTM Development Partners will initiate each of the above actions as a co-applicant with EDC.

The project site is comprised of a western and an eastern portion divided along Exterior Street. The portion of the site west of Exterior Street is considered the western portion, and the area east of Exterior Street is the eastern portion. Under the terms of its agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site. In this case, the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop a 2-acre public open space. The City would be responsible for developing the remainder of the western portion of the site, but has not yet determined what the potential use of that site would be. It could be used as a public park or recreational space, or for parking; however, prohibited uses would include noxious uses and uses similar to those proposed for the eastern side of the project site. As discussed in Chapter 11, "Hazardous Materials," remediation of this area would need to be implemented before redevelopment and would be the responsibility of the City or a designated developer. The project sponsor would retain the option to renew the leasehold interest in the future. Should the City determine that retail development of the western portion of the site is in its best interest, the project sponsor could renew its leasehold interest and develop the western portion of the site. The scenario in which only the eastern side of the project site is developed and the leasehold interest in the western side of the site is returned to the City is analyzed in Chapter 24, "Alternatives." This Environmental Impact Statement (EIS) analyzes the Proposed Project as the reasonable worst-case scenario for both portions of the project site.

In addition to the above, the disposition of the long term lease will require approval pursuant to Section 384(b)(4) of the City charter, which requires Borough Board and mayoral approval. The proposed actions are limited and restricted by the terms and conditions of these approvals. The project sponsor will seek financing for the Proposed Project from the New York City Industrial Development Agency (NYCIDA). The project has applied for and been accepted into the Brownfield Cleanup Program (BCP) by the New York State Department of Environmental Conservation (NYSDEC). The project site is divided into two sites for the BCP: the east side of the site and the public open space west of Exterior Street; and the remaining part of the west side of the site. Project site remedial activities under the BCP are subject to review under the State Environmental Quality Review Act (SEQRA). The project would also require a NYSDEC State Pollution Discharge Elimination System (SPDES) permit for stormwater discharges associated with construction activities. One or more additional outfalls for stormwater discharge into the Harlem River may need to be installed if the project site's existing outfalls cannot be used. If the construction of new outfalls is necessary, an amendment of the City's SPDES permit would be required, as well as Tidal Wetlands and Protection of Waters permits from NYSDEC, a U.S. Army Corps of Engineers (USACOE) permit, an amendment to the City's drainage plan, and possibly a Water Quality Certification. If the existing outfalls can be used and no new outfalls are needed, the City's drainage plan and SPDES permit would need to be amended, which would require NYSDEC approval. If use of the existing outfall requires the removal of sedimentation from the mouths of the outfall and placement of related structures, Tidal Wetlands and Protections of Waters permits from NYSDEC, and an USACOE permit, would be needed. The project may also require NYSDEC and USACOE permits for removal of debris from interpier

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Proposed Changes to Zoning and City Map
Figure 1-5

GATEWAY CENTER @ BRONX TERMINAL MARKET

areas, and a USACOE permit for work on platforms above the River. All of the forgoing activities (except possibly work on platforms over the River) are expected to qualify for a Nationwide Permit from USACOE. The Proposed Project is within the boundaries of the coastal zone and will require a New York State Department of State (NYS DOS) determination of consistency with New York City's Local Waterfront Revitalization Program. The project may also involve a land transfer from NYSDOT to the City of New York, and a revocable consent for utility lines underneath Exterior Street. The potential widening of the 149th Street exit ramp from the Major Deegan Expressway may require approval from NYSDOT.

To the extent the Proposed Project will involve discretionary actions by a federal agency, it will include a review under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as implemented by federal regulations appearing at 36 Code of Federal Regulations (CFR) Part 800.

F. PROJECT SCHEDULE AND STATUS

The parking spaces on the roof of Building C are currently used during games at Yankee Stadium. This use is required by an existing agreement for Yankee parking. To avoid disrupting the availability of parking spaces during games, the Proposed Project would be completed in two phases. Building C would be demolished as part of the first phase of the project and its current parking use would be relocated to the proposed hotel's portion of the project site, which would be constructed as the second phase of the project. The first phase would comprise the development of the retail, parking, and public open space portions of the project. The construction period for this phase would be approximately 24 months. The second phase would include the development of the hotel. The construction period for the second phase would be approximately 24 months. If the proposed actions are approved, it is anticipated that site preparation and construction for the first phase would begin in 2007, and the development would be complete and operational in 2009. Site preparation and construction for the second phase would begin in 2012, and the building would be complete in 2014.

G. RELOCATION PLAN

EDC has hired a relocation consultant to provide assistance to the current market tenants of the project site. This is being done independently of the Proposed Project and is not subject to any discretionary approvals. EDC, Bronx Empowerment Zone, and the project sponsor will provide various benefits to assist tenants in their relocation efforts. The relocation package includes the following benefits:

- EDC will provide Bronx Terminal Market tenants payments of \$10 per square foot towards expenses;
- Tenants who relocate to a building within or near the Bronx Empowerment Zone will be eligible to borrow up to \$500,000, at 0 percent interest rate for a maximum of 10 years, for the purchase of fixtures and equipment or for working capital;
- The project sponsor will provide incentive payments equal to half of the net rental payments paid by each tenant and received by the project sponsor from the date the tenant accepts the relation offer to the date the tenant vacates;
- EDC's relocation consultant will provide relocation services at no cost to Bronx Terminal Market tenants; and

- In addition, other government programs such as tax incentives, energy discounts, and financing programs are also available to eligible tenants.

As additional details become available, they will be incorporated into the EIS.

H. ENVIRONMENTAL REVIEW

This EIS reviews the potential effects of the proposed discretionary actions described above. The approvals currently sought would change the zoning of the site, allow a large retail use under the proposed zoning, eliminate portions of several streets, and would allow for the creation of a public open space and waterfront esplanade. The proposed actions would facilitate the Proposed Project. Thus, as described above, this EIS considers the Proposed Project to be a reasonable worst-case scenario for the purposes of assessing potential impacts.

REVIEW PROCEDURES

The SEQRA/CEQR process provides a mechanism for decision-makers to understand the environmental consequences, the alternatives, and the need for mitigating significant impacts. SEQRA/CEQR rules guide environmental review through the following steps:

- Establish a Lead Agency. Under SEQRA/CEQR, the “lead agency” is the public entity responsible for conducting environmental review. The lead agency is typically the agency with primary responsibility for the proposed action. The Office of the Deputy Mayor for Economic Development and Rebuilding (ODMEDR) is the lead agency for the Proposed Project.
- Determine Significance. The lead agency’s first decision is to determine whether the proposed action may have a significant impact on the environment. After review of the Environmental Assessment Statement (EAS), it was determined that this proposal could have a significant adverse effect on the environment, requiring that an EIS be prepared. ODMEDR issued a Positive Declaration on August 5, 2004.
- Scoping. The lead agency issued a Positive Declaration on August 5, 2004, and issued a draft scope of analysis for the EIS. “Scoping” is the process of establishing the type and extent of the environmental impact analyses to be studied in the EIS. CEQR requires all scoping meetings to be public. A public scoping meeting was held for the Proposed Project on September 9, 2004, and a final scope of work, reflecting comments made during scoping, was issued on October 8, 2004.
- DEIS. In accordance with the final scope of work, this Draft Environmental Impact Statement (DEIS) has been prepared. The lead agency reviews all aspects of the document, calling on other City agencies to participate. Once the lead agency is satisfied that the DEIS is complete, it issues a Notice of Completion and circulates the DEIS for public review.
- Public Review. Publication of the Notice of Completion of the DEIS starts public review. During this period, which must extend for a minimum of 30 days, the public may review and comment on the DEIS either in writing or at a public hearing. Because the CEQR process is coordinated with land use review, the hearings are held jointly. All substantive comments become part of the CEQR record and are summarized and responded to in the FEIS.

- FEIS. The lead agency will prepare a Final Environmental Impact Statement (FEIS). The FEIS will include a summary restatement of each substantive comment made about the DEIS with a response to each comment.
- Findings. The lead agency and each involved agency will adopt a formal set of written findings, reflecting its conclusions about the potential for significant adverse environmental impacts of the proposed action, potential alternatives, and mitigation measures. The findings may not be adopted until 10 days after the Notice of Completion has been issued for the FEIS. Once findings are adopted, the lead and involved agencies may take their actions.

CONTENT OF THE EIS AND METHODOLOGY

The lead agency and involved agencies are required to take a hard look at the environmental effects of a proposed action and, to the maximum extent practicable, avoid or mitigate significant adverse impacts on the environment, consistent with social, economic, and other essential considerations. The EIS identifies and analyzes the significant adverse environmental impacts of a proposed action and how those impacts could be avoided or minimized, providing a means for agencies to consider environmental factors and choose among alternatives in their decision-making processes.

In disclosing impacts, the EIS considers the proposed action's adverse impacts on the environmental setting. Because the Proposed Project would be operational in 2009 and 2014, its environmental setting is not the current environment, but the future environment. Therefore, the technical analyses and consideration of alternatives assess current conditions and forecast these conditions to 2009 and 2014 (the two analysis years that were determined appropriate for this project) for the purposes of determining potential impacts. The reasonable worst-case scenario, to be updated between the DEIS and FEIS, analyzes both the No Build and Build conditions and also includes other future developments, as identified in Chapter 2, "Land Use, Zoning, and Public Policy." The New York Yankees recently announced plans to build a new stadium on the north side of East 161st Street between River Avenue and Jerome Avenues within Macombs Dam Park, directly north of the current Yankee Stadium. Given its prominence in the neighborhood and the uncertainty of its planning status, the Yankee Stadium proposal is considered separately from the No Build condition presented in the remainder of this EIS. Because the relocation of Yankee Stadium would alter conditions in the study area, Chapter 22, "Future Conditions with a Relocated Yankee Stadium," provides an assessment of how the project could be expected to change background conditions by 2009 and 2014, and discusses any concomitant changes to the impacts identified for the Proposed Project.

Thus, the technical analyses and consideration of alternatives in Chapters 2 through 24 assess conditions today, and forecast these conditions to the future/analysis years 2009 and 2014 without and with the Proposed Project. *

A. INTRODUCTION

This analysis of land use, zoning, and public policy characterizes the existing conditions of the project site and study area; anticipates and evaluates those changes in land use and zoning that are expected to occur independently of the Proposed Project; and identifies and addresses any potential impacts to land use, zoning, and public policy associated with the Proposed Project.

To determine existing conditions and assess the potential for project-related impacts, the land use study area has been defined within a ¼-mile radius of the project site, which is the area in which the project has the greatest potential to affect land use or land use trends. Various sources were utilized to prepare a comprehensive analysis of land use, zoning, and public policy characteristics of the study area, including field surveys and land use and zoning maps.

Overall, it is concluded that the Proposed Project would not have any significant adverse impacts on land use, zoning, and public policy. The Proposed Project would introduce new commercial and recreational uses to an underutilized, dilapidated site and provide public access to the waterfront. This is consistent with City policies aimed at revitalizing the waterfront and achieving public access. The proposed rezoning of the project area from M2-1 to C4-4 would allow for the introduction of retail stores and a hotel in an area underserved by such amenities. The requested special permits relating to building height, setback, and signage would allow the proposed buildings and their accessory signs to be configured in a functional manner on a site constrained by irregular lot shapes and nearby elevated structures. Therefore, the proposed actions would result in improvements to land use in the project area and would further public policy goals.

The project site is located in the West Haven neighborhood of the Bronx on Block 2356, Lot 20; Block 2357, Lots 1 and 86; and Block 2539, part of Lots 2, 20, 50, and 60 and Lot 32.

B. EXISTING CONDITIONS**LAND USE**

The following discussion describes existing land use on the project site as well as the land use patterns and trends in the land use study area.

PROJECT SITE

The project site is located in the West Haven neighborhood of the Bronx on an approximately 26-acre parcel that is bordered by Metro North Rail Road tracks to the north, River Avenue to the east, 149th Street/Hostos Boulevard to the south, and the Harlem River to the west. The project site currently contains a mixture of low-rise commercial, industrial, and community facility uses and paved land (see Figure 2-1). The majority of the project site is occupied by six buildings that are part of the Bronx Terminal Market, and a power house building built for the Bronx Terminal Market. The buildings are partially occupied and most of the market buildings

are in a dilapidated condition. Building A, which was formerly located on the northeast portion of the site, was in very poor condition. The New York City Economic Development Corporation (NYCEDC), acting on the behalf of the Office of the Deputy Mayor for Economic Development and Rebuilding (ODMEDR) through prior arrangement with the applicant, recently required the demolition of this building because of its condition.

The site also contains the Bronx House of Detention, which is in reserve status and is currently closed, at the project site's eastern boundary, as well as Pier 4, combined Piers 2 and 3, and a portion of Pier 1 on the Harlem River. The Bronx House of Detention would be disposed first to the New York City Economic Development Corporation and then to BTM Development Partners. The elevated Major Deegan Expressway and Exterior Street/Major Deegan Boulevard (the street under the Expressway) bisect the project site, separating the piers and four of the project site buildings from the four remaining project site buildings. The site also contains paved areas that provide parking seasonally during games at Yankee Stadium and are used for truck parking when needed for the market. A farmers market is also held on the northern portion of the project site. The Oak Point Link rail connection runs on a trestle along the Harlem River parallel to the shoreline and the project site. The site is owned by the City of New York, except for one parcel on the west side of the project site that is owned by the New York State Department of Transportation.

STUDY AREA

As shown in Figure 2-2, the land use study area has been defined by a ¼-mile perimeter extending from the project site. The eastern portion of the study area is located across the Harlem River within Manhattan, with the remainder of the study area located in the Bronx. The study area is bounded roughly by 161st Street (Bronx) and Macombs Place (Manhattan) to the north, Grand Concourse to the east, West 141st Street (Manhattan) and East 144th Street (Bronx) to the south, and Seventh and Lenox Avenues to the west.

The Harlem River, which separates the Bronx from Manhattan, is a defining element of the study area. Along this section of the river, two bridges—the Macombs Dam Bridge and the 145th Street Bridge—connect the two areas. Each borough has a major thoroughfare—the Harlem River Drive for Manhattan and the Major Deegan Expressway for the Bronx—running alongside the waterway.

The study area contains a number of distinct neighborhoods. The central portion of the study area—generally south of 153rd Street, west of Gerard Avenue, and east of the Harlem River—is the heavy commercial/industrial portion. The area contains food and beverage suppliers/distributors on the outskirts of the market, surface parking lots within proximity to Yankee Stadium, self-storage facilities, warehouses, wholesale merchandise suppliers, car washes, and auto body shops.

North of the project site is Yankee Stadium and related parking facilities, as well as Macombs Dam Park, a 12-acre park with soccer fields, baseball fields, basketball courts, and lawn areas. Gerard Avenue roughly marks the boundary between the industrial and residential portions of the study area within the Bronx. Six-story residential apartment buildings line Gerard and Walton Avenues north of 153rd Street and 2- to 3-story attached residential buildings are located along Walton Avenue south of 151st Street. Eugenio Maria de Hostos Community College (commonly referred to as Hostos Community College) is the largest institutional use in the study area, and is located along Walton Avenue and Grand Concourse south of Hostos Boulevard. Other institutional uses in this portion of the study area include the post office at 149th Street

and Cardinal Hayes Memorial High School on the Grand Concourse at 151st Street, and the P.S. 31 building, which is not currently in use. Another major park in the study area is Franz Sigel Park, a 16-acre park with largely active recreational facilities, such as handball courts, tennis courts, play equipment, and passive recreational amenities, such as benches and game tables. The park is located along the Grand Concourse north of 151st Street. Garrison Playground—a 0.7-acre park—is located on the Grand Concourse adjacent to the P.S. 31 building. Retail uses in this portion of the study area are concentrated largely on the Grand Concourse, 149th Street, and 151st Street. Retail uses are primarily located in the ground floors of residential buildings and include a mix of neighborhood retail uses, such as grocery stores, cleaners, internet cafes, bars, delis, and restaurants. Additionally, Concourse Plaza, located approximately two blocks outside the study area along East 161st Street between Sheridan and Morris Avenues, provides retail shopping opportunities to the area.

The Manhattan portion of the study area, separated by the Harlem River, is largely residential. Several high-rise residential complexes define the area, including Harlem River Houses, a New York City Housing Authority development, and the private Esplanade Gardens complex. Several institutional uses, including the Fifth Avenue Armory of the U.S. Army National Guard and P.S. 200, are located in the area. Several parks are also located in the vicinity, including Colonel Charles Young Triangle, Colonel Charles Young Playground, Bill 'Bojangles' Robinson Park, and Frederick Thomas Playground. Retail uses in this portion of the study area are primarily neighborhood serving uses, such as groceries and laundries.

ZONING AND PUBLIC POLICY

PROJECT SITE

The project site is located entirely in an M2-1 manufacturing district (see Figure 2-3). M2 zoning districts are districts that serve as middle ground for light and heavy industrial areas. Performance standards in M2 districts require that certain uses located in manufacturing districts comply with standards governing noise, vibration, smoke and other particulate matter, odorous matter, toxic or noxious matter, radiation hazards, fire and explosive hazards, humidity, heat, and glare. The maximum Floor Area Ratio (FAR) for commercial and manufacturing uses in this district is 2.0.

STUDY AREA

The M1-1, M1-2, M2-1, C4-4, C8-3, R6, and R8 districts are the predominant zoning districts within the project's ¼-mile study area (see Figure 2-3).

M1 districts often serve as buffers to adjacent residential neighborhoods. Within the study area M1 districts are located in the Bronx portion of the study area between 153rd Street and the Metro North Rail Road tracks as well as between River and Gerard Avenues, south of 153rd Street. Strict performance standards apply in this light manufacturing district. M1-1 districts have maximum FARs of 1.0 and M1-2 districts have maximum FARs of 2.0.

The C4-4 district is located in the southeastern portion of the study area, both north and south of 149th Street. The district is a shopping center district with a maximum commercial FAR of 3.4 and a maximum residential FAR of 3.44. The district permits department stores, theaters, and commercial uses that serve a larger area and are located outside the central business district. The other commercial district in the study area is the C8-3 district, which is mapped both in the southwestern part of the Manhattan portion of the study area and the northern part of the Bronx

section of the study area. The C8 district is an automotive and heavy commercial services district with a maximum commercial FAR of 2.0.

The R8 district is the predominant residential zoning district in the study area, and occupies the northeastern portion of the study area in the Bronx and a portion of the study area along the Harlem River in Manhattan. This is the highest density residential zoning district mapped in the Bronx. The maximum permitted FAR is 6.02. Buildings in the district are generally taller buildings with low lot coverage, set back from the street. A small R6 district is also located in the study area. This district is appropriate for medium density housing and has a maximum FAR of 2.43.

Two special districts are located in the study area. The Special Grand Concourse Preservation District, which is mapped along the Grand Concourse in the Bronx, was established to protect the existing scale and form of development and the traditional residential character of the Grand Concourse. The special district protects the design features of certain buildings through the establishment of design guidelines for renovation or alteration. It is also intended to encourage new development that is in keeping with the scale and character of the area, by providing for street wall continuity and bulk regulations consistent with existing development. Finally, it is intended to preserve and enhance the residential character of the Grand Concourse by limiting ground floor retail and commercial uses to certain specified locations and by regulating the location of retail and commercial signage.

The second special district, a Special Planned Community Preservation District, is located in the Manhattan portion of the study area where the Harlem River Houses are located. The purpose of the Special Planned Community Preservation Districts are to preserve and protect such districts as examples of town planning or large-scale development and to preserve and protect the character and integrity of unique communities which add to the quality of urban life by their existing site plan, pedestrian and vehicular circulation system, balance between buildings and open space, harmonious scale of development, related commercial uses, open space arrangement and landscaping. The district regulations guide future development within the special districts to be consistent with the existing development.

The Bronx Waterfront Plan issued by Bronx Borough President Adolfo Carrion, Jr. in March 2004 aims at establishing and improving public waterfront access and enhancing the business environment to maximize jobs for Bronx residents. Specifically, the plan addresses developing the Bronx Terminal Market as a year-round commercial, recreational, and education center.

In addition, the New York City Department of City Planning has recently initiated a study of the Bronx waterfront of the Harlem River with the aim of improving public access to the waterfront.

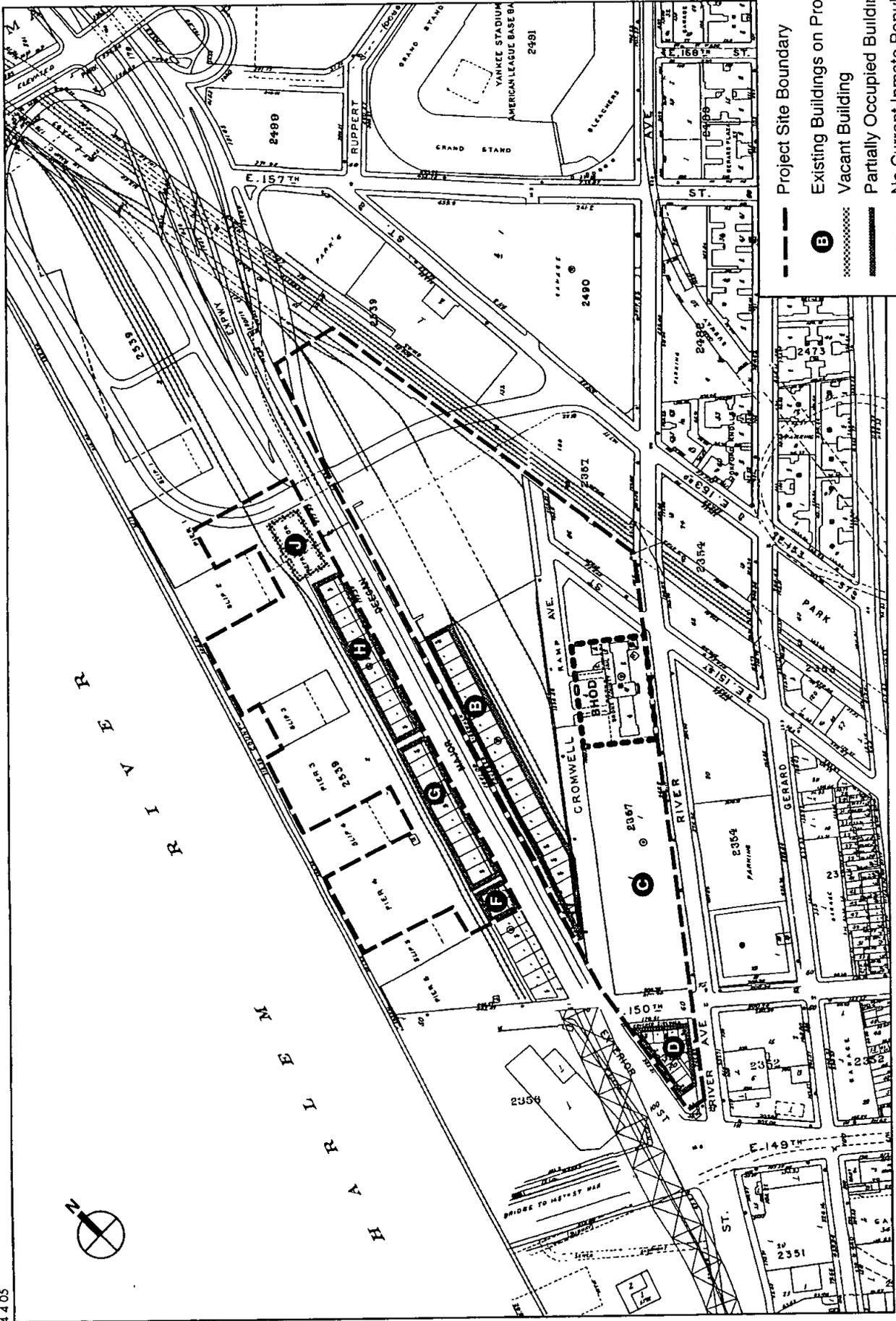
C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

LAND USE

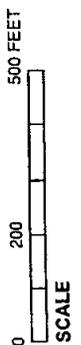
2009

Project Site

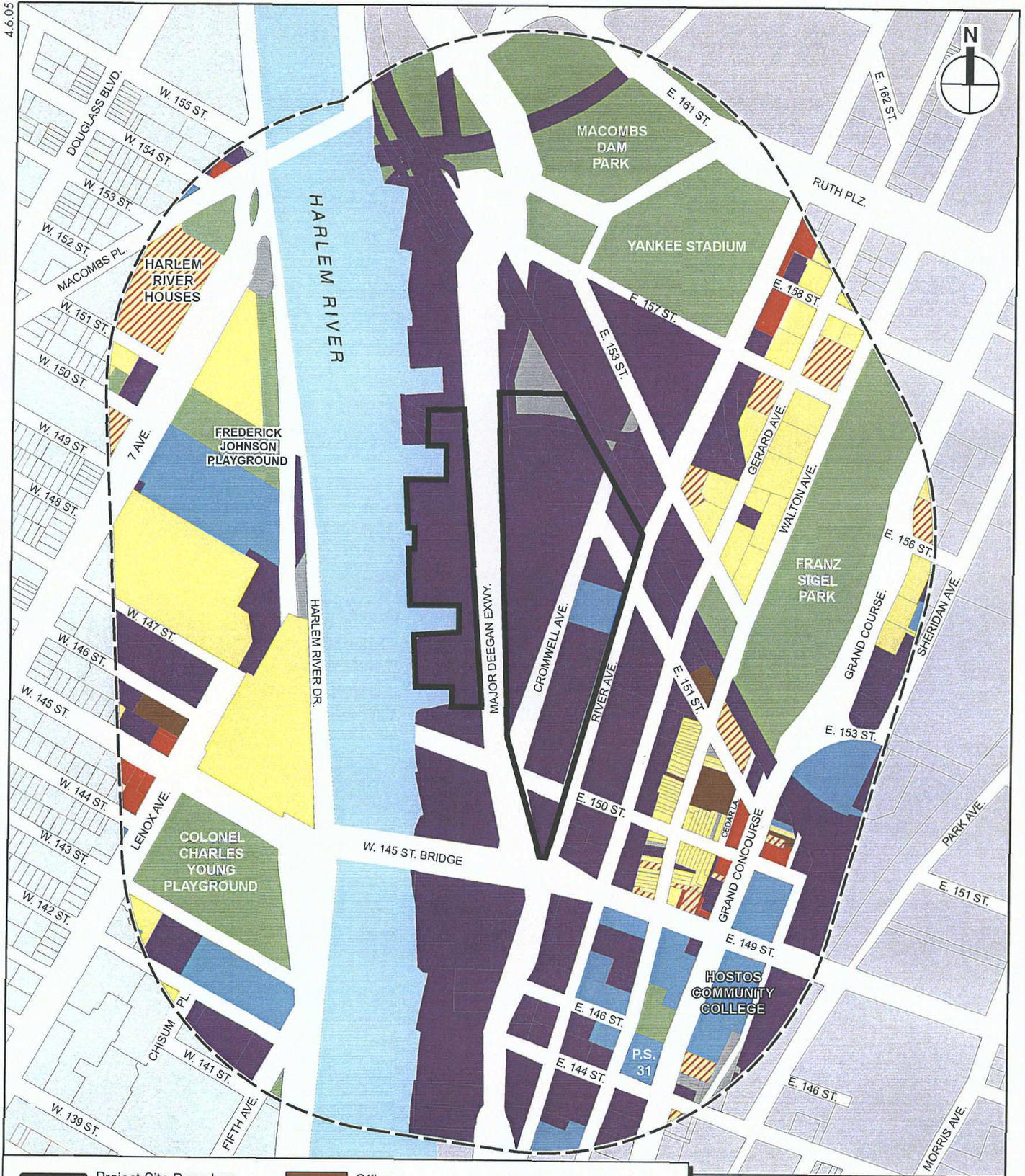
No changes to the project site are expected to occur without the Proposed Project by 2009.



Project Site Boundary
 Existing Buildings on Project Site
 Vacant Building
 Partially Occupied Building
 No Current Inmate Population



Project Site
 Figure 2-1



	Project Site Boundary		Office
	Study Area Boundary (1/4-Mile Perimeter)		Institutional
	Residential		Open Space/Recreation
	Residential (with Ground Floor Retail)		Industrial, Utilities, Transportation, Public Parking
	Commercial		Vacant Parcel
			Lots Outside of Study Area

G, H, and J) and the Bronx House of Detention do not possess any historic period archaeological research potential. These buildings are extant on the property, their construction is well documented, and no archaeological features would be expected outside of the footprint of the buildings themselves.

In addition, the areas now containing buildings associated with the Bronx Terminal Market and the Bronx House of Detention should be considered completely disturbed with regard to potential archaeological resources. Most of the market buildings erected in 1934-1935 are set on deep concrete pilings. The piles were said to be an average of 46 feet in length; considering bedrock ranges from ca. 30-60 feet below grade in the areas where the buildings were constructed, it can be inferred that these pilings were extended down as far as the top of the bedrock. The vast number of piles (approximately 1,290) sunk in the APE to support Buildings B, F, G, and H suggests a high degree of disturbance beneath these buildings. Although complete data are not available concerning specific construction of the former Building A, and Buildings C and J, considering the size and load bearing requirements of these structures, it can also be inferred that they, too, rest on deep pilings driven to bedrock. Limited construction plans were available at the New York City Department of Buildings for the original Bronx House of Detention; according to these documents this structure also rests on pilings driven to bedrock.

There appears to be little historic period archaeological research value associated with the buildings formerly located on the piers within the APE. In general, the activity that occurred within these buildings would not have left a significant archaeological record. Many of the buildings were used only for storage; those that contained some sort of manufacturing entity would have used equipment and other materials within the buildings that have since been removed from the property. Although a number of the former building foundations remain on the ground surface in the form of concrete slabs, there appears to be little archaeological data that could be gleaned from these features. The piers and slips within the APE were built in the early 1890s. Their construction appears to follow a standard template for these types of resources, examples of which are found throughout the New York Harbor area by this period. The ubiquity of these types of piers and bulkheads, combined with their deteriorating condition, suggests little historical archaeological research value. In summary, the historic period archaeological sensitivity for the project APE is low.

ARCHITECTURAL RESOURCES

Table 7-1 summarizes the known and potential architectural resources within the project site and study area.

PROJECT SITE

Known Resources

OPRHP has determined that the Bronx House of Detention and the buildings of the Bronx Terminal Market (Buildings B, D, F, G, H, and J) are eligible for listing on the State and National Registers of Historic Places. These buildings are described in detail below and identified on Figure 7-1. The other building on the site (Building C) is not eligible for S/NR listing. In a letter dated October 25, 2005, LPC made a finding of no architectural concerns for the project site, and deferred to OPRHP regarding determinations of architectural significance.

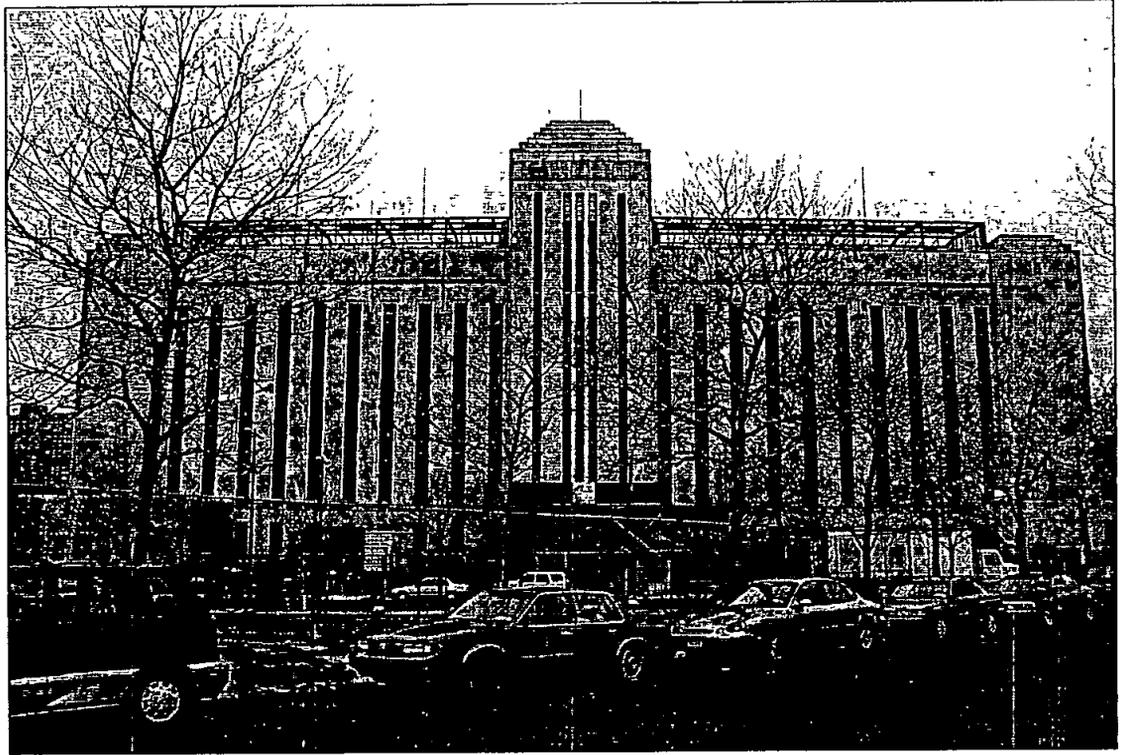
Table 7-1
Architectural Resources within Project Site and Study Area

Resource Name	Block/Lot	NYCL	S/NR-Listed	S/NR-Eligible
KNOWN RESOURCES				
Project Site				
Bronx House of Detention	2357/1			X
Bronx Terminal Market (Buildings B, D, F-H, and J)	2356/20 2539/2, 32			X
Study Area				
145th Street Bridge	N/A			X
POTENTIAL RESOURCES				
Study Area				
691 Gerard Avenue/ 109 153rd Street	2482/1, 60			
690 Gerard Avenue	2473/1			
Note: See Figure 7-1 for reference. NYCL = New York City Landmark S/NR-listed = Listed on the State and National Registers of Historic Places S/NR-eligible=Determined eligible for listing on the State and National Registers of Historic Places				

The Bronx House of Detention (formerly the Bronx County Jail), located at 653 River Avenue at the southwest corner of 151st Street, was constructed in 1938 as a Work Progress Administration (WPA) project. The architect of the building is Joseph H. Freeland, who also designed the nearby Bronx County Building (also known as the Bronx County Courthouse), the Museum of the City of New York, and the French Institute Building. The Bronx House of Detention is an 8-story, 260-foot-long rectangular form with small pavilions at each end and a 10-story central pavilion (see Photograph 1 of Figure 7-2). The pavilions have truncated, stepped pyramidal roofs; at the top of the central pavilion is a wide stone frieze with classical bas relief ornamentation. The building is faced with gray brick and stone. Its façade is articulated by the repetition of long, vertical window openings which rise uninterrupted above the base of the building. Netting can be seen surrounding recreational facilities on the roof. An 8-story addition to the building, constructed in 1963, was built perpendicular to the original structure on its west façade. The main addition is also faced in gray brick; in contrast to the original structure, it has long horizontal bands of windows (see Photograph 2 of Figure 7-2). The top portion of the addition appears to be clad in turquoise metal siding. There are also small one-story additions at each side of the northern end of the original structure; these are faced in gray brick but have no decorative elements. The building is currently surrounded by several trailers and temporary structures.

The S/NR-eligible buildings of the Bronx Terminal Market are Buildings B, D, F, G, H, and J. The former Building A was not considered a contributing element to the Bronx Terminal Market complex because of its failing condition, and has since been demolished.

Building B is a complex of 19 small, connected spaces within a two-story reinforced concrete structure on the east side of Exterior Street north of 150th Street. According to the *New York Times*, Building B was constructed between October 1, 1934 and May 1, 1935, at a cost of \$570,000; according to Helen Tangires, construction funds, labor, and architectural services for Building B (and the other Market buildings constructed at the same time) were provided by the



Bronx House of Detention, main facade 1



Bronx House of Detention, rear facade with additions 2

Civil Works Administration¹ Building B was designed by Samuel Oxhandler with John D Churchill and Albert W Lewis. Little is known about Oxhandler and Churchill's other works, however, Albert W. Lewis is known to have designed 477 Fifth Avenue and 250 Park Avenue in Manhattan. The design of the building mimics the former Building A and Building J by creating a stucco version of the brick corbel course found at the top of those buildings. Other than this feature, the building does not have any decorative elements. The southern end of the building is angled to meet the intersection of Exterior Street and Cromwell Avenue (see Photograph 3 of Figure 7-3). There are large industrial sash windows at the second floor, and cantilevered canopies projecting over the loading docks; there were also once railroad sidings at the eastern side of the building (see Photograph 4 of Figure 7-3). Building B was connected with the refrigeration plant and power house in Building J. The building originally was painted a light yellow color, but today is mostly unpainted. The window openings at the second floor have been sealed with concrete block or other materials; some of the entrances at the ground floor are also sealed off.

Building D is a 2-story stucco-clad building constructed in 1934-35 as part of Mayor LaGuardia's expansion of the Bronx Terminal Market. It is located at the southeast corner of the Bronx Terminal Market site, at the corner of 149th Street and Exterior Street. According to the *New York Times*, Building D was the Bronx Terminal Market's flagship structure, and was designed to serve as a bank, restaurant, and a hotel for farmers. It is a small, polygonal building similar in style to Buildings B, F, G, and H, and has "Bronx Terminal Market, City of New York, 1935" painted in large, Art Moderne lettering at its southern corner (see Photograph 5 of Figure 7-4).

Buildings F, G, and H are located on the west side of Exterior Street. Buildings F, G, and H were built at the same time as Buildings B and D, and are similar in design and condition. Building F contains 8 connected spaces, Building G contains ten connected spaces, and Building H contains 11 connected spaces, for a total of 29 connected spaces between the three buildings (see Photograph 6 of Figure 7-4).

Building J is a 2-story, red brick power house that was built in 1925 in support of the original Bronx Terminal Market cold-storage warehouse (the former Building A). The building housed the Market's machine shop and facilitated the manufacture and distribution of ice to the former Building A and, later, to the other Market buildings. It has crenellated tower elements at the two southern corners and two tower elements just in from the north façade of the building on its west and east facades (see Photograph 7 of Figure 7-5). There is a small room above each tower, which has arched windows and is capped by a tiled, hipped roof. There are also arched, multi-paned windows at the first floor. Similar to the former Building A, Building J has an arched corbel course of brick above the second floor. An exterior iron stair leads to an entrance at the second floor at the south façade of the building. There is a small pediment above the center bay of the east façade. The window openings at the second level have been sealed with concrete block. A metal awning above the first floor of the east and north facades exists only in portions.

¹ Tangires, Helen. "Wholesale Produce Markets and the Agricultural Landscape of New York City, 1912-1945" Paper presented at the 57th Annual Meeting of the Society of Architectural Historians, April 15, 2004, Providence, Rhode Island

STUDY AREA

Known Resources

The 145th Street Bridge (S/NR-eligible), a steel truss wing bridge which connects 145th Street in Manhattan to 149th Street in the Bronx, was also designed by Alfred Pancoast Boller (see Photograph 8 of Figure 7-5). The bridge was constructed in 1905. The approaches are constructed of reinforced concrete and steel.

There are four known architectural resources located just outside of the project study area, along the Grand Concourse and spanning the Harlem River. These are Public School 31, the Bronx Post Office, the Mott Avenue Control House, and the Macombs Dam Bridge and 155th Street Viaduct. Public School 31 (NYCL, S/NR-eligible) is located at 425 Grand Concourse (see Photograph 9 of Figure 7-6). It was designed by C.B.J. Snyder in 1897-1899, during the early years of his term as Superintendent of School Buildings for the Board of Education of New York. The building represents an important step in the development of the Collegiate Gothic style as applied to public school architecture in New York City. The Bronx Post Office (NYPL, S/NR-listed), also known as the General Post Office or the Bronx Central Annex, is located at 558 Grand Concourse (see Photograph 10 of Figure 7-6). It was designed by Thomas Harlan Ellett under the U.S. Treasury Department's supervising architect, Louis A. Simon, and was constructed in 1935-1937. It is a large, gray brick and white marble building rising above a granite terrace. There are WPA murals by Ben Shahn in the lobby, on the theme of America at work. The Mott Avenue Control House (S/NR-listed) is located at the southwest corner of 149th Street and Grand Concourse (see Photograph 11 of Figure 7-7). It was built for the original IRT and is no longer in use. Its main (north) façade is buff brick, with a classical modillioned terra cotta cornice above a terra cotta "Mott Street Station" plaque flanked by panels decorated with scepters, tied with ribbons, supporting spheres. The other facades are stuccoed; the rear façade is enlivened by modern incompatible ceramic tiles and light fixtures. The Macomb's Dam Bridge and 155th Street Viaduct (NYCL, S/NR-eligible) spans the Harlem River between West 155th Street in Manhattan and Jerome Avenue and East 162nd Street in the Bronx (see Photograph 12 of Figure 7-7). It is located on the site of a dam erected in 1813 by Robert Macomb; the waters of the artificial pond operated his mill. The bridge was designed by Alfred Pancoast Boller and constructed in 1890-1895. Formerly known as the Central Bridge, it is the oldest metal truss swing bridge and the third-oldest bridge in the city.

Potential Resources

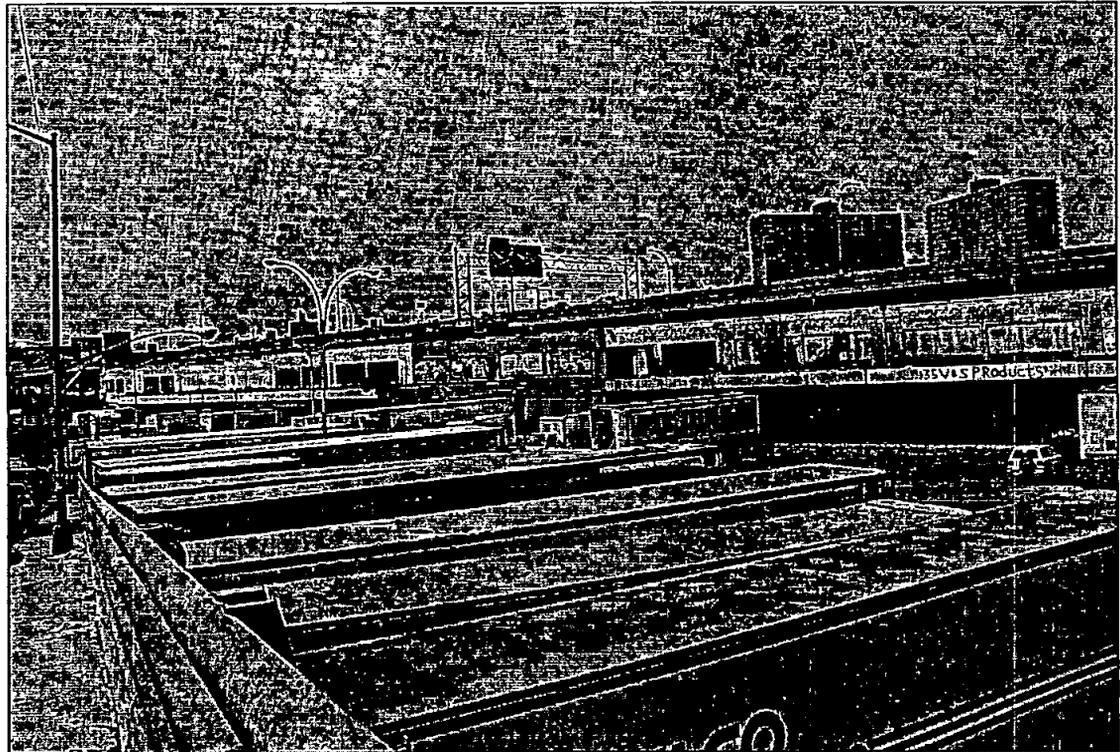
There are two potential architectural resources located within the project study area. Yankee Stadium, which is located within the project's study area, was previously determined not eligible for S/NR listing by OPRHP.

The Oxford Knolls, located at 691 Gerard Avenue/109 153rd Street, is a complex of three 6-story apartment buildings that spans the full block of 153rd Street between River and Gerard Avenues. The buildings are clad in coarse red brick and built in a mock Tudor style, with half-timbering, steeply pitched gables, crenellated parapets, and a rusticated stone base and details (see Photographs 13 and 14 of Figure 7-8). The buildings were constructed ca. 1930; the architect(s) are unknown.

690 Gerard Avenue, located at the northeast corner of Gerard Avenue and East 153rd Street, was built in 1936. It is a 6-story Art Deco apartment building similar in style to the many Art Deco apartment buildings constructed along the Grand Concourse during this period (see Photograph



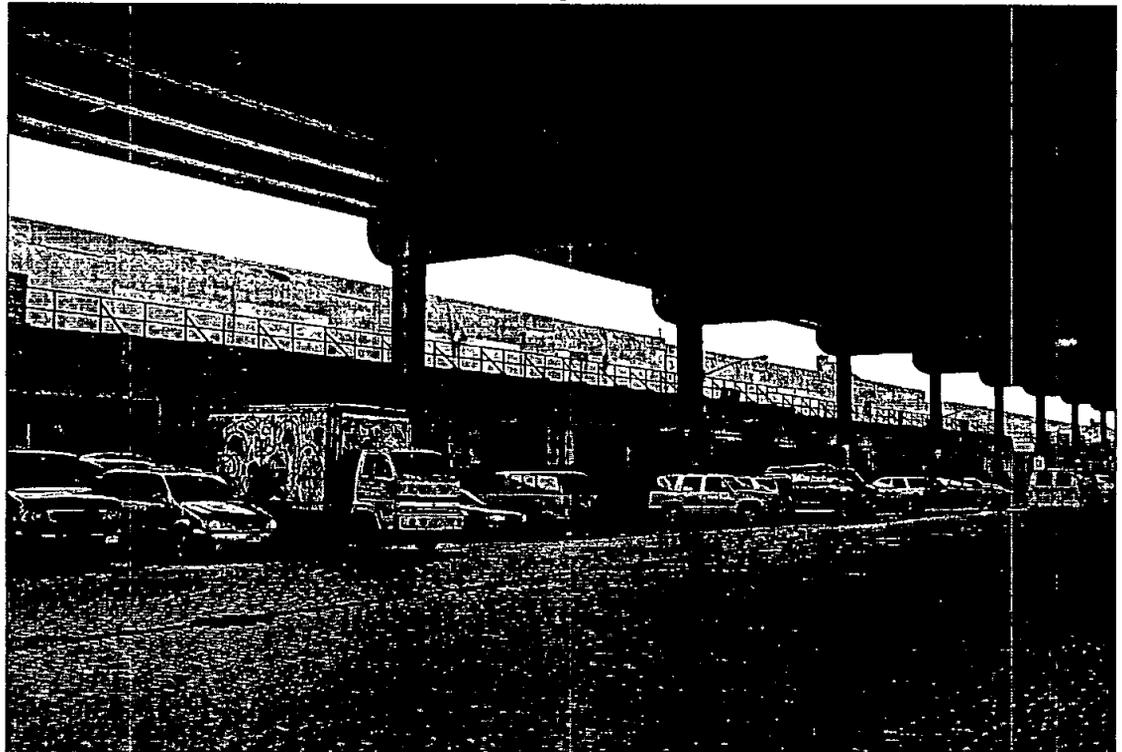
Bronx Terminal Market, Building B 3



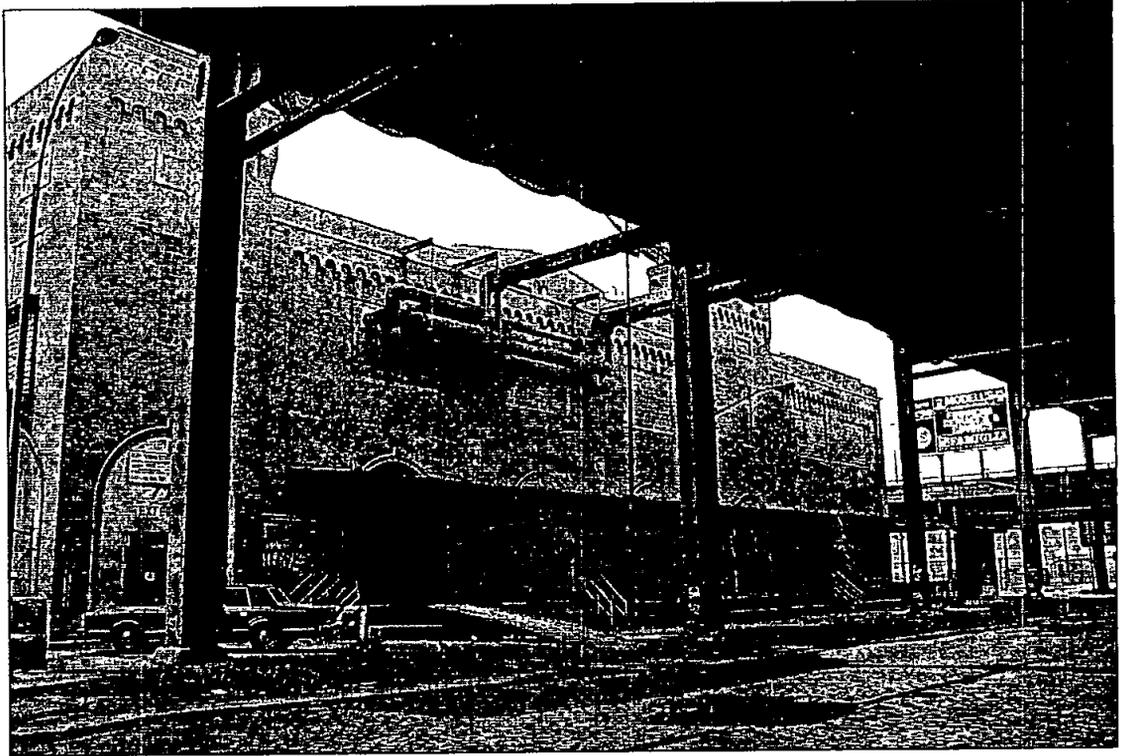
Bronx Terminal Market, Building B (east facade) 4



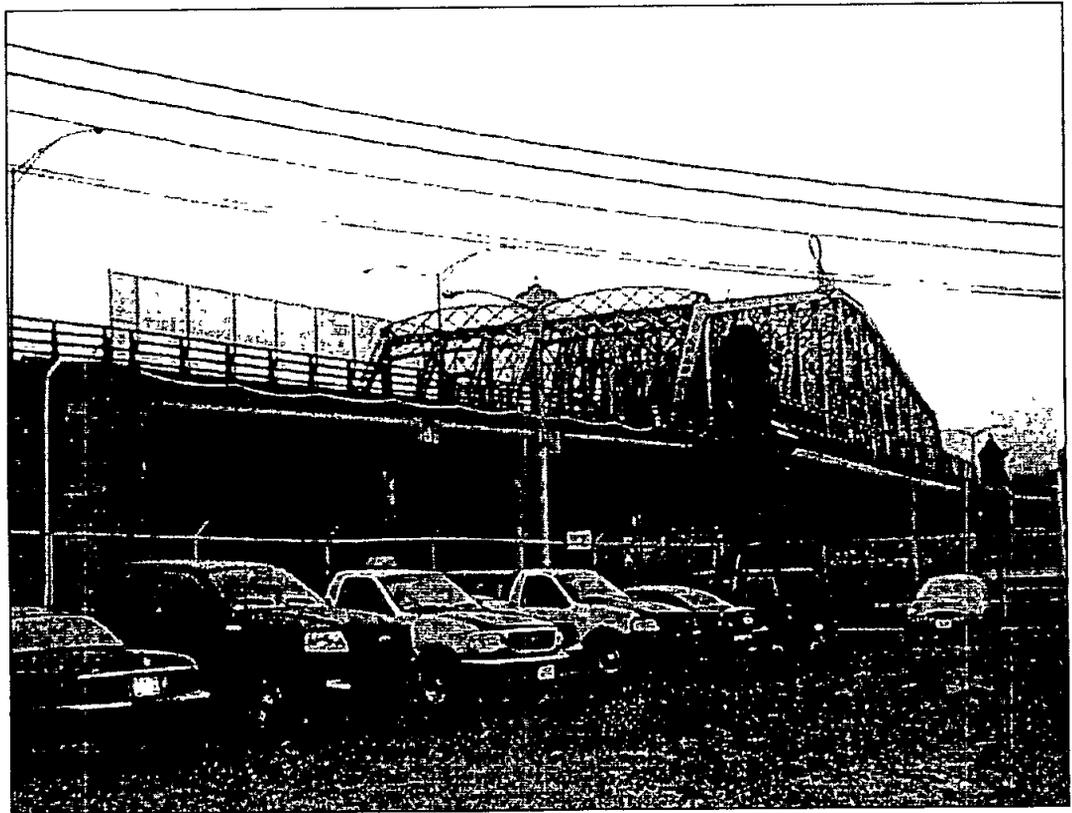
Bronx Terminal Market, Building D 5



Bronx Terminal Market, Buildings F/G/H 6



Bronx Terminal Market, Building J 7



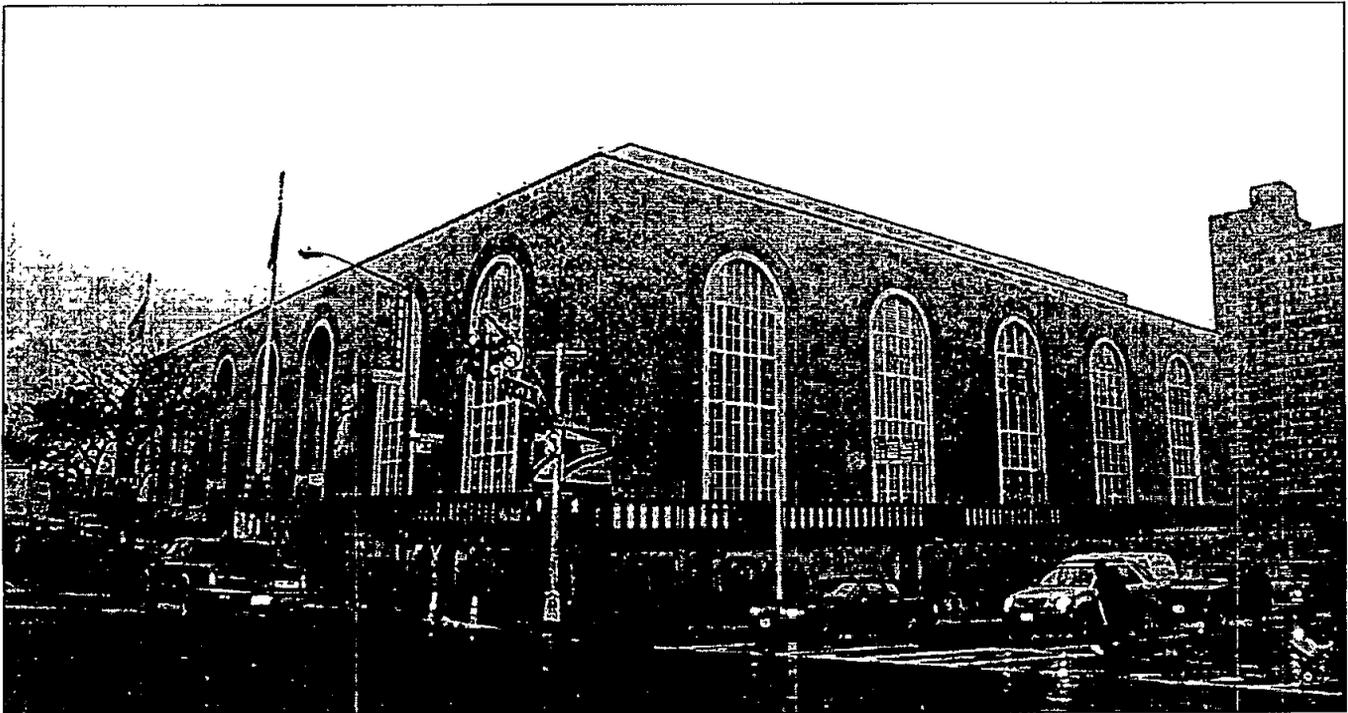
145th Street Bridge 8

**Historic Resources in Project Site
and Study Area**

Figure 7-5



P.S 31 9



General Post Office 10

**Historic Resources in
Surrounding Area**

Figure 7-6



Mott Avenue Control House 11



McCombs Dam Bridge 12



Oxford Knolls, view from Gerard Avenue and East 153rd Street 13



Oxford Knolls, view from River Avenue and East 153rd Street 14

**Potential Historic Resources in
the Study Area**

Figure 7-8

15 of Figure 7-9). It is faced in light-colored brick and accented with darker-colored brick in geometric patterns. The building's windows are separated vertically by dark and light brick laid in a vertical striping pattern.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

2009

There are no other projects planned for construction on the project site by the year 2009. Without the Proposed Project, the project site is expected to remain in its current use.

Two institutional projects are planned for the study area by 2009. The New York City Department of Homeless Services has plans for a new 60,000 square feet (sf) Emergency Assistance Unit at 151st Street and Walton Avenue to replace the existing facility at this location. Hostos Community College has plans to renovate a 125,000 gsf academic building, and has future capital investment projects that are pending budget allocation. Finally, outside the study area, Lincoln Hospital is in the process of constructing several new facilities, including a labor and delivery center and an MRI unit. Other improvements at Lincoln Hospital that are in the planning and/or design phase include a redesign of the emergency room, a new women's option center, and an upgrade of the existing parking garage facility. The projects planned for the area are not expected to affect any known or potential historic resources.

One major project proposed within the study area that could be developed by 2009 is the construction of a new stadium for the New York Yankees, in the portion of Macombs Dam Park located north of the existing stadium across 161st Street. The potential historic resources impacts of that No Build project are discussed in Chapter 22, "Future Conditions with a Relocated Yankee Stadium."

It is possible that one or more of the resources on the project site or potential resources within the study area identified above may be found eligible for listing on the Registers or designation as a New York City Landmark and may be listed or designated in the future.

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

2014

There are no other projects planned for construction on the project site by the year 2014.

A widening of the Major Deegan Expressway is planned for completion by 2011–2012. This could require a new right-of-way easement in the area of the existing Buildings, B, F, G, and H.

Since New York City will not be hosting the 2012 summer Olympics, the area south of the project site on the Harlem River that had been proposed as the velodrome venue will be considered for other possible uses.

E. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

ARCHAEOLOGICAL RESOURCES

2009

As described above, portions of the APE at the northern end of the project site contain the potential for precontact archaeological resources to be located beneath the layer of peat found under fill deposits and river mud. However, project specifications indicate that future excavation would only extend to the depth of these potential resources (i.e., to below the peat layer) in the form of building pilings. Due to the depth of the potential precontact resources and the difficulty in accessing the potentially sensitive strata, which are well below the water table, no archaeological field investigations are recommended for precontact resources at this time. Full excavation for the proposed buildings would only extend approximately three to four feet below grade, for the construction of pile caps within the proposed buildings' footprints; this depth would not reach the peat layer or below. Future utilities planned for the site would not be located any deeper than existing utilities on the property. The area of the project site that would require deeper excavation as part of the project does not contain a layer of peat, being just at the edge of the original shoreline and not within a former marshy area, and has been previously disturbed from earlier construction. Therefore, any potential precontact period archaeological resources in this area would already have been destroyed, and no archaeological field investigations are recommended.

Historic period archaeological sensitivity for the project APE is low, and no archaeological field investigations are recommended for historic period resources. Therefore, the project is not expected to have any significant adverse impacts on archaeological resources.

2014

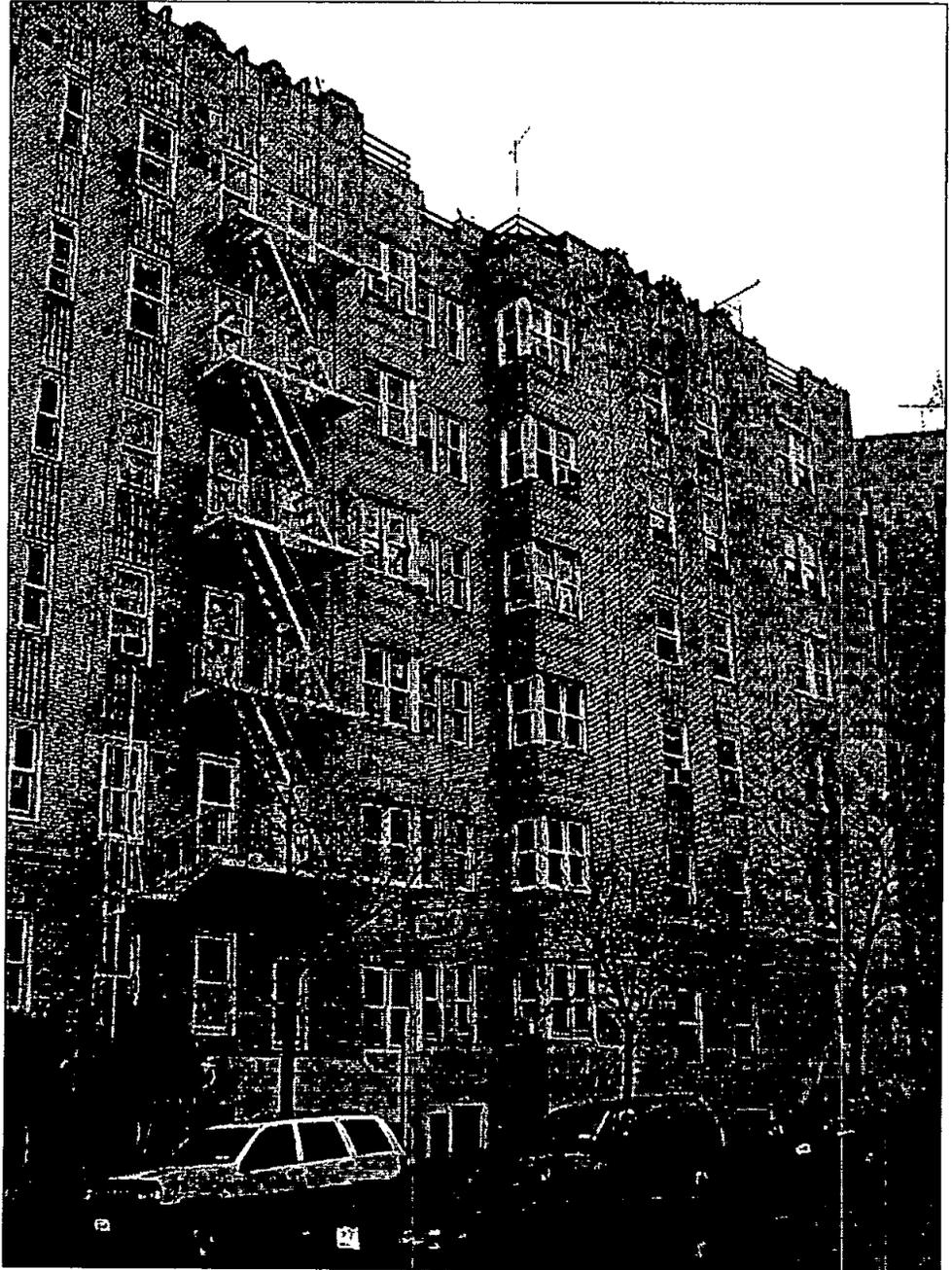
The future hotel site falls within the area of precontact archaeological sensitivity. While construction specifications for the proposed hotel have not yet been determined, it is expected that the excavation for the hotel would be consistent with that of the other proposed buildings. Therefore, the project is not expected to have any significant adverse impacts on archaeological resources. If future project specifications for the proposed hotel indicate it would require deep excavation instead (i.e., excavation that would penetrate/impact the peat layer or below the peat layer), then archaeological field investigations or monitoring for the recovery of precontact resources would be undertaken.

ARCHITECTURAL RESOURCES

2009

Project Site

All of the buildings on the project site would be demolished for the Proposed Project by 2009. The demolition of the buildings identified as historic resources—Buildings B, D, F, G, H, and J,



690 Gerard Avenue 15

**Potential Historic Resources in
the Study Area**

Figure 7-9

and the Bronx House of Detention—would constitute a significant adverse impact. Measures to mitigate the effect of the proposed project on historic resources are being developed in consultation with OPRHP. As discussed in Chapter 23, “Mitigation,” the mitigation measures are anticipated to include recording Buildings B, D, F, G, H, and J and the Bronx House of Detention through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative; publishing a pamphlet describing the historical development and significance of the Bronx Terminal Market; and creating interpretive displays or markers on the site illustrating the Market’s history.

Study Area

The project site is located far enough away (i.e. more than 90 feet) from the known and potential historic resources in the study area (the 145th Street Bridge, 691 Gerard Avenue/109 153rd Street, and 690 Gerard Avenue) not to have any direct, physical effects on these resources from ground-borne vibrations or other potential construction-related issues.

The new, modern development on the project site would be expected to alter the context of the historic resources in the surrounding area. However, these resources already exist in an environment that is predominantly industrial, and this change is not considered a significant adverse impact. In addition, the bulk of the project development would be somewhat less noticeable from the resources along the Grand Concourse, which is at a higher elevation than the project site. While the project site buildings would be more noticeable from the Macombs Dam and 145th Street Bridges, they would not block views from those bridges to any historic resource. The Proposed Project would provide new views to the historic bridges spanning the Harlem River, by providing public access to the project site waterfront in the form of a public open space and waterfront esplanade.

2014

Project Site

There are no historic resources on the area of the project site to be developed as a hotel by 2014, and there would be no historic resources on the remainder of the project site by 2014. Therefore, the development of the proposed hotel would not affect any historic resources on the project site.

Study Area

The proposed hotel site is located far enough away (i.e. more than 90 feet) from the known and potential historic resources in the study area not to have any direct, physical effects on these resources from ground-borne vibrations or other potential construction-related issues. The development of a new, modern hotel on the project site would be expected to alter the context of the historic resources in the surrounding area. However, these resources already exist in an environment that is predominantly industrial, and this change is not considered a significant adverse impact. *

A. INTRODUCTION

This chapter considers the potential for the Gateway Center at the Bronx Terminal Market project to have significant adverse effects on urban design and visual resources.

As defined in the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, urban design components and visual resources determine the “look” of a neighborhood—its physical appearance, including the size and shape of buildings, their arrangement on blocks, the street pattern, and noteworthy views that may give an area a distinctive character. The following analysis addresses each of these characteristics for existing conditions and the future without and with the proposed actions for the years 2009 and 2014, when the two phases of the Proposed Project are expected to be completed. The study area for urban design and visual resources is defined as extending a ¼-mile from the boundary of the project site; however, the analysis will also consider views across the Harlem River from Manhattan.

The following analysis concludes that the Proposed Project would not have a significant adverse effect on the area’s urban design and visual resources. The project would substantially improve the condition of the Harlem River waterfront and create a new amenity in the form of a public open space and waterfront esplanade. The demolition of the project site buildings could create new views to visual resources; however, the construction of the proposed buildings could eliminate other views from the project site or the surrounding area. The Proposed Project is expected to enhance the vitality of the project site and surrounding area by increasing access to and landscaping and activity on the project site. Although the Proposed Project will include the creation of buildings that are taller and bulkier than most of the existing buildings, these changes are not considered to be adverse, as they would improve the visual quality of the site and would be compatible with the bulk and use of buildings in the surrounding area.

B. EXISTING CONDITIONS

PROJECT SITE

URBAN DESIGN

The project site is approximately 26 acres in size and is located in the West Haven section of the Bronx. The project site is bounded by the Metro North Rail Road to the north, River Avenue to the east, 149th Street to the south, and the Harlem River to the west. The Major Deegan Expressway and Exterior Street, also known as Major Deegan Boulevard, bisect the project site. (see Figure 8-1). The project site is currently occupied by seven low-scale warehouse buildings (Buildings B, C, D, F, G, H, and J) and the Bronx House of Detention, as well as paved areas for parking. (A six-story refrigerated warehouse building on the project site, Building A, was recently demolished.) The low-scale warehouse buildings are part of the Bronx Terminal Market, a wholesale food market. The paved areas provide truck parking space for the market

when needed, as well as parking space for events at Yankee Stadium, which is located approximately 400 feet from the northern end of the project site. The northern portion of the project site, north of the former Building A and the Major Deegan Expressway ramp, is the site of a farmers market on weekdays and serves as additional parking space during Yankee games.

The Bronx House of Detention is an 8-story, rectangular building with small pavilions at each end and a 10-story central pavilion. The building is faced with gray brick and stone and long columns of vertical windows run uninterrupted above the base of the building. An 8-story addition to the building is perpendicular to the original structure on its west façade. It is also faced in gray brick and has long horizontal bands of windows. Several trailers and temporary structures are also located on the building's site. As the Bronx House of Detention is in reserve status and is currently closed, it has taken on a derelict and abandoned look (see Photograph 1 of Figure 8-2).

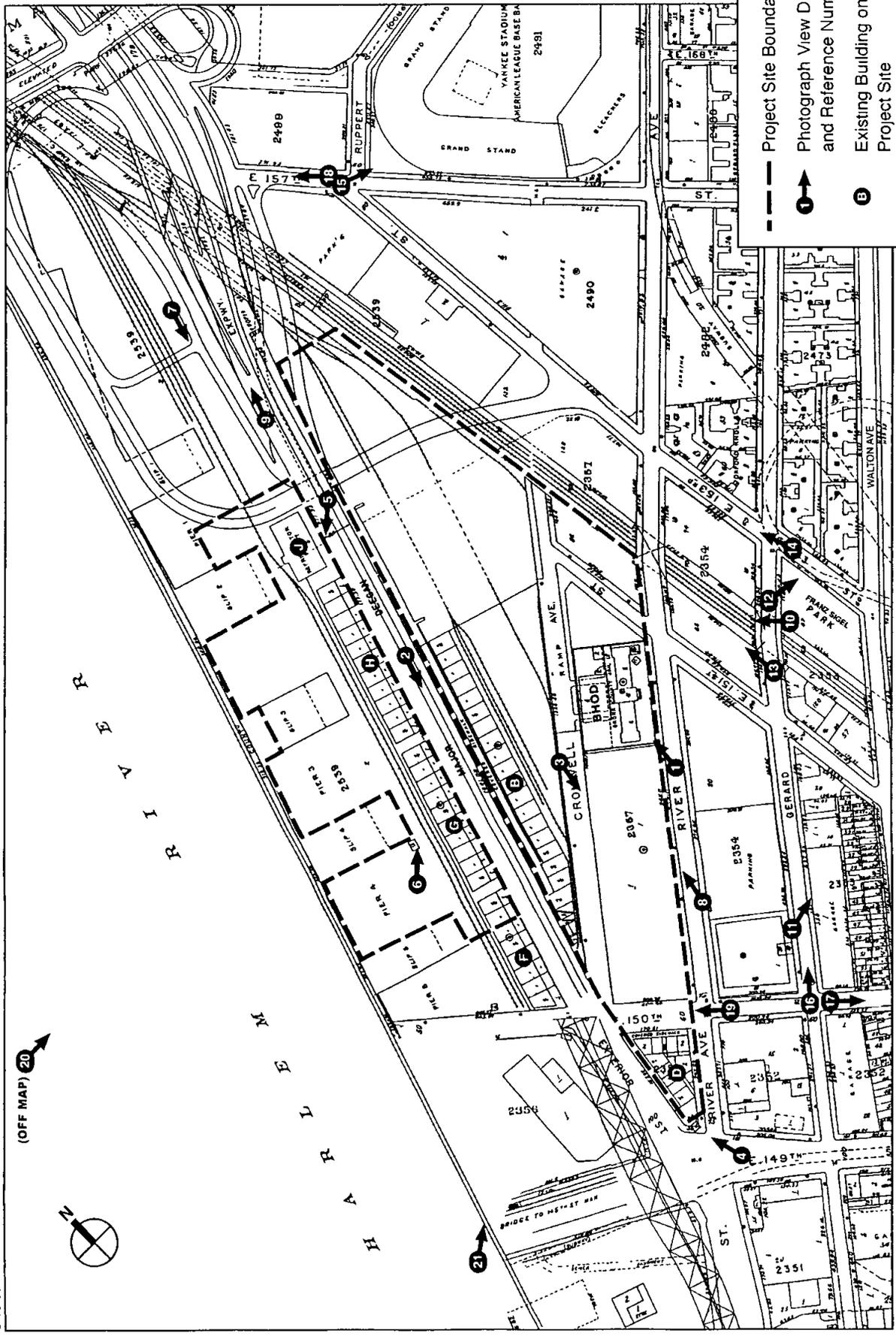
Buildings B, F, G, and H are similar in form, decoration, and massing. Buildings F, G, and H line the west side of Exterior Street north of East 150th Street, and Building B is located on the east side of Exterior Street north of its intersection with Cromwell Avenue. Each structure comprises a group of small, connected spaces within a reinforced concrete structure. These 2-story buildings are unpainted and have few decorative elements beyond a stucco corbel course running along the top (see Photograph 2 of Figure 8-2). Large openings covered with metal grates are on the first floor, while large, multi-paned rectangular window openings are on the second floor. The second floor windows have been sealed with a variety of materials, mainly concrete block. The buildings are built to the street line, are in fair condition, and are partially occupied. They are painted with advertising signs indicating the nature of their use as wholesale food market buildings. Small spaces between the buildings along the west side of Exterior Street are not landscaped and contain garbage and other debris, adding to the industrial and dilapidated feel of the area. Metal walkways placed at the second story level connect the buildings.

Building C, located just south of the Bronx House of Detention, is a 1-story brick building with large, paired openings. It is unpainted and has little decoration beyond a red advertising sign which reads "Cuba Tropical." The building is rectangular in form and extends the length of the block between Cromwell and River Avenues and north from East 150th Street to the Bronx House of Detention. With few ground-floor openings, this creates a long streetwall (see Photograph 3 of Figure 8-3).

Building D is a 2-story stucco building located at the southeast corner of the project site, at the intersection of East 149th and Exterior Streets and River Avenue. It is a small, polygonal building with "Bronx Terminal Market, City of New York, 1935" painted in large lettering at the top of the southeast corner of the building (see Photograph 4 of Figure 8-3). It is built to the street line, is in fair condition, and is partially occupied.

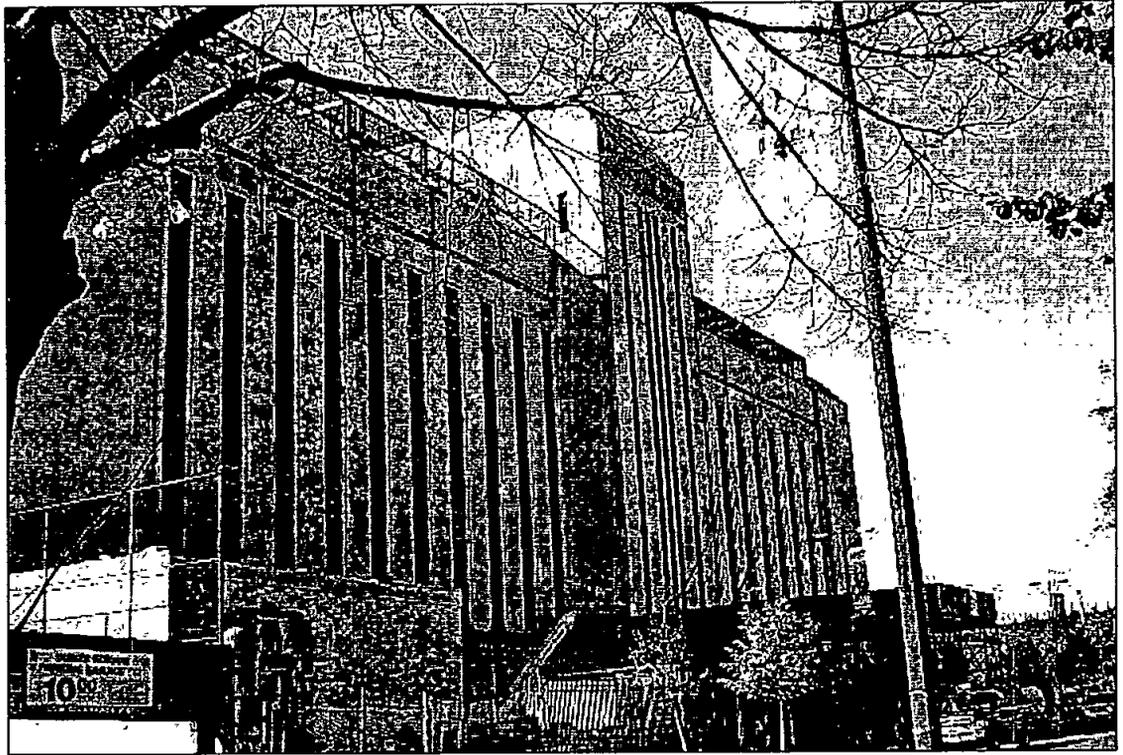
Building J, built as a power plant for the former Building A, and located on the west side of Exterior Street at the entrance/exit ramps for the Expressway, is currently partially occupied as a site manager's office. This rectangular building has a 3-story central pavilion flanked by 2-story end pavilions and is clad in red brick. Large arched openings are placed on the first story while large square openings are located on the second story. All of the openings are covered in either concrete or cement brick. Building J is set back a bit from the street line, and views to it are partially obscured by the elevated Expressway. It is covered with graffiti on the first floor (see Photograph 5 of Figure 8-4).

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Urban Design and Visual Resources
Figure 8-1

GATEWAY CENTER @ BRONX TERMINAL MARKET



View of the Bronx House of Detention from River Avenue, facing north 1



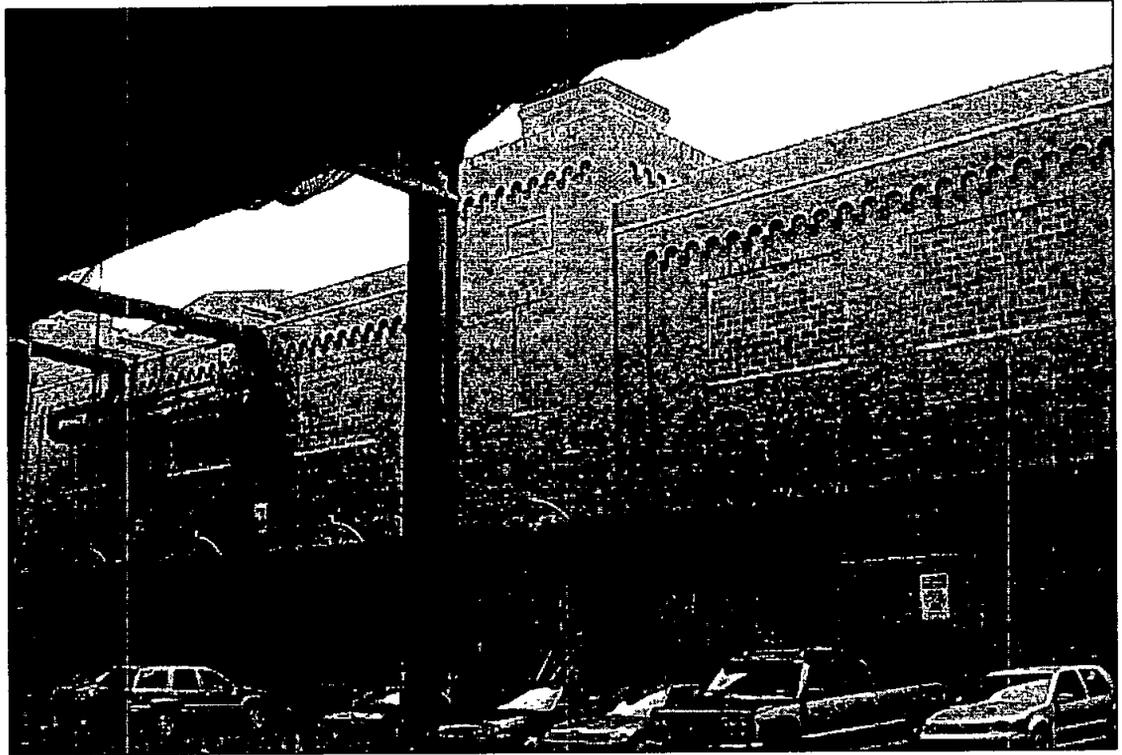
Exterior Street, view south from northern portion of project site 2



Building C, view south on Cromwell Avenue 3



Building D, facing west from northeast corner of East 150th Street and River Avenue 4



Building J, view west from Exterior Street 5



Area west of Buildings F/G/H, view north 6

Buildings F, G, H, and J are adjacent to piers on the Harlem River. The area of the piers immediately west of the buildings is currently used for delivery truck parking. The piers are not easily accessed, and views to the waterfront from the piers are blocked by the trucks, metal fencing, and concrete traffic barriers. The piers look rundown, adding to the degraded appearance of the project site (see Photograph 6 of Figure 8-4).

The project site is dominated by the presence of an elevated structure, the Major Deegan Expressway, which divides the western and eastern sections of the project site (see Photograph 8 of Figure 8-5). While the Expressway is elevated, it is located at a level low enough to block views to and from the site. In addition, entrance and exits ramps for the Expressway are located within the boundaries of the project site and affect both vehicular and pedestrian traffic by creating intersections which are difficult to cross (see Photograph 7 of Figure 8-5)

The streets within the project site are arranged in an irregular pattern with some streets, such as East 151st Street, cutting through the site at a diagonal and terminating upon their intersection with other streets. Some of the streets are also unpaved and/or in poor condition. Exterior Street is paved with Belgian block, which is somewhat covered by blacktop. Cromwell Avenue is completely paved with Belgian block. These streets are both in fair condition; the paving is worn down in some parts, exposing the Belgian blocks, and in other parts the blocks have come loose or are broken. There are unused, partially obscured railroad tracks running parallel to the market buildings west of Buildings F, G, H, and J and east of Building B. The sidewalks are only slightly elevated and in some points they are almost flush with the ground. Often delivery trucks and vans are parked on them, making them unusable for pedestrian traffic. Running along the western edge of Building B and the eastern edges of Buildings F, G, and H is a covered walkway, approached by a set of three steps. Delivery trucks and vans unload here and often block the walkways.

The topography of the western portion of the project site is relatively flat; the eastern portion of the project site slopes upwards towards River Avenue, particularly near East 151st Street. The condition of the streets, the irregular street pattern, and the elevated Expressway structure limit the pedestrian accessibility and experience on the project site. In addition, the project site is generally inaccessible to the public due to its industrial use and lack of amenities, as well as the presence of large delivery trucks which frequently pass through the streets. There is little to no landscaping or vegetation on the site, adding to its somewhat degraded appearance.

VISUAL RESOURCES

The Harlem River is generally visually inaccessible due to the presence of the elevated Expressway and the project site buildings. In addition, the limited views to the riverfront that exist are impeded by the Oak Point Link rail connection, which runs on a trestle along the Harlem River parallel to the shoreline and the project site.

From certain sections of the southern portion of the project site the 145th Street Bridge is visible. Parts of the Macombs Dam Bridge are somewhat visible from the northern section of the study area. Views of these two resources are, for the most part, hampered by the presence of the elevated Expressway and the project site buildings.

Yankee Stadium and the Bronx House of Detention are visual landmarks, and are visible from various points on the project site. Yankee Stadium is visible from the project site along River and Cromwell Avenues; elsewhere, the elevated Expressway and existing buildings block views of it. The Bronx House of Detention is also mainly visible along Cromwell and River

Gateway Center at Bronx Terminal Market DEIS

Avenues, though often it is only the western (rear) elevation that is visible (see Photograph 8 of Figure 8-5). The eastern or front façade is visible from the intersection of River Street and East 151 Street and from approximately 200 feet to the north and south of this intersection. The Bronx County Courthouse, located on East 158th Street between Walton and Gerard Avenues, is a large, boxy, structure approximately ten stories in height. It is only visible from the northern portion of the project site.

There are no significant view corridors within the project site. On Exterior Street views to the north and the south are limited by the elevated Expressway and terminate with views of its entrance and exit ramps (see Photograph 9 of Figure 8-6 and Photograph 7 of Figure 8-5. above). Other south-facing views are of industrial and warehouse buildings located just south of East 150th Street. Views looking east from the project site along East 150th and 151st Streets, both of which slope slightly uphill to the east, terminate with buildings along the Grand Concourse. Views looking west from within the project site are primarily hampered by the buildings along the west side of Exterior Street (Buildings F, G, H, and J). While there are small spaces between the buildings, these spaces are covered in overgrown trees and debris, surrounded by metal chain-link fencing, and have metal walkways on the second stories, all of which block views to the waterfront and greatly reduce any visual links between the project site and the waterfront.

STUDY AREA

The study area for urban design and visual resources is a ¼-mile perimeter from the project site boundary. The study area includes a portion of East Harlem located in northern Manhattan. The Bronx study area is roughly bounded by Jerome Avenue and East 161st Street to the north, Sheridan Avenue to the west, and East 144th Street to the south. In Manhattan the study area is roughly bounded by West 141st Street to the south, Lenox and Seventh Avenue to the west, and Macombs Place to the north. The Harlem River runs through the study area. The discussion below focuses first on the area's urban design—its basic layout and structures—and then describes its visual resources.

URBAN DESIGN

Street Pattern, Block Shapes, and Natural Features

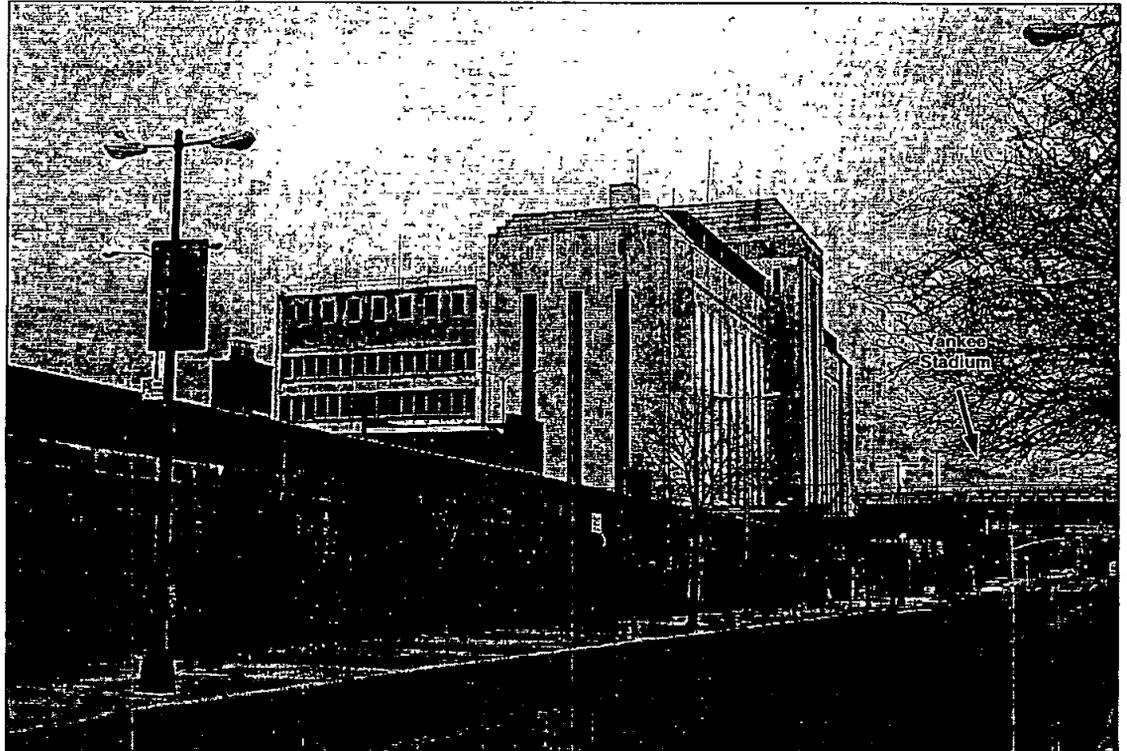
The Bronx

The street pattern of this section of the Bronx does not follow the orthogonal grid. Instead, the wider north-south avenues run on a slight angle to the east. Narrower streets run on an angle from northwest to southeast. This creates irregular-shaped blocks as well as long blocks which are uninterrupted by cross streets. In addition, the superblocks created by Yankee Stadium and its associated parking structure are irregularly shaped and create impediments to pedestrian traffic.

The most prominent natural feature in the study area is the Harlem River. The river is narrow and separates this section of the Bronx from the northern section of Manhattan. It is easily crossed via the 145th Street or Macombs Dam Bridges, which connect Manhattan and the Bronx. The waterfront is not easily accessible within the study area, due to the presence of entrance ramps for the elevated Expressway and the warehouse buildings along the water. The topography of the study area is hilly and slopes down from the Grand Concourse, located three blocks east of the project site, towards the water.



Major Deegan Expressway ramp, facing south from northern end of project site 7



Building C and the Bronx House of Detention, view from River Avenue 8



Major Deegan Expressway ramp at northern end of project site 9



Sunken railroad tracks, view from Gerard Avenue between East 151st and 153rd Streets 10

Views of Project Site and Study Area
Figure 8-6

East Harlem

The street pattern of the East Harlem section of the study area follows the regular grid pattern. Seventh and Lenox Avenues are wide and run north-south, while narrower side streets run east-west. There is a mix of building styles and types most of which are either low-scale residential with ground floor retail or high-rise residential towers. The lower scale buildings include a school, commercial and residential structures, and a New York City Transit bus depot.

In addition to the Harlem River, natural features in the East Harlem study area are limited to the parks along the Harlem River. This includes the Colonel Charles Young Park located from West 145th Street to West 143rd Street and bounded by the Harlem River on the east and Lenox Avenue on the west. This park has tennis courts, softball fields and some benches for seating. Other open space includes the Frederick Johnson Park located on Seventh Avenue between West 154th Street and West 150th Street and is associated with the Harlem River Houses.

Streetscape

The Bronx

The streetscape of the study area is urban and industrial in character. The streets outside the project site are flanked by concrete sidewalks. The majority of the study area has an underutilized, degraded quality and has very little street life, due to the nature of the businesses in the area: a truck rental business, a recycling center, auto repair shops, and parking lots. With the exception of East 149th Street there is little pedestrian activity or street life in the southern and eastern portion of the study area. East 149th Street, which is wider than other streets in the area, serves as the entrance and exit point for the 145th Street Bridge. It also serves as a major thoroughfare with a city bus line. Unlike other streets in the study area, restaurants and small retail shops line East 149th Street, increasing the pedestrian activity and traffic.

On the eastern edge of the study area is the Grand Concourse, a wide and major thoroughfare for this section of the Bronx. In comparison to the majority of the study area, the Grand Concourse has active pedestrian and vehicular traffic. Most of the Grand Concourse in the study area is lined with buildings associated with Hostos Community College which adds to the street life. In addition, Franz Segal Park runs along the Grand Concourse which improves the appearance of the Concourse with its associated street furniture and street trees.

There are few street trees or street furniture in the study area; closer to Yankee Stadium along East 153rd Street, there are some street trees and landscaping. There are standard "cobra-head" lampposts with banners advertising the Yankees ball team. All of the streets are paved, and the sidewalks along Gerard and River Avenues are wider than those of the surrounding streets. Two bridges, which are located between East 151st and 153rd Streets along River and Gerard Avenues, cross over sunken railroad tracks for the Metro North Rail Road (see Photograph 10 of Figure 8-6). Two auto-repair businesses are located on the blocks of Gerard Avenue between East 150th Street and East 153rd Street. Damaged cars line both sides of the avenue and run almost the entire length of the block (see Photograph 11 of Figure 8-7). The northern portion of the study area is dominated by Yankee Stadium, a related parking structure, and baseball fields in Macombs Dam Park. The western section of the study area extends to the Harlem River which, as described above, is generally inaccessible and does not contribute to the feel of the study area.

East Harlem

The streetscape in the Manhattan section of the study area is urban and residential in character and is developed with a mix of low-scale commercial and residential buildings and with high-rise apartment buildings. The area has a vibrant street life due to the high density of housing, the commercial businesses and the school. The sidewalks are wide along the avenues and narrow on the side streets. There is a limited amount of street furniture, mostly standard metal light posts, fire hydrants, electronic parking meters and phone booths. The Colonel Charles Young playground and the Harlem Tennis and Recreation Center located just west of the Harlem River between West 142nd Street and West 145th Street provide a visual break in the streetscape. The study area is dominated by the Esplanade Gardens, a group of five residential towers set at angles to each other allowing for some open space and visual access to the waterfront. However, access to the waterfront between the apartment buildings is blocked by parking lots and a metal chain link fence. There are also some evenly placed street trees running along the perimeter of the Esplanade Gardens site.

Along Seventh Avenue a consistent streetwall is created by the lower scale buildings which are residential with ground floor retail, adding to the pedestrian activity along the Avenue. The street wall is broken up by a playground located along Seventh Avenue from West 151st Street and West 153rd Street which contains park benches, groups of shade trees and recreation space. Additional street traffic is due to the Frederick Douglass Academy, a local public school.

Building Uses, Bulk, and Arrangements

The Bronx

The area of the Bronx surrounding the project site includes both low-scale buildings and Yankee Stadium and its related structures. Directly south of the project site are entrance and exit ramps for the Expressway and a one-story wholesale restaurant supply store with a fenced-in parking lot. There are other one-story industrial buildings as well as a recycling center near the Expressway overpass. A gas station and auto repair shop is located on the corner of River Avenue and East 150th Street, near the entrance to the 145th Street Bridge. Along Gerard Avenue there are several 1-story buildings of brick and/or concrete with large openings to allow vehicles to enter the repair shops; one has metal gates at the openings and barbed wire along the roof line. These buildings run almost the entire length of the block and are in fair condition, with some broken windows and graffiti. Along the west side of Gerard Avenue between East 151st and East 153rd Streets is a sunken, paved parking lot surrounded by trees. The trees are overgrown and extend onto the sidewalk. Litter and other debris have accumulated under the tree growth adding to the derelict feel of the study area (see Photograph 13 of Figure 8-8). In the northeastern section of the study area, along East 153rd Street between Gerard and River Avenues, are the Oxford Knolls, one of the only residential buildings located within the study area. They are six stories in height, clad in coarse red brick, and have distinct Tudor ornamentation including steeply pitched gables and mock timbering (see Photograph 14 of Figure 8-8).

The northern part of the Bronx study area is composed of parking lots for Yankee Stadium, which are enclosed by chain link fences; a 4-story concrete parking garage; and a baseball field. The parking garage occupies the entire triangular block bounded by East 153rd and 157th Streets and River Avenue. This 4-story parking structure is open on each floor and creates a consistent street wall. Yankee Stadium is located at the northeastern edge of the study area and is taller than the surrounding buildings. Yankee Stadium is approximately 138 feet tall and is shaped in



Auto repair shop and damaged cars along Gerard Avenue between 151st and 153rd Streets 11



Franz Sigel Park Extension, view facing east from Gerard Avenue and 153rd Street 12



Gerard Avenue between 151st and 153rd Streets, view facing north 13



Oxford Knolls, view facing north from Gerard Avenue and 153rd Street 14

the traditional style of a baseball stadium. The words "Yankee Stadium" are spelled out in 1-story high blue letters along the western side of the stadium. The portion of the stadium located near the study area is the concession and ticket area; there is a small plaza space containing concrete blocks with flower planters, lampposts, and some mature trees (see Photograph 15 of Figure 8-9).

In contrast to the rest of the study area, Walton Avenue is dominated with residential buildings. The buildings along Walton Avenue are similar in style and bulk to the apartment houses along the Grand Concourse. They are six stories in height, and clad in brick with brick exterior details.

East Harlem

The buildings in the Manhattan study area are primarily residential and vary between high-rise towers and lower scale multi-family units, some with ground floor retail. The Esplanade Gardens dominate the area; they are thirty stories in height, faced in red brick with enclosed, exterior balconies and placed at an angle to the street. They are supported by one-story round concrete piers. In addition, The Harlem River Houses, a stretch of residential buildings, run along Seventh Avenue. They are approximately three stories in height, also faced in brick with small courtyards. Three-story residential with ground floor commercial buildings line the western side of Seventh Avenue.

There is one school in the East Harlem study area. The Frederick Douglass Academy, an intermediate and high school, is located on Seventh Avenue between West 149th Street and West 150th Street. The Academy is three stories high, constructed of concrete and is partially enclosed by a metal chain link fence.

A Metropolitan Transit Authority bus depot is located at the corner of Lenox Avenue and West 146th Street. It occupies the majority of the block with entrances and exits onto Lenox Avenue it creates traffic congestion at the corner of Lenox Avenue and West 147th Street.

VISUAL RESOURCES

The Bronx

There are no views of the Harlem River waterfront from the project study area. Views are blocked by the buildings both on the project site and in the study area. Therefore, there is no visual link between the study area and the waterfront. Views to the north and to the south along the study area's streets are long and do not end in any prominent or notable features (see Photograph 16 of Figure 8-9). The exception is the intersection of East 153rd and East 157th Streets, from which the southwestern corner of Yankee Stadium is in clear view. Views to the east terminate at the Grand Concourse, three blocks from the eastern edge of the project site. Again, there are no prominent or notable features to these view corridors (see Photograph 17 of Figure 8-10).

Visual landmarks within the study area include Yankee Stadium and the Bronx House of Detention. Yankee Stadium is the most prominent and is visible from almost all parts of the study area. The Bronx House of Detention is also visible from many parts of the study area. Views of the Bronx House of Detention are most prominent looking south along River Avenue from East 153rd Street or looking north along Cromwell Avenue. Due to the sloping topography of the study area and some of the low-scale buildings, views of the Bronx House of Detention are sometimes blocked, or limited to only the very top floor. For the majority of the study area,

views are blocked by the parking structure for Yankee Stadium and the Oxford Knolls apartment buildings.

Three bridges are visible from the study area. On East 149th Street, in the southern portion of the study area, views of the 145th Street and 138th Street Bridges are possible. From the northern section of the study area the Macombs Dam Bridge is visible. The Macombs Dam Bridge is most visible looking west from the Yankee Stadium area (see Photograph 18 of Figure 8-10).

East Harlem

Views of East Harlem from the study area are almost completely blocked by the 1- and 2-story industrial buildings located along the waterfront and on the project site. At the entrance/exit ramps for the Expressway and the 145th Street and Macombs Dam Bridges, some views of East Harlem are possible. The Esplanade Gardens, a high-rise housing complex across the river in East Harlem, is the most prominent visual feature of this view (see Photograph 19 of Figure 8-11).

From East Harlem, the project site, Yankee Stadium, the Bronx House of Detention and the Bronx County Courthouse are visible only from the small parks around the Esplanade Gardens and the small park associated with the Harlem River Houses (see Photograph 20 of Figure 8-11). The best views of the study area's visual landmarks, including Yankee Stadium, the Bronx House of Detention, and the Bronx County Courthouse, are from the 145th Street and Macombs Dam Bridges (see Photograph 21 of Figure 8-12).

The project site and study area are also visible from the elevated Major Deegan Expressway. The Bronx House of Detention and Yankee Stadium are the most prominent features visible from the Expressway.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

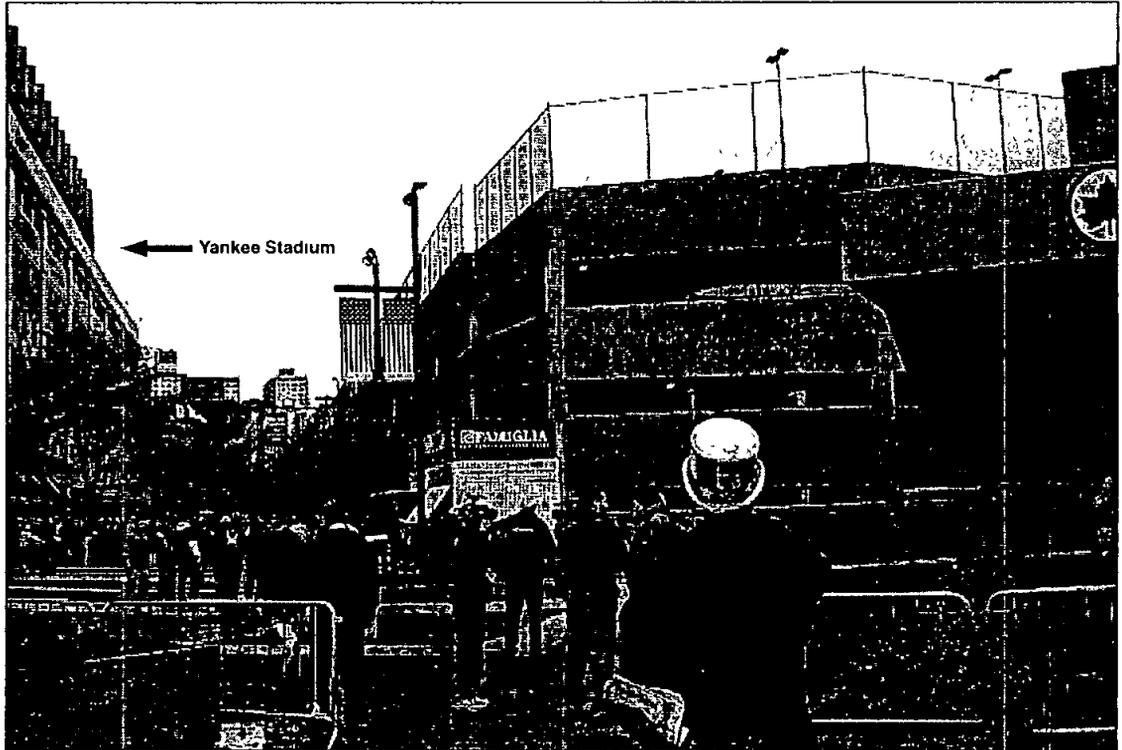
2009

PROJECT SITE

One major project proposed within the study area that could be developed by 2009 is the construction of a new stadium for the New York Yankees, in the portion of Macombs Dam Park located north of the existing stadium across East 161st Street. The potential urban design and visual resources impacts of that No Build project are discussed in Chapter 22, "Future Conditions with a Relocated Yankee Stadium."

STUDY AREA

There are no major residential or commercial construction projects planned for the study area by 2009. However, two institutional projects are planned for the study area by 2009. The New York City Department of Homeless Services has plans for a new 60,000 square feet (sf) Emergency Assistance Unit at East 151st Street and Walton Avenue to replace the existing facility at this location. Hostos Community College has plans to renovate a 125,000 gsf academic building, and has future capital investment projects that are pending budget allocation. Finally, outside of the study area, Lincoln Hospital is in the process of constructing several new facilities, including a 30,000 sf labor and delivery center and a 2,000 sf MRI unit. The hospital also has plans for a renovated emergency room, women's option center, and upgraded of an existing 650-space



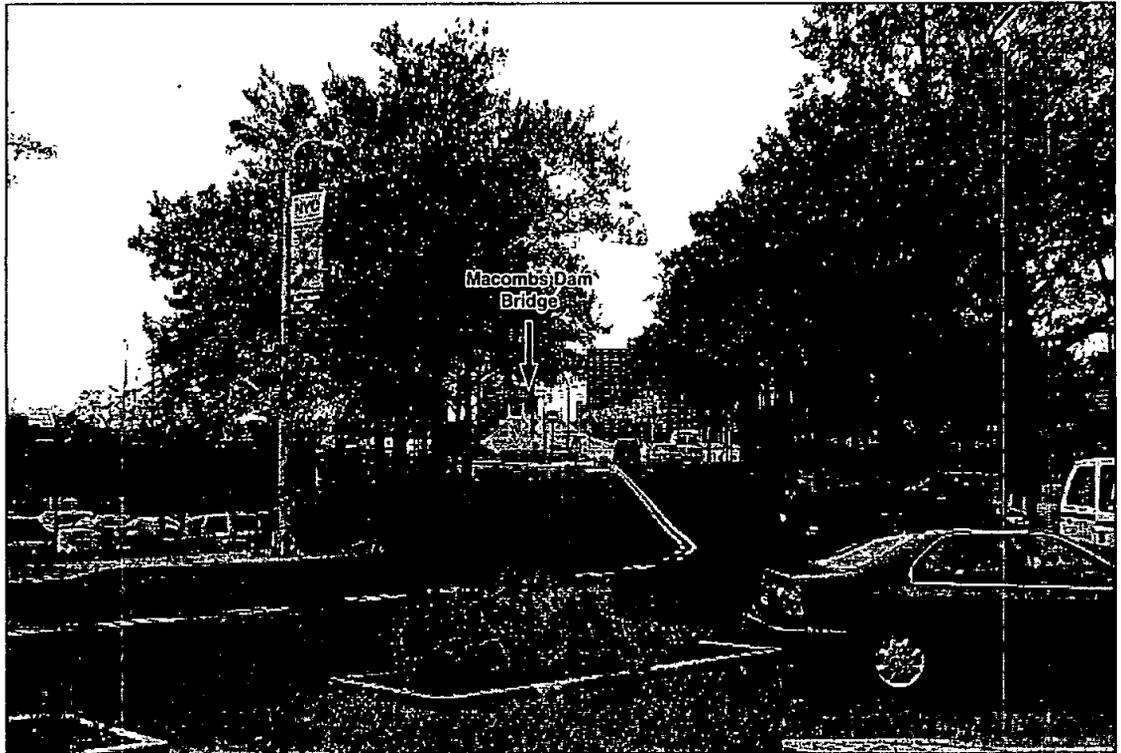
Plaza and parking structure at western edge of Yankee Stadium, view facing east from River Avenue and 157th Street 15



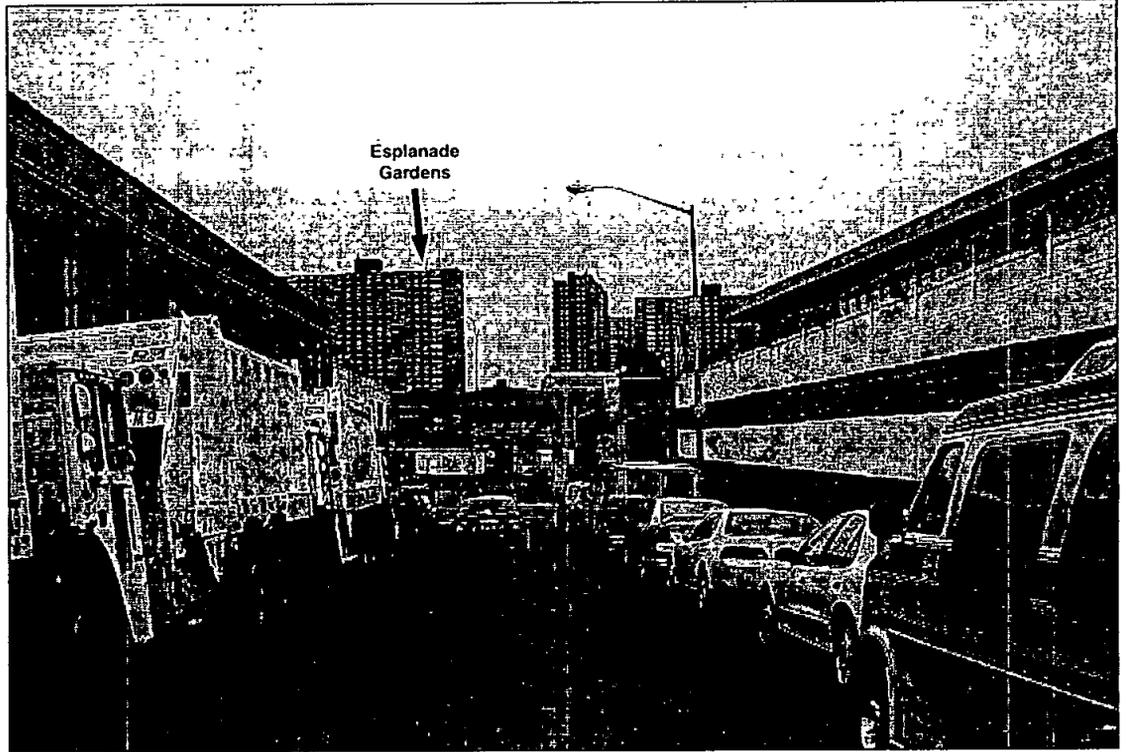
View north along Gerard Avenue from 150th Street 16



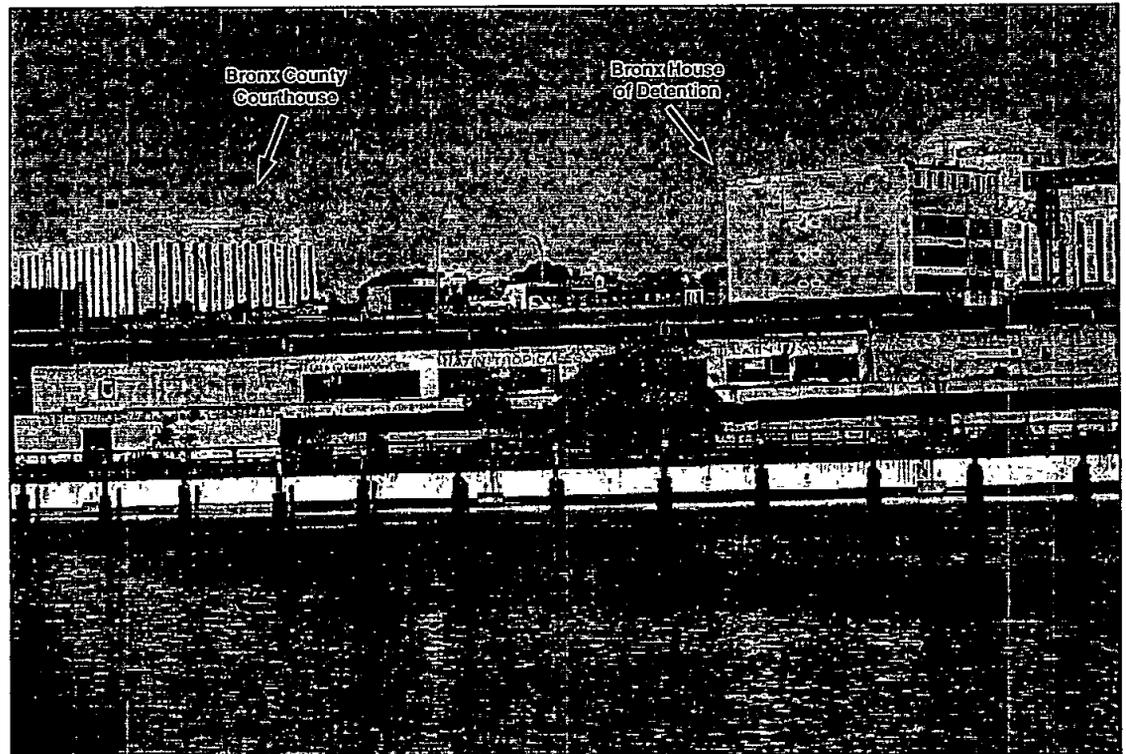
View east from Gerard Avenue and 150th Street 17



View of Macombs Dam Bridge, view west from 157th Street 18



View of Harlem from study area, view west from 150th Street 19



Project site and study area, view northeast from Harlem 20



View of project site and study area from 145th Street Bridge 21

parking garage. East 149th Street between Griffin Place and Exterior Street will be reconstructed to improve street lighting, sidewalks, and curbs. This will improve pedestrian access to the area, as well as its urban design.

2014

PROJECT SITE

No changes are expected to occur on the project site without the proposed actions by 2014.

STUDY AREA

A widening of the Major Deegan Expressway is planned for completion by 2011-2012. This reconstruction would improve access to the area, including the project site. In addition, the Metro North Rail Road has been studying the possibility of establishing a station in the study area at least since the mid-1980s. If this station were created, it would improve access to the area.

Since New York City will not be hosting the 2012 summer Olympics, the area south of the project site on the Harlem River that had been proposed as the velodrome venue will be considered for other possible uses.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

2009

PROJECT SITE

Urban Design

The Proposed Project would alter the street pattern of the project site by demapping East 150th Street between River Avenue and Exterior Street, and eliminating East 151st Street between River and Cromwell Avenues and Cromwell Avenue between Exterior Street and the Metro North Rail Road tracks. This change is not considered to be adverse, as these streets are currently underutilized and are not a defining element of the area's urban design. The Proposed Project also would substantially alter the appearance of the project site by replacing the existing one- and two-story, long, narrow industrial buildings and the 8- and 10-story Bronx House of Detention with a series of retail establishments of up to 96 feet in height, a 6-level parking garage, and a landscaped open space and waterfront esplanade. The proposed buildings would be larger and squarer in form than the existing buildings, and their expected materials, coloration, and style would be different and more modern than those of the existing buildings on the project site. Building materials could include pre-cast concrete and brick, and the buildings are expected to have a warehouse aesthetic incorporating a variety of storefronts with industrial lighting and signage. While the proposed buildings would be considerably different than the existing buildings, the existing buildings are currently unutilized or underutilized and have a neglected quality, and the proposed buildings would be expected to improve the visual quality of the site. The proposed buildings also would maintain the existing streetwalls on Exterior Street and River Avenue. The proposed retail and parking uses would be expected to generate more pedestrian activity than the existing wholesale and retail uses. The signage to be erected on the sides of the

proposed buildings would include elements intended to create a visual rhythm along the Major Deegan Expressway.

The Proposed Project would create landscaped passageways between the proposed buildings, allowing for better pedestrian access, and would introduce street lighting and trees to improve the visual appearance of the project site (see Figure 8-13). The landscaped passageways would not be built upon and would be available for public use, facilitating access to the public open space to be created on the west side of the project site. It would also create a public open space and waterfront esplanade, which would enhance the project site's piers and make the Harlem River waterfront both visually and physically more accessible. The Belgian block paving on Exterior Street would be removed as part of the Proposed Project; however, it is possible that the pavers would be incorporated into the design of the public open space. In summary, the Proposed Project is not expected to have a significant adverse impact on the urban design of the project site.

Visual Resources

The demolition of the Bronx House of Detention could create new views to Yankee Stadium from the project site; however, the construction of the proposed buildings could eliminate other views of the stadium from the project site. Views of Bronx House of Detention from the project site are mainly of the rear or western façade which is not original to the building. Views of the Harlem River from the project site would be improved with the creation of the public open space and waterfront esplanade.

STUDY AREA

Urban Design

Street Pattern, Block Shapes, and Natural Features

The Proposed Project would not alter the street pattern, block shapes, or natural features of the Bronx or East Harlem study area.

Streetscape

The Proposed Project would enhance the vitality of streets in the study area by introducing new commercial and parking uses and pedestrian activity to the project site. It would also improve the appearance of the area's streetscape by adding street lighting and landscaping. The lighting of the pedestrian walkways could include industrial light fixtures as well as decorative accent lighting. The Proposed Project would include signs that would be visible from the surrounding area. Illuminated signs identifying retail tenants would be located on Retail Buildings A, B/F, and G and would be located along the public streets that run through and along the project site. Taller backlit signs approaching heights of approximately 155 feet, 87 feet, and 100 feet respectively would be located along Exterior Street at the corners of Retail Buildings B/F and G, and along River Avenue on the proposed parking garage. The proposed signage would draw attention to the retail development and the surrounding recreational space and would create visual interest along the Major Deegan Expressway. The Proposed Project would not affect other streetscape elements within the Bronx study area.

The Proposed Project would not affect streetscape elements in the East Harlem study area.



**Illustrative Rendering
Interior Street**
Figure 8-13

Building Uses, Bulk, and Arrangements

The Proposed Project would introduce a land use that is complimentary to the surrounding area, as it would create major retail facilities which would serve residents in the Bronx and northern Manhattan. The height of the proposed buildings would be similar to that of the residential buildings located along East 153rd Street and along Gerard and Walton Avenues north of East 153rd Street. In addition, Hostos Community College, located at East 145 Street and the Grand Concourse, is comprised of buildings of a similar height and bulk, and Yankee Stadium, to the north of the project site, is approximately 138 feet tall. Therefore, the proposed buildings would be in keeping with the height and bulk of some of the existing structures in the study area. The expected design of the buildings could be referential to the surrounding industrial scale buildings along the waterfront.

The Proposed Project would not affect building uses, bulk or arrangements in the East Harlem study area.

VISUAL RESOURCES

While the Proposed Project would result in the demolition of the Bronx House of Detention, this resource is only visible from specific locations within the study area and from the elevated Expressway. Additionally, views of the resource are mainly of the rear or western façade which is not original to the building. The removal of the Bronx House of Detention could also allow for new views of Yankee Stadium from the study area. The proposed signage at the corners of the proposed buildings could obstruct some views from the Major Deegan Expressway to the surrounding area; however, because they are available only from passing vehicles, such views are of short duration and are not considered significant

2014

PROJECT SITE

The second phase of the Proposed Project would involve the development of a hotel on the northern portion of the project site by the 2014 Build year. This would be a new use on the project site and in the study area; however, it would be compatible with the retail center which would already exist on the project site by 2014. The development of the proposed hotel would not alter any street patterns, block shapes, natural features, or adversely affect views to visual resources from the project site.

STUDY AREA

Urban Design

Street Pattern, Block Shapes, and Natural Features

The construction of the hotel would not alter any street patterns, block shapes, or natural features within either study areas.

Streetscape

The proposed hotel would not adversely affect the streetscape of the study area. It is anticipated that development of the hotel would bring greater activity to the streets of the project site and the study area in the Bronx. The proposed hotel would not impact the streetscape of the East Harlem study area.

Building Uses, Bulk, and Arrangements

The proposed hotel use would be compatible with the retail center which would already exist on the project site by 2014. At approximately 230 feet in height, the hotel would be taller than the buildings currently on the project site and in the study area; however, it would occupy a much smaller footprint than the proposed retail buildings. Therefore, its bulk would be most noticeable from across the Harlem River or along East 153rd Street near the project site.

VISUAL RESOURCES

The proposed hotel would not have significant adverse impacts on the visual resources within the study area. Since the hotel would be located west of East 153rd Street, it would not block existing views of Yankee Stadium and the Bronx County Courthouse from the majority of the study area. Some views of the Bronx County Courthouse from across the Harlem River in Manhattan could be eliminated; however, these are very distant views, and other, closer views to the courthouse would not be affected. Therefore no significant adverse effects to the visual resources of either study area are expected from the second phase of the Proposed Project. *

A. INTRODUCTION

Neighborhood character is an amalgam of the many factors that combine to give an area its distinctive personality. These components include land use, scale, and type of development, historic features, patterns and volumes of traffic, noise levels, and other physical or social characteristics that help define a community. Not all of these elements affect neighborhood character in all cases; a neighborhood usually draws its distinctive character from a few determining elements.

According to the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, an assessment of neighborhood character is generally needed when the action would exceed preliminary thresholds in any one of the following areas of technical analysis: land use, urban design, visual resources, historic resources, socioeconomic conditions, traffic, or noise. An assessment is also appropriate when the action would have moderate effects on several of the aforementioned areas. Potential effects on neighborhood character may include:

- *Land Use* When development resulting from the proposed actions would have the potential to change neighborhood character by introducing a new, incompatible land use; conflicting with land use policy or other public plans for the area; changing land use character; or resulting in significant land use impacts.
- *Urban Design and Visual Resources*: In developed areas, urban design changes have the potential to affect neighborhood character by introducing substantially different building bulk, form, size, scale, or arrangement. Urban design changes may also affect block forms; street patterns; or street hierarchies; as well as streetscape elements such as streetwalls, landscaping, and curbcuts. Visual resource changes have the potential to affect neighborhood character by directly changing visual features such as unique and important public view corridors and vistas, or public visual access to such features.
- *Historic Resources*. When an action would result in substantial direct changes to an historic resource or substantial changes to public views of a resource, or when an historic resources analysis identifies a significant impact in this category, there is a potential to affect neighborhood character.
- *Socioeconomic Conditions*. Changes in socioeconomic conditions have the potential to affect neighborhood character when they result in substantial direct or indirect displacement or addition of population, employment, or businesses; or substantial differences in population or employment density.
- *Traffic and Pedestrians*. Changes in traffic and pedestrian conditions can affect neighborhood character in a number of ways. For traffic to have an effect on neighborhood character, it must be a contributing element to the character of the neighborhood (either by its absence or its presence), and it must change substantially as a result of the action. According to the

CEQR Technical Manual, such substantial traffic changes can include: changes in level of service (LOS) to C or below; changes in traffic patterns; changes in roadway classifications; changes in vehicle mixes; substantial increases in traffic volumes on residential streets; or significant traffic impacts, as identified in that technical analysis. Regarding pedestrians, when a proposed action would result in substantially different pedestrian activity and circulation, it has the potential to affect neighborhood character.

- *Noise*. According to the *CEQR Technical Manual*, for an action to affect neighborhood character in regards to noise, it would need to result in a significant adverse noise impact and a change in acceptability category.

This chapter examines neighborhood character in the area surrounding the project site, defined as a ¼-mile perimeter around the project site, and how the Proposed Project would affect that character. The chapter's impact analysis focuses primarily on changes to neighborhood character resulting from changes in the technical areas discussed above, since changes in these technical areas are most likely to result in changes to neighborhood character.

The analysis concludes that as a result of the Proposed Project, changes to the project site's land use and design and scale of the buildings would occur, as well as increases to traffic and transit activity and minor increases to noise levels. However, these changes overall would not be adverse, as discussed below.

B. EXISTING CONDITIONS

The project site is bounded by the Metro North Rail Road tracks to the north, River Avenue to the east, 149th Street to the south, and the Harlem River to the west. The 26-acre parcel comprises a mixture of low-rise commercial, industrial, and community facility uses and paved land. On the site there are six dilapidated Bronx Terminal Market buildings (Buildings B, C, D, F, G, and H) that are partially occupied, a power house building built for the Bronx Terminal Market, currently partially occupied as a site manager's office (Building J), the Bronx House of Detention which is in reserve status and currently closed, Piers 3 and 4, and a portion of Pier 1 on the Harlem River. The primary uses on the project site are wholesale food warehouses and markets. Exterior Street/Major Deegan Boulevard (the street under the Expressway) bisects the project site, separating the piers and four of the project site buildings from the four remaining project site buildings. The site also contains paved areas that provide parking seasonally during games at Yankee Stadium and are used for truck parking when needed. A farmers market is held on the northern portion of the project site.

The low-rise buildings are 1- to 2-story rectangular concrete-block, stucco, or brick structures. The Bronx House of Detention ranges from 8 to 10 stories and is faced with gray brick. The long rectangular shape of many of the project site buildings creates an uninterrupted street wall. With the exception of Building C, all of the buildings on the project site have been found eligible for listing on the State and National Registers of Historic Places (S/NR).

The project site is dominated by the presence of the elevated Major Deegan Expressway above Exterior Street. While the Expressway is elevated, it is located at a level low enough to block views to and from the site. In addition, entrance and exits ramps for the Expressway are located within the boundaries of the project site and affect both vehicular and pedestrian traffic, by causing traffic congestion and creating intersections that are difficult to cross.

The streets within the project site are arranged in an irregular pattern, and some are also unpaved and/or in poor condition. The sidewalks are only slightly elevated and in some points they are almost flush with the ground. Often delivery trucks and vans are parked on them. The condition of the streets, the irregular street pattern, and the elevated transportation structures limit pedestrian accessibility and the pedestrian experience on the project site.

While not visibly accessible from much of the study area, the Harlem River, which separates the Bronx from Manhattan, is a defining element of the ¼-mile neighborhood character study area, as are the Harlem River Drive and the Major Deegan Expressway, which run alongside the waterway. The river is not easily accessible within the project site, due to the presence of access ramps for the elevated Expressway and waterfront warehouse buildings. The Macombs Dam Bridge and the 145th Street Bridge, which connect the Bronx and Manhattan, are also not visible from much of the project site, as they are obscured by the Expressway and project site buildings.

Within the Bronx portion of the study area, there is a large mix of uses, with types of land uses generally segregated by Gerard Avenue and 157th/153rd Streets. The Metro North Rail Road line, which runs just south of 153rd Street, is a contributing factor to this division. A heavy commercial/industrial area with food and beverage suppliers/distributors, warehouses, auto-related uses, and parking lots occupies the central portion of the study area—generally south of 153rd Street and west of Gerard Avenue. This area has an underutilized, degraded quality and has very little street life or pedestrian activity, due to the nature of the businesses in the area.

North of the project site are Yankee Stadium and its related parking facilities, which are enclosed by chain-link fencing. At approximately 123 feet tall, the stadium is a prominent visual feature of the study area, and is visible from various parts of the project site. The stadium has a concession and ticket area and a small plaza space containing concrete blocks with flower planters, lampposts, and some mature trees. Macombs Dam Park, a 12-acre park with soccer fields, baseball fields, basketball courts, and lawn areas is also located north of the project site.

East of Gerard Avenue the area is predominantly residential, with six-story residential apartment buildings lining Gerard and Walton Avenues north of 153rd Street and 2- to 3-story attached residential buildings along Walton Avenue south of 151st Street. Many of the six story buildings are clad in coarse red brick, and have distinctive Tudor ornamentation, including steeply pitched gables and mock timbering. De Hostos Community College, the largest institutional use in the study area, is located along Walton Avenue and the Grand Concourse, south of 149th Street. A major park in this portion of the study area is Franz Sigel Park, a 16-acre park with largely active recreational facilities, located along Grand Concourse north of 151st Street.

Several historic resources are located in the vicinity of the project site (see Figure 7-1 for a map indicating the location of the resources). The study area's two bridges—the S/NR-eligible 145th Street Bridge and the New York City Landmark (NYCL), S/NR-eligible Macombs Dam Bridge and 155th Street Viaduct—are both historic resources. The remainder of the study area's historic resources are located along the Grand Concourse. These include Public School 31 at 425 Grand Concourse (NYCL, S/NR-eligible), the Bronx Post Office (NYCL, S/NR-listed) at 558 Grand Concourse, and the Mott Avenue Control House (S/NR-listed) at 149th Street and Grand Concourse. Two additional potential architectural resources located in the vicinity of the project site are the Oxford Knolls, located at 691 Gerard Avenue/109 153rd Street, and 690 Gerard Avenue, located at the northeast corner of Gerard Avenue and 153rd Street.

The irregular street pattern in the study area—with north-south avenues running on a slight angle to the east and narrower streets running on an angle from northwest to southeast—creates

irregular-shaped blocks as well as long blocks that are uninterrupted by cross streets. The superblocks created by Yankee Stadium and its associated parking structure are irregularly shaped and create impediments to pedestrian traffic.

Traffic volumes along streets in the study area are generally at acceptable levels, though congestion exists at some intersections during both the AM and PM hours. The Major Deegan Expressway, which runs above the project site on a viaduct, is frequently congested in the northbound direction during peak traffic hours. Many sections of the local street network that serve the site have substantial amounts of unused capacity, particularly Exterior Street; however, some sections of the local street network—most notably the approach and departure routes to/from the 145th Street and Macombs Dam Bridges, the Major Deegan Expressway, and River Avenue before and after games at Yankee Stadium—are at times congested. Frequently before games, the Major Deegan ramp traffic queues back along the northbound side of the Expressway.

149th Street is one of the major thoroughfares in the area, with entrance and exit points for the 145th Street Bridge. It is one of the few streets in the study area lined with restaurants and small retail shops, increasing the pedestrian activity and traffic on this thoroughfare. The Grand Concourse is the study area's major roadway and has the largest concentration of commercial uses in the area. The level of pedestrian activity near the project site is low due to the industrial character of the area. Pedestrian bridges between 151st and 153rd Streets along River and Gerard Avenues cross over sunken railroad tracks for the Metro North Rail Road. The 2/4/5 149th Street-Grand Concourse Station and the 4/B/D 161st Street-Yankee Stadium Station are located to the southeast and northeast of the project site, respectively. The Bx1, Bx6, Bx13, and Bx19 bus routes all operate near the project site.

Existing noise levels near the project site range from being marginally acceptable on the northern and western edges of the site to clearly unacceptable near Exterior Street north of 150th Street.

The Manhattan portion of the study area, separated by the Harlem River, is largely residential. Several high-rise residential complexes define the area, including Harlem River Houses, a New York City Housing Authority development, and the private Esplanade Gardens complex. The area is well served by parks, such as the Colonel Charles Young Triangle, Colonel Charles Young Playground, Bill 'Bojangle' Robinson Playground, and Frederick Thomas Playground.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

2009

Without the Proposed Project, it is assumed that no major changes would occur on the project site. The site would remain a partially-occupied wholesale food marketplace, and the Bronx House of Detention would remain unused. The paved areas would continue to be used for Yankee Stadium parking, and the farmers market is expected to continue. The project site buildings would continue to obstruct views to the waterfront from the surrounding area, and the site would not offer any public access to the waterfront.

One major project proposed within the study area that could be developed by 2009 is a new stadium for the New York Yankees, in the portion of Macombs Dam Park located north of the existing stadium across East 161st Street. The potential neighborhood character impacts of that

No Build project are discussed in Chapter 22, "Future Conditions with a Relocated Yankee Stadium."

The other projects that are planned for construction within the study area by the year 2009 would not be expected to create any substantial changes to the character of the study area. Several of the projects would be transportation-oriented and would not significantly alter any natural features, street patterns, or block shapes. These transportation projects are not expected to alter travel patterns in the area. Traffic in the study area would change modestly, as a result of projects planned for the study area. Pedestrian activity would be expected to remain moderate, with acceptable levels of congestion. Noise levels would be expected to be similar to existing levels. The reconstruction of East 149th Street between Griffin Place and Exterior Street would enhance the vitality of street and sidewalk and improve both vehicular and pedestrian access on the street. The potential reconstruction of the 161st Street tunnel below the Grand Concourse as part of the Grand Concourse streetscaping and rehabilitation project between 161st and 166th Streets would not change the capacity of this portion of the street network.

Several institutional projects are also planned for the area: a new Emergency Assistance Unit for the New York City Department of Homeless Services is planned for 151st Street and Walton Avenue to replace the existing facility at this location. Hostos Community College has plans to renovate a 125,000-gsf academic building, and has future capital investment projects that are pending budget allocation. Outside the study area, Lincoln Hospital is in the process of constructing several new facilities, including a labor and delivery center and an MRI unit.

2014

Access to the area would be improved by two projects planned for completion prior to 2014: the widening of the Major Deegan Expressway viaduct and the potential construction of a Metro North Rail Road station. There would not, however, be any major change to neighborhood character as a result.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

2009

The first phase of the Proposed Project would result in a major change in land use on the project site. This change is considered to be complementary to the area, as it would create a major retail facility that would serve the residents, workers, and visitors of surrounding communities and Yankee Stadium. Wholesale commercial uses, vacant space, and an unused detention center would be removed from the site to allow for development of active retail uses, parking, and a public open space/waterfront esplanade. The project site is currently underutilized, and the Proposed Project would bring a greater intensity of use to the project site.

The Proposed Project would substantially improve the condition of the shoreline and waterfront edge. The Harlem River waterfront would be both visually and physically more accessible. The project would provide substantial access to the waterfront, which currently does not exist on the site or at very many locations within the study area. Views from and through the project site to the waterfront and the surrounding area would be improved with the provision of the waterfront open space and promenade. There would also be a notable improvement in the amount of open space in the neighborhood for use by visitors to the project site and the surrounding community,

compared to conditions without the proposed actions. Therefore, the proposed actions are expected to have a beneficial effect on the waterfront and open space in the study area.

The proposed buildings would be larger and squarer in form than the existing buildings, and their expected materials, coloration, and style would be different and more modern than those of the existing buildings on the project site. The buildings would, however, be similar in height to the residential buildings located along East 153rd Street and along Gerard and Walton Avenues north of East 153rd Street, the buildings at Hostos Community College, and Yankee Stadium. Therefore, the proposed buildings would be in keeping with the height and bulk of some of the existing structures in the study area. As the existing buildings on the project site are currently unutilized or underutilized and have a neglected quality, the proposed buildings would be expected to improve the visual quality and the character of the area.

The Proposed Project would modify the shapes of the project blocks by demapping portions of several streets to create a superblock. These streets are currently underutilized and form blocks with unusual shapes. The change would not result in a negative neighborhood character impact related to urban design, as it would not significantly alter the basic street pattern or block shapes of the study area.

In general, the Proposed Project is expected to enhance the vitality of the surrounding streets by introducing active retail uses and increasing visitation to the project site. The Proposed Project would also add to the visual quality of the surrounding area, by creating landscaped passageways between buildings, introducing street lighting and trees, and opening up views from the project site to the Harlem River. Although the context of surrounding views would be altered by the introduction of taller, modern buildings to the area, this change is not considered to be adverse, as these buildings would replace underutilized, deteriorating buildings and the project would create new waterfront access and views to the Harlem River. Yankee Stadium would continue to be a prominent feature in surrounding views. Some existing views to the stadium would be eliminated, but other new views would be created with the removal of the detention center.

Although the Proposed Project would require the demolition of the historic resources on the project site (Buildings B, D, F, G, H, and J, and the Bronx House of Detention)—this impact would be lessened by mitigation measures being developed in consultation with the New York State Office of Parks, Recreation and Historic Preservation. Other known and potential historic resources are located far enough away from the project site to not experience any direct physical effects from the Proposed Project. While the Proposed Project would be expected to alter the context of the historic resources in the surrounding area, these resources already exist in an environment that is predominantly industrial, and there would be no significant adverse neighborhood character impact related to changes to views of historic resources. The proposed buildings would not block views from the area bridges to any historic resource, yet would provide new views to the historic bridges from the project site waterfront, thus providing heightened visibility for these historic resources. Overall, the Proposed Project would not have an historic resources-related impact on neighborhood character.

The Proposed Project would displace some existing businesses; however, the businesses on the project site are not dependent upon siting on the waterfront and do not substantially contribute to defining the neighborhood, and thus removal would not result in a significant adverse impact to the neighborhood character of the area. As described in Chapter 3, "Socioeconomic Conditions," the Proposed Project would not have the potential to adversely affect competitive stores throughout the study area. The project's destination retail would not compete with local

shopping areas that are neighborhood-oriented and would not jeopardize the viability of any retail strips in the study area.

The Proposed Project would include several improvements to the roadway network. Exterior Street between 149th Street and its northern terminus and River Avenue between 149th and 153rd Streets would be substantially upgraded to include pavement resurfacing, dedicated turning lanes into the site, and widening along certain sections to provide two full travel lanes in each direction. New traffic signals would also be installed at parking garage driveways on Exterior Street in order to facilitate vehicle access in and out of the proposed parking garages. Yankee Stadium parking facilities would be displaced by the Proposed Project; however, the Proposed Project's parking facilities would provide capacity for the displaced Yankee Stadium parking activity. Although there would be significant increases in traffic volumes in the surrounding neighborhood, including along the Major Deegan Expressway, street network and Expressway capacities would be sufficient to accommodate traffic from the Proposed Project with the proposed mitigation measures, which include standard traffic engineering improvements as well as the widening of the northbound Major Deegan Expressway ramp at 149th Street. The Proposed Project is expected to generate a number of pedestrian trips to and from the site. The neighborhood's sidewalks are expected to have sufficient capacity to accommodate this increase in demand. Therefore, the Proposed Project should not have a pedestrian-related impact on neighborhood character.

The Proposed Project is also expected to generate a number of pedestrian trips to and from the site and to increase public transportation demand in the area. All subway station stairways would operate at LOS D or better during all peak periods, with the exception of several stairways at the 161st Street-Yankee Stadium Station during game day peak periods. During non-game day Saturday midday peak periods, the Bx19 local bus route would operate above its guideline capacity in the eastbound direction. Also during Saturday midday game and non-game peak periods, the north crosswalk at 149th Street and River Avenue would experience decreases in levels of service. However, the neighborhood's sidewalks, subways, and buses are expected to have sufficient capacity to accommodate these increases in demand with the mitigation measures proposed. Therefore, the Proposed Project should not have traffic- or transit-related impacts on neighborhood character. With the Proposed Project, changes in noise levels would be barely perceptible and there would be no resulting noise-related neighborhood character impacts.

In summary, the first phase of the Proposed Project would not significantly adversely affect the combined elements contributing to the neighborhood character of the study area. No significant adverse impacts to neighborhood character would result from the Proposed Project.

2014

The second phase of the Proposed Project would introduce a new hotel use to the project site. The hotel would be compatible with the retail center that would already exist on the project site by 2014. No businesses would be displaced by the construction of the hotel, which would be constructed on a vacant part of the project site, and it would be the only such facility in the study area. Activity would be increased on the currently vacant northern portion of the project site and the visual quality of this area would be enhanced by the addition of a modern building and landscaping. The development of the hotel would not alter any street patterns, block shapes, or natural features on the project site or in the study area, or have any significant adverse effects on views to visual resources from the project site. There would be no significant adverse impacts on open spaces from the second phase of the project.

The proposed hotel would continue to bring greater activity to the streets of the project site and the study area, and the building form would be compatible with the previously developed retail center. At approximately 230 feet in height, the hotel would be taller than the buildings currently on and proposed for the project site, as well as existing buildings in the study area; moreover it would occupy a much smaller footprint than the proposed retail buildings, and therefore its bulk would be most noticeable from across the Harlem River or along 153rd Street near the project site. The proposed hotel would also not have significant adverse impacts on the visual resources within the study area; it would not block existing views of Yankee Stadium from the majority of the study area.

There are no historic resources on the area of the project site to be developed as a hotel, and there would be no historic resources on the remainder of the project site by 2014. Therefore, the development of the proposed hotel would not affect any historic resources on the project site. Construction of the proposed hotel would be far enough away from the known and potential historic resources in the study area so as not to have any direct, physical effects on these resources. While the development of a new, modern hotel on the project site would be expected to alter the context of the historic resources in the surrounding area, these resources already exist in an environment that is predominantly industrial, and this change is not considered a significant adverse impact.

The majority of the increases in traffic and pedestrian volumes and public transportation demand would be generated by the retail portion of the Proposed Project to be developed by 2009. Therefore, the proposed hotel would generate smaller increases in traffic, pedestrians, and public transportation demands, and the Proposed Project would not have any traffic- or transit-related neighborhood character impacts by 2014. Noise levels with the completion of the Proposed Project would change imperceptibly and would have no resulting impact on neighborhood character.

In summary, the completion of the Proposed Project would not adversely affect the combined elements contributing to the neighborhood character of the study area. No significant adverse impacts to neighborhood character would result from the Proposed Project. *

A. INTRODUCTION AND METHODOLOGY

This chapter provides descriptions of the natural resources within the project area, assesses future natural resources and water quality conditions without the Proposed Project, assesses potential impacts to natural resources and water quality from the Proposed Project, and, if necessary, develops measures to reduce the potential impacts on natural resources and water quality.

The project site is almost completely developed with buildings, parking lots and roadways and, as such, on-site natural resources are limited. This natural resources analysis concludes that the Proposed Project would not result in significant adverse impacts to water quality, terrestrial resources, wetlands, aquatic resources, or endangered, threatened, or species of special concern during either construction activities or operation of the project. The Proposed Project may have an overall positive effect on natural resources and particularly on aquatic resources in the area by:

- Stabilizing waterfront structures and removing a substantial quantity of accumulated debris from the interpier areas, which will prevent debris from entering the Harlem River;
- Remediating contaminated soils and placing two feet of clean fill in pervious open space and landscaped areas to protect visitors and wildlife from exposure to residual contamination in soils;
- Eliminating areas that may be attractive to nuisance species and constructing a waterfront open space, esplanade, and vegetative landscaping along the waterfront, which would provide a 2-acre waterfront/fringe habitat for certain wildlife species.

Implementation of best management practices (BMPs) for erosion and sediment control would minimize potential water quality effects associated with discharge of stormwater during construction. With the project's removal or covering of contaminated soils, and installation of native upland vegetative community along the waterfront, improved water quality conditions in the river are anticipated.

METHODOLOGY

The methodology for the natural resources analysis involved review of literature sources and on-site observation. Literature sources included documents (reports and maps) prepared by the New York State Department of Environmental Conservation (NYSDEC), the New York State Department of State (NYSDOS), and the New York City Department of Environmental Protection (NYCDEP). Materials obtained from NYSDEC included Tidal Wetlands Maps. Materials obtained from NYCDEP included the *New York Harbor Water Quality Report* (NYCDEP 2002). Materials obtained from NYSDOS included the Significant Coastal Fish and

Wildlife Habitats Program. The *Second Avenue Subway Final Environmental Impact Statement* (2004) was also reviewed.

B. REGULATIONS AND PERMITS

The following section briefly describes the federal and state laws and associated regulations and regulatory programs that may apply to the Proposed Project with respect to water quality and aquatic and terrestrial resources. The regulations apply to certain activities in coastal areas, surface waters, and floodplains, and to the protection of rare species/species of special concern.

Because some of the state laws and regulatory programs were promulgated under authority of federal laws, the federal laws and regulatory programs are discussed first.

FEDERAL LAWS AND REGULATORY PROGRAMS

THE CLEAN WATER ACT

The Federal Water Pollution Control Act, as amended, commonly referred to as the Clean Water Act, addresses both point and non-point sources of pollution. The sections of the Clean Water Act with the potential to apply to the Proposed Project are Sections 401 and 404, which pertain to discharges of fill or dredged material to waters of the United States, and Section 301, which pertains to the need for a National Pollutant Discharge Elimination System (NPDES) permit for point discharges of pollutants to navigable waters. The NPDES program is delegated to New York State by the U.S. Environmental Protection Agency (USEPA) and is incorporated in New York's State Pollutant Discharge Elimination System (SPDES) permit system (described below).

Section 401 of the Clean Water Act of 1987 requires that any applicant for a federal permit or license for an activity that may result in a discharge to waters of the United States must provide to the federal agency issuing a permit a water quality certificate. The certificate must be issued by the state where the discharge will occur or from an interstate water pollution control agency with jurisdiction over navigable waters where the discharge will occur. The certificate is only issued after the applicant demonstrates that the discharge will comply with Sections 301 (effluent limitations for point source discharges), 302 (water quality-related effluent limitations for a point source or group of point sources to attain or maintain water quality), 303 (setting of water quality standards and implementation plans by each state), 306 (standards for the control of pollutants discharged by certain categories of point sources set on federal level or by each State), and 307 (effluent standards for certain toxic contaminants) of the Clean Water Act. Furthermore, dredging, or the disposal of dredged material, may not cause the concentrations of chemicals in the water column to exceed state standards. In New York State, NYSDEC issues the Water Quality Certificate.

Section 404 of the Clean Water Act requires authorization from the Secretary of the Army, acting through the United States Army Corps of Engineers (USACOE), for the discharge of dredged or fill material into navigable waters and other waters of the United States. The term "Waters of the United States" is defined in 33 CFR 328.3 and includes wetlands, mudflats, sandflats, streams, and rivers that meet the specified requirements. Section 404 applies to both permanent and temporary fill that are discharged into waters of the United States. A Section 404 permit from the USACOE requires a Water Quality Certificate.

For the Proposed Project, a Section 404 permit would be required for removing sediment from existing outfalls on the site and adding structures to prevent re-sedimentation of the mouths of

the outfalls that will be used for stormwater drainage from the project and/or for construction of new outfalls. If so, these activities should qualify for Nationwide Permit #13 (pertaining to bank stabilization activities); #3 (pertaining to maintenance, repair, and replacement); or #7 (pertaining to construction of outfall structures and excavation for maintenance of outfall structures). Nationwide Permit #7 would be available for maintenance excavation for the existing outfalls only if the excavated material is disposed of at an upland location.

In adopting a Nationwide Permit, the USACOE has already determined that the subject activity would not have a significant effect on the aquatic environment. A Water Quality Certification, with conditions that should be satisfied, has already been issued by NYSDEC for these Nationwide Permits. The work must also comply with Regional Conditions applicable to Nationwide Permits 3 and 7.

RIVERS AND HARBORS APPROPRIATIONS ACT OF 1899

Section 10 of the Rivers and Harbors Appropriations Act of 1899 requires authorization from the Secretary of the Army, acting through the USACOE, for the construction of any structure in, under or over any navigable waters of the United States, the excavation from or deposition of material in these waters, or any obstruction or alteration in navigable waters of the United States. The purpose of this Act is to protect navigation and navigable channels.

A Section 10 permit would be required for removing sediment from existing outfalls on the site and adding structures to prevent re-sedimentation of the mouths of the outfalls that will be used for stormwater drainage from the project and/or for construction of new outfalls. If so, these activities should qualify for Nationwide Permits #13, #3, or #7, as noted above. Although the removal of debris from the interpier areas may require a Section 10 permit, that work should qualify for Nationwide Permit #27 (pertaining to restoration activities). (NYSDEC has issued a Water Quality Certificate for this Nationwide Permit.) Work on top of the relieving platforms south of northern interpier area may require an individual USACOE permit, to the extent it involves construction of a structure or other work over (as opposed to in) a navigable water. While the waters of the Harlem River/interpier area may be considered navigable, no impact to navigation is expected from implementation of the Proposed Project.

COASTAL ZONE MANAGEMENT ACT OF 1972

New York has a federally approved coastal zone management program that is described in Chapter 12, "Waterfront Revitalization Program." Federal permits issued in states with approved coastal management programs must be accompanied by a Coastal Zone Consistency Determination that evaluates consistency with each state's coastal zone management plan. Cities may adopt their own local Waterfront Revitalization Programs (WRPs), which are considered in DOS determinations of consistency. In New York State, NYSDOS is responsible for the consistency review. New York City's revised Waterfront Revitalization Program, consisting of 10 policies, was approved by NYSDOS in August 2002. Chapter 12, "Waterfront Revitalization Program," assesses the consistency of the Proposed Project with these policies. The Proposed Project is expected to be consistent with both state and local Coastal Zone Policies.

MAGNUSON-STEVENSON ACT

Section 305(b)(2)-(4) of the Magnuson-Stevens Act outlines the process for the National Marine Fisheries Service (NMFS) and the Regional Fishery Management Councils (in this case the Mid-Atlantic Fishery Management Council) to comment on activities proposed by federal agencies

(issuing permits or funding projects) that may adversely impact areas designated as essential fish habitat (EFH). EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 USC 1802(10)). USACOE, in its permitting process, must either incorporate NMFS recommendations for minimizing effects to EFH (measures to avoid, minimize, or mitigate), or provide an explanation for not adopting them. Under the Magnuson-Stevens Act, NMFS and eight regional Fishery Management Councils were directed to describe and identify EFH in the fishery management plans developed by each Council to reduce the adverse effects of fishing on EFH and encourage the conservation and enhancement of EFH. Because the Proposed Project qualifies for Nationwide Permits under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, and requires no individual permits under those statutes for work below the high tide line that could affect aquatic species, an EFH Assessment is not necessary.

ENDANGERED SPECIES ACT OF 1973 (PL 93-205; 16 USC 1531 ET SEQ)

The Endangered Species Act of 1973 recognized that endangered species of wildlife and plants are of aesthetic, ecological, educational, historical, recreational, and scientific value to the nation and its people. The Act prohibits the importation, exportation, taking, possession, and certain other activities involving species covered under the Act, and certain interstate or foreign commercial activities. The Act also provides for the protection of critical habitats on which endangered or threatened species depend for survival. The United States Fish and Wildlife Service (USFWS) (non-marine plants and animals) and NMFS (marine plants and animals) are responsible for administering the Act. Section 7(a) of the Act requires federal agencies to consult with the Secretary of the Interior (through USFWS and/or NMFS) before project implementation to ensure that the proposed actions will not jeopardize a species, or destroy or adversely modify the designated critical habitat of the species. Threatened, endangered, and species of special concern with the potential to occur in the project area are discussed below in "Existing Conditions" and "Probable Impacts of the Proposed Actions."

NEW YORK STATE LAWS AND REGULATORY PROGRAMS

*PROTECTION OF WATERS, ARTICLE 15, TITLE 5, ECL, IMPLEMENTING REGULATIONS
6NYCRR PART 608*

New York State's surface waters (rivers, streams, lakes, and ponds) are valuable for sources of drinking water, for bathing, agricultural, commercial and industrial uses, for the fish and wildlife habitat they provide, and for educational and recreational opportunities. It is the state's policy, as set forth in Title 5 of Article 15, ECL to preserve and protect these waters. NYSDEC is responsible for administering the Protection of Waters regulations to prevent undesirable activities on water bodies. Under this regulatory program, all waters of the state are provided a use classification (A or AA for drinking water source, B for best usage for swimming and other contact recreation, C for waters supporting fisheries and non-contact recreation, and D the lowest use classification), and a standard designation based on existing or expected best usage (such as T for those that may support trout, or TS for those that may support trout spawning). The Harlem River is a Class I surface water. The water quality goals of Class I are discussed below.

The Protection of Waters Permit Program regulates five different categories of activities: disturbance of the stream bed or banks of a protected stream or other watercourse; construction, reconstruction, or repair of dams and other impoundment structures; construction,

reconstruction, or expansion of docking and mooring facilities; excavation or placement of fill in navigable waters and their adjacent and contiguous wetlands; and Water Quality Certification for placing fill or other activities that result in a discharge to waters of the United States in accordance with Section 401 of the Clean Water Act. A Water Quality Certificate will be required if a federal permit is needed for a discharge to any waters of the United States. Also, a Protection of Waters permit would likely be required for removal of sediments from the existing outfalls and/or construction of new outfalls, and for the excavation of debris from the interpier areas.

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES), ARTICLE 17 TITLE 8, ECL, IMPLEMENTING REGULATIONS 6NYCRR PARTS 750 THROUGH 757

Title 8 of Article 17, ECL, *Water Pollution Control*, was enacted to protect and maintain surface and ground water resources and authorized the creation of the SPDES permitting scheme to regulate discharges to the state's waters. This program incorporates requirements of the federal NPDES program delegated by USEPA to New York State. The following activities require SPDES permits: stormwater discharges during construction activities (SPDES General Permit), constructing or using (unless already permitted) an outlet or discharge pipe (point source) that discharges wastewater into surface or ground waters of the state; constructing or operating a disposal system (sewage treatment plant); or discharge of stormwater from certain types of uses. Because construction activities for the Proposed Project would disturb more than one acre, the SPDES stormwater general permit for construction activities will be required.

WATERFRONT REVITALIZATION OF COASTAL AREAS AND INLAND WATERWAYS ACT (EXECUTIVE LAW SECTIONS 910-921)

Under this Act, NYSDOS is responsible for conducting a Coastal Zone Consistency review and administering the Coastal Management Program (CMP) that contains legislatively enacted coastal area policies that must be complied with by New York State agencies. It also authorizes the state to encourage local governments to adopt WRPs that incorporate the state's policies. New York City has a WRP administered by the Department of City Planning (NYCDCP).

The WRP, originally adopted in 1982, included 44 State policies and 12 City policies. It established the City's policies for development and use of the waterfront. A revised WRP, which simplified and clarified the review process, was approved by the City Council in October 1999. The new WRP consists of 10 New York City coastal zone policies. Any activity subject to review under federal, state, and city laws must be assessed with respect to consistency with the state CMP and the state and city policies. A number of the policies deal with protection of water quality and natural resources. Chapter 12, "Waterfront Revitalization Program," addresses the consistency of the Proposed Project with the 10 City policies.

NYSDOS has designated 15 Significant Coastal Fish and Wildlife Habitats within New York City. The closest to the project site is known as the Lower Hudson Reach. The project site/Harlem River are not situated in this area. Therefore, this portion of the regulation does not apply to the Proposed Project.

The WRP designates three Special Natural Waterfront Areas (SNWA): East River and Long Island Sound; Jamaica Bay; and Northwest Staten Island Harbor Herons. None are located near the project site; therefore, this portion of the regulation does not apply to the Proposed Project.

Gateway Center at Bronx Terminal Market DEIS

The WRP also maps Significant Maritime and Industrial Areas (SMIA). The nearest is the South Bronx SMIA, at the confluence of the Harlem River with the East River, near Randall's Island. This SMIA does not include the project site.

THE NEW YORK STATE ENVIRONMENTAL QUALITY REVIEW ACT (6NYCRR PART 617, SEQRA).

Under SEQRA, local agencies may designate specific geographic areas as Critical Environmental Areas (CEAs). There are no CEAs located within the project area; therefore, this portion of the regulation does not apply to the Proposed Project.

FISH AND WILDLIFE ACT, ARTICLE 11, TITLE 20, ECL

This legislation, enacted in 1997, authorizes the commissioners of NYSDEC, NYSDOS, and the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) to designate areas of state lands and waters that are particularly important to bird conservation. There are no Bird Conservation Areas (BCAs) located in the study area. As such, this portion of the regulation would not apply to the Proposed Project.

TIDAL WETLANDS ACT, ARTICLE 25, ECL, IMPLEMENTING REGULATIONS 6NYCRR PART 661

Tidal wetlands regulations apply anywhere tidal inundation occurs on a daily, monthly, or intermittent basis. They are found along much of the salt-water shore, bays, inlets, canals, and estuaries of Long Island, New York City, and Westchester and Rockland Counties. Tidal wetlands are valuable for marine food production, wildlife habitat, flood, hurricane, and storm control, recreation, absorption of silt and organic material, education and research opportunities, and aesthetic values. The Tidal Wetlands Act sets forth the state's policy that tidal wetlands should be preserved and protected. NYSDEC is responsible for administering the tidal wetlands regulatory program (6 NYCRR Part 661) and mapping the locations of New York State's regulated tidal wetlands. The tidal wetlands are identified by category based on the types of vegetation and the presence of tide. Each category has restrictions on activities allowed in and adjacent (up to 150 feet inland from wetland boundary within New York City) to wetlands falling under that category. A permit is required for almost any activity that will affect wetlands or the adjacent areas. Accordingly, the removal of sediment from existing outfalls for stormwater drainage from the project and/or for construction of new outfalls would require a tidal wetlands permit. The removal of debris from the interpier areas would not be expected to require a tidal wetlands permit; however, if other activities require such a permit this work might be considered together with other activities in the tidal wetland or regulated adjacent area. Wetlands on the project site are described below in "Existing Conditions."

ENDANGERED AND THREATENED SPECIES OF FISH AND WILDLIFE; SPECIES OF SPECIAL CONCERN, ECL, SECTIONS 11-0535[1]-[2], 11-0536[2], [4], IMPLEMENTING REGULATIONS 6 NYCRR PART 182

The Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern regulations prohibit the take, import, transport, possession, or sale of any endangered or threatened species of fish or wildlife, or any hide or other part of these species as listed in Section 182.6. Threatened, endangered, and special concern species with the potential to occur

in the project area are discussed under "Existing Conditions" and "Probable Impacts of the Proposed Actions."

C. EXISTING CONDITIONS

TERRESTRIAL RESOURCES

The project site is entirely developed, and vegetation on the site is sparse, consisting of scattered vegetation and small trees. Soils on site are highly disturbed fill soils that are largely overlain by buildings, parking lots or roads. While no significant areas of vegetation or other natural resources occur on the site, a small woodlot (approximately 1/3-acre) is situated in the eastern corner of the site adjacent to the Metro North Rail Road tracks. Scrubby upland vegetation also occurs at the fringes of most of the former piers.

The entire shoreline is engineered, primarily with timber bulkheads, relieving platforms or rip-rap. Portions of the bulkhead within the interpier areas are in disrepair. Wildlife that may be expected to occur along the waterfront consists of species that are tolerant of urban conditions such as gulls, sparrows, starlings, and rats.

WETLANDS

The shoreline habitat at the site is almost entirely man-made (bulkhead, rip-rap, or relieving platforms); the exceptions are the interpier areas, which are mudflats. The site is not considered Significant Coastal Fish and Wildlife Habitat by NYSDOS (1992). The USFWS National Wetland Inventory classifies the interpiers as E1UBL (Estuarine subtidal unconsolidated bottom) (Figure 10-1). Subtidal areas are continuously submerged substrates (below extreme low water). Unconsolidated bottoms have at least 25 percent cover of particles smaller than 6 or 7 cm, and less than 30 percent vegetative cover. While the interpiers may have been subtidal at the time of aerial photograph for the NWI mapping, they are now intertidal mudflats that are alternately flooded and exposed by the tides.

The NYSDEC Tidal Wetland Map #588-518 indicates that the interpiers are Tidal Wetland-Littoral Zone designation (see Figure 10-2). Tidal Wetland Regulations 6 NYCRR Part 661.4 states the following

"Littoral Zone—The tidal wetlands zone designated LZ on an inventory map, that includes all lands under tidal waters which are not included in any other category except as otherwise determined in a specific case as provided in section 661.16. Provided there shall be no littoral zone under waters deeper than six feet at mean low water..."

Water depths within the interpiers and adjacent to the pierheads are less than six feet at mean low water.

USACOE has issued a jurisdictional determination that the extent of the agency's jurisdiction (under Sections 10 and 404) is the high tide line and that no wetlands under federal jurisdiction are present. NYSDEC has verbally confirmed the landward extent of State-regulated tidal wetlands is the Mean High Water elevation (el 1.0 Bronx Highway Datum). NYSDEC has also indicated that tidal wetland adjacent areas will extend onto certain upland areas, but not beyond paved areas that roughly parallel the shoreline (which predate the Tidal Wetlands Act). The exact extent of the adjacent area has not yet been finally determined; however, Figure 10-4 indicates the approximate extent of adjacent area.

FLOODPLAIN

Much of the project site west of Cromwell Avenue is within the 100-year floodplain (see Figure 10-3). The portions of the project site outside the 100-year floodplain include the location of former Building A, and the area east of Cromwell Avenue occupied by the Bronx House of Detention and Buildings C and D.

As shown on Figure 10-3, "Floodplain Map," almost all of the project site west of Exterior Street is within the 100-year floodplain. Slightly less than 50 percent of the project site east of Exterior Street also is within the 100-year floodplain. The 100-year flood rises to about 11 feet above National Geodetic Vertical Datum (NGVD), or about 8.4 feet above Bronx Borough Datum. The ground elevation at and to the west of Exterior Street ranges from about 5 to 6 feet above Bronx Borough Datum. This low ground elevation extends to a portion of Cromwell Avenue. The Federal Emergency Management Agency (FEMA) maps and regulates floodplains and floodways for insurance purposes. Flooding leads to widespread loss of life and property, and the purpose of the regulations and mapping is to minimize these losses. A municipality that becomes part of the program is required to promulgate and enact regulations to prevent inappropriate development in floodplains and floodways.

In New York City, Local Law 33 of 1988 regulates construction in the 100-year floodplain, and requires that roadway and utility construction be designed to minimize or eliminate damage from flooding. In addition, habitable structures must have the lowest floor not less than one foot above the base flood level. This New York City Law applies to the project.

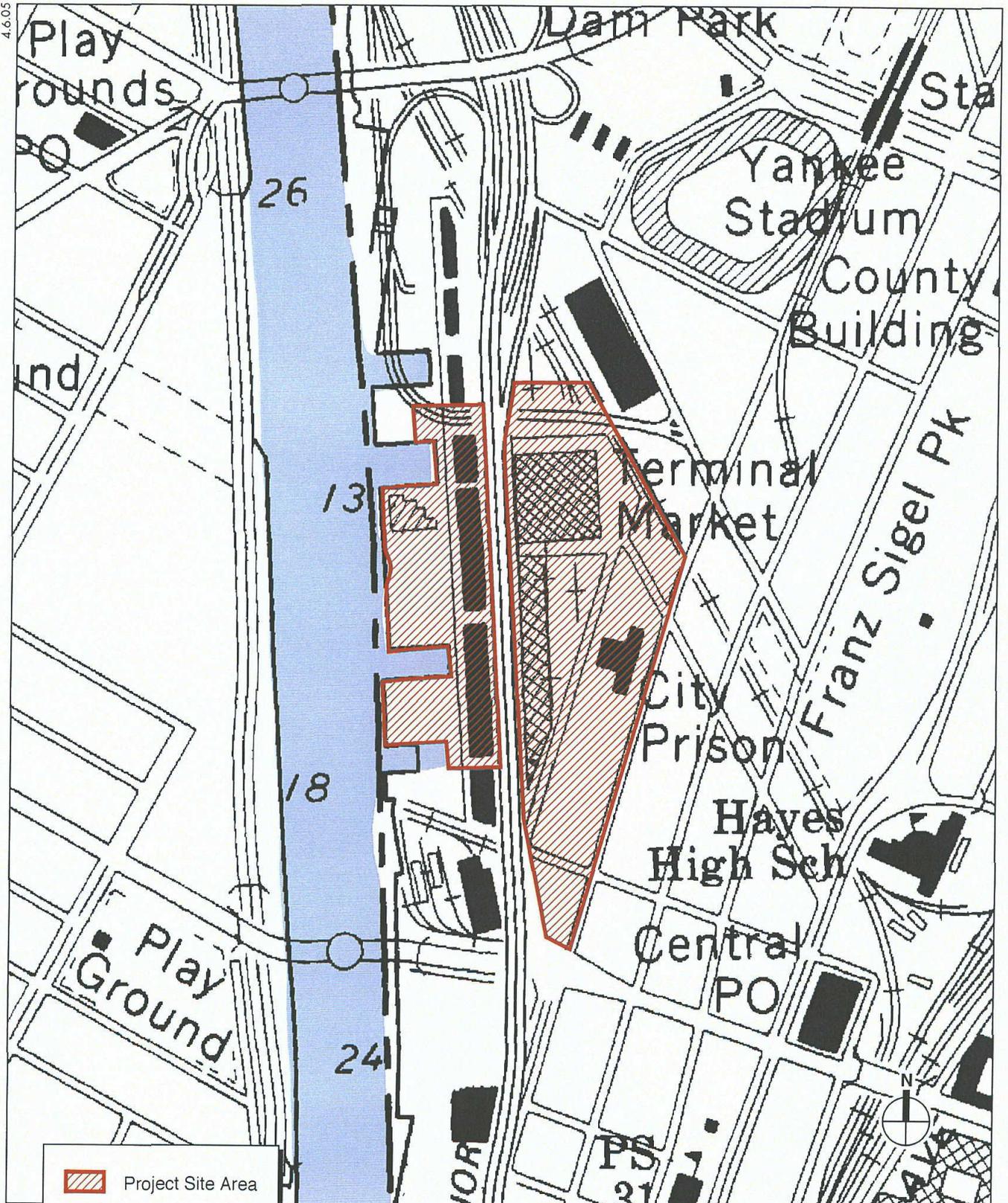
The project site is located in an area that is subject to coastal flooding and is not subject to riverine flooding. Riverine flooding is caused by runoff flowing into a river and causing the river to overflow its banks. If the volume of runoff is greater than volume of water that the streambed or floodway can keep within its banks, the water overflows onto the floodplain, where buildings and structures are flooded. Coastal flooding, however, has a different cause. The coastal ocean and bay waters rise because of the tides, storm surge and ocean waves from large area storm systems or hurricanes. The river does not back up and cause flooding, but rather the ocean rises over a large area, flooding the lower lying land areas. Only open coastal waters rising because of metrological and oceanic conditions would cause flooding at the project site.

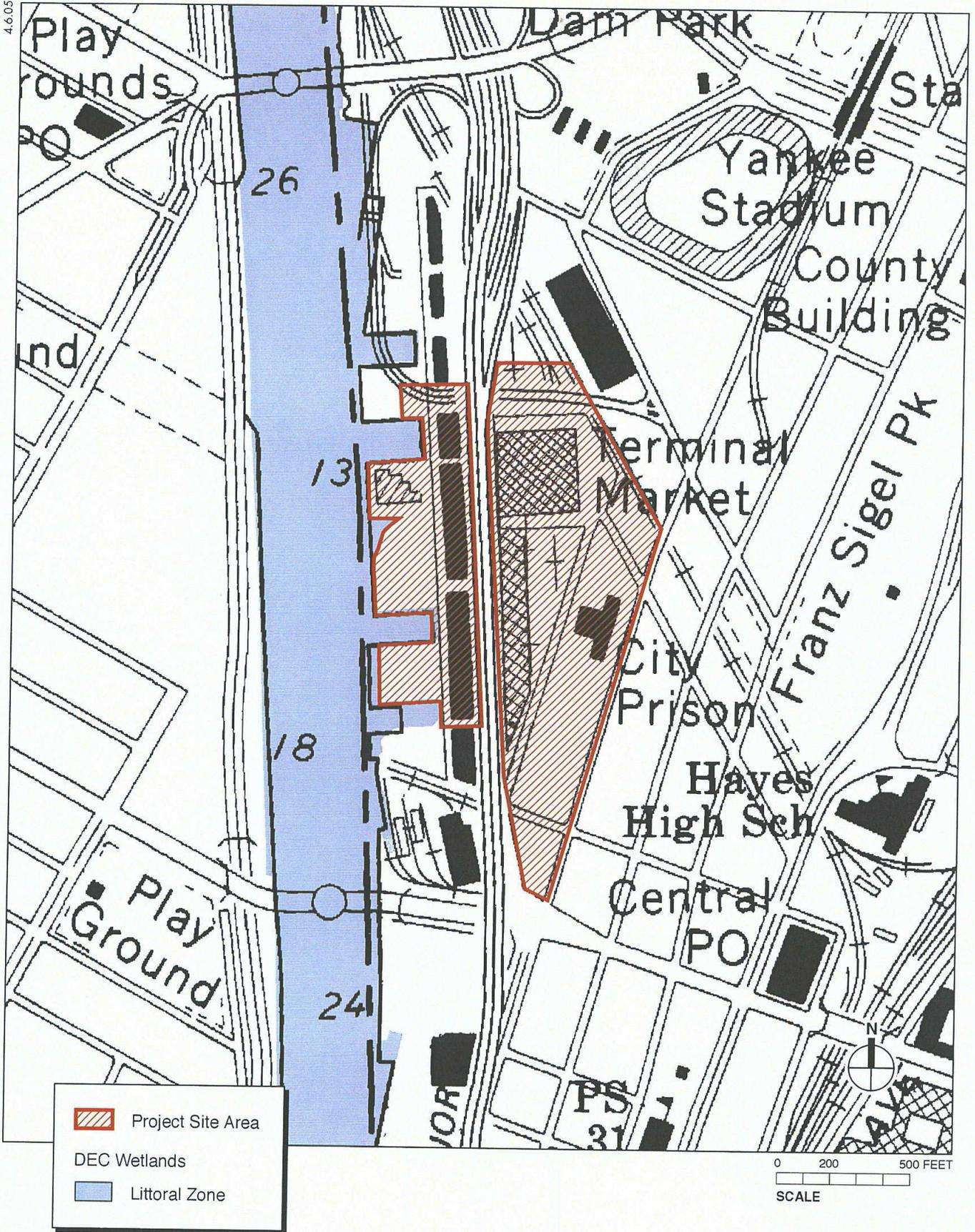
AQUATIC RESOURCES

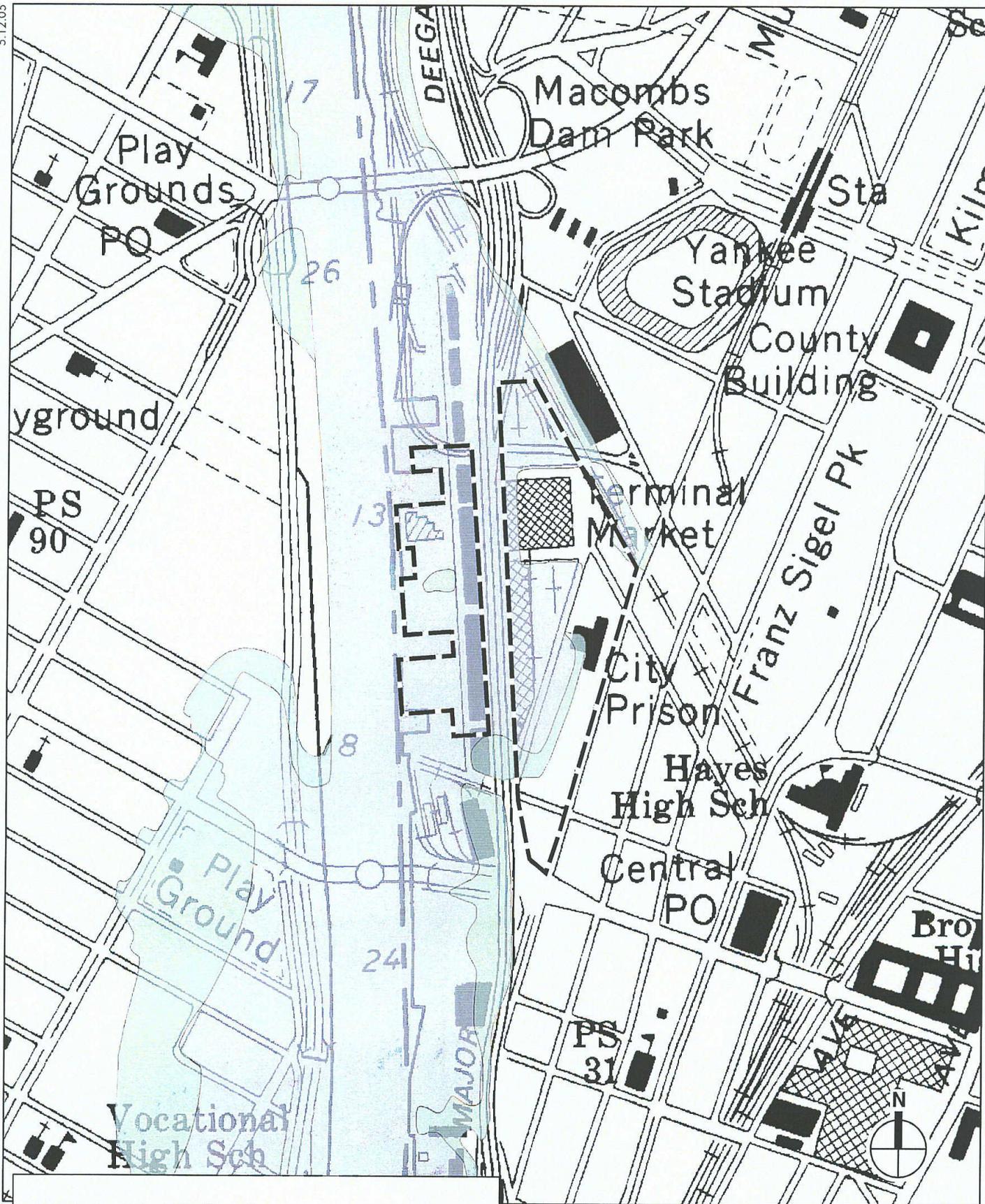
HYDROLOGY

The interpier areas are directly affected by the tides in the Harlem River. Prior to becoming "silted-laden" (due to the lack of dredging), these interpier areas are estimated to have had water depths exceeding 16 feet at mean low water to provide adequate draft for the barges and boats servicing the market. Today the interpiers have become almost completely filled with silt and sediment so that at extreme low tide, they are exposed mudflats. The interpiers are semi-sheltered from most wind and wave activity. The relatively recent construction of the Oak Point Link rail connection that runs on a trestle along the Harlem River, abutting the present day pier, has to some extent attenuated wave activity and promoted silt and sediment accumulation. Today, the interpier areas experience wave action mainly during severe storm events and when large vessels such as ferries navigate the Harlem River.

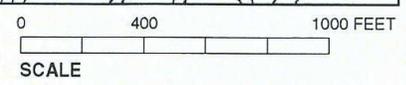
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-  Project Site Boundary
-  Inside 100-Year Floodplain (by detailed methods)
-  Inside 500-Year Floodplain



Floodplain Map
Figure 10-3

EXISTING WATER QUALITY CONDITIONS

Title 6 of the New York Code of Rules and Regulations (NYCRR) Part 703 includes surface water standards for each use class of New York surface waters. The Harlem River is use classification Class I. Table 10-1 presents the standards for the use classification (Class I).

Table 10-1
NYSDEC Standards for Fresh and Saline Waters Found Within New York City

Class	Definition	Fecal Coliform	DO (never less than)	pH
I	Suitability only for fish survival and propagation.	Monthly geometric mean (5 examinations) shall not exceed 2,000 cells per milliliter.	4.0 milligrams per liter (mg/L)	The normal range shall not be extended by more than 0.1 of a pH unit.

The City of New York has monitored New York Harbor water quality with an annual survey (Harbor Survey) for over 90 years. NYCDEP conducts the survey by collecting water samples at stations in four designated regions: Inner Harbor Area, Upper East River-Western Long Island Sound, Lower Harbor Area, and Jamaica Bay (NYCDEP 2003). The Upper East River-Western Long Island Sound Area includes the project site. Every year, NYCDEP produces a report summarizing the results of the current survey and providing a synopsis of recent trends in coliform counts, chlorophyll *a*, dissolved oxygen (DO), and Secchi transparency.

The results of recent Harbor Surveys (NYCDEP 2000, 2001, 2002, 2003) suggest that the water quality of New York Harbor has improved significantly since the 1970s as a result of measures undertaken by the City. These measures include eliminating 99 percent of raw dry-weather sewage discharges, reducing illegal discharges, increasing the capture of wet-weather related floatables, and reducing the toxic metals loadings from industrial sources by 95 percent (NYCDEP 2002). The 1999 and 2000 IEC 305(b) reports also indicate that the year-round disinfection requirement for discharges to waters within its district (including New York Harbor) has contributed significantly to water quality improvements since the requirement went into effect in 1986 (IEC 2000, 2001).

Salinity values vary at any given point within the Harbor Estuary depending on the amount of freshwater flow. As expected, average salinity values are highest in the Lower New York Harbor and Raritan Bay, decrease moving up-estuary to the Upper New York Harbor, the Lower Hudson River, and the Lower East River. The Upper New York Harbor is partially stratified—higher salinity water originating from the Atlantic Ocean at the mouth of the estuary tends to remain toward the bottom of the water column, while freshwater from the rivers draining to the estuary remain toward the top of the water column. Measurements taken in the Upper New York Harbor in 1998 and 1999 suggest that the salinity difference between surface and bottom waters can be as high as 10 parts per thousand (ppt) during periods of high river flow in the spring. Average salinity differences throughout the water column annually are generally between 1 and 3 ppt (USACOE 1999). Salinity measurements taken from the Harlem River, west of the project area at East 155th Street in 2001 by NYCDEP (2002) ranged from 19.4 to 27.2 ppt, with bottom water salinity generally greater than top water salinity. Salinity levels in 2003 decreased from above average levels in 2002 but were still above ten year monthly averages (NYCDEP 2004).

The following provides a brief summary of the water quality conditions in the sampling region (Upper East River) of the Harbor Survey that includes the project study area. The closest

sampling station (H3) is located to the west of the project area at East 155th Street in Manhattan. Table 10-2 presents a summary of water quality measurements at this station in 2001.

Table 10-2
2002 NYCDEP Water Quality Data for the East 155th Street Sampling Station

Parameter	Surface			Bottom		
	Min	High	Mean	Min	High	Mean
Total Fecal Coliforms (per 100 mL)	3	878	366.9	50	878	–
Dissolved Oxygen (mg/L)	3.3	9.0	5.3	3.1	8.2	5.3
Chlorophyll a (µg/L)	1.5	24.4	5.6	NM	NM	–
Secchi Transparency (ft)	3.5	11.0	6.8	NM	NM	–
Note:	NM = Not Measured; only one bottom water total fecal coliforms measurement was taken in 2001					
	mL = milliliter					
	µg/L = micrograms per liter					
Source:	NYCDEP 2002					

The presence of coliform bacteria in surface waters indicates potential health impacts from human or animal waste, and elevated levels of coliform can result in the closing of bathing beaches and shellfish beds. Temporary increases in fecal coliform concentrations may occur during wet weather due to increased fecal coliform loadings following a rain event. According to the 2003 New York Harbor Water Quality Report, although fecal coliform levels remain high in the Harlem River (H3 site) (compared to other parts of the Upper East River and Western Long Island Sound), the June average was recorded at 314 cells/100ml compared to the ten-year June average of 511 cells/100ml. Overall, fecal coliform concentrations in this area have declined, improving water quality from the early 1970s, when levels were routinely well above 3,000 cells/100 ml (NYCDEP 2004).

Dissolved oxygen (DO) in the water column is necessary for respiration by all aerobic forms of life, including fish and such invertebrates as crabs, clams, and zooplankton. The bacterial breakdown of high organic loads from various sources can deplete DO to low levels, and persistently low DO can degrade habitat and cause a variety of sublethal or, in extreme cases, lethal effects. Consequently, DO is one of the most universal indicators of overall water quality in aquatic systems. DO concentrations in the Upper East River – Western Long Island Sound area have increased over the past 30 years from an average that was approximately 3.5 mg/L in 1975 to above 5 mg/L in 2003, a value fully supportive of ecological productivity (NYCDEP 2004). However, concentrations below the “never less than 4.0 mg/L” criterion are still occasionally recorded, most often during the summer months.

SEDIMENT QUALITY

The Harlem River is a tidal strait that connects the Hudson and East Rivers. Sediments on the bottom of the Harlem River most likely consist of sand with traces of gravel and silt. Sediment samples collected in July 2002 at the 129th Street barge site were mostly silt and clay with some sand (Second Avenue Subway FEIS).

Typical of any urban watershed, New York Harbor Estuary sediments, including the Harlem River and interpier areas, are often contaminated due to a history of industrial uses in the area. Contaminants found throughout the New York Harbor Estuary include metals such as mercury

and copper, and various polycyclic aromatic hydrocarbons. Adams et al. (1998) found the mean sediment contaminant concentration for 50 of 59 chemicals measured to be statistically higher in the Harbor Estuary than other coastal areas on the East Coast. While the sediments of the New York Harbor Estuary are contaminated, the levels of most sediment contaminants have decreased on average by an order of magnitude over the past 30 years (Steinberg et al. 2002).

GENERAL HABITAT DESCRIPTION

The New York Harbor Estuary supports a diverse and productive aquatic community of over 100 species of finfish and more than 100 different invertebrates. Aquatic organisms of commercial or recreational importance found within the Harbor Estuary include striped bass, winter flounder, blue crab, and the northern quahog or hard clam.

The three main interpiers are adjacent to the Harlem River, which is part of the Upper New York Harbor. The Harlem River, which forms the site's western property boundary, is a deepwater habitat, with varying depths but generally greater than 20 feet at mean low water. The three interpier areas, while formerly deep water habitats (dredged regularly to provide the necessary draft for ships/barges), have accumulated a significant amount of silt and sediment to the point that there are exposed mud flats at low tide through a significant portion of each interpier. Water depths in the interpiers at mean high water currently range from one to five feet.

AQUATIC BIOTA

The following sections provide a brief description of aquatic biota found within the project area. The descriptions are largely drawn from existing information on the New York Harbor's resources prepared by the USFWS and NYCDEP, as well as a preliminary benthic and aquatic resource assessment conducted in the site's southernmost interpier in fall 2003. In addition, NMFS has determined that anadromous and resident fish, forage and benthic species may be present in the project area.

Primary Producers

Phytoplankton. Phytoplankton are microscopic plants whose movements within the system are largely governed by prevailing tides and currents. Several species can obtain larger sizes as chains or in colonial forms. Light penetration, turbidity and nutrient concentrations are important factors in determining phytoplankton productivity and biomass. While nutrient concentrations in most areas of New York Harbor are very high, low light penetration has often precluded the occurrence of phytoplankton blooms.

Resident times of phytoplankton species within New York Harbor are short and species move quickly through the system. Species found in the Harbor would also likely be present within the project area. In a 1993 survey of New York Harbor, 29 taxa of phytoplankton were identified, with the diatom *Skeletonema costatum* and the green algae *Nannochlorus atomus* determined to be the most abundant species at the monitored sites (Brosnan and O'Shea 1995). The average summer cell counts in that year ranged from 6,300 to 97,000 cells/ml.

Submerged Aquatic Vegetation and Benthic Algae. Submerged aquatic vegetation (SAV) are rooted aquatic plants that are often found in shallow areas of estuaries; these organisms are important because they provide nursery and refuge habitat for fish. Benthic algae can be large multicellular algae that are important primary producers in the aquatic environment. They are often seen on rocks, jetties, pilings, and sandy or muddy bottoms. Since these organisms require sunlight as their primary source of energy, the limited light penetration of New York Harbor

limits their distribution to shallow areas. Shallow water habitat occurs in the interpier areas however, SAV does not occur at the project site. Macroalgae was not observed on the intertidal "hard surfaces" (e.g. rip-rap, timber bulkheads, etc.) during any of the field investigations.

Zooplankton

Zooplankton are another integral component of aquatic food web. They are primary grazers on phytoplankton and detritus material, and are themselves used by organisms of higher trophic levels as food. The higher-level consumers of zooplankton typically include forage fish, such as bay anchovy, as well as commercially and recreationally important species, such as striped bass and white perch, during their early life stages.

Zooplankton include life stages of organisms such as fish eggs and larvae, decapod larvae, copepods, rotifers, barnacle larvae, cumaceans, mysid shrimp, and amphipods (Stepien et al. 1981; USACOE and USDOT 1984). Zooplankton studies conducted in New York Harbor found crustacean taxa to be the most prevalent form of zooplankton in collected samples. The most dominant species include the copepods *Acartia tonsa*, *Acartia hudsonica*, *Eurytemora affinis*, and *Temora longicornis*, with each species being prevalent in certain seasons.

Benthic Invertebrates

Invertebrate organisms that inhabit river bottom sediments as well as surfaces of submerged objects (such as rocks, pilings, or debris) are commonly referred to as benthic invertebrates. These organisms are important to an ecosystem's energy flow because they convert detrital and suspended organic material into biomass, and are also integral components of the diets of ecologically and commercially important fish and waterfowl species. Benthic invertebrates also promote the exchange of nutrients between the sediment and water column. They include those that can be retained on a 0.5 mm screen (macroinvertebrates) as well as smaller forms retained on 0.04 - 0.2 mm sieves called meiofauna. Some of these animals live on top of the substratum (epifauna) and some within the substratum (infauna). Substrate type (rocks, pilings, sediment grain size, etc.), salinity, and dissolved oxygen levels are the primary factors influencing benthic invertebrate communities; secondary factors include currents, wave action, predation, succession, and disturbance.

A literature review identified over 180 benthic taxa in the Hudson River, East River, and Upper New York Harbor (PBS&J 1998). Common infaunal macroinvertebrates collected within the New York Harbor system include aquatic earthworms, segmented worms, snails, bivalves and soft shell clams, barnacles, cumaceans, amphipods, isopods, crabs and shrimp (EEA 1988; EA Engineering, Science and Technology 1990; NJDEP 1984; Princeton Aqua Science 1985a & 1985b; LMS 1980 & 1984). Epifauna include hydrozoans, sea anemones, flatworms, oligochaete worms, polychaetes, bivalve, barnacles, gammaridean and caprellid amphipods, isopods, sea squirts, hermit crabs, rock crabs, grass shrimp, sand shrimp, blue crabs, mud dog whelks, mud crabs, horseshoe crabs, blue mussels, softshell clams, and sea slugs (EEA 1988; EA Engineering, Science and Technology 1990; Able et al. 1995; NYCDPR 1994).

The benthic invertebrate community in the Upper Harbor appears to be affected by the contaminants found in the bottom sediments (Adams et al. 1998). A survey of benthic habitats conducted in 1995 (Iocco et al. 2000) found that invertebrate communities in the Upper Harbor were dominated by pollution-tolerant or opportunistic species. Copepods (crustaceans) are the dominant group of zooplankton found in the New York Harbor Estuary system. Macroinvertebrates collected in July 2002 at 129th Street and Pier 6 included pollution tolerant

and pollution sensitive organisms. Dominant macroinvertebrates were polychaetes in the *Capitellidae* and *Spionidae* families (Second Avenue FEIS).

A preliminary survey conducted in November 2003 in the southernmost interpier on the project site and just waterward of the elevated Oak Point Link rail connection determined the presence of rock crabs, polychaete worms, snails and bivalve clams. Vertical surfaces at the project site such as the bulkheads, rip-rap slopes, and timber piles (associated with the relieving platforms) may offer some habitat for attached invertebrates such as mussels or barnacles.

Fish

A mixture of habitats in the Harlem and East Rivers supports marine, estuarine, anadromous, and catadromous fish. Despite the relatively low value of the Harlem and East Rivers as residential fish habitat, it serves as a major migratory route for certain species from the Hudson River to the Long Island Sound. Winter flounder, scup, bluefish, Atlantic silverside, striped killifish, common killifish, striped bass, tomcod, members of the herring family, and American eel are among the species seasonally present in the Harlem and East Rivers. Essential Fish Habitat has been identified for 17 species in the East and Harlem Rivers.

Fish species collected during the November 2003 preliminary survey are identified below in Table 10-3.

Table 10-3
Fish identified in interpier areas, Fall 2003

Species	Scientific Name
Blueback herring	<i>Alosa aestivalis</i>
Mumichug	<i>Fundulus heteroclitus</i>
Atlantic Silverside	<i>Menidia menidia</i>
Striped bass	<i>Morone saxatilis</i>
Winter flounder	<i>Pseudopleuronectes americanus</i>
Source: Princeton Hydro (2003).	

ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES

Requests for information on rare, threatened or endangered species within the immediate vicinity of the project area were submitted to USFWS, NMFS, and the New York Natural Heritage Program (NYNHP). NYNHP, a joint venture of NYSDEC and The Nature Conservancy (TNC) since 1985, maintains an ongoing, systematic, scientific inventory on rare plants and animals native to New York State. NYSDEC maintains the NYNHP files. The NYNHP database is updated continuously to incorporate new records and changes in the status of rare plants or animals. In addition to this state program, the USFWS maintains information for federally-listed threatened or endangered freshwater and terrestrial plants and animals, and NMFS for federally-listed threatened or endangered marine organisms.

The NYNHP and the USFWS have determined that there are no known occurrences of threatened or endangered species and there are no areas within the project area that are

considered "critical habitat."¹ The National Marine Fisheries Service has determined that shortnose sturgeon may be present in the project area as possible (likely rare) transients.²

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

There would be minimal changes to the use of the project site in the future without the proposed actions.

Elements of the New York/New Jersey Harbor Estuary Program (HEP) and other programs that are specifically directed at improving biological resources and habitats are briefly described below.

NEW YORK/NEW JERSEY HARBOR ESTUARY PROGRAM PROJECTS

The HEP Final Comprehensive Conservation and Management Plan (CCMP) included a number of goals to improve water quality and aquatic resources throughout the Harbor. To meet these goals, the CCMP outlines objectives for the management of toxic contamination, dredged material, pathogenic contamination, floatable debris, nutrients and organic enrichment, and rainfall-induced discharges. Most of these objectives aim to increase knowledge of the nature and extent of various forms of pollution (e.g., toxic chemicals, sewage overflows, and floatables), reduce inputs of these pollutants, and increase the habitat and human use potential of the Harbor area. The floatables action plan of the New York/New Jersey HEP aims to reduce the amount of debris in the states' waters. It includes marine debris survey collection programs, improved street cleaning, combined sewer overflow (CSO) and stormwater abatement, enforcement of solid waste transfer regulations, shoreline cleanup programs, and public education.

The HEP Habitat Workgroup developed watershed-based priorities for acquisition, protection, and restoration. The USACOE New York District began a feasibility study in 2001 to assess potential sites for habitat restoration in New York Harbor. In May 2003 the Regional Plan Association (RPA) identified needs and opportunities for environmental restoration in the Hudson-Raritan Estuary. These sites are not local to the project site but involve the preservation and enhancement of tidal wetlands that will provide improved habitat for fish and macroinvertebrates as well as the birds, mammals, and reptiles that depend on these habitats.

NEW YORK CITY PROJECTS

USEPA's National CSO Strategy of 1989 requires states to eliminate dry weather overflows of sewers, meet federal and state water quality standards for wastewater discharges, and minimize impacts on water quality, plant and animal life, and human health. New York City committed \$1.5 billion for construction of CSO abatement facilities over the period 1998-2008. This should result in some future improvement in coliform, DO, and floatables levels in the Harbor Area. The City also recently completed improvements to its wastewater treatment plants, which should lead to further decreases in coliform counts and floatables levels.

¹ USFWS, letter to Langan Engineering, November 29, 2004 NYSDEC, letter to Langan Engineering, October 20, 2004.

² NMFS, letter to Langan Engineering, January 19, 2005.

WATERFRONT RESTORATION

The future without the Proposed Project would involve no restoration or stabilization of the waterfront structures at the site. As such, the deterioration of the waterfront would continue and debris would continue to enter the harbor. In addition, there would continue to be no public access to the waterfront, due to its hazardous condition.

E. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

CONSTRUCTION IMPACTS

TERRESTRIAL RESOURCES

Currently, the project site provides minimal wildlife habitat other than small areas with ruderal vegetation along the waters edge, the small woodlot in the eastern portion of the site, and vacant buildings that may be used by urban wildlife typical of highly developed portions of cities such as pigeons, starlings, house sparrows, and rodents. Therefore, the Proposed Project would have no significant impacts on the limited terrestrial natural resources occurring on the site.

WETLANDS/WATERS OF THE UNITED STATES

As noted previously, the entire shoreline adjacent to the project site is engineered with rip-rap slopes, timber bulkheads or relieving platforms. USACOE has determined that the extent of federal jurisdiction is the high tide line and that no federally regulated wetlands are present within the areas to be developed. Based on site investigations conducted by Langan's wetland scientists there are no federally regulated, vegetated wetlands along the waterfront. There are intertidal waters/mudflats (waters of the U.S.), which have developed in the interpier areas. NYSDEC has indicated through State Tidal Wetland Maps and based on a physical inspection of the site that state-regulated Tidal Wetlands (Littoral Zone) boundaries extend up to the mean high water line. NYSDEC also regulates an adjacent area, or upland buffer, under the Tidal Wetland Regulations (see Figure 10-4, "Approximate Tidal Wetlands Adjacent Area").

Short term construction related impacts to these resources would be associated with the proposed improvements to the waterfront and water's edge. Portions of the existing timber bulkheads within the interpier areas would be removed at or just above spring high tide and replaced by a softer, sloped, and more stable rip-rap edge. The affected areas would be portions of: the northern bulkhead along the southern interpier area, both bulkheads along the middle interpier area, and the southern bulkhead along the northern interpier area. The project involves no filling of state-regulated Tidal Wetlands or waters of the U.S., except to the extent small amounts of material may be incidentally discharged as a result of the removal of sediments from the existing stormwater outfalls on the site or as the result of construction of new outfalls.

Tidal wetland adjacent area disturbance would occur during construction and would include mainly the new rip-rap replacing portions of bulkhead in the interpier areas, replacement of existing-disturbed sparsely vegetated adjacent area with a landscaped public open space and esplanade in the south and esplanade in the north, as well as possibly some covering of adjacent areas with impervious material (asphalt or concrete) for parking and a retail building. The project is expected to have no significant impacts and may have a beneficial ecological effect on the adjacent area.

FLOODPLAIN

The proposed ground elevations would remain close to the existing elevations. As discussed above, this area is subjected to coastal flooding, not riverine flooding. Because a major component of coastal flooding is caused by tides, this type of flooding can be predicted. Typically, several days of notice are available for coastal flooding. In that time, the project site could be secured to any damage from the flooding. The proposed buildings would not cause additional flooding because they would not block water from flowing around the area and would not reduce the ability of the floodplain to store water nor increase flooding risks to the surrounding area. Best engineering practices would be used to minimize flood damages to the buildings, roadways, and utilities located in the floodplain.

AQUATIC RESOURCES

Activities which could result in potential water quality impacts include replacement of bulkheads with rip-rap, removing sediment affecting the operation of existing outfalls and/or construction of new outfalls, and upland construction activities.

The potential impacts would be associated with:

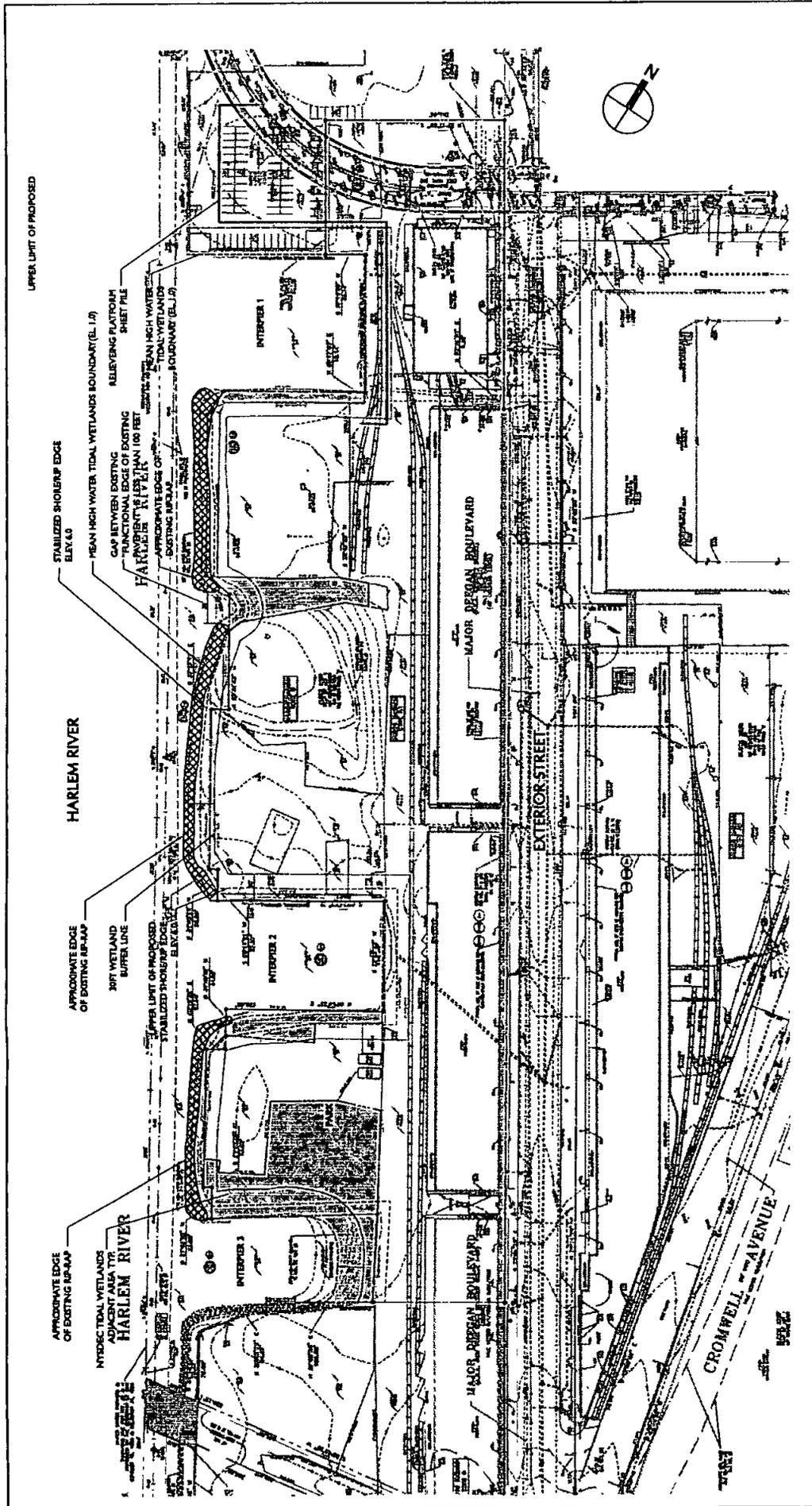
- Localized increases in suspended sediment;
- Temporary disturbance of benthic communities during debris removal from interpier areas; and
- Suspension of contaminated sediments.

Water quality changes associated with increases in suspended sediment and re-suspension of contaminated sediments from construction would be minimal and are expected to dissipate shortly after the structures are installed.

A stormwater pollution prevention plan (SWPPP) would be prepared for the Proposed Project in accordance with established engineering practices as part of the SPDES permitting process. Implementation of best management practices for erosion and sediment control and other measures of the SWPPP (described further below) would minimize potential water quality effects associated with the discharge of stormwater during construction activities.

Replacement of the bulkheads and concomitant improvement of the existing rip-rap edge and removal of sediment around existing outfalls and/or construction of new outfalls have the potential to result in temporary impacts to fish and benthic macroinvertebrates due to temporary increases in suspended sediment, potential release of contaminants from disturbed sediments, and noise associated with in-water construction activities. These effects would be localized and would not be expected to significantly impact aquatic biota.

Life stages of estuarine-dependent and anadromous fish species, bivalves, and other macroinvertebrates have developed behavioral and physiological mechanisms for dealing with variable concentrations of suspended sediment, and thus are fairly tolerant of elevated suspended sediment concentrations (Birtwell et al. 1987; Dunford 1975; Levy and Northcote 1982 and Gregory 1990 in Nightingale and Simenstad 2001; LaSalle et al. 1991). Fish are mobile and generally avoid unsuitable conditions such as increases in suspended sediment and noise (Clarke and Wilber 2000), and also have the ability to expel materials that may clog their gills when they return to cleaner, less sediment-laden waters. Most shellfish are adapted to naturally turbid estuarine conditions and can tolerate short-term exposures by closing valves or reducing



Approximate Tidal Wetlands Adjacent Area
Figure 10-4

pumping activity. More mobile benthic invertebrates that occur in estuaries have been found to be tolerant of elevated suspended sediment concentrations.

Debris has accumulated in the interpier areas from various sources including floating debris being brought in by the tide, the state of disrepair of portions of the bulkheads within the interpiers and upland concrete pads and illegal dumping. The southernmost interpier has been most adversely impacted by debris accumulation.

As discussed, the Proposed Project involves substantial improvements to the water's edge, including the partial replacement of existing timber bulkhead and creation of a waterfront open space and esplanade. In addition to these activities, the applicant would also remove and properly dispose of all debris along the shoreline, as well as debris accumulated on the mudflats.

The proposed improvements to the shoreline (bulkhead removal and replacement with rip-rap, removal of sediment around existing outfalls and/or construction of new outfalls, and removal of accumulated debris found on the mudflats of the interpiers) would disturb a small area of benthic habitat. Benthic organisms would be expected to recolonize these areas. Disturbance to benthic communities during construction would be minimal and would not significantly impact the food supply for fish foraging in the area. In fact, a larger area of benthic habitat would be created through the replacement of portions of the vertical timber bulkheads with the sloped, rip-rapped edge.

ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES

As described above, NYNHP and USFWS have determined that there are no known occurrences of threatened or endangered species and there are no areas within the project area that are considered "critical habitat." NMFS has determined that shortnose sturgeon may be present in the project area as possible (likely rare) transients. As transients, the shortnose sturgeon would be unlikely to regularly occur in the project area. In any case, the Proposed Project would employ best management practices to prevent potential disturbances from any work below mean high water, and therefore no significant impacts would be expected during construction activities.

EROSION AND STORMWATER MANAGEMENT

During construction activities, there would be increased potential for on-site erosion and sedimentation where soils would be disturbed. A detailed SWPPP would have to be prepared under SPDES permitting requirements and would be implemented during construction. Stormwater management plans would be developed as part of the design process, with implementation to be carried out by the contractor under supervision of the owner, construction manager, and the SPDES permitting and enforcement program administered by NYSDEC.

The stormwater management program would contain appropriate requirements for erosion and sedimentation controls to be used during construction. Such controls may include structural as well as vegetative measures such as hay bales, silt fencing, vegetative covers, and slope and soil stabilization methods.

These measures would avoid adverse impacts to surface water and aquatic organisms of the Harlem River and the interpiers near the construction site.

OPERATIONAL IMPACTS

TERRESTRIAL RESOURCES

The Proposed Project would add vegetated areas within the two-acre waterfront esplanade and open space area of the site that have the potential to provide some limited habitat to bird species and other wildlife. Construction of the Proposed Project would result in an increase in the amount of green space on the site. Further, the newly created rip-rapped tidal areas have the potential to provide feeding and resting areas for aquatic bird species.

WETLANDS

No adverse impacts to wetlands are expected to occur from operation of the Proposed Project. The coverage of a portion of regulated adjacent area with impervious material would not have a significant impact, as such area provides very limited protection of the wetlands.

FLOODPLAIN

The Proposed Project's buildings, roadways, and utilities would be located within the 100-year floodplain. The proposed ground elevations would remain close to the existing elevations, but the buildings would be built to above the floodplain level. Generally, the first floor elevation of the proposed buildings would be approximately 10 feet above Bronx Borough Datum and more than one foot above the 100-year floodplain elevation, complying with Local Law 33 of 1988. Therefore, operation of the Proposed Project would not be expected to result in significant adverse impacts to floodplains.

AQUATIC RESOURCES

The proposed increase in landscaped areas would result in a reduction in runoff generation. The existing estimated stormwater discharge to the Harlem River is 149 cubic feet per second (cfs), and the estimated stormwater discharge to the Harlem River with the Proposed Project is 142 cfs. The proposed development would result in a five percent reduction in developed stormwater discharge to the Harlem River. It is also anticipated, due to the cleaning up of debris, operational controls incorporated into the design of the proposed facilities and increases in landscaped areas that stormwater runoff quality will improve.

The New York City Department of Parks and Recreation implements an Integrated Pest Management (IPM) strategy for the management of all turf within its facilities. The IPM results in healthy grass areas with minimal use of fertilizers, pesticides, and herbicides and thus minimizes the discharge of pesticides to surface water from stormwater runoff generated within these open space areas. Implementation of the IPM strategy within the proposed open space would minimize potential adverse impacts to surface water quality from the discharge of stormwater generated within the project site.

ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES

As noted previously, NYNHP and USFWS have determined that there are no known occurrences of threatened or endangered species on the project site and there are no areas within the project area that are considered "critical habitat." NMFS has determined that shortnose sturgeon may be present in the project area as possible (likely rare) transients. As transients, the shortnose sturgeon would be unlikely to regularly occur in the project area. In any case, the

Proposed Project would employ best management practices to prevent potential disturbances from any work below mean high water, and therefore no significant impacts would be expected.

F. MEASURES TO MINIMIZE IMPACTS

As required for construction activities that disturb one acre or more of land, a SWPPP would be prepared in accordance with established engineering practices. Implementation of best management practices for erosion and sediment control and other measures of the SWPPP would minimize potential water quality effects associated with the discharge of stormwater during upland construction activities. Best management practices would be used to prevent, or minimize, the potential disturbance from any work below mean high water. The addition of landscaped areas mainly along the waterfront would result in a decrease in the amount of impervious surface on the project site and increase the amount of permeable landscape by over 367 percent site-wide. The addition of pervious surfaces should increase filtering of runoff as well as decrease the amount of stormwater runoff from the project site. The Proposed Project would also involve removal of accumulated debris from the intertidal, interpier areas. *

A. INTRODUCTION

The potential for impacts relating to the presence of hazardous materials in soil, groundwater, and building materials resulting from previous and existing uses of the site are summarized here, based on a Phase I and Phase II Environmental Site Assessment performed by Langan Engineering & Environmental Services, P.C. (Langan), dated 6 January 2004 (included in Appendix D); remedial investigation implemented between 27 September 2004 and 18 January 2005; correspondence from the New York State Department of Environmental Conservation (NYSDEC), dated 7 January 2004 related to the removal of underground storage tanks and 29 September 2004; and correspondence from the New York City Department of Environmental Protection (NYCDEP) containing their recommendations for addressing constituents of concern at the Site. The Phase I study included a visual inspection of the site; a review of existing data on geology and hydrology of the area; an examination of historical maps; interviews with persons knowledgeable about the site; and a review of federal and state databases regarding the site and surrounding areas. The Phase II study included sampling and analysis of soil and groundwater. As of June 2005, the remedial investigation included a geophysical survey and additional sampling and analysis of the soil and groundwater. The analytical data generated through the remedial investigation is included in Langan's February 2005 Soil and Groundwater Investigation Summary—Eastern Parcel and Park Area report submitted to the NYSDEC on 11 February 2005 (included in Appendix D) under the auspices of the NYSDEC's Brownfield Cleanup Program (BCP).

B. EXISTING CONDITIONS

SITE CONDITIONS

GEOLOGY AND HYDROGEOLOGY

The majority of the project site is relatively flat with elevations varying from approximately five to ten feet above mean sea level, according to the USGS Topographic Central Park, New York Quadrangle. The topography rises sharply along the eastern site limits along River Avenue. Elevations along River Avenue vary from 15 feet at 149th Street to 30 feet at the Metro North Bridge. Based on investigations as of February 2005, the specific geology of portions of the project site east and west of Exterior Street are as follows:

East of Exterior Street

Surface cover is primarily composed of cobblestone, asphalt and concrete, with small areas of sand, vegetation and gravel. In general, fill composed of brick, asphalt, sand and gravel extends from beneath the surface cover to a depth of ± 10 (Borough President of Bronx Datum, which is 2.608 feet above USGS NGVD mean sea level at Sandy Hook, New Jersey). In the northeast

portion on the Eastern Parcel, where the elevation is higher, the fill layer generally raises to \pm el 15. On the west side of the Eastern Parcel the fill is underlain by silty clay, which pinches out to the east. On the east side, the fill is generally underlain by sand. The depth to bedrock is \pm el 0 to \pm el -15 in the northeast corner of the Eastern Parcel and slopes down to the south and west to \pm el -40 to \pm el -70

West of Exterior Street

Surface cover is primarily composed of concrete, sand and gravel, with small areas of vegetation near the Harlem River. In general, fill composed of brick, asphalt, ash, metal debris, wood debris, concrete, coal, porcelain, pottery, sand and gravel extends from beneath the surface cover to a layer of silt and clay. The layer of silt and clay is at \pm el 0 on Exterior Street and slopes down to greater depths on the Harlem River side. The depth to bedrock is \pm el -50 to \pm el -75 on the east side of the waterfront (Park Area) and slopes down to the west to \pm el -85 to \pm el -95.

Groundwater underlying the site was found at \pm el 1 to \pm el 2.5 east of Exterior Street and \pm el -1 to \pm el 1 west of Exterior Street. Groundwater was generally found to flow to the southwest toward the Harlem River, based on area topography and the monitoring of fifteen wells installed by Langan on the site. This direction is generally consistent with regional maps published by the U.S. Geological Survey.

SITE HISTORY

Development at the site dates back to prior to 1891, based on Sanborn fire insurance maps. Historical operations included a foundry, coal yards, rail yards, a fireproofing manufacturing facility, an electric power generation plant, an asphalt paving company, toy and refrigerator manufacturing, a New York City Department of Sanitation facility, fuel oil storage, and a jailhouse (the Bronx House of Detention). Historic surface disturbances throughout the waterfront area and under the northern portion of the Major Deegan Expressway are indicated by aerial photos.

CURRENT CONDITIONS

The site contains eight buildings constructed and modified at various times between the 1920s and the mid-1970s. These buildings include a two-story power house (Building J), six wholesale food market buildings (Buildings B/D and F/H), and the Bronx House of Detention. The six market buildings now generally consist of vacant space and wholesale stores. The power house is currently vacant. The Bronx Men's House of Detention is in reserve status, and is currently closed. Building A, a 6-story cold storage warehouse building formerly located on the northeast portion of the site, was recently demolished because of its poor condition.

PETROLEUM STORAGE TANKS

The Phase I and II reports and the remedial investigation identified the probable existence of 18 underground storage tanks on the project site, though none are active. Four tanks at the Bronx House of Detention, one of which had leaked, were removed in 2003. Four tanks were replaced in a similar location at the Bronx House of Detention following the removal. Eleven other tanks are listed as having been closed in place in 2001. One tank, situated along the waterfront, appeared to be abandoned, and two other locations that may have underground tanks were identified. one under the sidewalk on the east side of Exterior Street, in front of a market building on the southern side of the site; and one in the location of the former New York City

Department of Sanitation (NYCDOS) garage facility (no longer extant). One inactive aboveground storage tank was observed in the former Building A, which has since been demolished. The New York State Spills database has records of five releases on the site, three of which have been closed to the satisfaction of the NYSDEC. One of the remaining spills related to a release contained inside a manhole; the other was a 2001 release at the Bronx House of Detention, which resulted in petroleum being released to the sewer system. Further details regarding this spill are provided in Langan's Phase I and II report.

POTENTIAL PCB USAGE

No transformers or related electrical equipment potentially containing PCBs were identified. Fluorescent light ballasts in fluorescent light fixtures may potentially contain PCBs, as may the hydraulic elevators in the warehouse buildings.

HISTORIC FILL

The surface soil on the site is fill material of unknown origin placed prior to development. The fill material covers the entire site. Fill thickness ranges from approximately 6 feet to 25 feet. Observations during site investigation describe the fill as composed of sand, gravel, ash, asphalt, porcelain, brick, cobble, coal, wood, metal debris and pottery. River mud underlies the fill material. Decomposition of organic material in the river mud can generate methane gas; however, testing at seven locations on the project site revealed no detectable levels of methane.

LABORATORY ANALYSIS OF SOIL AND GROUNDWATER SAMPLES

Phase II Environmental Site Investigation

Soil borings were advanced at 12 locations on the site, based on historic usage and locations of underground storage tanks. Groundwater samples were collected from four observation wells and one soil boring location. Locations of groundwater samples were based on historic usage of hazardous materials.

For the soil samples, no volatile organic compounds (VOCs) or PCBs were detected above the most stringent guidelines in NYSDEC's Technical and Administrative Guidance Memo (TAGM) 4046 Recommended Soil Cleanup Objectives (RSCOs). As expected for fill material on a former industrial site, all the samples exceeded one or more of the RSCOs for individual polycyclic aromatic hydrocarbons (PAHs) and for metals, but the levels of total PAHs were below 100 ppm, the levels of total SVOCs were below 500 ppm for all but one sample, and the levels of metals, though above normal background levels, were generally typical of urban conditions.

Although some exceedances of NYSDEC GA standards were found in the groundwater samples, these standards were calculated assuming use as drinking water, and groundwater is not used for potable supply in the Bronx. In addition, all samples had high sodium levels consistent with the natural brackish condition resulting from the proximity to the tidal Harlem River.

BCP Remedial Investigation

For the purpose of the BCP, the site was split into two parcels; the Western Parcel and the Eastern Parcel and Park Area as shown on the attached Figures 11-1 and 11-2. Post Phase II work summarized herein was performed under the auspices of the BCP. The results of the

investigation implemented up to February 2005 are included in Langan's Soil and Groundwater Summary – Eastern Parcel and Park Area report.

A geophysical survey was performed on the southern portion of the waterfront area and other select areas suspected of containing USTs from 27 September to 1 October 2004. The geophysical survey identified potential subsurface anomalies at nine locations in the southern portion of the waterfront. Test pits were excavated at each of these locations to investigate the potential subsurface anomalies. The anomalies discovered were rusted, unidentifiable metal debris, cables and rusted sheet metal. In addition, the geophysical survey provided evidence that the tank at the former NYSDOS facility and the tank under the sidewalk on the eastern side of Exterior Street exist. Information on these two tanks can be found in Langan's Phase I.

In addition, soil borings were advanced at 59 locations to delineate the findings of the Phase II and further investigate historic usage and potential impacts due to the underground storage tanks. Groundwater samples were collected from the four Phase II observation wells and 13 wells installed during the remedial investigation. Locations of groundwater samples were based on historic usage of hazardous materials. Field observations obtained from 27 September 2004 to 18 January 2005, both visually and with field instrumentation, found several locations with petroleum contaminated soil. Locations where petroleum contaminated soil were observed can be found in the Soil and Groundwater Investigation Summary.

The extent of the estimated impacted areas based on the sampling conducted to date are shown on the attached Figure 11-1, which combines the information generated in the Phase II investigation with the current data. Visual petroleum staining and odors were observed, at varying depths and thicknesses of up to 12 feet in fill above the water table. The thickest (± 12 feet) layer of petroleum staining and odor was observed adjacent (immediately west) to the triangular building on the south side of the site. East of Exterior Street, petroleum impacted soil as evidenced by elevated PID readings, staining and odor was observed in multiple borings in nine areas:

- north of Ramp A,
- two areas under the floor slab within WH-1,
- south of WH-1,
- the Bronx House of Detention UST area,
- two areas in market buildings along Exterior Street,
- one area under the floor slab within S-1, and
- under the triangular building at the far south of the site.

The volume of petroleum contaminated soils east of Exterior Street, based on investigation activity as of February 2005, is estimated to be approximately 19,700 cubic yards.

West of Exterior Street, petroleum contamination was observed in borings and test pits in three areas;

- one location in a market building,
- one area in the proposed Retail G area, and
- one area in the proposed Park Area.

The volume of petroleum contaminated soil west of Exterior Street, based on investigation activity as of February 2005, is estimated to be approximately 6,000 cubic yards.

It is anticipated that additional sampling to be conducted in certain areas of the project site will identify additional petroleum contaminated soil. Given the circumstances of development, it is also anticipated that additional petroleum contaminated soil will be discovered during construction. Accordingly, to be conservative, it could reasonably be assumed that the volumes calculated above might increase by up to 25 percent and that an additional 2,700 cubic yards of contaminated soil may be discovered in conjunction with upgrading the utilities under Exterior Street.

In addition, analytical data indicates that the general fill across the site contains minor SVOC and metals exceedances of TAGM. This is attributed to the historic nature of the fill and is typical of fill found in urban environments.

Based on the proposed construction requirements, all petroleum contaminated soils and petroleum contaminated fill material will be properly removed, transported by a licensed carrier and disposed at a permitted off-site facility in accordance with NYSDEC regulations. The procedures and protocols are discussed in more detail in Section D below. The only exception to this removal will be the area underlying the foundation of the existing WH-1 warehouse building, as the existing foundation will remain and become an integral part of the foundation for the planned retail building. The piles and pile caps must remain in place because possible dewatering and excavation under pile caps would require dangerous, confined space hand work and would risk damage to the piles. This limited area of petroleum contaminated soil can be safely left in place, because the new concrete floor slab and a vapor barrier will protect future occupants from potential exposure. Vapor barriers for other site structures will be determined on a case by case basis depending on the results of planned, site-wide soil gas sampling. Additionally, the monitoring well downgradient of WH-1 indicates that contaminants are not migrating from this area.

Other than the observed petroleum impacts (visual staining, petroleum odor and/or elevated PID readings) and elevated SVOC and metal concentrations, the analytical results for the soil samples indicated no PCBs, pesticide or herbicide concentrations above the TAGM 4046 RSCOs.

No soil samples contained VOCs above the TAGM with the exception of an acetone exceedance in one sample. Acetone is used for decontamination of sampling equipment in the field. Its presence in the analytical results is likely due to incomplete cleaning and not to actual soil conditions. Similar to the Phase II investigation, all the samples from the post-Phase II investigation exceeded one or more of the RSCOs for individual PAHs and metals, but the levels of total PAHs were below 100 ppm, the levels of total SVOCs were less than 500 ppm, and the levels of metals, though above normal background levels, were generally typical of urban fill.

Although some exceedances of NYSDEC GA standards were found in the groundwater samples, these standards were calculated assuming use as drinking water, and as noted above groundwater is not used for potable supply in the Bronx. In addition, as with respect to the Phase II results, all samples had high sodium levels consistent with the natural brackish condition resulting from the proximity to the tidal Harlem River.

An additional investigation planned for the Western Parcel to more precisely characterize this area will include: (1) A geophysical survey to screen the open waterfront area for subsurface structures; (2) seventeen direct push soil borings to more extensively characterize the soil; (3) eight test pits in the Park Area to delineate contamination and investigate tanks and underground

concrete structures discovered during previous investigation and the geophysical survey; and (4) installation of seven shallow monitoring wells to characterize the groundwater.

A supplement investigation planned for the Eastern Parcel and Park Area to more precisely delineate and characterize this area include: (1) fourteen direct push soil borings to further delineate findings of previous investigations; (2) soil gas sampling from fifteen locations to determine the need for vapor barriers associated with proposed site structures; (3) post-slab removal screening and sampling under structures to be demolished to provide a more complete characterization of the site; and (4) groundwater sampling from the fifteen existing monitoring wells to provide a more complete characterization of the groundwater.

ASBESTOS AND LEAD

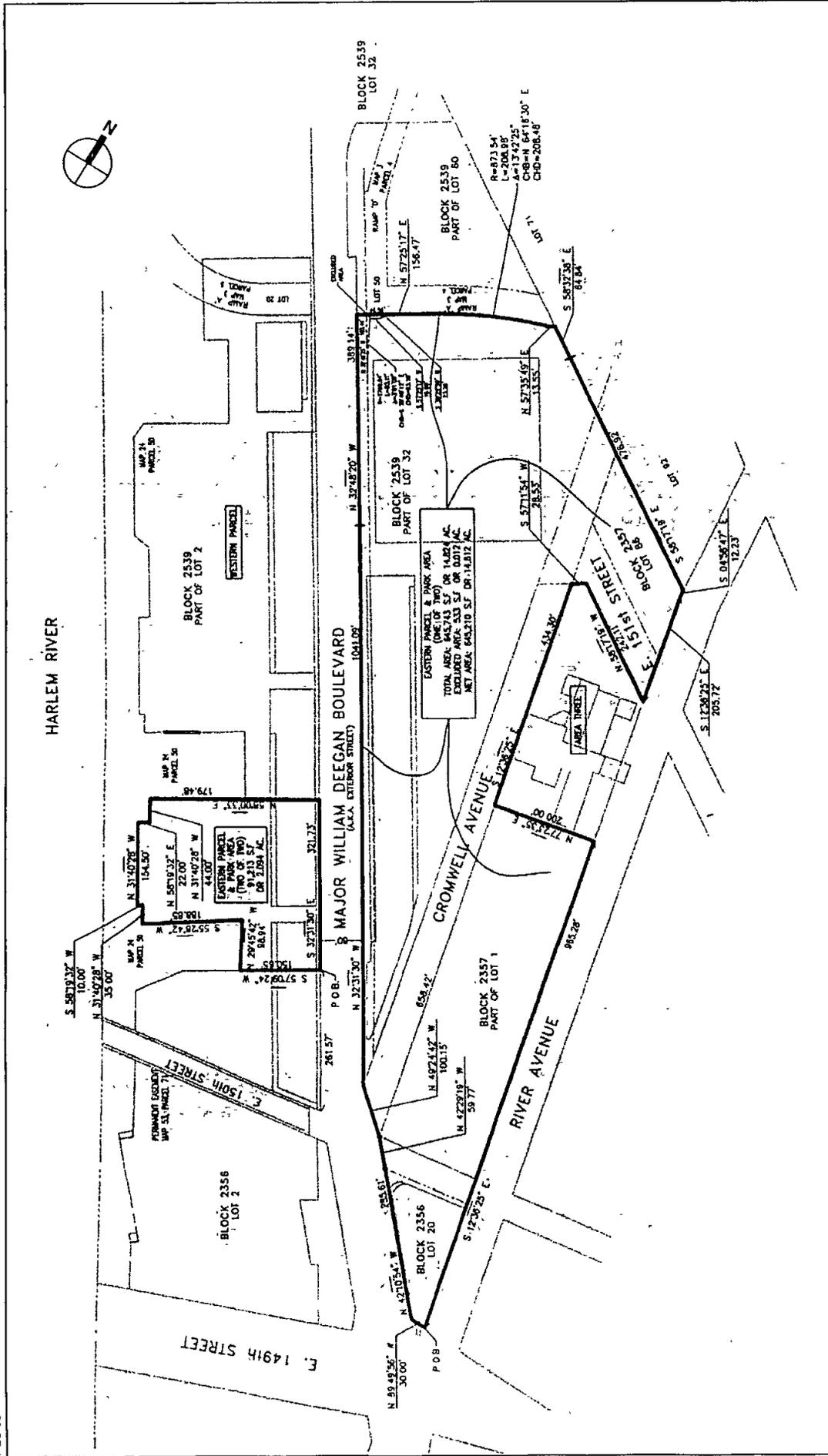
Asbestos was formerly used as a component of many building materials and was also used in fireproofing materials. Lead was formerly used in paint to coat exterior and interior surfaces, equipment, structural members of buildings and various other surfaces. A comprehensive asbestos and lead survey of all structures on the site was conducted on behalf of the applicant in 2003 by Hillman Environmental Group in accordance with Environmental Protection Agency and Asbestos Hazardous Emergency Response Act (AHERA) recommended procedures. This survey included the sampling of all suspect materials to confirm the presence or absence of asbestos and lead. The survey is included in Appendix D. Typical for buildings constructed prior to the 1960s, several buildings on the site contain asbestos-containing material. Sampled materials from buildings B, D, E, F, G, H, and J were found to contain asbestos.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

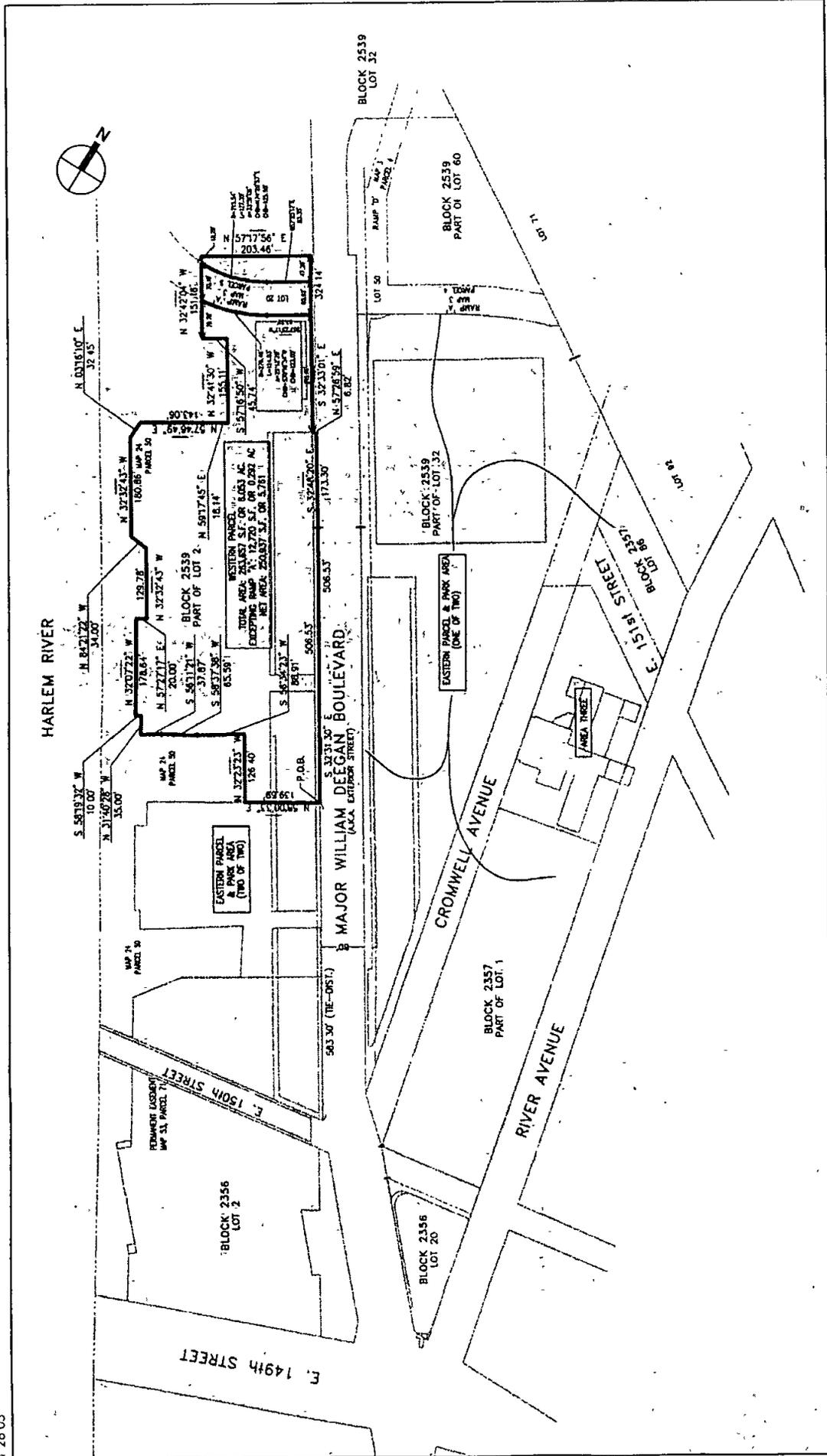
In the future without the Proposed Project, it is assumed that there would be minimal changes in the use of the project site. In the absence of the Proposed Project, there would be no cleanup at the project site.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The project sponsor has entered into agreements with NYSDEC under the auspices of the BCP to investigate and, where necessary, remediate contamination on large portions of the site as part of its redevelopment. There are two Brownfield Cleanup Agreements (BCAs), for two portions of the project site—an area east of Exterior Street plus the area planned for the open space, and the area north of the proposed open space and west of Exterior Street. These areas are delineated in Figures 11-2 and 11-3. Under this program, a draft Remedial Work Plan (RWP) would be submitted to NYSDEC and the New York State Department of Health (NYSDOH) after the completion of an Investigation Report describing and characterizing the environmental conditions of the project site. The RWP would include remedial actions, as necessary, to be performed before, during, and/or after construction of the Proposed Project. NYSDEC, NYSDOH and NYCDEP would review this plan; the public would be provided the opportunity to submit comments. The RWP would include a Health and Safety Plan (HASp), CAMP, Soil Management Plan (SMP) and a description of site engineering controls to include surface cover requirements and building vapor barriers. Following approval, NYSDEC would monitor implementation of the RWP in accordance with the terms of the Brownfield Cleanup Agreements. Upon completion of the remedial action consistent with the Remedial Work Plan (RWP) a final engineering report will be submitted for NYSDEC's approval. If the project sponsor returns its leasehold interest in the western portion of the project site to the City, the



Brownfield Cleanup Agreement Area
Eastern Portion and Park
Figure 11-2



Brownfield Cleanup Agreement Area
Western Portion
Figure 11-3

BCA for the portion of the project site north of the proposed open space and west of Exterior Street would be terminated or assigned, and the other BCA would be amended to include only the portion of the project site east of Exterior Street.

The BCP is designed to encourage the private sector to acquire and reuse contaminated real estate through a comprehensive program of rigorous investigation to document the environmental conditions on a site, detailed remedial design and remedial action oversight, along with a public participation element. To meet the BCP requirements for public participation, the sponsor has developed and submitted a Community Participation Plan (CPP) to NYSDEC for each area included in the BCP.

Without appropriate controls, there would be a potential for adverse impacts resulting from the presence of subsurface contamination, as well as asbestos-containing materials (ACMs) and lead-based paint in the site's buildings, since demolition, excavation and construction activities could disturb hazardous materials and increase pathways for human exposure. However, impacts would be avoided by performing construction activities in accordance with the following protocols that will be detailed in a RWP:

- Prior to construction or as part of initial construction activities for the project, additional investigation (if necessary) and/or remediation of all identified areas of contaminated soil and removal of all remaining petroleum storage tanks (and any associated dispensers, piping, fill ports and contaminated soil) found to require remediation or removal by the project sponsor in conjunction with NYSDEC, NYSDOH and NYCDEP, would be performed in accordance with applicable federal, state, and local requirements. This will include the proposed work described in Section B. At this time, the available data suggest that remediation will consist of excavation and proper off-site disposal of petroleum contaminated soil and other non-reusable petroleum contaminated fill materials, and removal of all above and below ground storage tanks in accordance with NYSDEC regulations. After excavation of the impacted soil and the underground storage tanks, soil samples will be collected in accordance with NYSDEC requirements to confirm that remedial objectives have been met.

The only exception to this removal will be the area underlying the foundation of the existing WH-1 warehouse building, as the existing foundation will remain and become an integral part of the foundation for the planned retail building. The piles and pile caps must remain in place because possible dewatering and excavation under pile caps would require dangerous, confined space hand work and would risk damage to the piles. This limited area of petroleum contaminated soil can be safely left in place, because the new concrete floor slab and a vapor barrier will protect future occupants from potential exposure. Additionally, the monitoring well downgradient of WH-1 indicates that contaminants are not migrating from this area.

In addition, there is a potential need for a vapor barrier under certain buildings (in addition to the WH-1 building), which will be determined (in consultation with the appropriate agencies) upon evaluation of soil gas, groundwater and soil remedial investigation results. A determination will be made as to the necessity of an appropriate vapor barrier, which would be chemically compatible with the constituents present in the soil gas and thereby would provide long-term protection from exposure. Any necessary vapor barrier would be incorporated into the design plan for all enclosed structures during the proposed construction project. The conceptual design of the vapor barrier system will be provided in the RWP and submitted to the NYSDEC, NYSDOH, and NYCDEP for review and approval.

- If dewatering were required for construction, there would be a potential for contact with contaminated groundwater. Although testing to date indicates that the majority of the Site's groundwater would meet New York City Department of Environmental Protection (NYCDEP) sewer discharge requirements, additional testing would be performed, as conditions may vary around the site, and if necessary pretreatment would be conducted prior to the water discharge to the City's sewer system, as required by NYCDEP permit/approval requirements.
- Since much of the soil sampled does not meet the most stringent guidelines for unrestricted use, any areas of exposed soil (e.g., park areas not covered by buildings or pavement) would be capped with imported acceptable soil. The Park Area west of Exterior Street and any other landscaped areas of the proposed development would be capped with at least two feet of imported acceptable soil.
- All activities involving disturbance of existing soils would be conducted in accordance with a HASP that would detail measures, including health and safety guidelines and work practices, to reduce the potential for exposure (e.g., dust control). The procedures would be developed through evaluation of the suspect contaminants and the work to be performed. Contingencies to address potential hazards would be included. Workers that have the potential to come in contact with contaminated materials would be required to read, understand, and implement the procedures specified in the HASP. The HASP would include both a worker and community air monitoring plan to detect and respond to any emissions of vapors or dust from the site.
- A SMP would describe the procedures to identify and manage known contamination (e.g., petroleum storage tanks) and unexpectedly encountered contamination. In the event that soil containing petroleum or other potentially contaminated materials is discovered during excavation activities (e.g., through staining, discoloration or odor), such soil would be segregated, stockpiled, and sampled to determine whether the non-petroleum contaminated soil could be reused on-site under impervious surfaces or the soil cap. Contaminated soils that cannot be reused in this manner (including all petroleum- contaminated soil) would be sampled for characterization purposes sufficient to meet the requirements of the applicable disposal facility, transported off-site by a licensed transporter, and disposed of in an approved treatment or disposal facility in accordance with all applicable federal, state, and local regulations and guidelines.
- To protect workers and the general public during site preparation and construction activities, dust control measures would be undertaken. These would typically include such measures as fine sprays of water, mist curtains, or chemical foams within the excavation area. Tarpaulins can be used to cover stockpiled or staged soils. Dust generated by other construction activities would be suppressed by spraying water during dry weather, cleaning vehicles and other equipment prior to leaving the site, placing gravel on areas of exposed soil used for vehicle activities, covering the trucks with a tarp prior to leaving the site, and sequencing construction activities to minimize areas of exposed soil.
- The ACM identified in the comprehensive asbestos survey would be removed and disposed of in accordance with all federal, state, and local regulations.
- Any demolition activities with the potential to disturb lead-based paint would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62 - Lead Exposure in Construction).

- Upon completion of the remedial activities described above, it is anticipated that institutional controls would be put into place to assure the long-term protection of public health and the environment. Those institutional controls would include, among other things, an environmental easement, as required by participation in the BCP, which would allow only commercial use of the site. Institutional controls would be supplemented with engineering controls to maintain the acceptable soil cover over open space/park areas, and asphalt and concrete cover over other areas, and to prevent any vapor intrusion into site buildings through the use of vapor barriers to prevent human exposure.

With the implementation of these measures, no significant adverse impacts related to hazardous materials would result from demolition and/or construction activities on the project site. Following construction, there would be no further potential for the Proposed Project to have significant adverse hazardous materials impacts. *

A. INTRODUCTION

The Proposed Project would redevelop 26 acres on the eastern shoreline of the Harlem River within the West Haven neighborhood of the Bronx (see Figure 1-1, Chapter 1, "Project Description"). The entire project site is within New York City's coastal zone boundary as outlined by the New York Department of City Planning (NYCDCP) (see Figure 12-1). This chapter examines the Proposed Project's compliance with federal, state, and local coastal zone policies. The New York City Waterfront Revitalization Program Consistency Assessment Form is included in this EIS as Appendix D.

The federal Coastal Zone Management Act (CZMA) of 1972 was enacted to support and protect the distinctive character of the waterfront and to set forth standard policies for reviewing proposed development projects along coastlines. The program responded to city, state, and federal concerns about the deterioration and inappropriate use of the waterfront. The CZMA emphasizes the primacy of state decision-making regarding the coastal zone. In accordance with the CZMA, New York State adopted its own Coastal Management Program (CMP), designed to balance economic development and preservation by promoting waterfront revitalization and water-dependent uses while protecting fish and wildlife, open space and scenic areas, public access to the shoreline, and farmland, and minimizing adverse changes to ecological systems and erosion and flood hazards. The New York State CMP provides for local implementation when a municipality adopts a local waterfront revitalization program, as is the case in New York City. The New York City Waterfront Revitalization Program (WRP) is the City's principal coastal zone management tool. The WRP was originally adopted in 1982 and approved by the New York State Department of State (NYS DOS) for inclusion in the New York State CMP. The WRP encourages coordination among all levels of government to promote sound waterfront planning and requires consideration of the program's goals in making land use decisions. NYS DOS administers the CMP at the State level, and the DCP administers WRP in the City. The WRP was revised and approved by the City Council in October 1999. In August 2002, the NYS DOS and federal authorities (e.g., the U.S. Army Corps of Engineers [USACOE] and the U.S. Fish and Wildlife Service [USFWS]) adopted the City's 10 WRP policies for most of the properties located within its boundaries.

The policies in the City's WRP are as follows:

- Support and facilitate residential and commercial redevelopment in appropriate coastal zone areas;
- Support water-dependent and industrial uses in New York City coastal areas that are well suited to their continued operation;
- Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers;

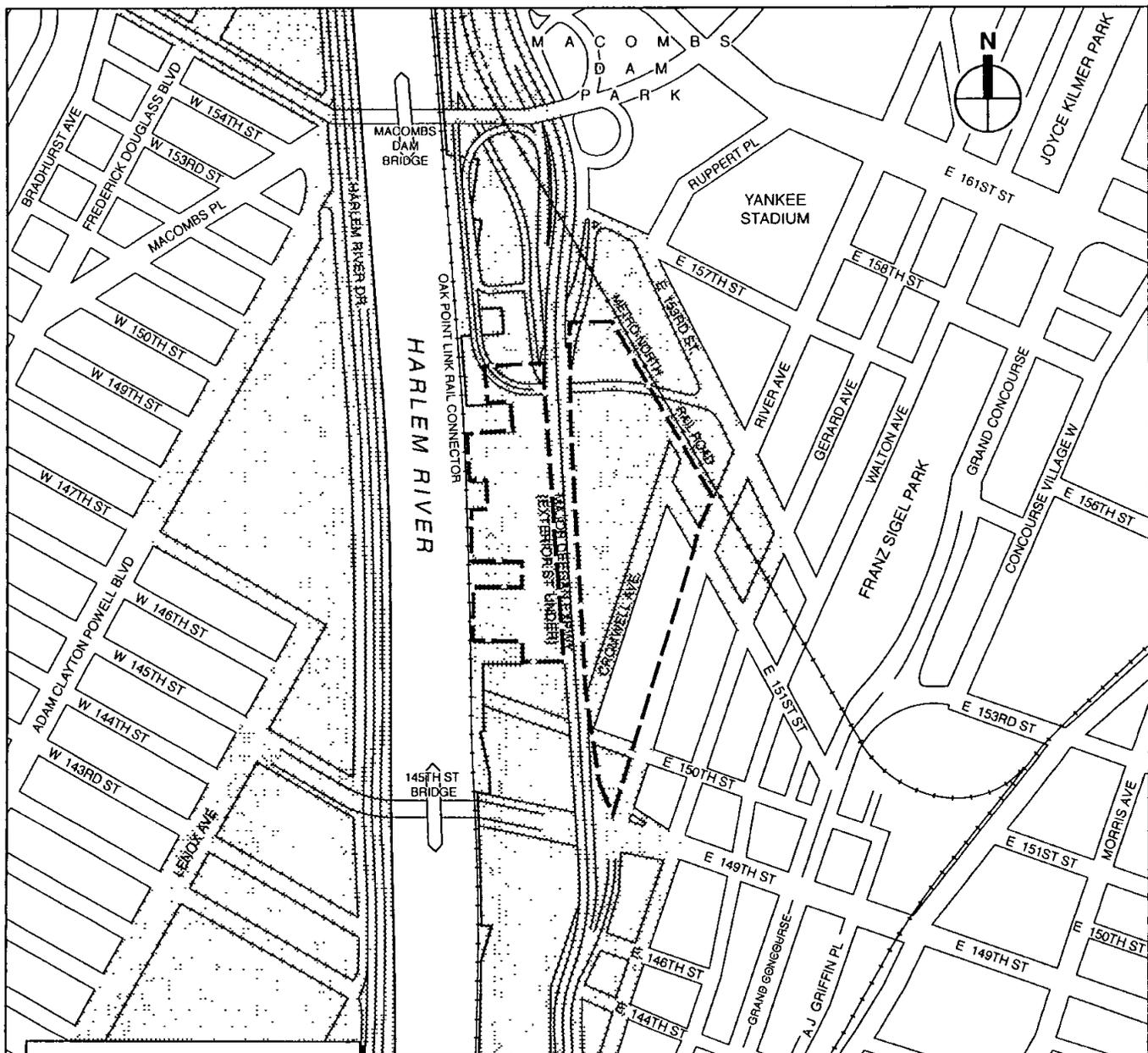
- Protect and restore the quality and function of ecological systems within the New York City coastal area;
- Protect and improve water quality in the New York City coastal area;
- Minimize loss of life, structures, and natural resources caused by flooding and erosion;
- Minimize environmental degradation from solid waste and hazardous substances;
- Provide public access to and along New York City's coastal waters;
- Protect scenic resources that contribute to the visual quality of New York City; and
- Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

As detailed in the assessment below, the Proposed Project would be consistent with the City's 10 WRP coastal policies, and the WRP's guiding principle of maximizing the benefits derived from economic development, environmental preservation, and public use of the waterfront while minimizing conflicts among these objectives. It would also be consistent with the Bronx Waterfront Plan and its objectives to improve existing parkland, develop pedestrian connections to the Harlem River waterfront, and redevelop the Bronx Terminal Market to include a waterfront open space. The Proposed Project would re-establish physical and visual public access to the Harlem River waterfront and result in waterfront uses that attract the public and enliven the waterfront as well as benefit the surrounding community.

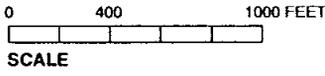
The proposed approximately two-acre public waterfront open space and esplanade would provide waterfront access and recreational opportunities that are currently not available within the vicinity of the project site. While the structures proposed as part of the redevelopment would be larger and squarer in form than the existing buildings, the Proposed Project would create landscaped passageways between these structures. These passageways would provide clearer sightlines through the project site and some views of the Harlem River, improve pedestrian access to the waterfront, and improve the visual appearance of the project site. The Bronx House of Detention, and buildings comprising the Bronx Terminal Market (Buildings B, D, F, G, H, and J) have been determined to be eligible for listing on the State and National Registers of Historic Places. These structures would be demolished as a result of the Proposed Project. Measures to mitigate for the loss of these historic resources are being developed with and approved by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The Proposed Project has been found eligible for the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). Preparation and implementation of a Remedial Work Plan (RWP) required as part of the BCP will minimize environmental degradation from hazardous substances that may be identified on the project site during demolition of the existing buildings, infrastructure improvements, and construction of the project elements. Implementation of a stormwater pollution prevention plan (SWPPP) during construction will minimize potential water quality effects associated with the discharge of stormwater. Lastly, the landscaping proposed as part of the public open space and waterfront esplanade and throughout the project site will provide additional habitat for terrestrial wildlife.

B. EXISTING CONDITIONS

The 26-acre project site contains six low-scale warehouse buildings comprising the Bronx Terminal Market (a wholesale food market), a two-story power house built for the Bronx



- - - - Project Site Boundary
 Coastal Zone



Terminal Market, paved areas for parking, the Bronx House of Detention, and a waterfront area with a portion of Pier 1, combined Piers 2 and 3, and Pier 4. The power house building is currently partially occupied as a site manager's office. Five of the Bronx Terminal Market buildings are also partially occupied, and the Bronx House of Detention is in reserve status and is currently closed. Most of the market buildings are dilapidated. The shoreline within the project site is engineered with timber bulkheads, relieving platforms or riprap. Portions of the bulkhead are in disrepair. The interpier areas are silted in and water depths are less than six feet at mean low water.

The Bronx House of Detention and the buildings comprising the Bronx Terminal Market (Buildings B, D, F, G, H, and J) have been determined eligible for listing on the State and National Registers of Historic Places (see Chapter 7, "Historic Resources"). There are no structures on the piers, which date from the early 1890s. The piers are rundown, adding to the degraded appearance of the project site, and are currently used for delivery truck parking. The piers are not easily accessed, and waterfront views are blocked by trucks, metal fencing, concrete traffic barriers, and the Oak Point Link rail connection on the Harlem River. The Harlem River cannot be viewed from the eastern portion of the project site due to the presence of the elevated Major Deegan Expressway and the existing project site buildings. There is little to no landscaping or vegetation on the project site.

The project site is located in an M2-1 manufacturing district (see Chapter 2, "Land Use, Zoning, and Public Policy"). M2 zoning districts serve as middle ground for light and heavy industrial areas. M1-1, M1-2, M2-1, C4-4, C8-3, R6 and R8 are the predominant zoning districts surrounding the project site.

C. CONSISTENCY OF PROPOSED PROJECT WITH THE WRP POLICIES

Policy 1: Support and facilitate commercial and residential development in areas well-suited to such development.

Policy 1.1: Encourage commercial and residential redevelopment in appropriate coastal zone areas.

The Proposed Project would result in the redevelopment of a portion of the Harlem River waterfront that is currently underutilized and contains dilapidated buildings. The proposed development of a major retail center with parking, a hotel, and public waterfront open space and esplanade would be an appropriate coastal zone development. It would be compatible with the surrounding commercial, industrial, and residential lands uses, and support the economic revitalization of the West Haven neighborhood through new employment opportunities and convenient shopping and dining opportunities for local residents. Therefore, the Proposed Project would be consistent with this policy.

Policy 1.2: Encourage non-industrial development that enlivens the waterfront and attracts the public.

The Proposed Project would re-establish physical and visual public access to the Harlem River waterfront and result in waterfront uses that attract the public and enliven the waterfront as well as benefit the surrounding community. The proposed public open space and waterfront esplanade would provide waterfront access and recreational opportunities that are currently not available within the vicinity of the project site. Additionally, the

landscaped passageways that would be created between the buildings as part of the Proposed Project (see Chapter 8, "Urban Design and Visual Resources") would provide clearer sitelines through the project site and views of the Harlem River, improve pedestrian access to the waterfront, and improve the visual appearance of the project site. Therefore, the Proposed Project would be consistent with this policy.

Policy 1.3: Encourage redevelopment in the coastal area where public facilities and infrastructure are adequate or will be developed.

Community facilities and services in and around the project site are sufficient to meet any increased demand that would result from the Proposed Project (see Chapter 4, "Community Facilities"). The New York City Police Department and New York City Fire Department will continue to evaluate the need for personnel and equipment and make any necessary adjustments to adequately serve the area. As part of the Proposed Project, new water lines would be installed both within the City's right-of-way and the project site to facilitate new service laterals to the retail development, public open space, and street hydrant system. All new water lines would be designed and built to meet New York City Department of Environmental Protection (NYCDEP) requirements. New sanitary sewer lines would also be constructed within Exterior Street. As part of the Proposed Project, a NYCDEP storm sewer would be constructed within Exterior Street in accordance with the City's amended drainage plan for the area. New storm sewers would be constructed on the site to collect runoff from buildings, parking areas, the public open space, Exterior Street, and the Major Deegan Expressway. See Chapter 13, "Infrastructure," for a detailed discussion of infrastructure improvements that are part of the Proposed Project. The Proposed Project, therefore, would be consistent with this policy.

Policy 2: Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.

Policy 2.1. Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.

The project site is not located in a Significant Maritime and Industrial Area. Therefore, this policy is not applicable to the Proposed Project.

Policy 2.2: Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas.

The piers located within the project site, Piers 1 through 4, are not suitable for working waterfront uses. Water depth in the interpier areas and at the pierheads is currently less than six feet deep at mean low water. Bottom sediment would have to be dredged for access by most vessels. Additionally, the Oak Point Link rail connection, which runs parallel to the shoreline, is adjacent to the pierhead line and precludes working waterfront and vessel uses of the project site shoreline. Therefore, this policy is not applicable to the Proposed Project.

Policy 2.3: Provide infrastructure improvements necessary to support working waterfront uses.

The Proposed Project would not include working waterfront uses. Therefore, this policy is not applicable to the Proposed Project.

Policy 3: Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers.

Policy 3.1: Support and encourage recreational and commercial boating in New York City's maritime centers.

While the project site is not suitable for the promotion of recreational or commercial boating (see response for Policy 2.2), the Proposed Project would provide for public access to the waterfront as part of the proposed public open space and waterfront esplanade. Additionally, the Proposed Project would not affect the seasonal ferry operation for Yankee Stadium that lands to the north of the project site. Therefore, the Proposed Project would be consistent with this policy.

Policy 3.2: Minimize conflicts between recreational, commercial, and ocean-going freight vessels.

The Proposed Project would not provide facilities for recreational or commercial vessels. Therefore, this policy is not applicable to the Proposed Project. Policy 3.3 Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.

The Proposed Project would not provide facilities for commercial or recreational boating. Therefore, this policy is not applicable to the Proposed Project.

Policy 4: Protect and restore the quality and function of ecological systems within the New York City coastal area.

Policy 4.1: Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas, Recognized Ecological Complexes, and Significant Coastal Fish and Wildlife Habitats.

The project site is not located within a Special Natural Waterfront Area or Recognized Ecological Complex, or Significant Coastal Fish and Wildlife Habitat. Therefore, this policy is not applicable to the Proposed Project.

Policy 4.2: Protect and restore tidal and freshwater wetlands.

As presented in Chapter 10, "Natural Resources," the water depth at the pierhead and interpier areas is less than six feet at mean low water, which may result in these areas being classified as littoral zone tidal wetlands by NYSDEC. A final written jurisdictional determination from NYSDEC and USACOE with respect to the presence of tidal wetlands is pending. A written jurisdictional determination from USACOE with regard to the extent of waters of the U.S. within the project site is pending. The entire shoreline within the project site is engineered, and no vegetated tidal wetlands are present. The Proposed Project would not result in filling of state-regulated tidal wetlands or waters of the U.S. Proposed improvements to the waterfront and waters edge through the removal of timber bulkheads above mean high water in certain areas and replacement with a softer, sloped and more stable rip-rap edge would not adversely impact wetland resources. There are no freshwater wetlands on or adjacent to the project site. Therefore, the Proposed Project is consistent with this policy.

Policy 4.3: Protect vulnerable plant, fish, and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.

Requests for information on rare, threatened, or endangered species within the immediate vicinity of project site were submitted to USFWS, the NYSDEC Natural Heritage Program

(NYNHP), and National Marine Fisheries Service (NMFS). The NYNHP and USFWS have determined that there are no known occurrences of threatened or endangered species and there are no areas within the project area that are considered critical habitats. NMFS has determined that shortnose sturgeon may be present in the project area as possible (likely rare) transients. As transients, the shortnose sturgeon would be unlikely to regularly occur in the project area. Given the responses from NYNHP, USFWS, and NMFS, and the current intensity of development on the project site, no significant adverse impacts to sensitive resources would be expected. Therefore, the Proposed Project would be consistent with this policy.

Policy 4.4: Maintain and protect living aquatic resources.

As presented in Chapter 10, "Natural Resources," the Proposed Project would not be expected to result in adverse impacts to water quality or aquatic biota. The only in-water activities that would occur as part of the Proposed Project is the removal of timber bulkheads above mean high water in certain locations and replacement with a softer, sloped and more stable rip-rap edge. During construction, implementation of a Stormwater Pollution Prevention Plan (SWPP) would minimize potential water quality effects associated with the discharge of stormwater. The proposed public open space and waterfront esplanade, and other areas of permeable landscaping within the project site, would result in about a six percent increase in pervious surface within the project site and a corresponding decrease (six cubic feet per second) in stormwater runoff discharged to the Harlem River from the project site through the existing stormwater outfalls (see Chapter 13, "Infrastructure"). Therefore, the Proposed Project would be consistent with this policy.

Policy 5: Protect and improve water quality in the New York City coastal area.

Policy 5.1: Manage direct or indirect discharges to waterbodies.

The majority of the stormwater runoff generated within the project site as a result of the Proposed Project (estimated at approximately 142 cfs) would be collected by a NYCDEP storm sewer to be constructed as part of the Proposed Project. Stormwater runoff collected through this system would be discharged to the Harlem River through the existing outfalls. As discussed in the response to Policy 4.4, the Proposed Project would result in a decrease in surface runoff from the project site due to the small increase in pervious surface cover. A small amount of stormwater runoff (approximately 15 cfs) would be discharged to the municipal combined sewer system within the drainage area for the Ward Island Water Pollution Control Plant (WPCP). This small estimated runoff volume would not be expected to affect the combined sewer system or the ability of the WPCP to meet its SPDES permit conditions. Therefore, the Proposed Project would be consistent with this policy.

Policy 5.2: Protect the quality of New York City's waters by managing activities that generate non-point source pollution.

As discussed in the response to Policy 5.1, new storm sewers would be constructed on the project site to collect stormwater runoff for discharge to the NYCDEP storm sewer constructed within Exterior Street as part of the Proposed Project. The storm sewer will be developed and constructed in accordance with the City's amended drainage plan for the area. The small portion of the project site not draining to the new storm sewer would discharge surface runoff to the municipal combined sewer system. Therefore, the Proposed Project would be consistent with this policy.

Policy 5.3: Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes or wetlands.

The proposed replacement of timber bulkheads above mean high water in certain locations with a softer, sloped and more stable rip-rap edge would be done using best management practices for erosion and sediment control to minimize impacts to water quality. No other in-water activities would occur as a result of the Proposed Project. The SWPPP implemented during construction would minimize adverse impacts to water quality resulting from stormwater runoff generated within the project site. Therefore, the Proposed Project would be consistent with this policy.

Policy 5.4: Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.

The project site does not contain any potable groundwater, nor does it contain streams or the source of water for wetlands. At the project site, groundwater is typically found at between eight to 10 feet below the ground surface. Groundwater quantity would not be expected to be impacted as a result of the Proposed Project. Implementation of the RWP would minimize potential impacts to groundwater quality during construction of the Proposed Project. Therefore, the Proposed Project would be consistent with this policy.

Policy 6: Minimize the loss of life, structures, and natural resources caused by flooding and erosion.

Policy 6.1: Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the condition and use of the property to be protected and the surrounding area.

Much of the project site west of Cromwell Avenue is within the 100-year floodplain (see Figure 12-2). The portions of the project site outside the 100-year floodplain include the location of former Building A, and the area east of Cromwell Avenue occupied by the Bronx House of Detention and Buildings C and D. The entire shoreline within the project site is currently engineered with bulkhead or riprap. The Proposed Project would result in a change in the type of structural shoreline engineering in some areas above mean high water, but would not result in a change in the amount of shoreline with structural erosion control. The placement of demolition fill and other acceptable fill material on the project site to raise the building footprints above the 100-year floodplain will not exacerbate flooding on adjacent properties. In addition, because the Proposed Project would not increase the amount of impervious surface within the project site as compared to the existing condition or in the future without the proposed actions, it would not result in an increased exposure to flood hazards in or near the project site. Therefore, the Proposed Project would be consistent with this policy. Policy 6.2: Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.

The Proposed Project would not involve the use of public funding for such measures. Therefore, this policy is not applicable to the Proposed Project.

Policy 6.3: Protect and preserve non-renewable sources of sand for beach nourishment.

There are no non-renewable sources of sand in or near the project site. Therefore, this policy is not applicable to the Proposed Project.

Policy 7: Minimize environmental degradation from solid waste and hazardous substances.

Policy 7.1: Manage solid waste material, hazardous wastes, toxic pollutants, and substances hazardous to the environment to protect public health, control pollution, and prevent degradation of coastal ecosystems.

As presented in Chapter 14, "Solid Waste and Sanitation Services," the Proposed Project would result in a small increase in the volume of solid waste generation at the project site (about six truck loads per week). However, the Proposed Project would also be required to comply with the City's recycling regulations (source separation of paper, cardboard, metal, and certain plastics) and state solid waste laws that would reduce the solid waste stream. Solid waste and separated materials resulting from the Proposed Project would be collected and transported from the project site by licensed private carters for disposal at out-of-City locations, as is the practice for managing solid waste currently being generated within the project site.

Most of the project site (with the exception of the hotel site and the Bronx House of Detention) has been found eligible for the NYSDEC Brownfield Cleanup Program (BCP). Preparation and implementation of a RWP required as part of the BCP will minimize environmental degradation from hazardous substances that may be identified on the project site. Any toxic or hazardous waste encountered during construction or remediation activities associated with the Proposed Project would be handled in accordance with NYCDEP, NYSDEC, Occupational Safety and Health Administration (OSHA), and Environmental Protection Agency (EPA) requirements. Equivalent measures will be used, as in the area of the site not included in the BCP. Chapter 11, "Hazardous Materials," discusses the potential for hazardous materials within the project site and describes measures to be implemented during construction and operation of the Proposed Project to minimize potential environmental impacts. Therefore, the Proposed Project would be consistent with this policy.

Policy 7.2: Prevent and remediate discharge of petroleum products.

Petroleum products encountered during construction activities associated with the Proposed Project would be managed and mitigated according to the RWP and pertinent NYCDEP, NYSDEC, OSHA, and EPA requirements. Also, any petroleum-contaminated soil found on the project site will be removed pursuant to applicable regulations. Storage and handling of petroleum products would follow applicable regulations. See Chapter 11, "Hazardous Materials," for detailed discussion of petroleum products management. Therefore, the Proposed Project would be consistent with this policy.

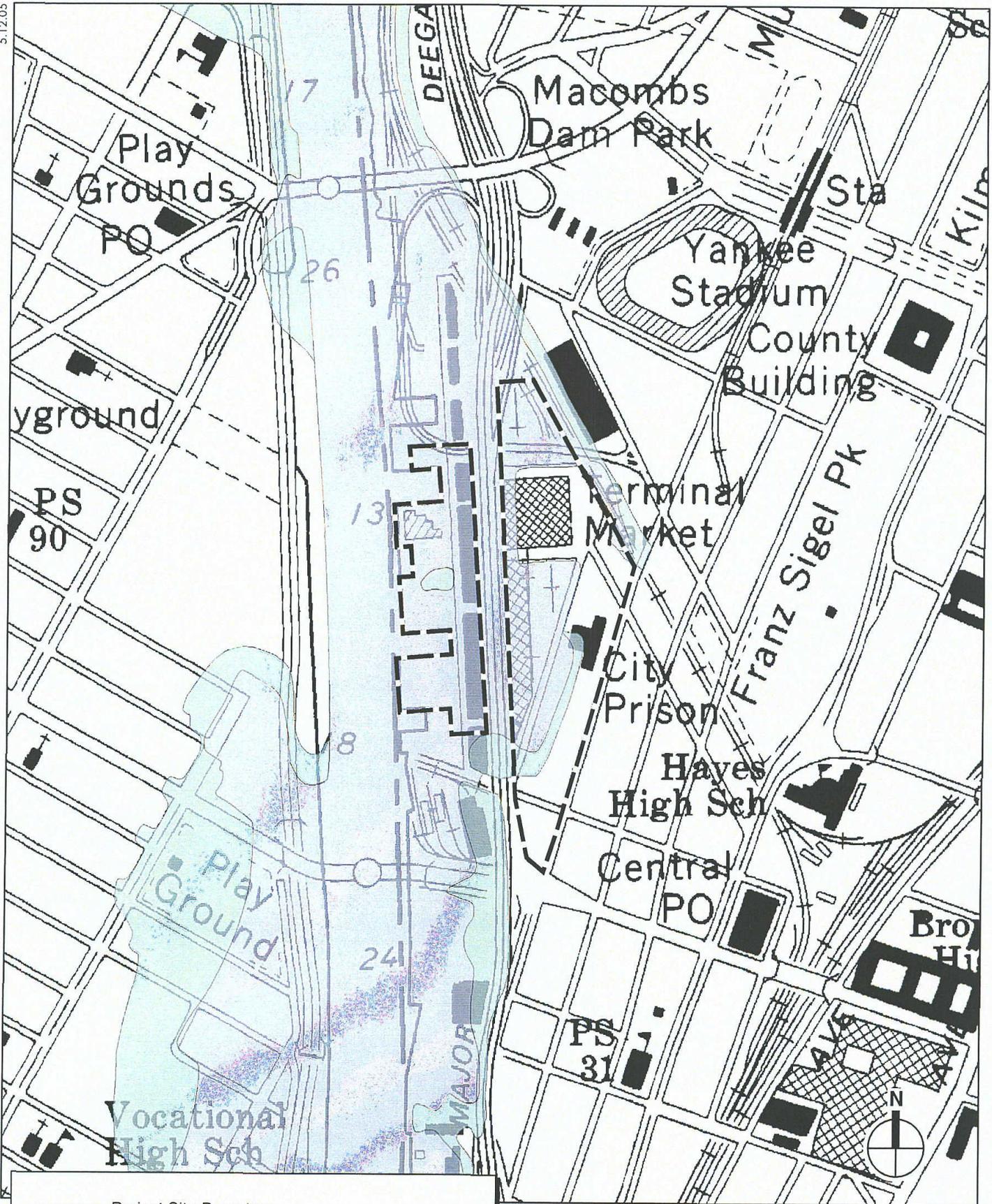
Policy 7.3 Transport solid waste and hazardous substances and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.

See the response to Policy 7.1, above.

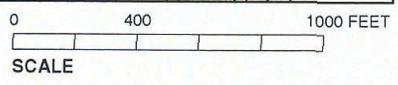
Policy 8: Provide public access to and along New York City's coastal waters.

Policy 8.1: Preserve, protect and maintain existing physical, visual, and recreational access to the waterfront.

As presented in Policy 1.2, the Proposed Project would re-establish physical and visual public access to the Harlem River waterfront and result in waterfront uses that attract the public, enliven the waterfront, and benefit the surrounding community. The proposed public



-  Project Site Boundary
-  Inside 100-Year Floodplain (by detailed methods)
-  Inside 500-Year Floodplain



open space and waterfront esplanade would provide waterfront access and recreational opportunities that are currently not available within the vicinity of the project site. Additionally, the landscaped passageways that would be created between the buildings would improve pedestrian access to the waterfront. Therefore, the Proposed Project would be consistent with this policy.

Policy 8.2: Incorporate public access into new public and private development where compatible with proposed land use and coastal location.

See the responses to Policies 1.2 and 8.1, above.

Policy 8.3: Provide visual access to coastal lands, waters, and open space where physically practical.

As presented in Policies 1.2 and 8.1, the proposed public waterfront open space and esplanade would provide visual access to the Harlem River and waterfront recreational opportunities that are currently not available within the vicinity of the project site. While the structures proposed as part of the redevelopment would be larger and squarer in form than the existing buildings, the Proposed Project would create landscaped passageways between the buildings. These passageways would provide clearer sightlines through the project site and some views of the Harlem River, improve pedestrian access to the waterfront, and improve the visual appearance of the project site. Therefore, the Proposed Project would be consistent with this policy.

Policy 8.4: Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.

As discussed in Policy 1.2, the Proposed Project includes the development of a public waterfront open space and esplanade. Therefore, the Proposed Project would be consistent with this policy. *Policy 8.5: Preserve the public interest in and use of lands and waters held in public trust by the State and City.*

With the development of the public waterfront open space and esplanade, the Proposed Project would preserve the public interest in and use of lands and waters held in public trust by the City. Therefore, the Proposed Project would be consistent with this policy.

Policy 9: Protect scenic resources that contribute to the visual quality of the New York City coastal area.

Policy 9.1: Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.

The visual character of the Harlem River waterfront consists of an urban landscape with manufacturing, industrial, and commercial buildings, and paved surfaces. As discussed in Chapter 8, "Urban Design and Visual Resources," the Proposed Project would enhance the project site by replacing the existing vacant or underutilized structures that have a neglected quality with buildings that have a more modern character that would complement the character of the surrounding areas. The landscaped passageways would provide clearer sightlines through the project site and some views of the Harlem River, improve pedestrian access to the waterfront, and improve the visual appearance of the project site. Therefore, the Proposed Project would be consistent with this policy.

Policy 9.2: Protect scenic values associated with natural resources.

With the exception of the Harlem River, natural resources are limited within the project site. The landscaping proposed as part of the public open space and waterfront esplanade and throughout the project site will provide additional habitat for terrestrial wildlife. Additionally, the replacement of wooden bulkhead with riprap in some areas of the shoreline has the potential to result in improved habitat for aquatic biota. Therefore, the Proposed Project would be consistent with this policy.

Policy 10: Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

Policy 10.1: Retain and preserve designated historic resources and enhance resources significant to the coastal culture of New York City.

The Bronx House of Detention, and buildings comprising the Bronx Terminal Market (Buildings B, D, F, G., H, and J) have been determined to be eligible for listing on the State and National Registers of Historic Places (see Chapter 7, "Historic Resources"). These structures would be demolished as a result of the Proposed Project. Measures to mitigate for the loss of these historic resources are being developed with OPRHP. Therefore, the Proposed Project would be consistent with this policy.

Policy 10.2: Protect and preserve archaeological resources and artifacts.

At the request of OPRHP, a Phase IA Archaeological Assessment was prepared for the project site in October 2004. The Phase IA assessment concluded that although some areas within the northern portion of the project site contained the potential for precontact archaeological resources to be located beneath a layer of peat found under fill deposits and river mud, the excavation required for the Proposed Project would not reach the peat layer or below the peat layer, except for shafts for building pilings. Due to the depth of the potential precontact resources and the difficulty in accessing the potentially sensitive strata, which are well below the water table, no archaeological field investigations were recommended for precontact resources. Archaeological field investigations or monitoring for the recovery of precontact resources would be considered if future specifications for the proposed hotel indicate that deep excavation would be necessary. Historic period archaeological sensitivity for the project site is low, and no archaeological field investigations are recommended for historic period resources. The piers and slips within the project site were built in the early 1890s and their construction appears to be typical for this period. The activities that occurred within the buildings formerly located on the piers would not have left a significant archaeological record and little archaeological data would be expected under former building foundations. Therefore, the Proposed Project would be consistent with this policy. *

A. INTRODUCTION

The workers, visitors, and shoppers introduced to the site as a result of the Proposed Project are expected to place new demands on New York City's water supply and sewage treatment/disposal systems. The evaluation of these new demands is based on a proposed retail and hotel development that would cover approximately 26 acres and comprise:

- 1.1 million gross square feet of large- and medium-scale retail uses, as well as local retail;
- a 250-room hotel and banquet hall;
- a two-acre public open space and waterfront esplanade; and
- 3,216 parking spaces.

The analysis concludes that the Proposed Project would not result in any significant adverse impacts to the existing water supply, sewage treatment, and stormwater discharge systems.

B. EXISTING CONDITIONS**WATER SUPPLY**

The New York City water supply system comprises three watersheds north and northwest of the city: the Delaware, Catskill, and Croton. From these watersheds, water is conveyed as far as 125 miles to the City via a system of reservoirs, aqueducts, and tunnels. Within the City, a grid of pipes distributes water to consumers. The average daily consumption in 2003 was 1.094 billion gallons per day according to New York City Department of Environmental Protection (NYCDEP), the municipal agency that operates the system.

The Bronx's water supply comes primarily from the Croton system. Watersheds within the Croton system collect runoff from areas in Westchester, Dutchess and Putnam Counties and deliver it via open channel streams and rivers to the New Croton Reservoir in Westchester County. From there, water flows to the Jerome Park Reservoir through the Croton Aqueduct, then to the low lying areas of the Bronx and Manhattan. However, water can also come from the Catskill/Delaware system, which originates in the Catskills. Water from this system is brought via aqueducts to the Kensico Reservoir in Westchester County. From the Kensico Reservoir, the water is conveyed to the Hillview Reservoir in the City of Yonkers. Hillview Reservoir serves to balance the fluctuating daily water demand and connects into the system of water pipes that deliver the water in New York City.

Average daily water consumption in the Bronx is estimated at about 187 million gallons per day (mgd). Because of the size of the water supply system, little variation in water pressure occurs from hour to hour, except within the local distribution network. The average water pressure in

Gateway Center at Bronx Terminal Market DEIS

the Bronx is 38 pounds per square inch (psi). A pressure of 20 psi is considered the minimum acceptable level for uninterrupted service.

The project area is serviced by a network of water mains forming an interconnected looped service. Portions of this looped service abut the project site; specifically a 20-inch diameter water main located within Exterior Street, a 12-inch diameter main in River Avenue (western side), a 36-inch diameter main in River Avenue (eastern side), a 12-inch diameter main in Cromwell Avenue, a 12-inch diameter main in East 151st Street, and a 12-inch diameter main in East 150th Street. These mains provide domestic and fire services to the existing buildings on the project site and to neighboring businesses, and also to street hydrants for fire fighting.

Minimal water is consumed by the uses on the project site.

SANITARY SEWAGE

The project site is located in the service area of the Wards Island Water Pollution Control Plant (WPCP). This plant provides full secondary physical and biological treatment of sanitary sewage so that it can be discharged into the City's waterways without adversely affecting water quality. Secondary treatment requires the removal of at least 85 percent of the total dissolved solids and biochemical oxygen demand in the influent. In addition, the effluent is treated with chlorine to kill pathogens. Effluent from the Wards Island WPCP is discharged into the East River. Discharges from the WPCP are regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by the New York State Department of Environmental Conservation (NYSDEC).

For the Wards Island WPCP, the SPDES permit allows an inflow of 275 mgd. As shown on Table 13-1, during the past 12 months the Wards Island WPCP had an average flow of 200 mgd, which is below the SPDES permit allowable limit. In addition, all other permit conditions were met.

**Table 13-1
Actual Average Monthly Flows at
Wards Island WPCP**

Month	Actual Flow (mgd)
November 2003	184
December	198
January 2004	178
February	205
March	197
April	209
May	198
June	194
July	218
August	201
September	219
October	198
Yearly Average	200
Note:	Permit Limit: 275 mgd.
Source:	New York City Department of Environmental Protection.

For the conveyance of sanitary sewage, the project site is currently served by combined sewers. Combined sewers carry only sanitary sewage during dry weather and convey all sewage to the WPCP. During rain storms and other precipitation events, the combined sewer carries both sanitary sewage and stormwater runoff. The volume of water during a storm is too great for the WPCP to handle. Therefore, the maximum amount of water that the WPCP can handle is sent to the plant, and the excess mixture of sanitary sewage and runoff is discharged into a receiving water body. In the case of the project site, the excess is discharged into the Harlem River.

An interceptor sewer under Exterior Street conducts flows in a southerly direction towards a regulating chamber at 149th Street. Only connections from NYCDEP sewer lines in the streets are allowed to connect to interceptor sewer lines. Direct connections from individual buildings are not permitted. Dry weather flows in the 10- by 7.5-foot interceptor sewer are conveyed to a grit chamber in St. Ann's Avenue before flowing to the Wards Island WPCP. During wet weather, the excess flow is diverted into the Harlem River at a regulator at 149th Street.

A combined sewer line that allows connections from buildings is located under River Avenue. It is 50 inches by 62 inches. This sewer flows to the same regulator chamber at 149th Street as the interceptor sewer under Exterior Street. Again, during dry weather, the sanitary sewage is conveyed to Wards Island WPCP through a grit chamber at St Ann's Avenue. During wet weather, the excess mixture of sanitary sewage and runoff is discharged in the Harlem River at 149th Street.

The existing uses at the project site currently generate minimal sanitary sewage.

STORMWATER RUNOFF

For the analysis of the impact of stormwater runoff from the Proposed Project, and subsequent development of the stormwater management plan, all areas tributary to the site must be considered. The stormwater analysis considers the 26 acres from the Proposed Project plus an additional 5 acres from offsite tributary areas - specifically Exterior Street between the east and west parcel and portions of the east and west parcels under the Major Deegan Expressway ramps (see Figure 13-1).

The project site is fully developed and primarily consists of impervious surfaces (roof, pavement, roadway, sidewalk) with minimal landscaped or other pervious surfaces. The coverage of each existing use is presented in Table 13-2.

Table 13-2
Existing Surface Coverages

Surface	Size	Percent
Building Rooftops	324, 877 sq.ft. (7.46 acres)	24.1
Existing Roadway & Pavement Area	997,466 sq. ft (22.90 acres)	73.9
Pervious/Vegetated Area	27,033 sq ft (0.62acres)	2.0
Totals	1,349,376 sq.ft. (30.98 acres)	100.0
Source: <i>Bronx Terminal Market, Existing Conditions Plan</i> , Langan Engineering, October 22, 2003.		

The majority of the stormwater runoff volume discharges directly into the Harlem River via existing internal drains through four outfalls. One stormwater sewer serving the project site is 21 inches in diameter and serves the northern portion of the project site. The central portion of the

project site is served by a 36-inch and 42-inch stormwater sewer. The southern portion of the site is served by a 30-inch stormwater sewer. Based on topographic information, portions of the Bronx House of Detention site and the market building located at the intersection of 149th Street and River Avenue discharge to the 50- by 62-inch combined sewer in River Avenue.

Table 13-3 shows an estimate of the existing stormwater discharge volumes. The calculated volumes are based on NYCDEP Design Guidelines for developed areas with rainfall intensity (I) of 5.95 inches per hour. The runoff coefficient (C) is based on standard NYCDEP rates and represents the percent of precipitation that becomes surface flow and does not filter into the ground. Runoff rates are presented in cubic feet per second (cfs).

**Table 13-3
Existing Estimated Stormwater Runoff Volumes**

	Surface Area			Runoff (cfs)
	Roof Area (C = 1.0)	Roadway/Pavement Area (C = 0.85)	Pervious/Vegetated Area (C = 0.2)	
Directly to the Harlem River	292,628 sq. ft. (6.72 acres)	932,028 sq. ft. (21.40 acres)	27,033 sq. ft. (0.62 acres)	148.95
Discharges into River Avenue Sewer	32,249 sq. ft. (0.74 acres)	65,438 sq. ft. (1.50 acres)	0	11.99
TOTAL	324,877 sq. ft. (7.46 acres)	997,466 sq. ft. (22.90 acres)	27,033 sq. ft. (0.62 acres)	160.94

During the design storm, the Harlem River receives approximately 149 cfs of runoff directly and another 12 cfs to the combined sewer line in River Road that goes to the 149th Street regulator. A total of 161 cfs of stormwater flows from the Proposed Project during the design storm.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

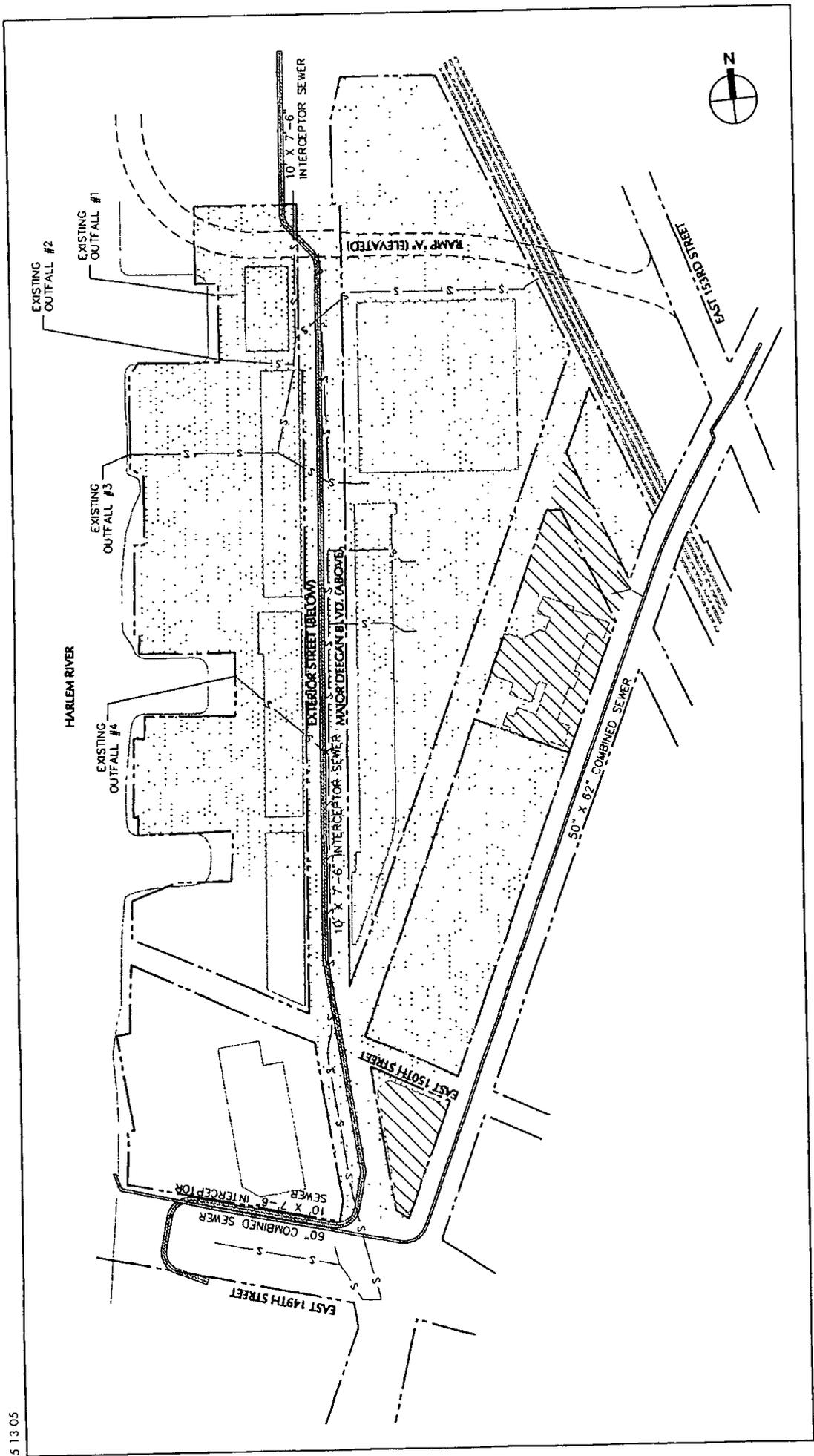
In the future without the proposed actions, water consumption, sewage generation and stormwater runoff are not expected to change significantly from existing conditions.

WATER SUPPLY

Water demand in the area would be expected to increase as a result of incidental growth; however, this increase is not anticipated to adversely affect the water supply system. The effects of water conservation measures, such as low-flow fixtures and metering, are expected to keep any growth in water demand to a minimum. No major changes to the water distribution system are planned by the City in the project area.

SANITARY SEWAGE

New York City regulations require all new construction and substantial renovation projects to incorporate low-flow fixtures for water conservation purposes. In addition, the City has an active program to install water meters in all buildings. Based on 1998 projections, NYCDEP estimates that the flows to the Wards Island WPCP would increase between 6 and 18 percent, to a range of 206 to 230 mgd by the year 2015. Trends since 1998 have shown that sewage generation has been very close to the low end of the range. This estimated future flow is well below the SPDES permit level of 275 mgd.



- Property Line
- ▨ Existing Areas Tributary to Combined Sewer
- ▤ Existing Areas Tributary to Harlem River
- s — Existing Storm Line

Existing Stormwater Runoff Conditions
Figure 13-1

STORMWATER RUNOFF

Without the Proposed Project, current runoff patterns at the project site are not expected to change.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS**WATER SUPPLY**

As part of the Proposed Project, new water lines would be installed both within the City's right of way and the Proposed Project. This includes the construction of a 12-inch diameter water main within Exterior Street parallel to the existing 20-inch service. Typically, 20-inch mains are considered transmission mains, and domestic, fire service, and hydrant laterals are not made directly to transmission mains. The proposed parallel 12-inch main in Exterior Street would facilitate the new service laterals to the retail development, public open space, and street hydrant system. All new water lines would be designed and built to meet NYCDEP requirements.

Water mains located within City streets proposed to be demapped would be capped and removed/abandoned in accordance with NYCDEP requirements.

The expected water demand is shown in Table 13-4.

Table 13-4
Projected Water Consumption

Use	Size (square feet)	Rate	Consumption (gallons per day)
Retail Uses			
Domestic	1,068,930	0.17 gpd/sq. ft.	181,718
Air conditioning	39,000	0.17 gpd/sq. ft.	6,630
Hotel			
Domestic	250 rooms	150 gpd/room/occupant	75,000
Function Space	30,000	0.17 gpd/sq. ft.	5,100
Air conditioning	55,000	0.10 gpd/sq. ft.	5,500
TOTAL	NA	NA	273,948
Source: Rates from 2001 <i>City Environmental Quality Review Technical Manual</i> .			

The additional demand is not expected to adversely affect the City's water supply or local water pressure. Pursuant to public law, all plumbing fixtures would be of low-flow design. Compared to the average daily water demand in New York City of about 1.1 billion gpd, the proposed usage represents 0.026 percent of the City's total consumption, which is an insignificant increase. The water supply system has adequate capacity to support the Proposed Project and would not experience a significant adverse impact.

SANITARY SEWAGE

As part of the Proposed Project, sanitary sewers would be constructed within Exterior Street. These sewers would connect to either the 50- by 62-inch combined sewer at the intersection of Exterior Street and 149th Street or directly to the City's interceptor main located within Exterior Street.

The estimated sanitary sewage generation would be the same as the estimated domestic water demand. The projected sanitary sewage flow from the Proposed Project would be approximately

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267,318 gpd. This generation rate represents approximately 0.10 percent of the SPDES permitted flow of 275 mgd to the Wards Island WPCP and is considered to be insignificant. The Proposed Project would not have a significant adverse impact on the Wards Island WPCP's ability to properly treat and discharge sanitary sewage.

New sewer lines would be designed in accordance with the NYCDEP amended drainage plan for the area and will be built to meet all NYCDEP requirements. The Proposed Project would not exceed the capacity of the local sewer system. The Proposed Project is not expected to result in significant adverse impacts on the existing City's sewer system.

STORMWATER RUNOFF

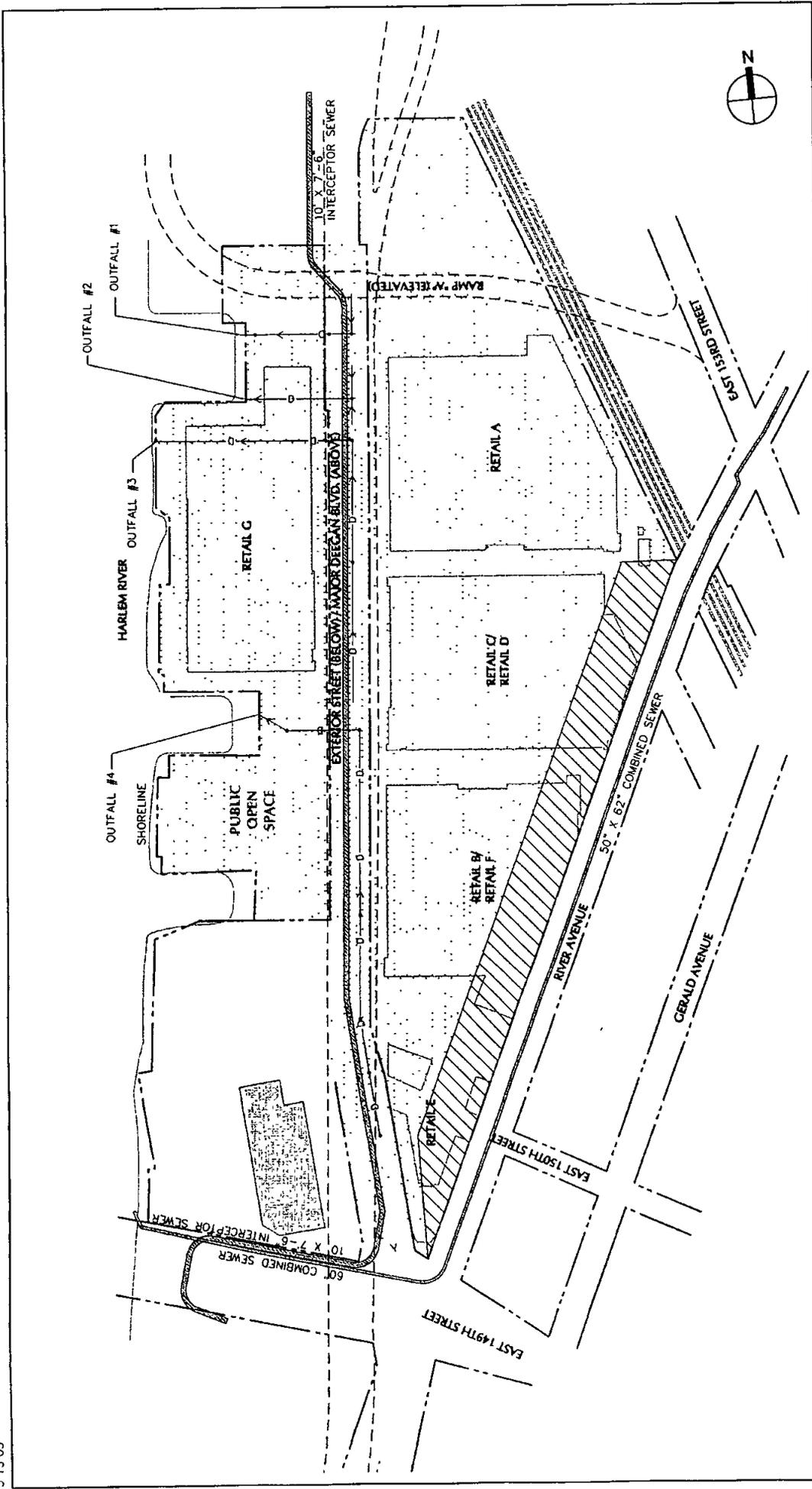
The development of the Proposed Project would result in approximately 10 acres of building roof area; 14 acres of structured parking, surface parking, and associated entrance roadways; and a two-acre open space and esplanade. Again, as in the analysis of existing runoff conditions, an additional five acres of off-site tributary area is taken into consideration for this analysis. Consistent with existing runoff conditions, 26 acres of the Proposed Project as well as the five additional acres would discharge into the Harlem River via the existing outfalls. In addition, approximately three acres of the site adjacent to River Avenue would discharge into the 50- by 62-inch combined sewer in River Avenue (see Figure 13-2). Surface coverage within the Proposed Project is presented in Table 13-5.

**Table 13-5
Proposed Surface Coverages**

Surface	Size	Percent
Building Rooftops	617,767 sq. ft. (14.19 acres)	45.8
Roadway & Pavement Area	632,326 sq. ft. (14.51 acres)	46.8
Pervious/Vegetated Area	99,283 sq. ft. (2.28 acres)	7.4
Total	1,349,376 sq. ft. (30.98 acres)	100

The Proposed Project would include construction of a NYCDEP storm sewer within Exterior Street in accordance with the City's amended drainage plan for the area. The drainage plan would be amended as part of the mapping action associated with the Proposed Project. The plan would be developed to utilize the existing outfalls from the project site into the Harlem River. If the existing outfalls cannot be used, one or more additional outfalls would need to be installed in consultation with NYCDEP.

New site storm sewers would be constructed to collect runoff from the buildings, parking areas, public open space, Exterior Street and the Major Deegan Expressway. These internal drains would be designed as private storm sewers and discharge into the NYCDEP storm sewer. Runoff from areas served by these stormwater sewers would not enter the combined sewers and would not flow to Ward Island WPCP. The Proposed Project would be designed in accordance with a Stormwater Pollution Prevention Plan (SWPPP) in order to minimize potential water quality and stormwater drainage effects associated with the discharge of stormwater during and after the completion of construction activities. The SWPPP will incorporate stormwater management practices (SMP's) consistent with the SPDES General Permit for Construction Activities (GP-02-01) and with the New York State Stormwater Management Design Manual. Table 13-6 presents a summary of the stormwater discharge volumes associated with the Proposed Project. The runoff calculations are in accordance with NYCDEP guidelines with a runoff coefficient of



- Property Line
- Proposed Areas Tributary to Combined Sewer
- Proposed Areas Tributary to Harlem River
- Proposed Storm Line

Stormwater Runoff with Proposed Project
 Figure 13-2

0.85 and a rainfall intensity of 5.95 in/hr. Runoff rates are presented as cubic feet per second (cfs).

**Table 13-6
Estimated Stormwater Runoff Volumes with the Proposed Project**

	NYCDEP Runoff Coefficient	Rainfall Intensity	Tributary Area (sq.ft.)	Total Runoff (cfs)
Directly to the Harlem River	0.85	5.95	1,222,290.3 (28.06 acres)	141.91
Into the River Avenue sewer	0.85	5.95	127,085.7 (2.92 acres)	14.77
Total Discharge (cfs)				156.68

Overall, the stormwater runoff is expected to decrease from the existing 161 cfs to 157 cfs with the Proposed Project. This would not have a significant adverse impact and could have minimal water quality benefits in the Harlem River.

E. CONCLUSION

In conclusion, the Proposed Project would not result in significant adverse impacts on existing infrastructure systems. The existing City infrastructure has sufficient capacity to accommodate the Proposed Project without having a significant adverse impact on other users. *

A. INTRODUCTION

The workers, visitors, and shoppers at the Proposed Project would create new demands for solid waste and sanitation services. The potential effects on these services are presented in this section of the DEIS. The conclusion of the analysis is that neither the Proposed Project nor any potential development induced by the Proposed Project would result in significant adverse impacts related to solid waste.

B. EXISTING CONDITIONS**SOLID WASTE**

In the City of New York, residential and institutional refuse is handled by the New York City Department of Sanitation (NYCDOS), while solid waste from commercial and manufacturing uses is collected by private carters.

NYCDOS picks up residential and institutional solid waste and takes it to transfer stations. From there, private carters take it to disposal facilities out of the City. Most of these facilities are in Virginia, Ohio and Pennsylvania. Commercial carters who pick up from businesses and institutions like hospitals also use facilities outside the City.

The operations on the project site are commercial or manufacturing. Thus, NYCDOS does not collect or dispose of their solid waste and the project will be served by private carters.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

In the future without the Proposed Project, no major changes are expected in the city's solid waste management handling practices. Likewise, solid waste practices at facilities that privately haul solid waste should not change. It is assumed that the volumes of solid waste generated at the site should also not change.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The Proposed Project would increase the volume of solid waste generation at the site. It would also be required to comply with the City's recycling program. This includes source separation of solid waste in conformance with City recycling regulations and state solid waste laws. Materials to be separated include paper, cardboard, metal, and certain plastics, all of which reduces the stream of waste to landfills. The analysis below conservatively does not include that reduction.

Solid waste projections are provided below based on the types of uses that are projected at the site, which include large retail use buildings and new restaurant/retail use buildings. Estimated solid waste generation with the Proposed Project is shown in Table 14-1, below. As shown in the table, total weekly solid waste generation with the Proposed Project would amount to 168,361

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pounds per week (about 84 tons), based on the project's size and anticipated uses. All solid waste would be handled by private carters. The approximately 84 tons per week of solid waste is a small percentage of the 175,000 tons per week total solid waste generated in New York City. An average garbage truck for containerized collections carries about 16 tons. The Proposed Project would therefore generate about 6 truck loads per week. In sum, the Proposed Project would represent a very small increase in the amount of solid waste generated, and therefore would not have an adverse impact on solid waste handling and disposal systems.

**Table 14-1
Projected Solid Waste Generation**

Use	Number of Employees	Generation Rate (Pounds per Week)	Generation (Pounds per Week)
General Retail	1,984	79 per employee	156,736
Hotel/Banquet	155	75 per employee	11,625
Total Waste Generation			168,361

Sources: Rates from City Environmental Review (CEQR) Technical Manual, December 2001

*

A. INTRODUCTION

The Proposed Project would create new energy demands. The potential for impacts on these services is discussed below. The conclusion of this analysis is that the Proposed Project would not result in significant adverse impacts related to energy demands.

B. EXISTING CONDITIONS

Consolidated Edison (Con Ed) supplies electricity and gas to the area. Existing uses at the site do not generate significant energy consumption.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

In the future without the proposed actions, no changes in energy consumption are anticipated at the project site.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The Proposed Project, which would use natural gas with a minor electrical component for its HVAC systems, would create new energy demands at the site. Any new structures would be required to comply with the New York State Conservation Construction Code. This Code governs performance requirements of heating, ventilation, and air-conditioning systems, as well as the exterior building envelope. The Code, instituted on January 1, 1979, pursuant to Article Eleven of the Energy Law of the State of New York, requires that new and recycled buildings (both public and private) must be designed to ensure adequate thermal resistance to heat loss and infiltration. In addition, it provides requirements for the design and selection of mechanical, electrical, and illumination systems. In compliance with the Code, the basic designs would incorporate all required energy conservation measures, including meeting the Code's requirements relating to energy efficiency and combined thermal transmittance.

Electricity and gas would be supplied by Consolidated Edison, which would be used to provide heating, cooling, and lighting to the Proposed Project. With the Proposed Project, at least two existing transformer substations on the site would be decommissioned, and one new transformer/network substation would be constructed to serve the proposed buildings. Based on factors from Energy Consumption in New Building Design: An Impact Assessment of ASHRAE Standard 90-75, by Arthur D. Little, Inc. for the Federal Energy Administration, March 1976, consumption for operation is expected to be approximately 126 billion British Thermal Units (BTUs) per year. Consolidated Edison could easily supply this energy without disruption to the main distribution system. Thus, there would not be any significant adverse energy impacts from the Proposed Project. *

A. INTRODUCTION

The Bronx Terminal Market parcels are located along River Avenue and Exterior Street, in close proximity to Yankee Stadium and alongside (as well as beneath) the Major Deegan Expressway. The site borders the Harlem River north of the 145th Street Bridge and is within the Bronx's grid street network of north-south avenues and east-west cross-streets. Although the Major Deegan Expressway is frequently congested in the northbound direction during peak traffic hours due to delays further north at the Cross Bronx Expressway exit, many sections of the local street network that serve the site have substantial amounts of unused capacity, particularly Exterior Street, which bisects the site. Some sections of the local street network—most notably the approach and departure routes to/from the 145th Street and Macombs Dam Bridges, the Major Deegan Expressway, and River Avenue before and after Yankee games—carry substantial traffic volumes, which at times are congested.

This chapter addresses the potential traffic and parking impacts of the Proposed Project. The approach routes to the site traverse intersections along 138th, 149th, and 161st Streets, Exterior Street, River Avenue, the Grand Concourse, the 145th Street and Macombs Dam Bridges, and the Major Deegan Expressway exits immediately north and south of the Bronx Terminal Market. Therefore, the traffic and parking analyses cover a large study area encompassing 15 existing intersections plus new intersections created for access to and from the project's parking garages. Key segments of the Major Deegan Expressway have also been studied (see Figures 16-1 and 16-2).

The analyses begin with an assessment of existing traffic and parking conditions in the study area, and proceed to an analysis of conditions in the future without the Proposed Project—i.e., the future No Build condition. The Existing and No Build conditions are analyzed under normal weekday and Saturday peak hour roadway conditions and under roadway conditions typically experienced before and after Yankee games on a weekday and Saturday. Three non-game day peak hours are analyzed, including the 1-2 PM weekday midday, 5-6 PM weekday PM, and 1-2 PM Saturday midday peak hours. Also, three Yankee game day peak hours are analyzed, including the 5:15-6:15 PM pre-game weekday PM, 12-1 PM pre-game Saturday midday, and 4-5 PM post-game Saturday PM peak hours. These analyses are presented for two separate future Build years—2009 and 2014.

The next step in the analyses considers the amount of vehicular traffic expected to be generated by the Proposed Project in each of the Build years, and an assessment of future traffic and parking conditions with the Proposed Project in place in 2009 (interim Build condition) and 2014 (final Build condition). Like the No Build conditions, the Build conditions analyze roadway conditions with and without Yankee games, on weekdays and Saturday. These Build year analyses identify the location and extent of significant impacts potentially generated by the Proposed Project, and identify and evaluate traffic improvements that may be needed to mitigate

those impacts. The parking analysis addresses the ability of the Proposed Project to accommodate the parking demands in each Build year.

In addition to the analyses presented in this chapter of the DEIS, data on traffic volumes and detailed traffic impact analyses, are presented in Appendix A.

B. EXISTING CONDITIONS

ROADWAY NETWORK AND TRAFFIC STUDY AREA

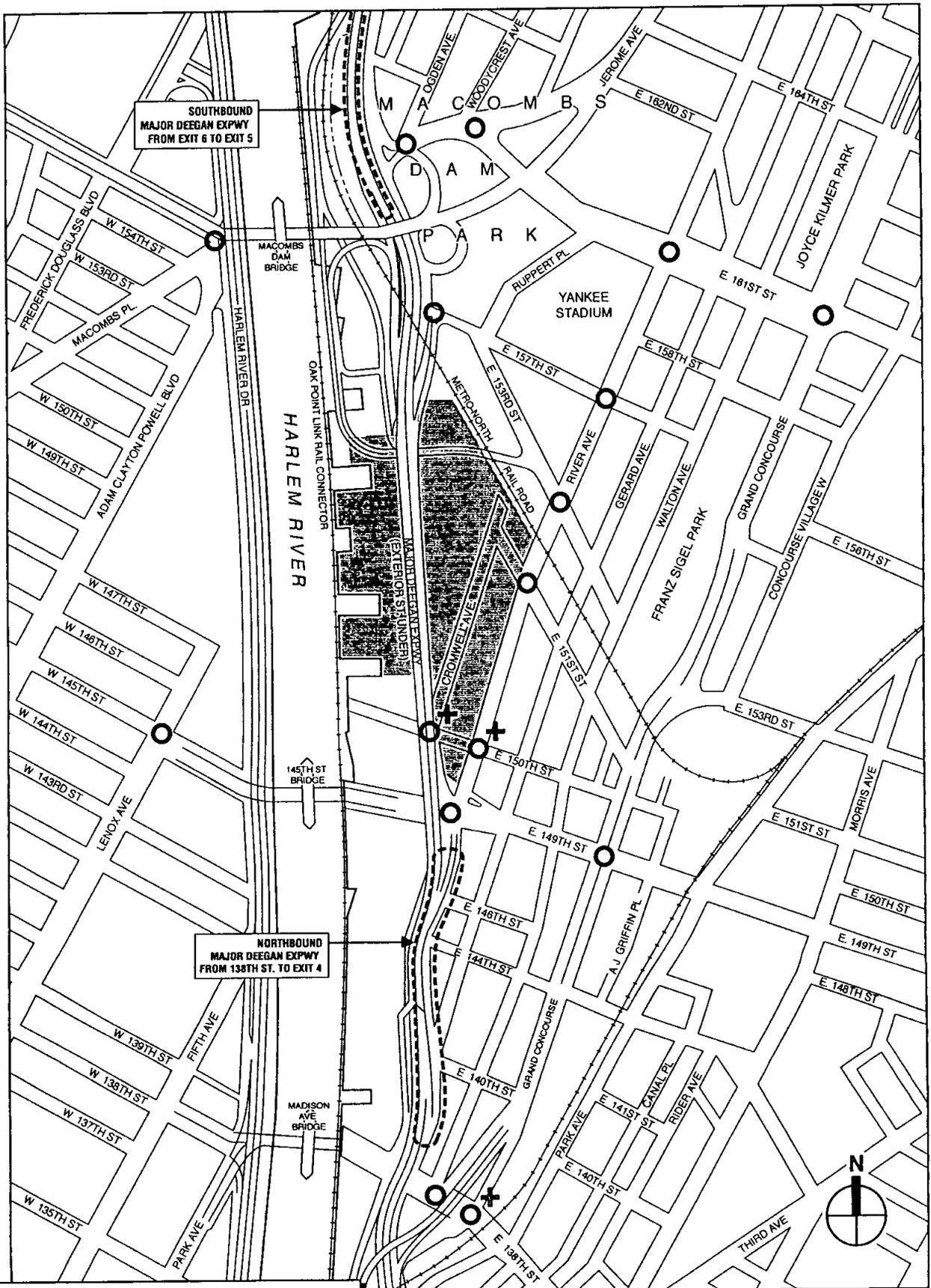
The overall study area generally consists of a grid network of local streets and avenues that are interspersed between the Harlem River and the Grand Concourse with the ramp network that serves traffic heading to and from the Major Deegan Expressway. The presence of the Major Deegan Expressway and its ramp network has a major influence on traffic conditions in the area, since the Expressway attracts a substantial volume of traffic, especially before and after Yankee games. The Major Deegan Expressway is elevated above Exterior Street between 149th Street and Jerome Avenue and consists of three lanes per direction in the vicinity of the site with single-lane entrance and exit ramps. It serves as the sole limited-access highway carrying major traffic loads to, from, and through the area. There are several ramps to and from the Major Deegan Expressway that serve the area. Together with the Triborough Bridge south of the project site and the Cross Bronx Expressway north of the project site, the Major Deegan Expressway provides excellent traffic access to the site.

The Major Deegan Expressway provides access to the project site at Exits 4 through 6.

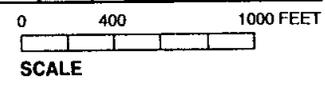
- Northbound Exit 4 is a single-lane off-ramp touching down at the 149th Street/Exterior Street/River Avenue/145th Street Bridge access intersection. This is the most direct route to the site for northbound Major Deegan Expressway motorists. There is no southbound Exit 4 or direct access to the southbound Major Deegan from this area. Motorists from the site can continue south on Exterior Street/Major Deegan Boulevard under the Expressway and access the Major Deegan near 138th Street.
- Northbound Exit 5 consists of a single-lane off-ramp terminating at the intersection of 157th Street and the access ramp from northbound Exterior Street below. Although this exit is located adjacent to the north end of the project site, it does not connect directly to Exterior Street or River Avenue.
- Southbound Exit 5 is a single-lane off-ramp to Jerome Avenue and the Macombs Dam Bridge approach. This exit provides access to Exterior Street via a ramp south of the Macombs Dam Bridge.
- Southbound Exit 6 consists of a single-lane off-ramp that passes under the Macombs Dam Bridge and splits to provide access to Exterior Street or River Avenue. The ramp provides direct access to southbound Exterior Street past the Yankee Stadium parking lots west of the Expressway. The ramp also provides access to River Avenue via the 153rd Street flyover ramp, which terminates at 153rd Street one block west of River Avenue.

The local study area street network conforms to a general grid, with the avenues extending in a north-south direction and the cross-streets extending east-west. The north-south avenues consist of Jerome, Cromwell, River, Gerard, and Walton Avenues, the Grand Concourse, and Exterior Street.

4.5.05

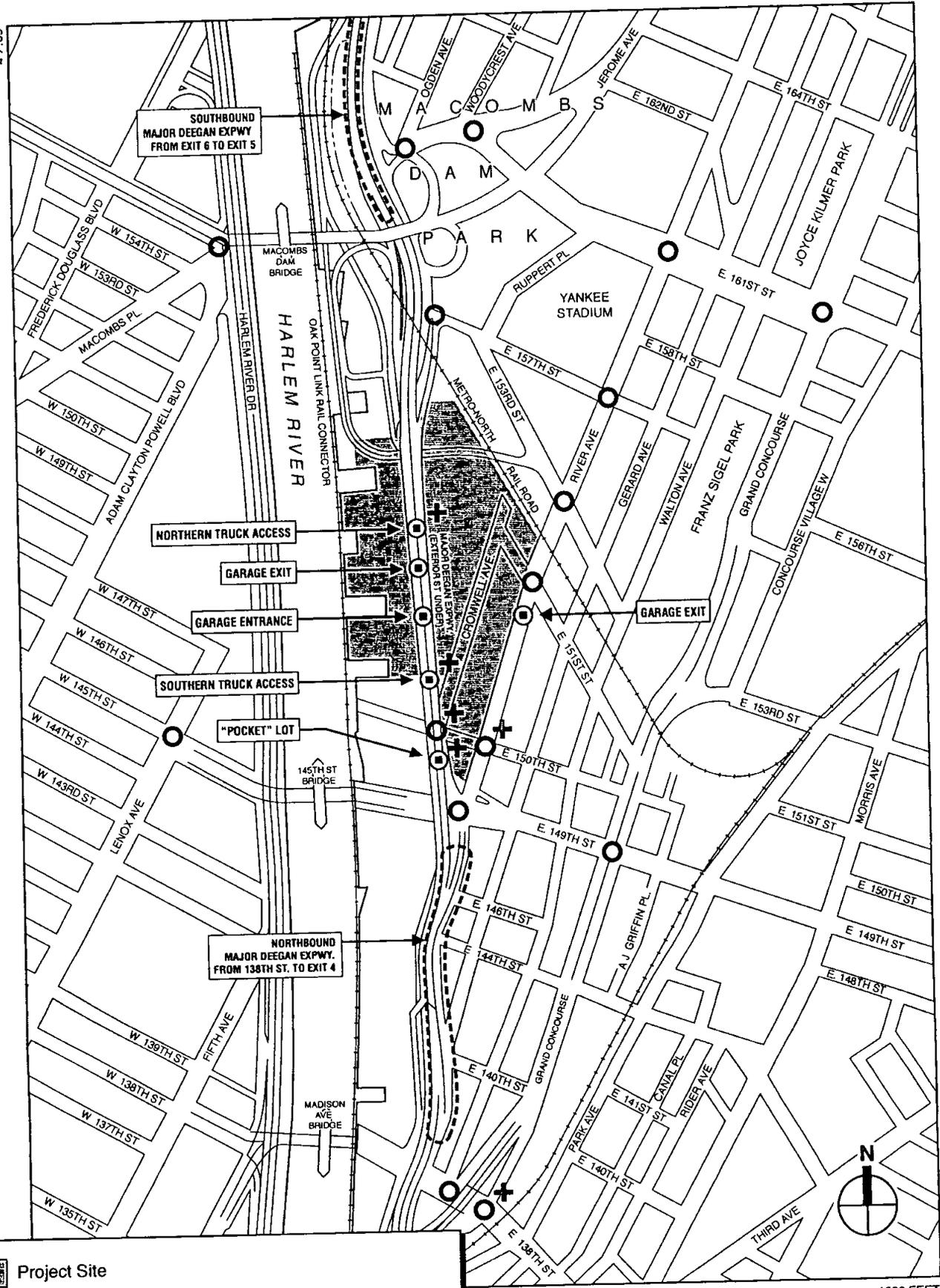


	Project Site
	Existing and No Build Traffic Study Location
	Unsignalized Intersection

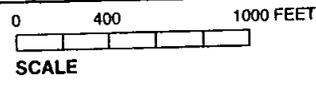


Existing and No Build Traffic Study Locations

Figure 16-1



	Project Site
	Existing and No Build Conditions Traffic Study Location
	Build Conditions Traffic Study Location
	Unsignalized Intersection



Build Traffic Study Locations
Figure 16-2

- Exterior Street is a 50 to 70-foot wide two-lane, two-way cobblestone street that currently serves low traffic volumes destined to the Bronx Terminal Market and an increased volume of traffic after Yankee games because of its access to the northbound and southbound Major Deegan Expressway. It bisects the project site and is expected to receive the most project-generated traffic.
- The two-lane, two-way River Avenue processes moderate traffic volumes apart from Yankee games, when this street becomes heavily used. River Avenue intersections within the study area are signalized, with the exception of 150th Street.
- The Grand Concourse is a high-capacity roadway that extends north-south over the full length of the Bronx. It serves substantial volumes of through and local traffic, and benefits from traffic signal timing patterns that allow traffic to proceed with good progression when traffic volumes are moderate and conditions allow. The Grand Concourse consists of three northbound and three southbound lanes between 138th and 161st Streets; north of 161st Street it separates into express and service lanes consisting of two lanes each per direction.
- Jerome Avenue is a two-lane, two-way roadway that carries moderate volumes without Yankee games and high volumes before and after Yankee games. Jerome Avenue intersections are signalized, with the exception of the Macombs Dam Bridge approach, which consists of a stop-controlled "T" intersection.
- Cromwell Avenue is a minor two-way, two-lane street carrying extremely low traffic volumes due to the cul-de-sac at its north end. It connects to Exterior and 150th Streets.
- Gerard and Walton Avenues are one-lane streets that compose a one-way pair, carry much lower volumes than the Grand Concourse, and traverse residential blocks north of 149th Street.

The major east-west cross-streets consist of 138th, 149th and 161st Streets, which provide access to and from the Major Deegan Expressway and the Harlem River bridge to Manhattan. Less-trafficked cross-streets include 150th, 151st, 153rd, 157th, and 158th Streets.

- East 138th Street connects to the Madison Avenue Bridge, the Major Deegan Expressway and its northbound service road, and the Grand Concourse. The street consists of two lanes per direction and is signalized at major intersections. Large volumes of peak hour traffic are served by this east-west connector that spans the entire south Bronx.
- East 149th Street consists of two lanes per direction and connects to the 145th Street Bridge, River Avenue, and the Grand Concourse. Moderate volumes of peak hour traffic use 149th Street to traverse the South Bronx, and significant volumes of traffic use the 145th Street Bridge during peak hours.
- East 161st Street connects to the Macombs Dam Bridge via an approach road as well as Jerome Avenue, River Avenue, and the Grand Concourse. 161st Street consists of one express lane and one to two local lanes per direction. Heavy traffic volumes prevail at 161st Street near River Avenue before and after Yankee games. However, traffic is largely uncongested apart from Yankee games due to the capacity provided by express and local lanes.
- East 150th Street is a one-lane, one-way westbound street approaching River Avenue, where it is controlled by a stop sign. West of River Avenue, it is two-way where it crosses Exterior Street and Cromwell Avenue. It carries low to moderate traffic volumes.

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- East 151st Street is a two-lane, two-way street between River Avenue and the Grand Concourse with stop-sign control at the River Avenue intersection. Traffic volumes are relatively low at all times on this street.
- East 153rd Street is an important connector road before and after Yankee games, but typically serves low traffic volumes. It consists of one lane per direction and connects to East 157th Street at Ruppert Place and River Avenue.
- East 157th Street carries large volumes of traffic before and after Yankee games between River Avenue and parking garages, but is predominantly inactive at all other times. It has one lane per direction with traffic signal control at River Avenue and stop sign or flashing stop light control at other intersections.
- East 158th Street is a two-lane, two-way street between River Avenue and the Grand Concourse with traffic signal control at River Avenue. This street serves moderate traffic volumes before and after Yankee games and low volumes at all other times.

The traffic study area developed for this DEIS includes the following 15 intersections, which are shown in Figures 16-1 and 16-2(all intersections are signalized unless otherwise noted):

1. East 138th Street at the Grand Concourse (two intersections, one signalized and one unsignalized);
2. East 149th Street at the Grand Concourse;
3. East 149th Street at Exterior Street/River Avenue/northbound Major Deegan Expressway Exit 4;
4. West 145th Street/145th Street Bridge approach at Lenox Avenue,
5. East 150th Street at Exterior Street/Cromwell Avenue (unsignalized; analyzed as free-flow under Build conditions due to demapping of 150th Street and Cromwell Avenue);
6. East 150th Street at River Avenue (unsignalized; includes access to Bronx Terminal Market Southern "Pocket" Parking Lot under Build conditions);
7. East 151st Street at River Avenue;
8. East 153rd Street at River Avenue;
9. East 157th Street at River Avenue;
10. East 161st Street at River Avenue;
11. East 161st Street at the Grand Concourse;
12. East 161st Street at Jerome Avenue/Woodycrest Avenue;
13. East 157th Street at the northbound Major Deegan Expressway service road;
14. Jerome Avenue at Ogden Avenue/northbound Major Deegan Expressway service road ramp to Macombs Dam Bridge; and
15. West 155th Street at Macombs Place/Macombs Dam Bridge approach.

Six additional intersections created by the design of the Bronx Terminal Market project are also analyzed under Build Conditions:

16. Exterior Street at Bronx Terminal Market Northern Truck Access;

17. Exterior Street at Bronx Terminal Market Garage Northern Exit;
18. Exterior Street at Bronx Terminal Market Garage Southern Entrance;
19. Exterior Street at Bronx Terminal Market Southern Truck Access;
20. Exterior Street at Bronx Terminal Market Southern "Pocket" Parking Lot; and
21. River Avenue at Bronx Terminal Market Garage Exit (the River Avenue garage entrance would provide access across from East 151st Street, which is already included in the existing study area).

Portions of the Major Deegan Expressway were also analyzed, including:

- The weaving segment on the northbound Major Deegan Expressway between the 138th Street on-ramp and Exit 4/149th Street off-ramp; and
- The southbound Major Deegan Expressway diverges at Exit 6/Bronx Terminal Market and Exit 5/Macombs Dam Bridge.

EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

All new traffic counts were conducted for this DEIS in late April and early May 2004 using manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. These volumes were used, along with observations of actual traffic conditions, to determine levels of service for six peak hours, which are detailed in Table 16-1:

**Table 16-1
Traffic Study Peak Hours**

Day	Without Yankee Game		With Yankee Game	
	Time	Peak Hour	Time	Peak Hour
Weekday	1:00–2:00 PM	Non-game midday	Not analyzed ¹	
	5:00–6:00 PM	Non-game PM	5:15–6:15 PM	Pre-night game PM
Saturday	1:00–2:00 PM	Non-game midday	12:00–1:00 PM	Pre-day game midday
	Not analyzed ²		4:00–5:00 PM	Post-day game PM

Note: ¹ Weekday midday peak hour conditions are the same as without a Yankee game.
² There is no Saturday evening peak without a Yankee game.

Analyses of traffic conditions in urban areas are based on critical conditions at intersections and are defined in terms of levels of service. According to the *2000 Highway Capacity Manual (HCM)* that was used for these analyses, levels of service (LOS) at signalized intersections are defined in terms of a vehicle's total stopped delay at an intersection, as follows:

- LOS A describes operations with very low delays, i.e., 10.0 seconds or less per vehicle. This occurs when signal progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all.
- LOS B describes operations with delays in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. Again, most vehicles do not stop at the intersection.
- LOS C describes operations with delays in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The

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number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

- LOS D describes operations with delays in the range of 35.1 to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Delays of 45.0 seconds or greater are considered marginally unacceptable; delays under 45.0 seconds are considered marginally acceptable.
- LOS E describes operations with delays in the range of 55.1 to 80.0 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios.
- LOS F describes operations with delays in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with cycle failures. Poor progression and long cycle lengths may also contribute to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

Levels of service A, B, and C are considered acceptable; LOS D is generally considered marginally acceptable up to mid-LOS D (45 seconds of delay for signalized intersections), and is considered unacceptable above mid-LOS D. LOS E and F are considered unacceptable.

Although 13 analyzed intersections are signalized, three are not. For these unsignalized intersections, delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line: LOS A describes operations with very low delay, i.e., 10.0 seconds or less per vehicle; LOS B describes operations with delays in the range of 10.1 to 15.0 seconds; LOS C has delays in the range of 15.1 to 25.0 seconds; LOS D, 25.1 to 35.0 seconds per vehicle; and LOS E, 35.1 to 50.0 seconds per vehicle, which is considered to be the limit of acceptable delay. LOS F describes operation with delays in excess of 50.0 seconds per vehicle, which is considered unacceptable to most drivers. This condition exists when there are insufficient gaps of suitable size to allow side street traffic to cross safely through a major vehicular traffic stream.

Table 16-2 provides an overview of the levels of service that characterize the traffic study area during the peak hours. A summary description is also provided below:

- In the non-game weekday midday peak hour, four of the 13 signalized intersections analyzed are operating at overall unacceptable LOS E or F and two other intersections are operating at LOS D. "Overall" LOS E or F means that serious congestion exists—either one specific traffic movement has severe delays, or two or more of the specific traffic movements at the intersection are at LOS E or F with very significant delays (the overall intersection LOS is a weighted average of all of the individual traffic movements). Seventeen specific traffic movements (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.) out of approximately 65 total traffic movements analyzed are at LOS E or F conditions.
- In the non-game weekday PM peak hour, three signalized intersections are operating at overall LOS E or F, while four are at overall LOS D. Fifteen traffic movements are operating at LOS E or F.

Table 16-2
Existing Traffic Levels of Service Summary

Signalized Intersections (13 Total)	Without Yankee Game			With Yankee Game		
	Existing Non-game Weekday Midday	Existing Non-game Weekday PM	Existing Non-game Saturday Midday	Existing Pre-game Weekday PM	Existing Pre-game Saturday Midday	Existing Post-game Saturday PM
Overall Intersection LOS A/B	5	3	5	3	2	2
Overall Intersection LOS C	2	3	2	4	7	2
Overall Intersection LOS D	2	4	4	4	3	3
Overall Intersection LOS E/F	4	3	2	2	1	6
Number of Signalized Intersection Movements at LOS E or F (of approximately 65 total)	17	15	14	17	9	25
Note: The east leg of East 138th Street/the Grand Concourse is unsignalized and the west leg is signalized; they are counted separately. All three unsignalized intersections analyzed (the east leg of East 138th Street/the Grand Concourse, East 150th Street/Exterior Street, and East 150th Street/River Avenue) operate at LOS A, B, or C during all analysis hours.						

- In the non-game Saturday midday peak hour, two signalized intersections are operating at overall LOS E or F, while four are at overall LOS D. Fourteen traffic movements are operating at LOS E or F.
- In the pre-game weekday PM peak hour, two signalized intersections are operating at overall LOS E or F, while four are at overall LOS D. Seventeen traffic movements are operating at LOS E or F.
- In the pre-game Saturday midday peak hour, only one signalized intersection is operating at overall LOS E or F, and three are at overall LOS D. Only nine traffic movements of approximately 65 are operating at LOS E or F.
- In the post-game Saturday PM peak hour, six signalized intersections are operating at overall LOS E or F, while three are at overall LOS D. Twenty-five traffic movements are operating at LOS E or F.
- Each of the three unsignalized intersections analyzed operate at acceptable levels of service during each of the traffic analysis hours.

Another representation of overall existing levels of service can be seen in Figures 16-3 through 16-8. In Figure 16-3, which illustrates non-game weekday midday peak hour levels of service, acceptable LOS A, B, or C conditions prevail at River Avenue intersections, with the exception of River Avenue at 149th Street, which operates at LOS E. Along 161st Street, overall levels of service are acceptable, with the exception of East 161st Street at the Grand Concourse, which operates at an unacceptable LOS D. Across the Harlem River, the first Manhattan intersections motorists pass through going westbound across the 145th Street and Macombs Dam Bridges operate at acceptable LOS C or D conditions.

In Figure 16-4, which shows non-game weekday PM levels of service, conditions are generally the same as the non-game weekday midday peak hour, but with unacceptable LOS E and acceptable LOS D conditions at 161st Street at the Grand Concourse and 161st Street at Jerome Avenue, respectively.

In Figure 16-5, which shows non-game Saturday midday levels of service, at the intersection of 149th Street and the Grand Concourse, overall level of service conditions worsen to LOS E

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compared to an unacceptable LOS D in the weekday peak hours. Non-game Saturday midday conditions are the same or show improvements over non-game weekday peak hours at other intersections.

In Figure 16-6, which illustrates game-day weekday PM peak hour levels of service, acceptable levels of service prevail at River Avenue intersections, with the exception of River Avenue at 149th Street, which operates at LOS F. Along 161st Street, intersections operate at acceptable conditions with the exception of 161st Street at the Grand Concourse, which operates at an unacceptable LOS D. Across the Harlem River, 145th Street/Lenox Avenue operates at acceptable LOS C and 155th Street/Macombs Dam Bridge approach operates at LOS E conditions.

In Figure 16-7, which shows game-day Saturday midday levels of service, conditions are generally the same as game-day weekday PM conditions, but with acceptable LOS C conditions at 161st Street and the Grand Concourse.

In Figure 16-8, which shows game-day Saturday PM levels of service, conditions generally worsen at all intersections by about one level of service when compared to the game-day Saturday midday peak hour.

A more detailed presentation of traffic volumes and levels of service by corridor are provided below. (Details of the level of service analyses for each traffic movement at each of the intersections analyzed, as well as detailed traffic volume maps, appear in Appendix A.)

EXTERIOR STREET

Exterior Street is traveled by approximately 250–500 vehicles per hour (vph) per direction on non-game days and approximately 275–525 vph per direction on game days. Levels of service are clearly acceptable on Exterior Street near 150th Street, operating at LOS A or B for all peak periods. However, approaching the 149th Street intersection, southbound Exterior Street functions poorly at LOS D or E during non-game peak periods and LOS D, E, or F on game days during peak hours.

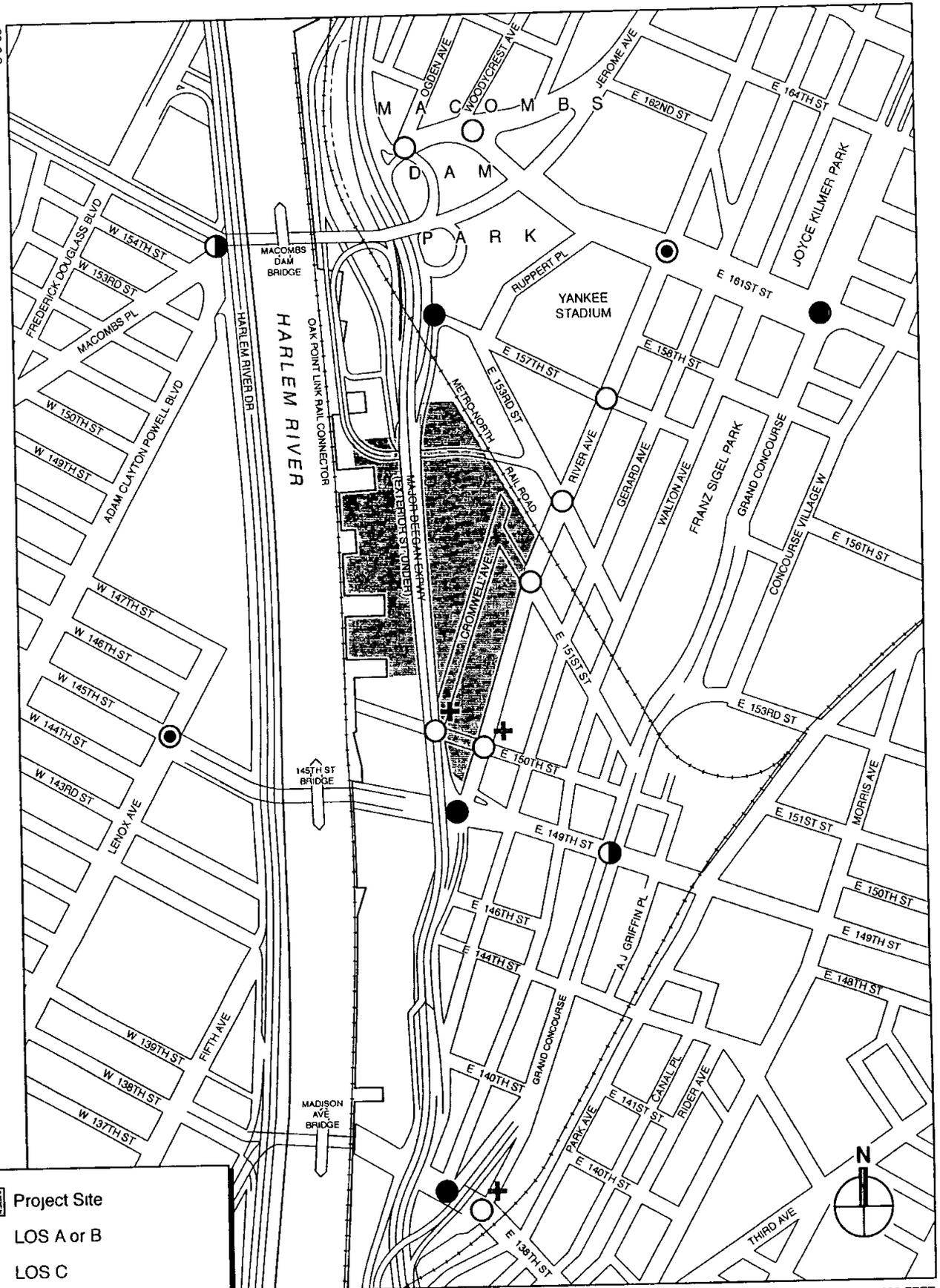
MAJOR DEEGAN EXPRESSWAY NORTHBOUND 149TH STREET OFF-RAMP

The northbound 149th Street off-ramp is used by approximately 375–500 vph approaching 149th Street on non-game days. Approximately 650–900 vph use the off-ramp in the pre-game weekday PM and Saturday midday peak hours, and approximately 275 vph exit the Major Deegan during the post-game Saturday PM peak hour. The northbound approach of the 149th Street off-ramp operates at an unacceptable LOS F for all peak hours except the post-game Saturday PM peak hour. Frequently before Yankee games, the ramp traffic queues back along the northbound Major Deegan Expressway.

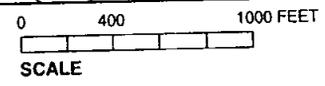
145TH STREET BRIDGE

The 145th Street Bridge is traveled by approximately 700–950 vph per direction on non-game days and approximately 750–1,250 vph per direction on game days. Levels of service are acceptable on the west side of the bridge at Lenox Avenue/145th Street, with all movements generally operating at LOS C or better. However, on the east side of the bridge approaching Exterior Street/River Avenue, LOS E and F conditions persist in all peak hours except the pre-game Saturday midday peak hour.

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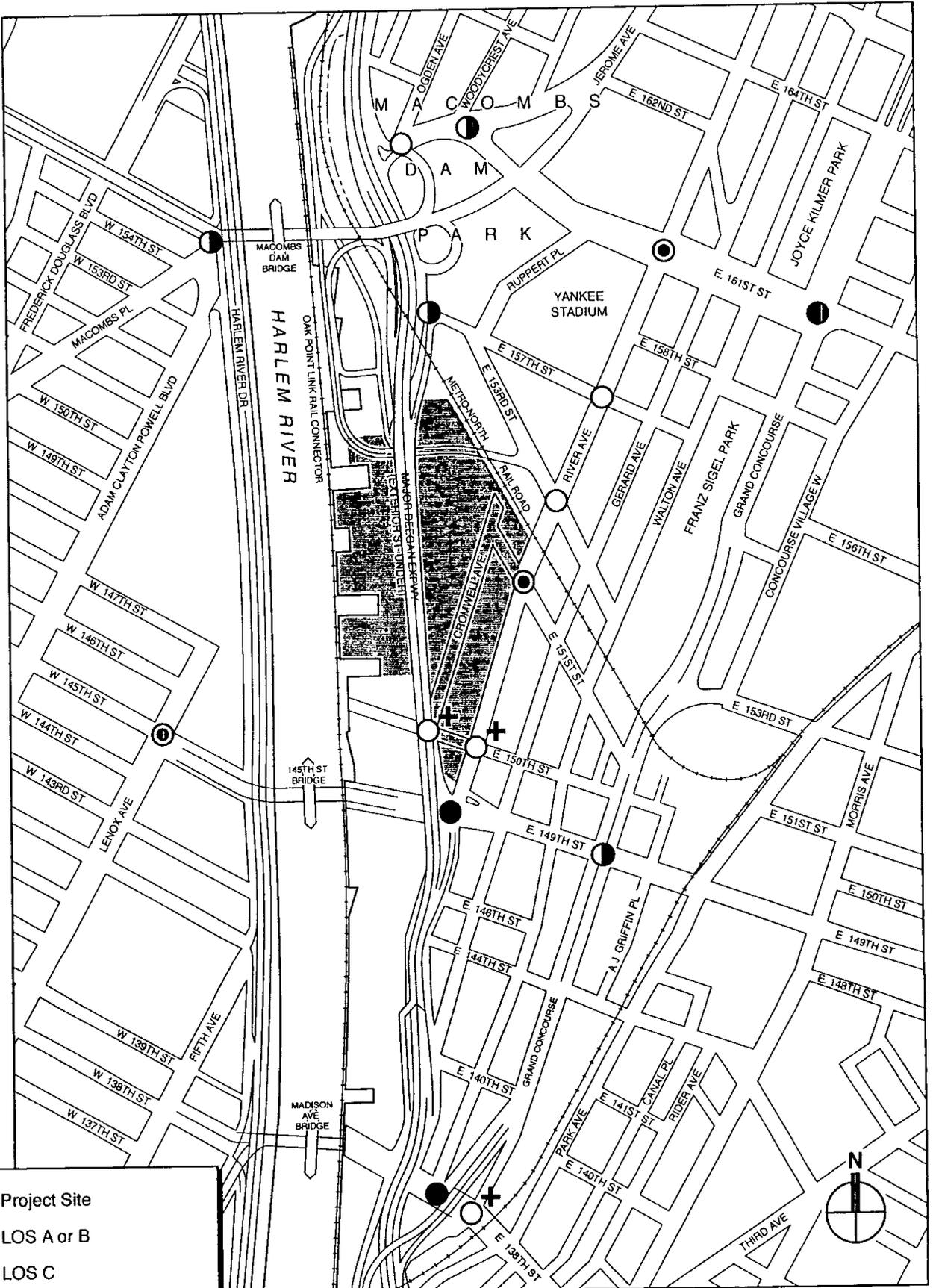
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection



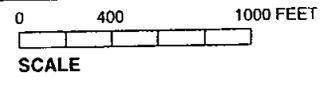
**2004 Existing Non-Game Weekday
Midday Levels of Service**
Figure 16-3

GATEWAY CENTER @ BRONX TERMINAL MARKET

6305

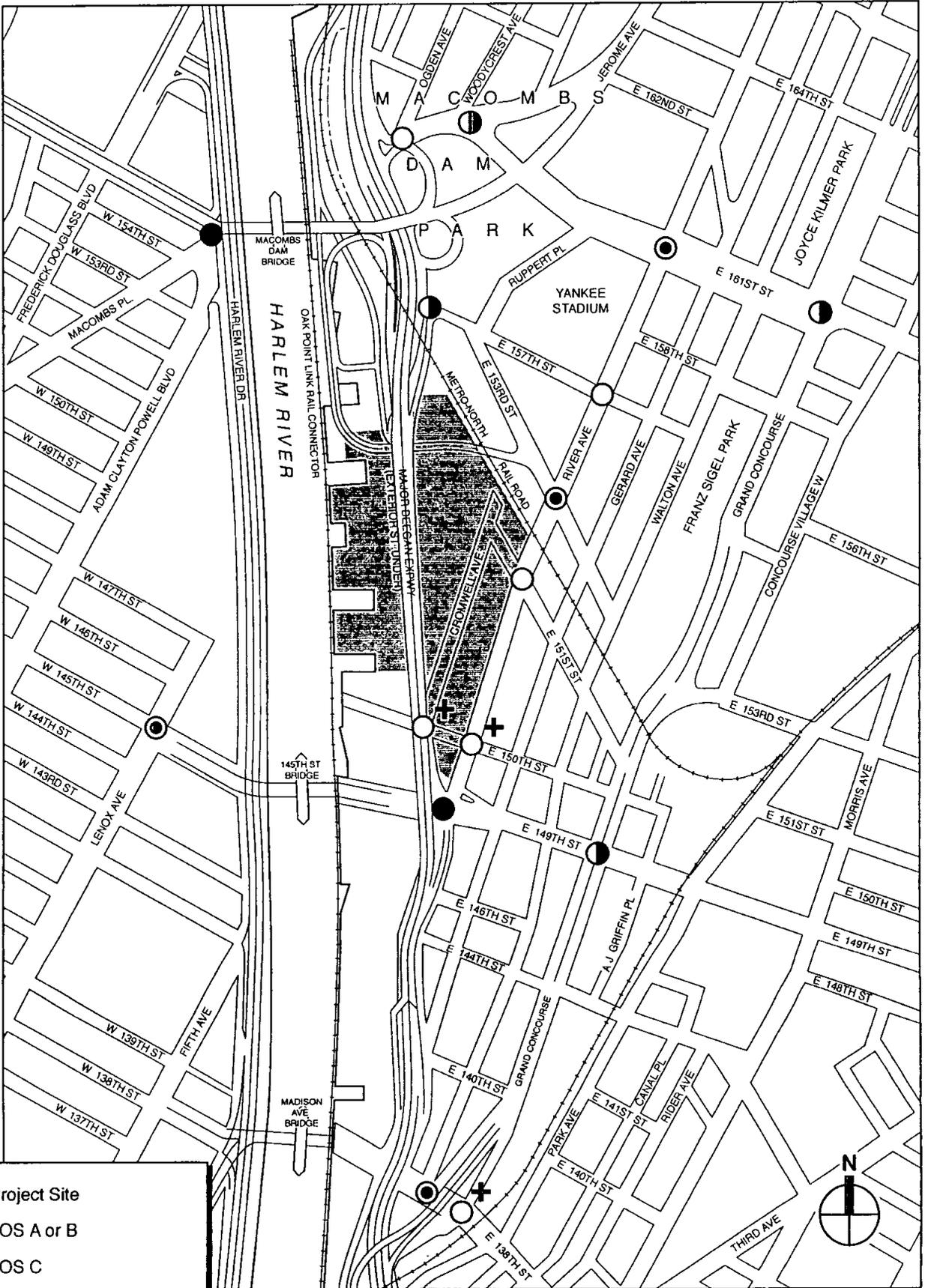


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection



**2004 Existing Non-Game Weekday
PM Levels of Service**

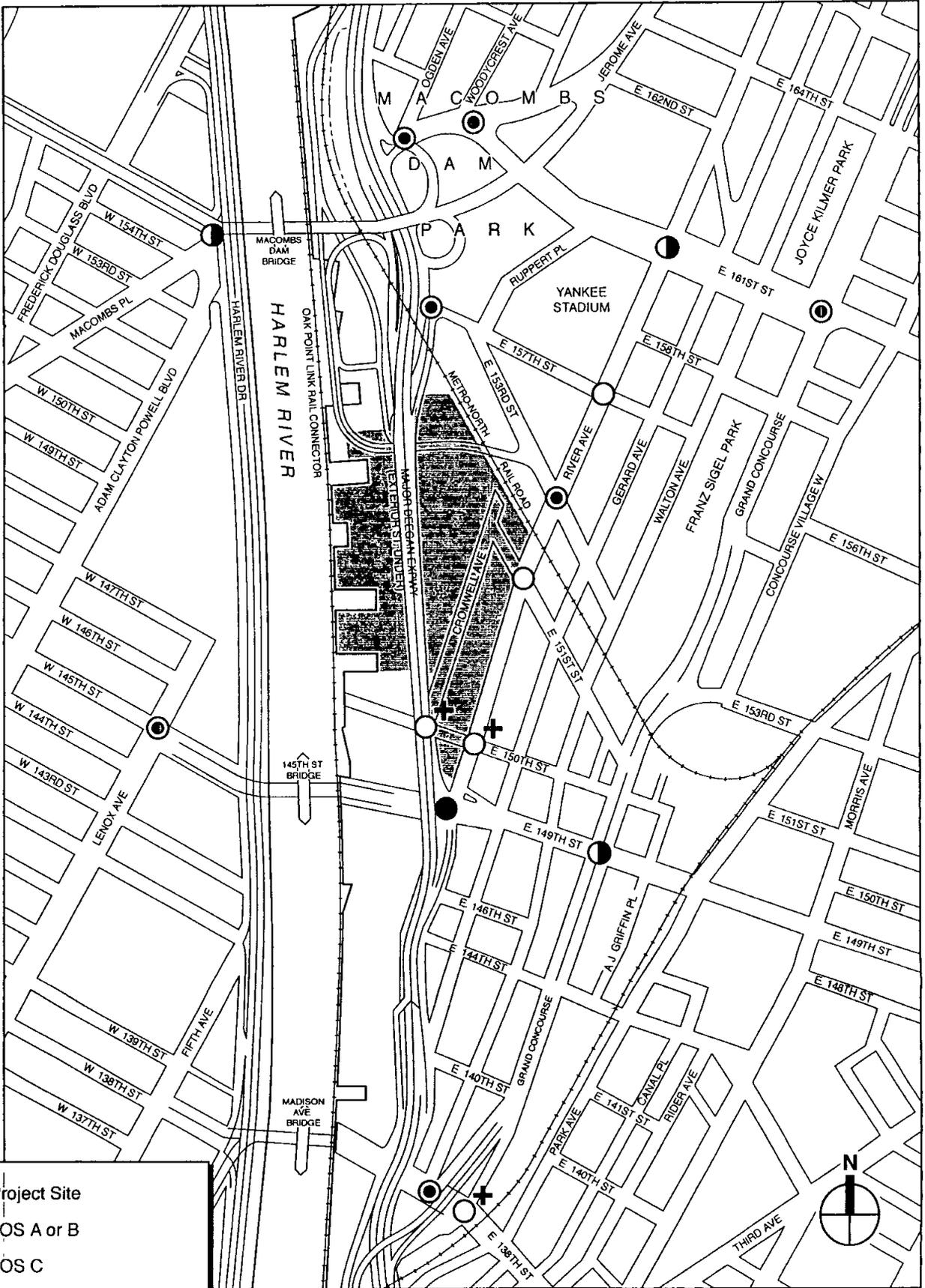
Figure 16-4



	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

**2004 Existing Pre-Game Weekday
PM Levels of Service**

Figure 16-6



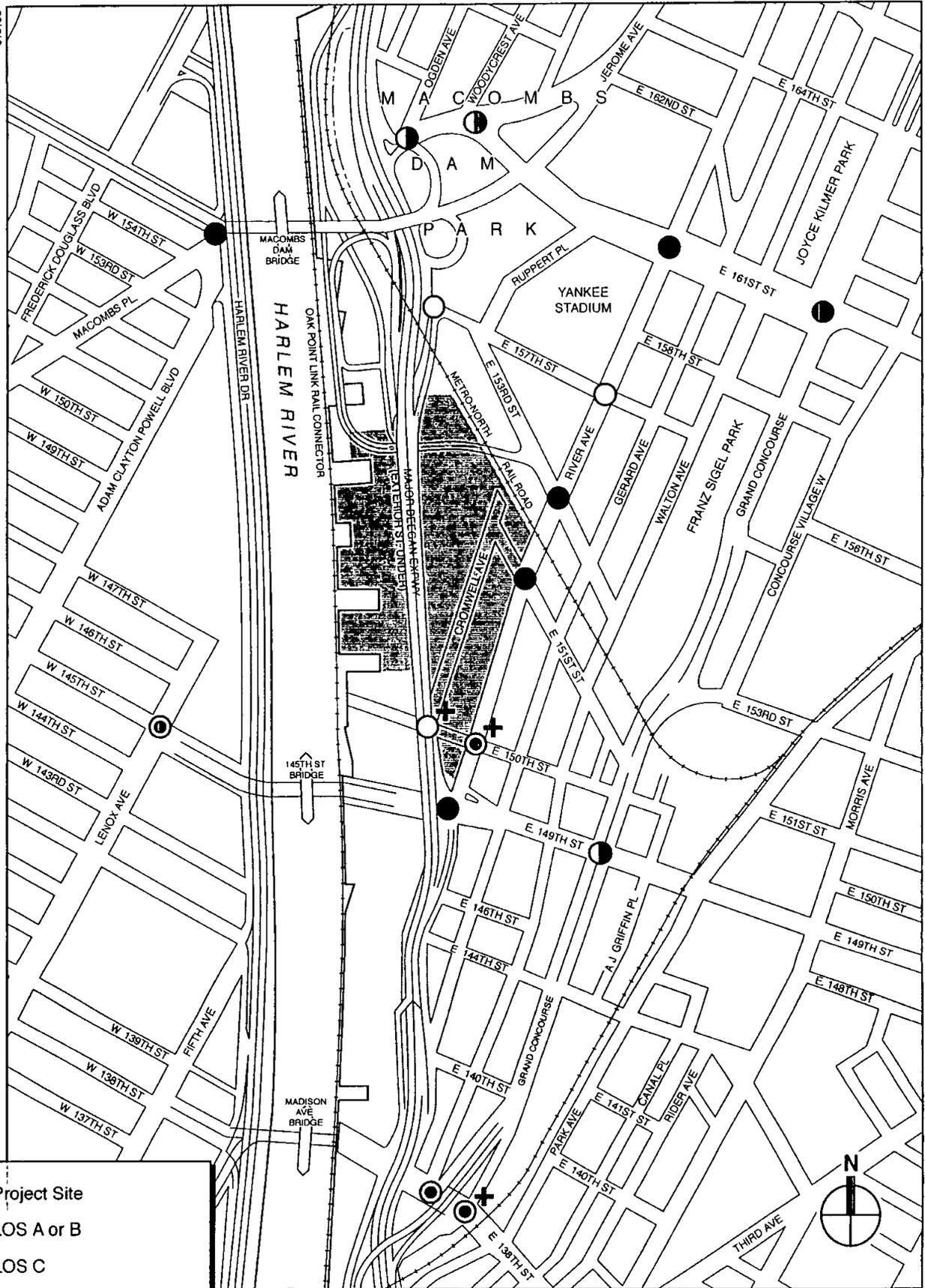
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection



**2004 Existing Pre-Game Saturday
Midday Levels of Service**

Figure 16-7

6.3.05



	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

**2004 Existing Post-Game Saturday
PM Levels of Service**

Figure 16-8

RIVER AVENUE

River Avenue is traveled by approximately 175–500 vph per direction on non-game days and approximately 175–725 vph per direction on game days in the vicinity of 149th Street. Approaching the 149th Street intersection, southbound River Avenue functions poorly with LOS D or E during non-game peak periods and LOS D, E, or F on game days during peak hours.

The River Avenue intersections at East 150th, 151st, 153rd, and 157th Streets operate at acceptable levels of service on non-game days, with all movements at LOS C or better. On game days, LOS D or better conditions for all movements occur during the pre-game weekday PM and Saturday midday peak hours. During the post-game Saturday PM peak hour, LOS E or F conditions prevail at the 151st and 153rd Street intersections and LOS C or better conditions occur at the 150th and 157th Street intersections. During the post-game period, southbound River Avenue is closed between 161st and 157th Streets to facilitate pedestrian movements away from Yankee Stadium.

River Avenue is traveled by approximately 175–400 vph per direction on non-game days and approximately 150–550 vph per direction on game days in the vicinity of 161st Street (southbound River Avenue is closed in this vicinity in the post-game period). Levels of service range from marginally unacceptable to acceptable on River Avenue near 161st Street on non-game days, operating at LOS D or better for all movements and peak periods. However, while conditions on the northbound and southbound approaches of River Avenue at 161st Street operate at LOS C or better during pre-game weekday PM peak hour conditions, these approaches operate at LOS D, E, or F conditions in the Saturday pre-game and post-game peak hours.

149TH STREET

The 149th Street corridor between River Avenue and the Grand Concourse is traveled by approximately 600–800 vph per direction on non-game and game days. Levels of service on non-game days range from acceptable LOS D to unacceptable LOS F conditions on the eastbound and westbound approaches at the River Avenue and the Grand Concourse intersections. On game days during the weekday pre-game PM peak hour, unacceptable LOS E or F conditions prevail; during the Saturday pre-game midday peak hour, LOS C or unacceptable LOS D conditions occur; and during the post-game Saturday PM peak hour, unacceptable LOS D conditions occur at the Grand Concourse, and LOS E and F conditions occur at River Avenue.

THE GRAND CONCOURSE

The Grand Concourse is traveled by approximately 850–1,400 vph per direction on non-game and game days in the vicinity of 149th Street. Levels of service are at acceptable conditions on the Grand Concourse near 149th Street during the non-game weekday midday and PM peak hours. However, approaching 149th Street, the northbound and southbound Grand Concourse functions poorly with LOS E conditions during the non-game Saturday midday peak hour. The Grand Concourse approaches operate at marginally acceptable LOS D conditions during all peak hours on game days.

The Grand Concourse is traveled by approximately 750–1,450 vph per direction on non-game and game days in the vicinity of 161st Street. The southbound approach at 161st Street operates at unacceptable LOS D, E or F conditions during all peak hours. The northbound approach operates at LOS E conditions in the non-game weekday midday and PM peak hours, and post-

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game Saturday PM peak hour; it operates at LOS D conditions in the pre-game weekday PM peak hour; and it operates at LOS B or C conditions during the non-game Saturday midday and pre-game Saturday midday peak hours.

153RD STREET

153rd Street is traveled by approximately 175–375 vph per direction on non-game days and approximately 80–500 vph per direction on game days. Levels of service are acceptable on non-game days, with LOS C or better conditions on the eastbound and westbound approaches at River Avenue. Conditions are acceptable with LOS C or better conditions before weekday and Saturday games, but the post-game Saturday PM peak hour operates at LOS E in the eastbound and westbound directions.

MACOMBS DAM BRIDGE

The Macombs Dam Bridge is used by approximately 700–1,450 vph per direction on non-game days and approximately 975–1,350 vph per direction on game days. Levels of service are unacceptable on the west side of the bridge at Macombs Place/155th Street, with at least one movement operating at LOS E for all peak periods except the non-game Saturday midday peak hour, where three of six movements operate at marginally acceptable LOS D.

JEROME AVENUE

Jerome Avenue is oriented east-west on its southernmost portion before terminating at the northbound Major Deegan Expressway service road. This area of Jerome Avenue between Ogden Avenue and 161st Street/Woodycrest Avenue is traveled by approximately 475–650 vph per direction on non-game days and approximately 550–1,050 vph per direction on game days. Levels of service are acceptable at the Ogden Avenue eastbound and westbound approaches with LOS B conditions during the non-game day periods and pre-game weekday PM and Saturday midday peak hours; marginally acceptable LOS D conditions occur in the post-game Saturday PM peak hour. At 161st Street/Woodycrest Avenue, the eastbound and westbound approaches of Jerome Avenue operate at unacceptable LOS D or better conditions for all peak periods.

161ST STREET

The 161st Street corridor near Jerome Avenue is traveled by approximately 250–550 vph per direction on non-game days and approximately 450–1,100 vph per direction on game days. Levels of service on the westbound approach of 161st Street at Jerome Avenue are acceptable during the non-game weekday midday, and PM peak hours, as well as the pre-game Saturday midday peak hour, with LOS B or C conditions. Marginally acceptable LOS D conditions occur during the non-game Saturday midday, pre-game weekday PM, and post-game Saturday PM peak hours.

The 161st Street corridor between River Avenue and the Grand Concourse is separated into local and express lanes, and is traveled by approximately 275–525 vph per direction in the local and express lanes on non-game days. It is traveled by approximately 275–600 vph per direction in the local lanes (except the eastbound local lanes at River Avenue, which are closed before and after the game) and approximately 175–700 vph per direction in the express lanes on game days. Levels of service are acceptable with LOS B or C conditions on the eastbound and westbound approaches of the local and express lanes of 161st Street at River Avenue during the non-game peak periods, and the pre-game weekday PM and Saturday midday peak hours. However, during

the post-game Saturday PM peak hour, the eastbound express lanes operate at LOS F due to game-exiting traffic being routed exclusively onto the express lanes; the westbound express lanes operate at LOS F and the westbound local lanes operate at a marginally unacceptable LOS D. On the eastbound and westbound approaches of 161st Street at the Grand Concourse, the eastbound and westbound approaches operate at unacceptable LOS D, E, or F conditions during all peak hours.

NORTHBOUND MAJOR DEEGAN EXPRESSWAY SERVICE ROAD AT 157TH STREET

The northbound Major Deegan Expressway service road including the on-ramp from Exterior Street and off-ramp from Exit 5 is traveled by approximately 1,000–1,250 vph approaching 157th Street; the westbound 157th Street approach consists of approximately 200–450 vph on non-game days. The northbound Major Deegan Expressway service road is traveled by approximately 850–1,400 vph and the westbound 157th Street approach consists of approximately 200–800 vph on game days since this location is the focal point for traffic leaving the stadium heading northbound toward the Cross Bronx Expressway, George Washington Bridge, and points north in Westchester. The Major Deegan Expressway Exit 5 off-ramp operates at unacceptable LOS E or F on non-game days. In the pre-game weekday PM peak hour, this approach operates at an unacceptable LOS D; during the pre-game Saturday midday peak hour, it operates at a marginally acceptable LOS D (delays are lower within LOS D). Because traffic control agents close the Exit 5 approach and allow the westbound 157th Street and northbound Exterior Street approaches to operate freely using traffic cones to separate traffic, LOS A conditions occur on this section of the service road in the post-game Saturday PM peak hour.

PARKING

An inventory of public parking lots and garages within the area bounded by 150th and 165th Streets east of the Harlem River and west of the Grand Concourse was conducted along with hourly parking facility occupancy surveys between 8 AM and 8 PM on a typical weekday and 10 AM and 6 PM on a typical Saturday without a Yankee game (see Tables 16-3 and 16-4) and with a Yankee game (see Tables 16-5 and 16-6). These inventories were conducted for days with typical high attendance games at the stadium. This study area constitutes an area within approximately ½ mile, or slightly more, from the Bronx Terminal Market site. Overall, there are 19 public parking lots or garages in the area (see Figure 16-9), the majority of which have capacities in the 100- to 600-vehicle range. Most serve Yankee Stadium only; 14 of these facilities are closed on a typical weekday and 16 are closed on a typical Saturday.

NON-GAME DAY PARKING

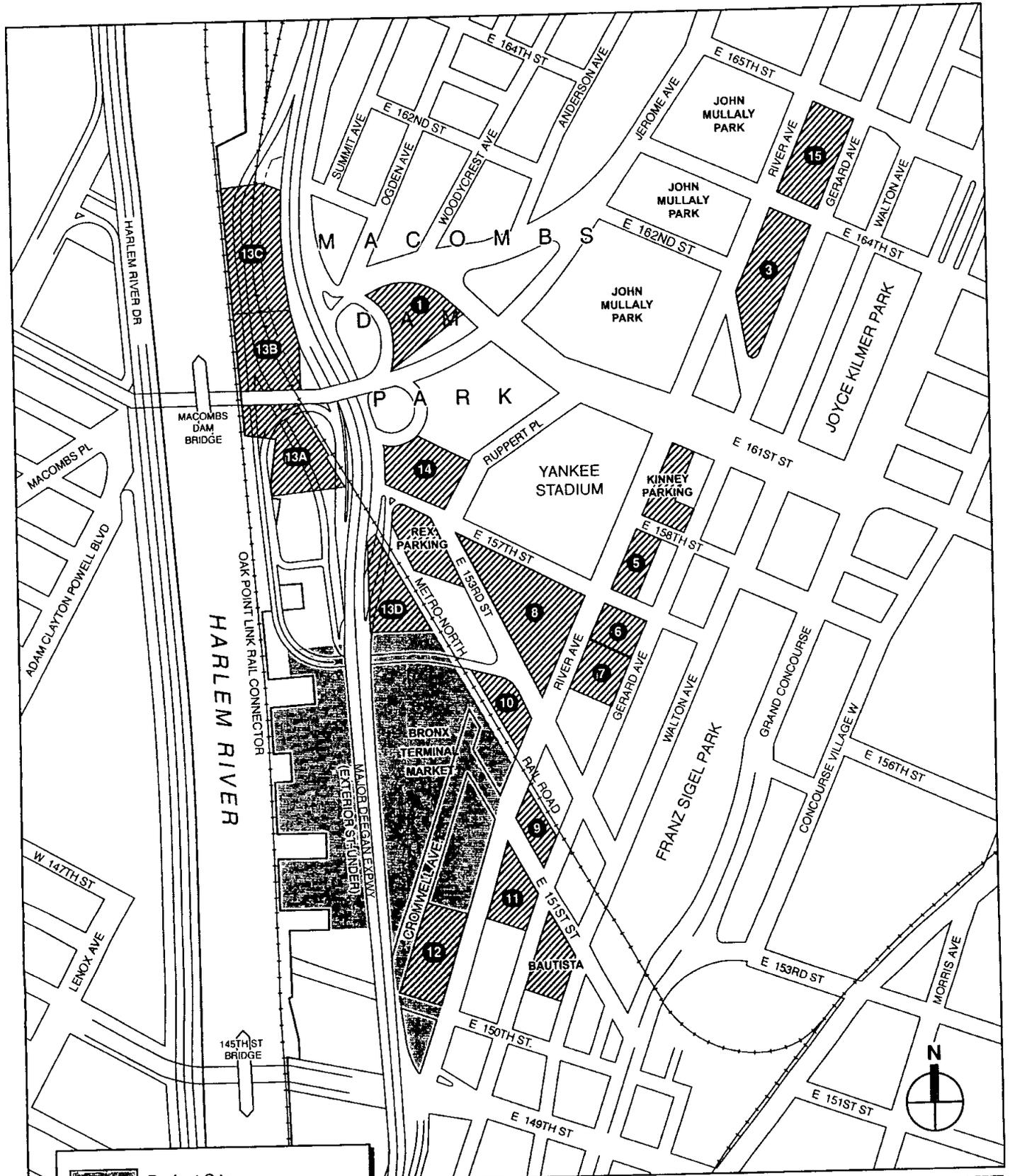
As shown in Table 16-3, the 19 public parking facilities surveyed contain approximately 8,070 spaces, with a maximum occupancy level of about seven percent between 1-2 PM on a typical weekday without a Yankee game. This means that at 1-2 PM and 5-6 PM, i.e., the weekday midday and PM peak shopping hours, respectively, there are about 7,500 unoccupied spaces available within off-street lots and garages, increasing to about 8,000 spaces in the PM peak hour. When considering only the five garages containing approximately 1,080 spaces that are open on a typical weekday without a Yankee game, there are approximately 510 unoccupied spaces between 1-2 PM, increasing to approximately 990 unoccupied spaces between 6-7 PM.

Table 16-3

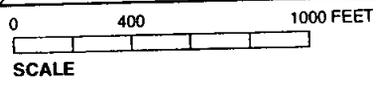
Hourly Parking Occupancy by Percentage and Occupied Spaces per Facility

Off-Street Parking Survey - Weekday without Yankee Game													
Parking Facility	Capacity	8-9 AM	9-10 AM	10-11 AM	11 AM-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM	7-8 PM
Yankee Stadium Parking Lot # 1	400	7%	8%	8%	8%	8%	8%	7%	7%	0%	0%	0%	0%
Yankee Stadium Parking Lot # 3	1,375	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 5	100	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 6	100	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 7	200	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 8	2,400	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 9	87	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 10	120	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 11	160	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 12	410	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 13A	405	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 13B	583	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 13C	120	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 13D	378	*	*	*	*	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 14	254	38%	41%	37%	71%	80%	90%	98%	92%	90%	20%	14%	11%
Yankee Stadium Parking Lot # 15	550	*	*	*	*	*	*	*	*	*	*	*	*
REX Parking Corp	225	35%	43%	50%	40%	42%	80%	70%	80%	87%	32%	1%	1%
Bautista Parking	50	74%	88%	94%	98%	86%	76%	96%	98%	88%	76%	72%	74%
Kinney Parking	155	13%	52%	71%	68%	52%	58%	41%	26%	27%	14%	11%	16%
TOTAL	8,072	3%	4%	5%	6%	6%	7%	7%	7%	6%	2%	1%	1%

Note: * = denotes that the parking lot is closed



	Project Site
	Lot Number
	Public Parking Lot/Garages



Off-Street Parking Facility Locations
Figure 16-9

Table 16-4
Hourly Parking Occupancy by Percentage and Occupied Spaces per Facility

Off-Street Parking Survey - Saturday without Yankee Game									
Parking Facility	Capacity	10 - 11 AM	11 AM - 12 PM	12 - 1 PM	1 - 2 PM	2 - 3 PM	3 - 4 PM	4 - 5 PM	5 - 6 PM
Yankee Stadium Parking Lot # 1	400	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 3	1,375	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 5	100	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 6	100	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 7	200	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 8	2,400	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 9	87	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 10	120	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 11	160	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 12	410	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 13A	405	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 13B	583	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 13C	120	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 13D	378	*	*	*	*	*	*	*	*
Yankee Stadium Parking Lot # 14	254	11%	11%	19%	19%	18%	17%	18%	17%
Yankee Stadium Parking Lot # 15	550	*	*	*	*	*	*	*	*
REX Parking Corp.	225	18%	19%	*	*	*	*	*	*
Bautista Parking	50	2%	2%	2%	2%	5%	6%	4%	2%
Kinney Parking	155	15%	14%	13%	12%	9%	8%	14%	17%
TOTAL	8,072	1%	1%	1%	1%	1%	1%	1%	1%

Note: * = denotes that the parking lot is closed

Table 16-5
Hourly Parking Occupancy by Percentage and Occupied Spaces per Facility

Off-Street Parking Survey - Weekday with Yankee Game													
Parking Facility	Capacity	8 - 9 AM	9 - 10 AM	10 - 11 AM	11 AM - 12 PM	12 - 1 PM	1 - 2 PM	2 - 3 PM	3 - 4 PM	4 - 5 PM	5 - 6 PM	6 - 7 PM	7 - 8 PM
Yankee Stadium Parking Lot # 1	400	1%	1%	1%	1%	1%	1%	5%	9%	11%	19%	44%	100%
Yankee Stadium Parking Lot # 3	1,375	*	*	*	*	*	*	*	*	15%	40%	95%	99%
Yankee Stadium Parking Lot # 5	100	*	*	*	*	*	*	*	*	*	4%	22%	100%
Yankee Stadium Parking Lot # 6	100	*	*	*	*	*	*	*	*	*	1%	24%	74%
Yankee Stadium Parking Lot # 7	200	*	*	*	*	*	*	*	*	*	1%	2%	80%
Yankee Stadium Parking Lot # 8	2,400	1%	1%	2%	3%	3%	4%	6%	11%	24%	51%	85%	88%
Yankee Stadium Parking Lot # 9	87	*	*	*	*	*	*	*	0%	1%	64%	101%	101%
Yankee Stadium Parking Lot # 10	120	*	*	*	1%	1%	1%	34%	43%	49%	56%	90%	100%
Yankee Stadium Parking Lot # 11	160	*	*	*	*	*	*	*	0%	1%	1%	101%	102%
Yankee Stadium Parking Lot # 12	410	*	*	*	*	*	*	*	*	1%	2%	68%	85%
Yankee Stadium Parking Lot # 13A	405	*	*	*	*	*	*	*	1%	1%	1%	23%	59%
Yankee Stadium Parking Lot # 13B	583	*	*	*	*	*	*	*	0%	1%	1%	1%	36%
Yankee Stadium Parking Lot # 13C	120	*	*	*	*	*	*	*	1%	3%	29%	43%	70%
Yankee Stadium Parking Lot # 13D	378	*	*	*	*	*	*	*	1%	1%	27%	44%	67%
Yankee Stadium Parking Lot # 14	254	8%	8%	13%	13%	13%	12%	10%	9%	11%	14%	23%	37%
Yankee Stadium Parking Lot # 15	550	8%	10%	10%	10%	8%	8%	10%	10%	10%	10%	10%	11%
REX Parking Corp.	225	38%	39%	39%	38%	38%	36%	36%	39%	36%	30%	17%	66%
Bautista Parking	50	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Kinney Parking	155	23%	23%	68%	71%	39%	26%	26%	19%	19%	19%	36%	84%
TOTAL	8,072	3%	3%	4%	4%	4%	4%	5%	7%	14%	29%	59%	76%

Note: * = denotes that the parking lot is closed.

Table 16-6
Hourly Parking Occupancy by Percentage and Occupied Spaces per Facility

Off-Street Parking Survey - Saturday with Yankee Game									
Parking Facility	Capacity	10 - 11 AM	11 AM - 12 PM	12 - 1 PM	1 - 2 PM	2 - 3 PM	3 - 4 PM	4 - 5 PM	5 - 6 PM
Yankee Stadium Parking Lot # 1	400	1%	28%	80%	100%	100%	100%	95%	90%
Yankee Stadium Parking Lot # 3	1,375	0%	45%	90%	98%	99%	99%	40%	1%
Yankee Stadium Parking Lot # 5	100	0%	45%	22%	36%	60%	57%	44%	0%
Yankee Stadium Parking Lot # 6	100	*	1%	24%	90%	102%	95%	40%	*
Yankee Stadium Parking Lot # 7	200	*	*	1%	23%	80%	98%	90%	10%
Yankee Stadium Parking Lot # 8	2,400	0%	48%	79%	79%	76%	52%	1%	1%
Yankee Stadium Parking Lot # 9	87	29%	43%	100%	100%	100%	80%	23%	1%
Yankee Stadium Parking Lot # 10	120	16%	43%	100%	100%	100%	92%	25%	*
Yankee Stadium Parking Lot # 11	160	1%	11%	92%	100%	100%	91%	13%	1%
Yankee Stadium Parking Lot # 12	410	1%	1%	77%	85%	107%	98%	61%	1%
Yankee Stadium Parking Lot # 13A	405	0%	50%	95%	100%	100%	95%	89%	45%
Yankee Stadium Parking Lot # 13B	583	0%	65%	90%	98%	100%	92%	88%	13%
Yankee Stadium Parking Lot # 13C	120	0%	80%	98%	98%	99%	101%	95%	1%
Yankee Stadium Parking Lot # 13D	378	0%	60%	97%	99%	99%	85%	79%	1%
Yankee Stadium Parking Lot # 14	254	0%	85%	98%	99%	100%	89%	78%	3%
Yankee Stadium Parking Lot # 15	550	0%	45%	80%	85%	90%	90%	75%	15%
REX Parking Corp.	225	0%	70%	85%	100%	100%	65%	61%	1%
Bautista Parking	50	0%	1%	1%	16%	100%	84%	66%	52%
Kinney Parking	155	0%	45%	97%	100%	100%	77%	39%	19%
TOTAL	8,072	1%	45%	82%	88%	91%	80%	45%	10%

Note: * = denotes that the parking lot is closed.

As shown in Table 16-4, the occupancy level is about one percent between the hours of 10 AM and 6 PM on a typical Saturday without a Yankee game. This means that at 1-2 PM, i.e., the Saturday midday peak shopping hour, there are about 8,000 unoccupied spaces available within off-street lots and garages. When considering only the three garages containing approximately 460 spaces that are open on a typical Saturday without a Yankee game, there are approximately 390 unoccupied spaces between 1-2 PM.

GAME DAY PARKING

On a typical weekday with a Yankee game, parking occupancy is lower than on a typical non-game day by approximately 50 to 100 vehicles per hour, from 8 AM until approximately 3 PM when many of the parking lots that are closed on non-game days open. Although typical non-game and game days were surveyed, it is possible that because of daily fluctuations in parking occupancy, the observed game day parking before 3 PM was less than the corresponding non-game day hours. Also, it is possible that before 3 PM on game days, daily parking occupancy is lower than non-game days due to people avoiding the area because of Yankee game parking demand and traffic. Regardless, by 5 PM on game days, parking is approximately 130 percent higher than by 5 PM on non-game days, due to pre-game Yankee fan parking. As shown in Table 16-5, all 19 public parking facilities are open to their full capacity of approximately 8,070 spaces by about 5 PM on a typical weekday with a Yankee game. Between 6-7 PM, the hour before a typical weeknight Yankee game, approximately 3,340 vacant spaces exist within ½-mile of the Bronx Terminal Market site. Between 7-8 PM, during which time a typical game has started, occupancy is just over 75 percent, leaving approximately 1,900 vacant spaces within the area (many Yankee fans do not arrive and park until after the game has started).

As shown in Table 16-6, all 19 public parking facilities are open to their full capacity of approximately 8,070 spaces by about 12 PM on a typical Saturday with a Yankee game. On a typical Saturday with a Yankee game, parking occupancy begins to climb to approximately 45 percent between 11 AM and 12 PM when all but one parking lot is open. Between 1-2 PM, approximately 88 percent of the spaces are filled, with approximately 970 vacant spaces within ½-mile of the project site. The occupancy during a typical Saturday Yankee game peaks at approximately 91 percent between 2-3 PM, but drops to about 45 percent between 4-5 PM.

On sellout and nearly-sellout game days, some Yankee fan parking occurs at the Concourse Plaza Shopping Center located along the south side of East 161st Street, one to two blocks east of the Grand Concourse. This shopping center is open 24 hours per day, seven days a week, and has a posted capacity of 1,200 spaces. Yankee fan parking takes place on the below-grade level, with several hundred parking spaces typically available on game days.

On-street parking regulations were also inventoried for this same parking study area. Typical weekday parking regulations were recorded on a block-by-block basis, and the number of legal parking spaces available for use by future travelers into the area were detailed.

Both sides of River Avenue are most typically characterized by a blend of very stringent parking regulations, such as No Parking Anytime, Tow Away Zone-No Parking Stadium Event, and No Standing Anytime, with unmetered non-game day parking available except for "alternate side-of-the-street" parking between 153rd and 158th Streets. Exterior Street restrictions consist of Bronx Terminal Market-only customer parking in some areas and others between 149th Street and the Major Deegan Expressway ramps with no parking regulations. Grand Concourse parking regulations consist of a mix of No Parking Anytime, 1 Hour Meter Parking 8:30 AM-7 PM, and No Standing Bus Stop signs, with some blocks of "alternate side-of-the-street" parking

available. 161st Street parking regulations are stringent with No Parking Anytime between Jerome and River Avenues. 149th Street parking regulations consist of a blend of stringent parking regulations, such as No Parking Anytime between the 145th Street Bridge and Gerard Avenue, and less stringent regulations, such as 1 Hour Meter Parking 8 30 AM–7 PM, and No Standing Bus Stop 7 AM–7 PM between Gerard Avenue and the Grand Concourse. East-west cross-streets between 149th and 161st Streets, and north-south avenues such as Gerard and Walton Avenues’ regulations consist mainly of “alternate side-of-the-street” parking.

Overall, within the area surveyed, there are approximately 1,200 legal parking spaces available on-street, with the following maximum occupancy totals (see Table 16-7): just over 80 percent occupied between 10 and 11 AM on weekdays without Yankee games, just over 40 percent occupied between 12 and 1 PM on Saturdays without Yankee games, just over 70 percent occupied between 11 AM and 12 PM on weekdays with Yankee games, and just under 50 percent occupied between 12 and 1 PM on Saturdays with Yankee games

**Table 16-7
Hourly Parking Occupancy by
Parking Spaces and Percentage for On-street Parking**

Time	Without Yankee Game		With Yankee Game	
	Existing Non-game Weekday	Existing Non-game Saturday	Existing Game-day Weekday	Existing Game-day Saturday
8:00–9:00 AM	688 (56%)	n/a	406 (33%)	n/a
9:00–10:00 AM	924 (75%)	n/a	593 (48%)	n/a
10:00–11:00 AM	1,017 (83%)	295 (24%)	821 (67%)	41 (3%)
11:00 AM–12:00 PM	1,011 (82%)	489 (40%)	878 (72%)	338 (28%)
12:00–1:00 PM	966 (79%)	522 (43%)	868 (71%)	576 (47%)
1:00–2:00 PM	980 (80%)	463 (38%)	876 (71%)	573 (47%)
2:00–3:00 PM	999 (81%)	424 (35%)	868 (71%)	531 (43%)
3:00–4:00 PM	902 (74%)	417 (34%)	764 (62%)	511 (42%)
4:00–5:00 PM	761 (62%)	386 (31%)	736 (60%)	452 (37%)
5:00–6:00 PM	673 (55%)	384 (31%)	635 (52%)	372 (30%)
6:00–7:00 PM	584 (48%)	n/a	617 (50%)	n/a
7:00–8:00 PM	542 (44%)	n/a	595 (48%)	n/a

Notes: The number of parking spaces observed to be occupied per hour are shown first, followed by the percentage of the total capacity occupied. The capacity is approximately 1,227 spaces within ½ mile of the site.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

TRAFFIC CONDITIONS

The future without the proposed actions, i.e., the future No Build condition, is established in order to provide the baseline against which the impacts of the proposed actions can be compared. Future year conditions were analyzed for two years—an interim Build year (2009), and a final Build year (2014). Future No Build traffic volumes were developed by applying a background traffic growth rate of one-half percent per year as stipulated in the *City Environmental Quality Review (CEQR) Technical Manual*. After consulting the New York City Department of City Planning (NYCDCP), it was determined that no significant developments

Gateway Center at Bronx Terminal Market DEIS

would be constructed in the vicinity of the project site; therefore, only the background traffic growth would increase traffic volumes at study locations.

There are three roadway improvements being considered within the study area that are expected to begin or be completed by 2009. The New York State Department of Transportation (NYSDOT) is currently planning to reconstruct the deck of the elevated portion of the Major Deegan Expressway corridor between 138th Street and the Macombs Dam Bridge, including temporary widening of the elevated deck and several ramps so that the current six lanes of traffic can be maintained throughout reconstruction. This is a major construction project expected to begin in 2009 and last approximately three years. It would not add capacity or alter traffic patterns in the area.

Next, the New York City Department of Transportation (NYCDOT) is currently planning to reconstruct the 161st Street tunnel below the Grand Concourse as part of the Grand Concourse streetscaping and rehabilitation project between 161st and 166th Streets. This project is in its scoping phase and the schedule is not known, but NYCDOT has stated that the capacity of the 161st Street/Grand Concourse intersection will remain the same during construction and upon completion.

The New York City Department of Design and Construction (NYCDDC) will be rehabilitating 149th Street between Exterior Street/River Avenue and Anthony J. Griffin Place beginning in 2005 and ending in 2007 to widen sidewalks, reconstruct the street, relocate utilities, and possibly create a striped median. DDC has stated that this will not change the operation or capacity of the Exterior Street/River Avenue or the Grand Concourse intersections on 149th Street within the study area, and all lanes will be maintained during construction. These projects will not disrupt traffic in 2009 or 2014 because they will be complete; or if they are under construction, the projects will maintain current traffic flows. Therefore, they would not affect the analysis of future No Build or Build conditions.

2009

Traffic volumes on the study area street network would be expected to generally increase at relatively modest volumes, by a factor of just over 2.5 percent between 2004 and 2009, or one-half percent per year.

Table 16-8 provides an overview of the levels of service that would be expected to characterize the traffic study area during the peak hours.

- In the non-game weekday midday peak hour, one additional signalized intersection, or five overall, would operate at overall unacceptable LOS E or F when compared to the three LOS E or F intersections in existing conditions. One additional traffic movement, or 18 of approximately 65 total traffic movements analyzed, would operate at LOS E or F conditions, when compared to existing conditions.
- In the non-game weekday PM peak hour, the same number of signalized intersections (three) would operate at overall LOS E or F as existing conditions. Three additional traffic movements than the existing conditions would operate at LOS E or F.
- In the non-game Saturday midday peak hour, two signalized intersections would operate at overall LOS E or F—the same as existing conditions. Fifteen traffic movements would operate at LOS E or F, which is one more than the existing conditions.

Table 16-8
2009 No Build Traffic Level of Service Summary

Signalized Intersections (13 Total)	Without Yankee Game			With Yankee Game		
	No Build Non-game Weekday Midday	No Build Non-game Weekday PM	No Build Non-game Saturday Midday	No Build Pre-game Weekday PM	No Build Pre-game Saturday Midday	No Build Post-game Saturday PM
Overall Intersection LOS A/B	4	3	5	3	2	2
Overall Intersection LOS C	3	3	2	4	7	2
Overall Intersection LOS D	1	4	4	2	3	3
Overall Intersection LOS E/F	5	3	2	4	1	6
Number of Signalized Intersection Movements at LOS E or F (of approximately 65 total)	18	18	15	20	13	28
Notes: The east leg of East 138th Street/the Grand Concourse is unsignalized and the west leg is signalized; they are counted separately. All three unsignalized intersections (the east leg of East 138th Street/Grand Concourse, East 150th Street/Exterior Street, and East 150th Street/River Avenue) analyzed would operate at LOS A, B or C during all analysis hours.						

- In the pre-game weekday PM peak hour, two additional signalized intersections, or four overall, would operate at overall LOS E or F when compared to existing conditions. Twenty traffic movements would operate at LOS E or F, up from 17 in existing conditions.
- In the pre-game Saturday midday peak hour, only one signalized intersection would operate at overall LOS E or F—the same as existing conditions. Four additional traffic movements, for a total of 13, would operate at LOS E or F when compared to existing conditions.
- In the post-game Saturday PM peak hour, six signalized intersections would operate at overall LOS E or F, which is the same number as existing conditions. When compared to existing conditions, three additional traffic movements, or 28 total, would operate at LOS E or F.
- Each of the three unsignalized intersections analyzed would operate at acceptable levels of service during each of the traffic analysis hours.

Another representation of 2009 No Build levels of service can be seen in Figures 16-10 through 16-15.

2014

Traffic volumes on the study area street network would be expected to generally increase at relatively modest volumes, by a factor of just over 5.1 percent between 2004 and 2014, or one-half percent per year.

Table 16-9 provides an overview of the levels of service that would be expected to characterize the traffic study area during the peak hours.

- In the non-game weekday midday peak hour, two additional signalized intersections, or five overall, would operate at overall unacceptable LOS E or F when compared to the three LOS E or F intersections in existing conditions. Seven additional traffic movements, or 24 of approximately 65 total traffic movements analyzed, would operate at LOS E or F conditions, when compared to existing conditions.

Table 16-9
2014 No Build Traffic Level of Service Summary

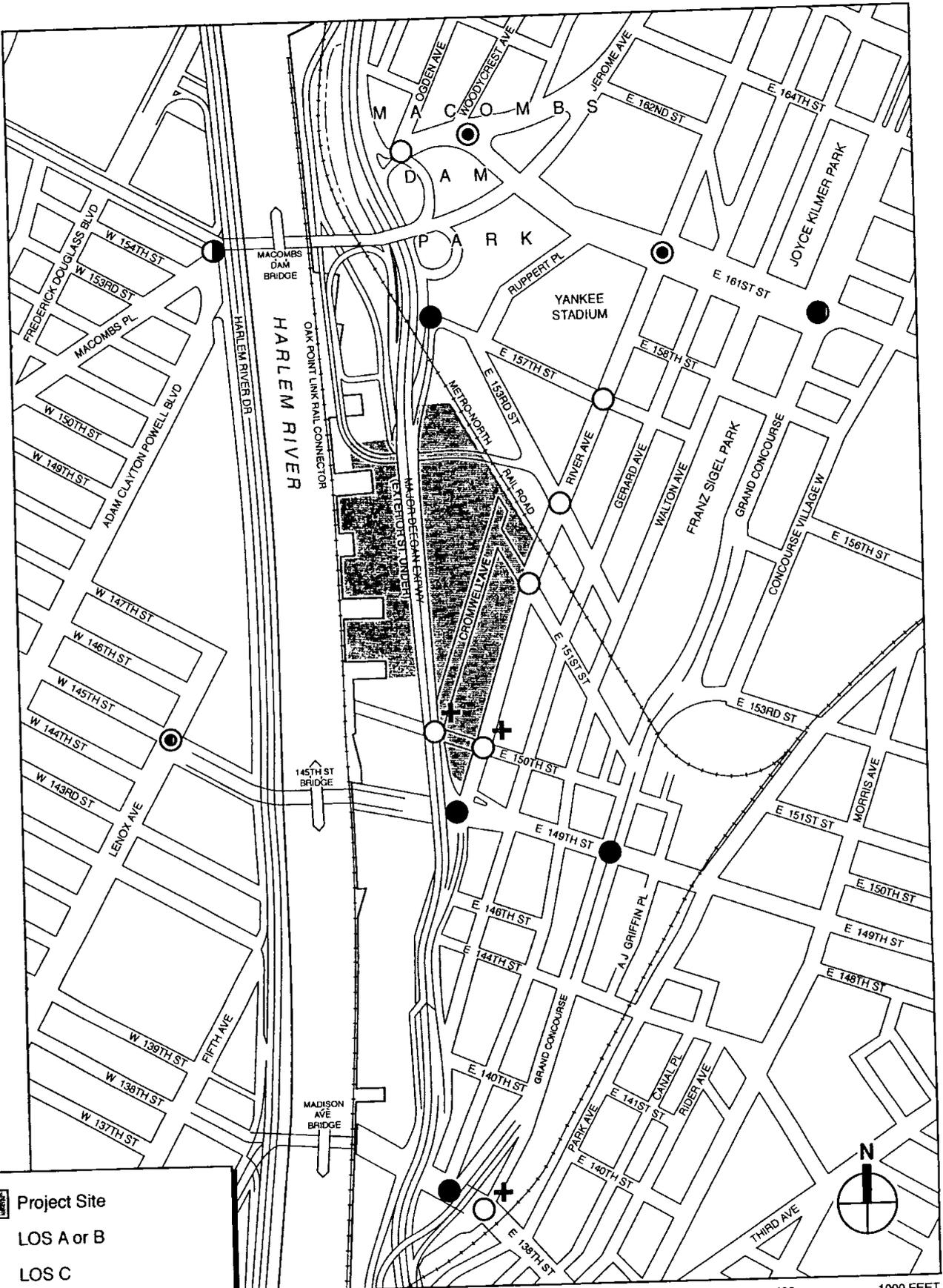
Signalized Intersections (13 Total)	Without Yankee Game			With Yankee Game		
	No Build Non-game Weekday Midday	No Build Non-game Weekday PM	No Build Non-game Saturday Midday	No Build Pre-game Weekday PM	No Build Pre-game Saturday Midday	No Build Post-game Saturday PM
Overall Intersection LOS A/B	4	3	5	3	2	2
Overall Intersection LOS C	3	3	2	4	6	2
Overall Intersection LOS D	1	3	4	2	4	3
Overall Intersection LOS E/F	5	4	2	4	1	6
Number of Signalized Intersection Movements at LOS E or F (of approximately 65 total)	24	23	20	22	15	30
Notes: The east leg of East 138th Street/the Grand Concourse is unsignalized and the west leg is signalized; they are counted separately. All three unsignalized intersections (the east leg of East 138th Street/Grand Concourse, East 150th Street/Exterior Street, and 150th Street/River Avenue) analyzed would operate at LOS A, B, or C during all analysis hours.						

- In the non-game weekday PM peak hour, one additional signalized intersection, or four overall, would operate at overall LOS E or F when compared to existing conditions. Eight additional traffic movements than the existing conditions would operate at LOS E or F.
- In the non-game Saturday midday peak hour, two signalized intersections would operate at overall LOS E or F—the same as existing conditions. Twenty traffic movements would operate at LOS E or F, which is six more than the existing conditions.
- In the pre-game weekday PM peak hour, two additional signalized intersections, or four overall, would operate at overall LOS E or F when compared to existing conditions. Twenty-two traffic movements would operate at LOS E or F, up from 17 in the existing condition.
- In the pre-game Saturday midday peak hour, only one signalized intersection would operate at overall LOS E or F—the same as existing conditions. Six additional traffic movements, for a total of 15, would operate at LOS E or F when compared to existing conditions.
- In the post-game Saturday PM peak hour, six signalized intersections would operate at overall LOS E or F, which is the same number as existing conditions. When compared to existing conditions, five additional traffic movements, or 30 total, would operate at LOS E or F.
- Each of the three unsignalized intersections analyzed would operate at acceptable levels of service during each of the traffic analysis hours.

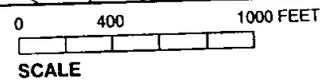
Another representation of 2014 No Build levels of service can be seen in Figures 16-16 through 16-21.

PARKING

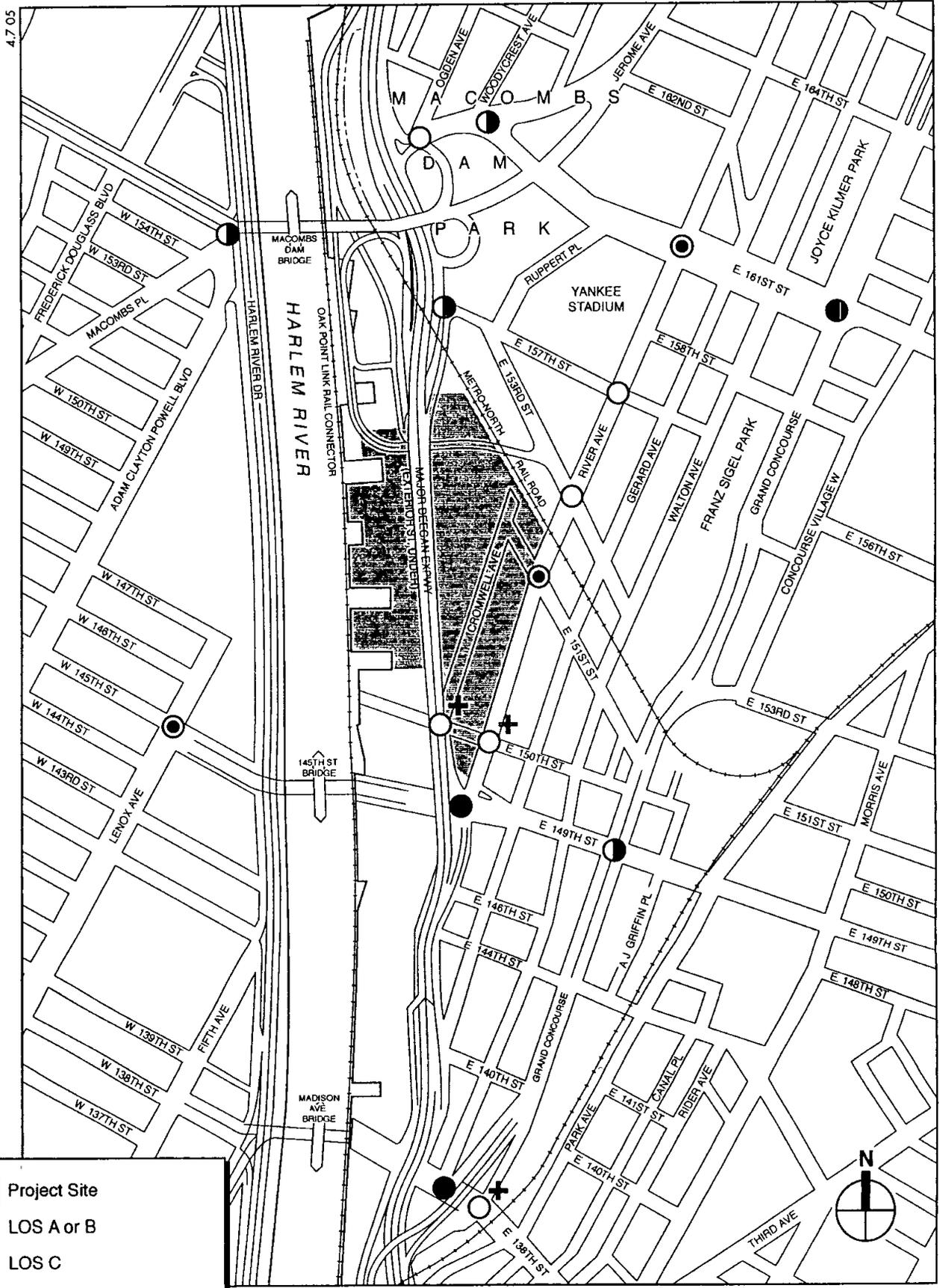
Based on a background traffic growth rate of one-half percent per year, occupancy of public parking facilities and on-street parking in the area can be expected to increase by the same rate. The maximum occupancy level for parking facilities on non-game days would not increase more than one-half to one percent in 2009 or 2014 from the existing maximum of seven percent between 1–2 PM on a typical weekday without a Yankee game. On a typical Saturday without a



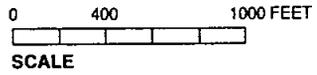
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection



**No Build 2009 Non-Game Weekday
Midday Levels of Service**
Figure 16-10

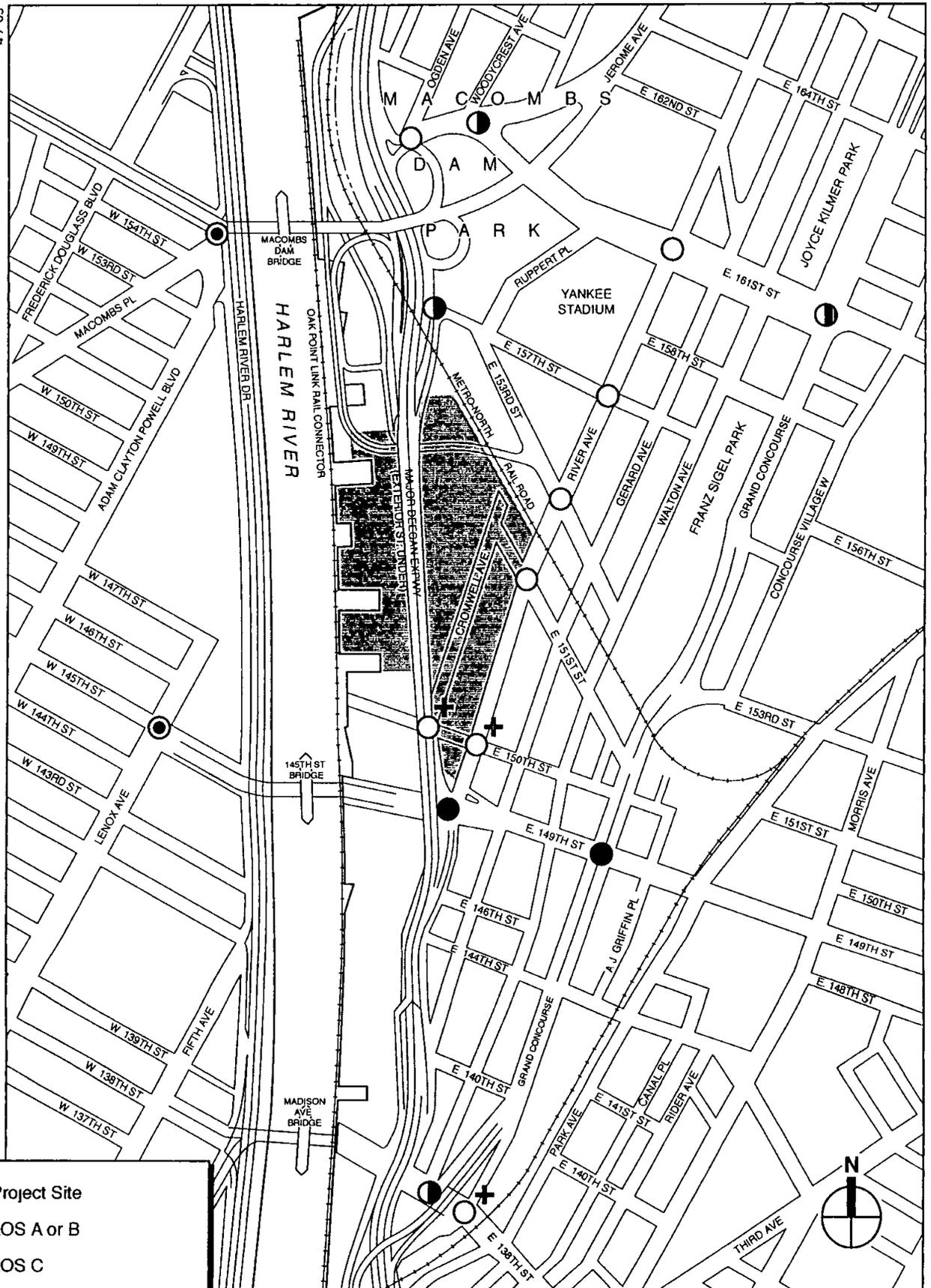


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection



**No Build 2009 Non-Game Weekday
PM Levels of Service**

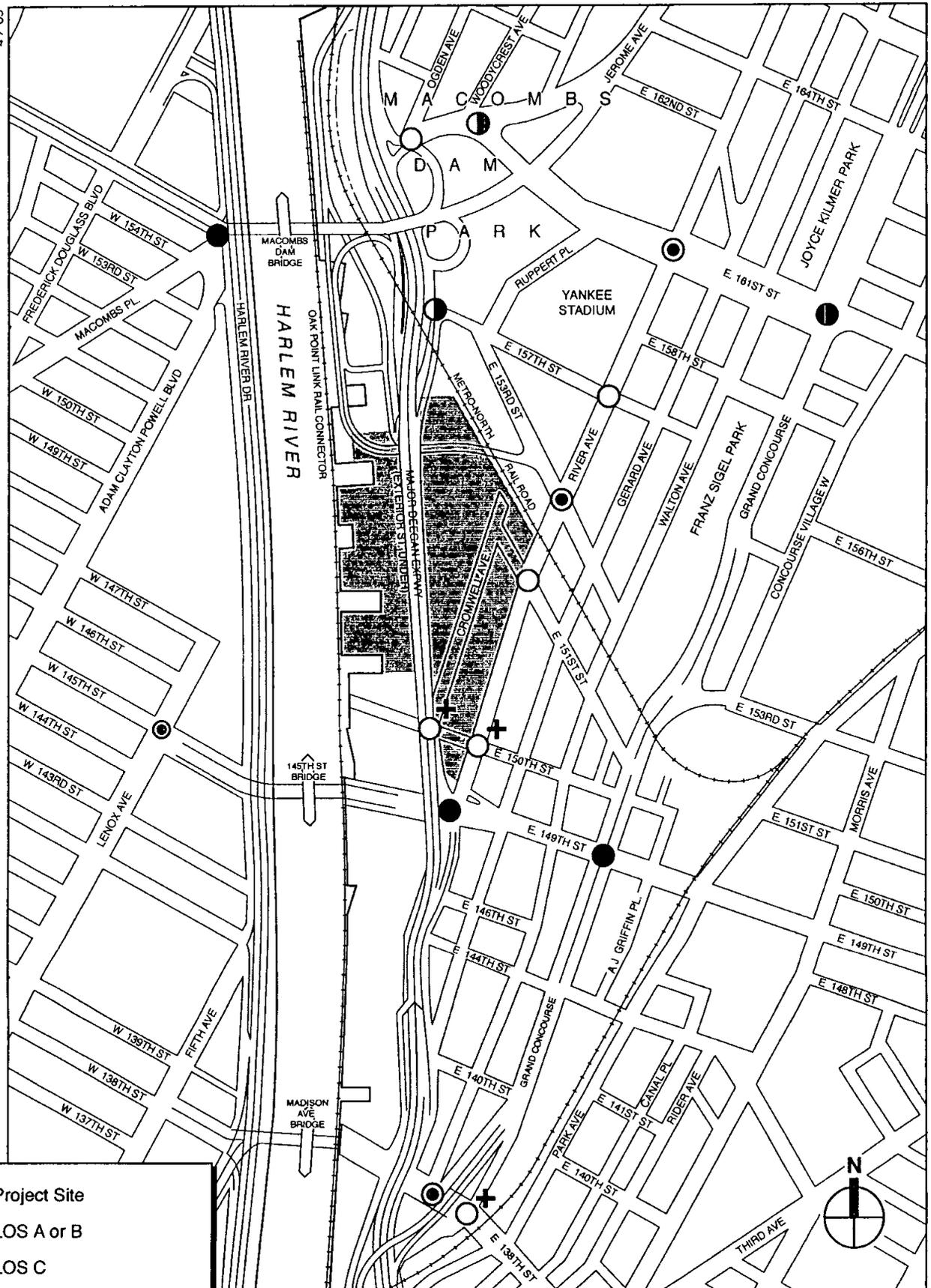
Figure 16-11



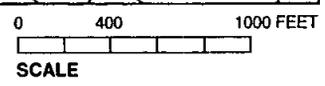
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

**No Build 2009 Non-Game Saturday
Midday Levels of Service**

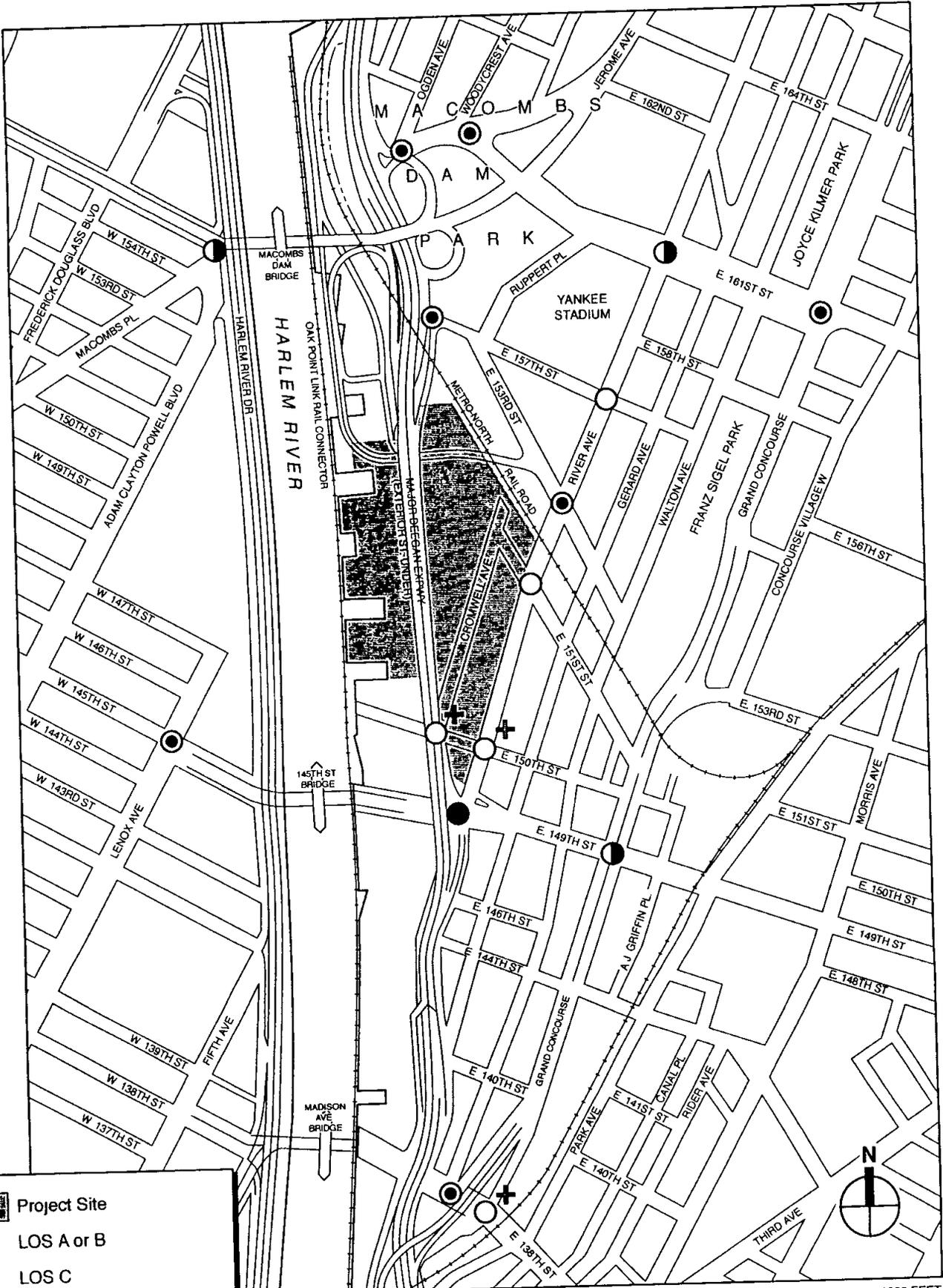
Figure 16-12



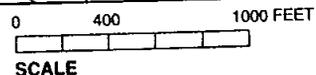
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection



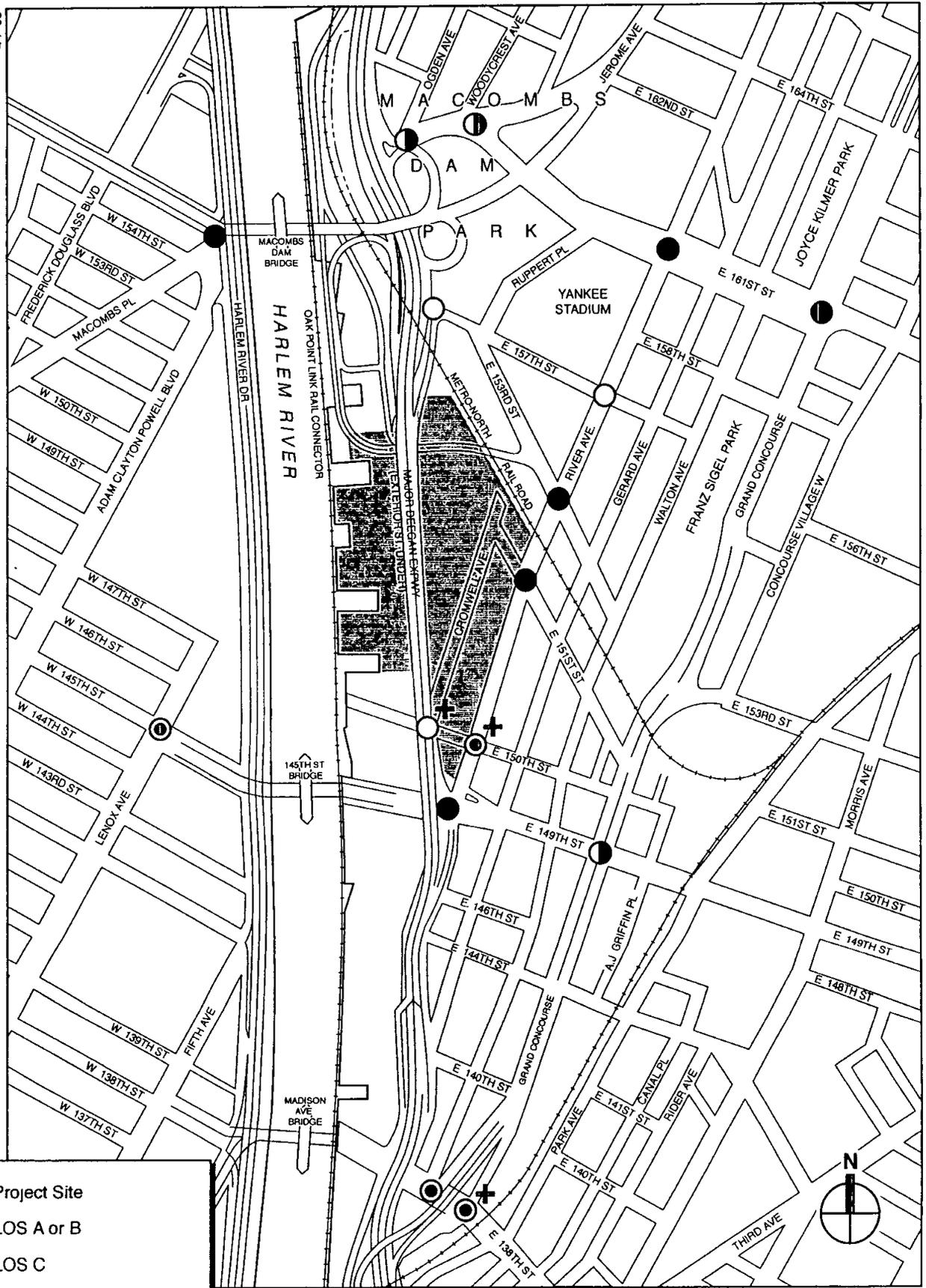
**No Build 2009 Pre-Game Weekday
PM Levels of Service**
Figure 16-13



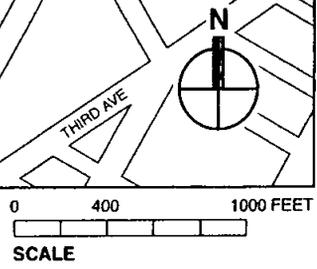
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection



**No Build 2009 Pre-Game Saturday
Midday Levels of Service**
Figure 16-14

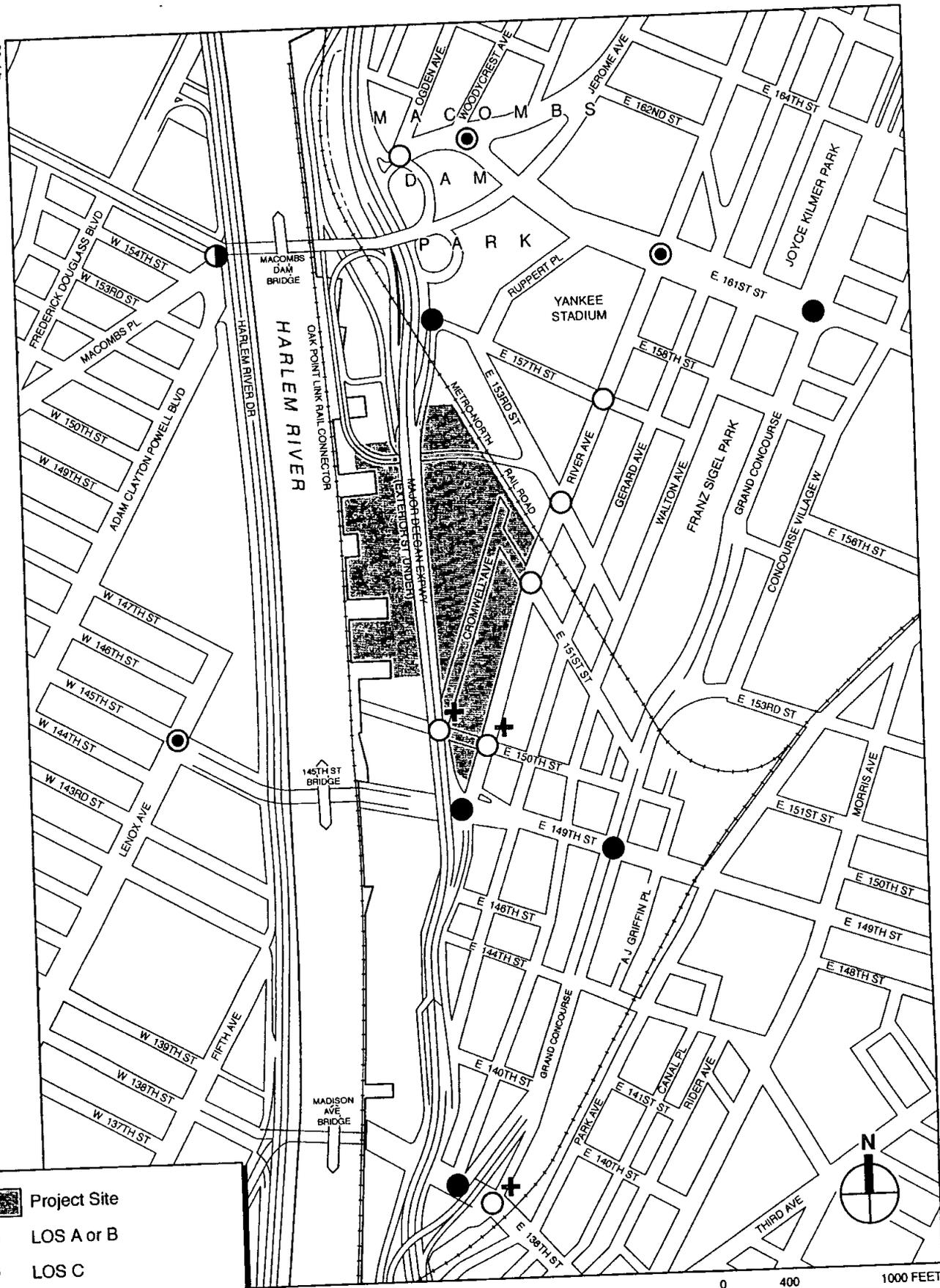


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

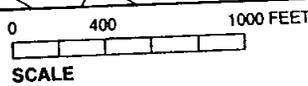


**No Build 2009 Post-Game Saturday
PM Levels of Service**

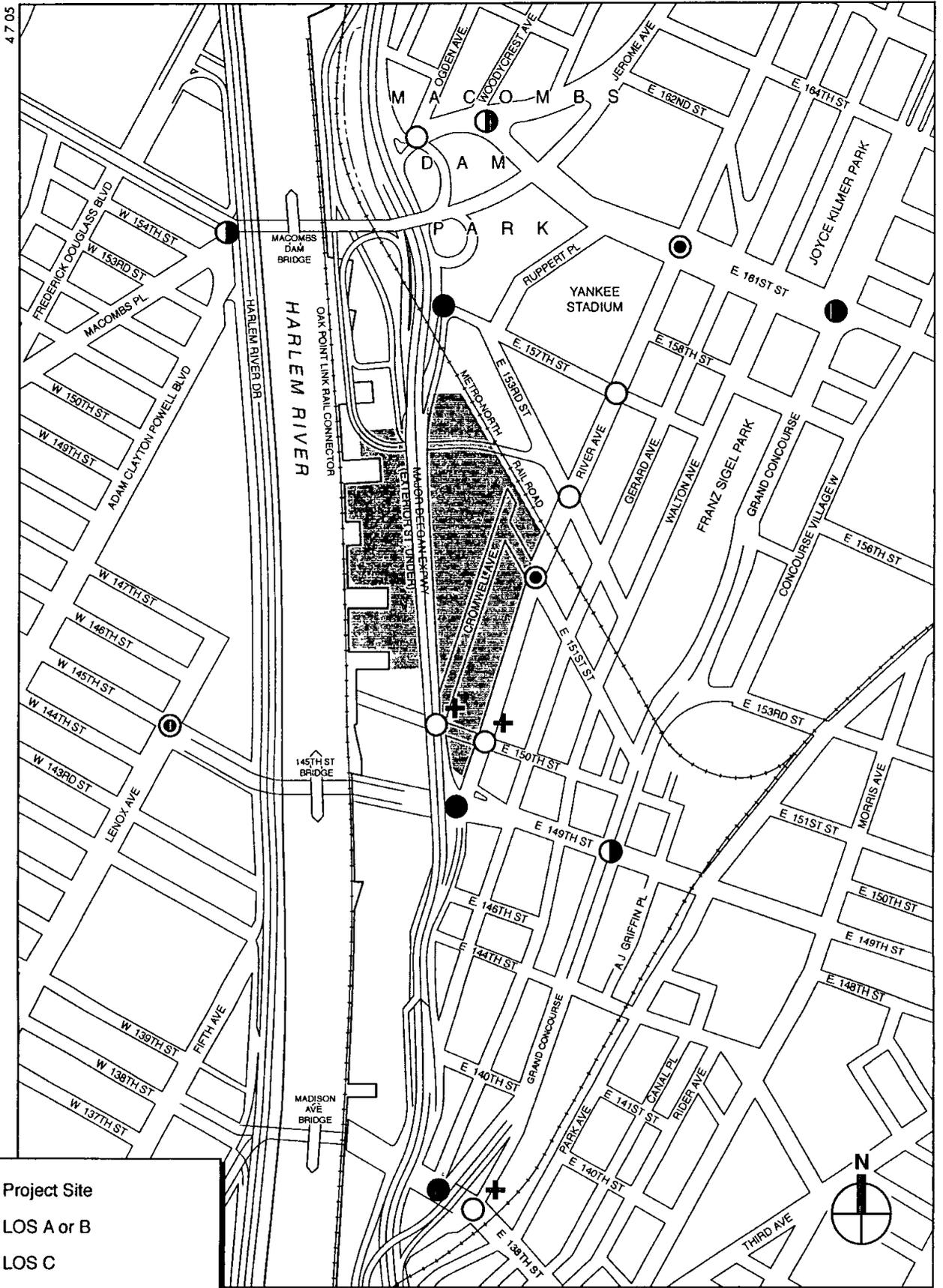
Figure 16-15



	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

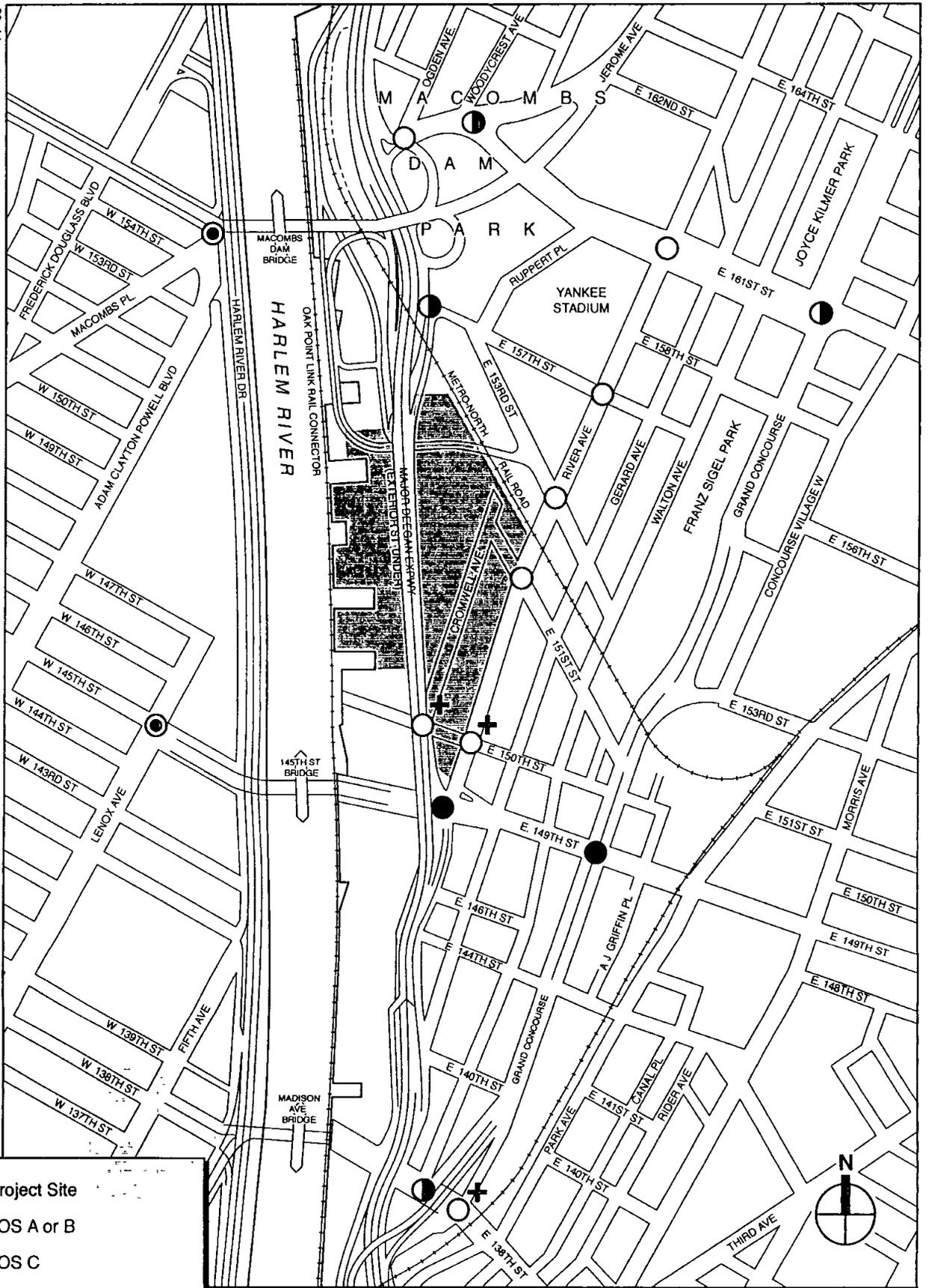


**No Build 2014 Non-Game Weekday
Midday Levels of Service**
Figure 16-16

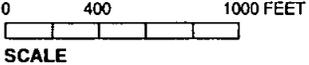


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

**No Build 2014 Non-Game Weekday
PM Levels of Service**
Figure 16-17

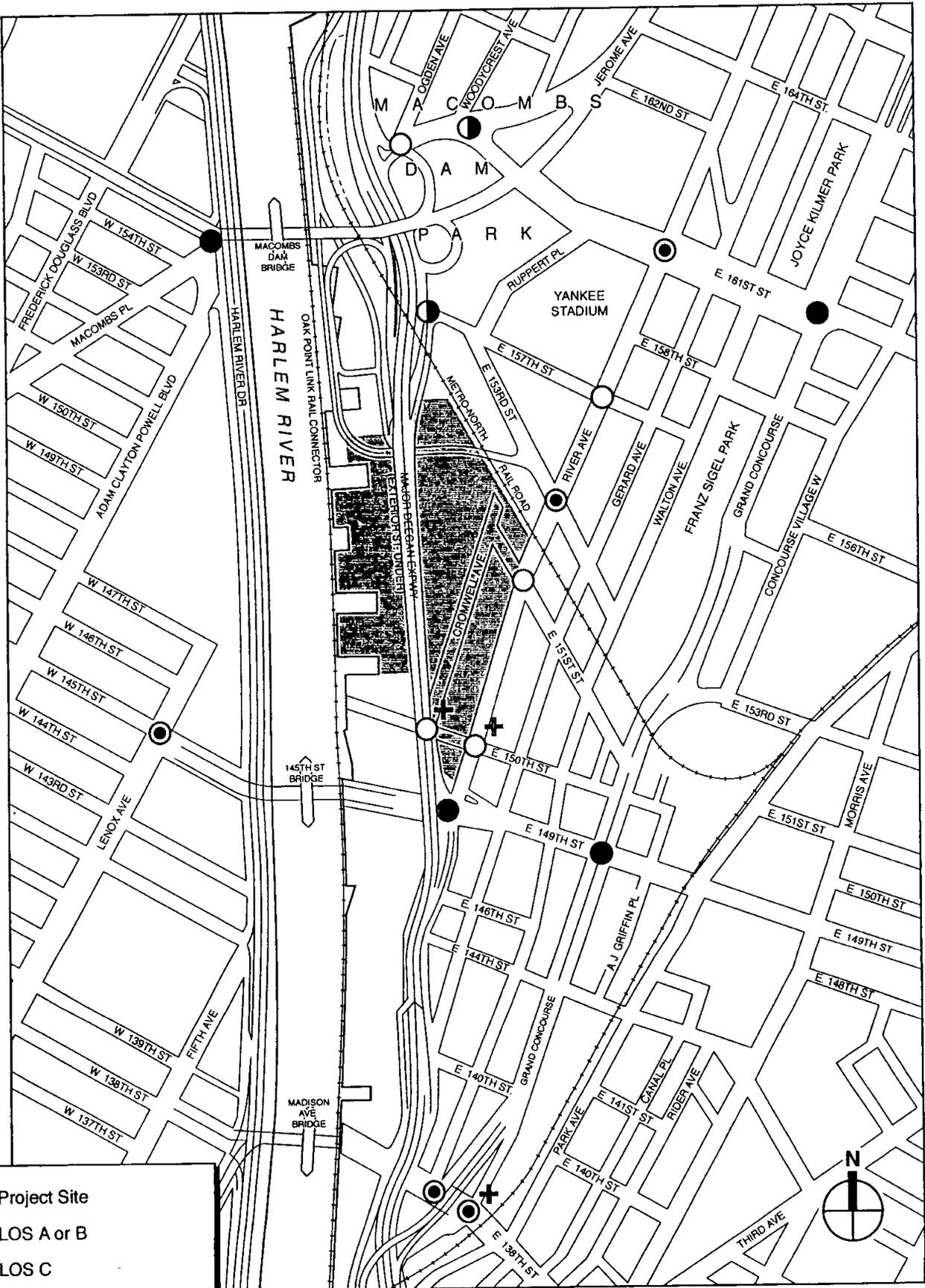


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

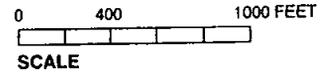


**No Build 2014 Non-Game Saturday
Midday Levels of Service**
Figure 16-18

4705

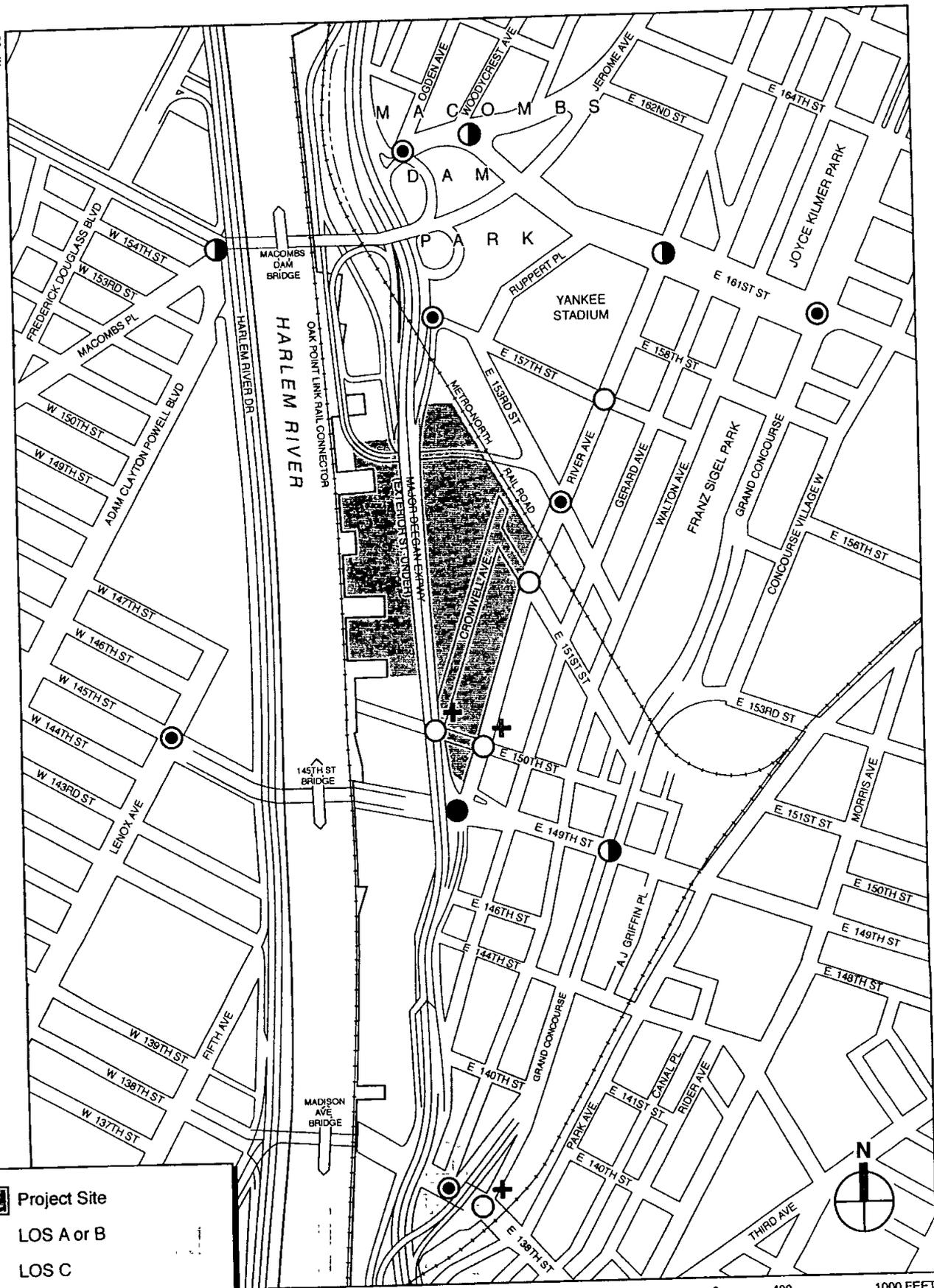


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

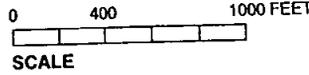


**No Build 2014 Pre-Game Weekday
PM Levels of Service**
Figure 16-19

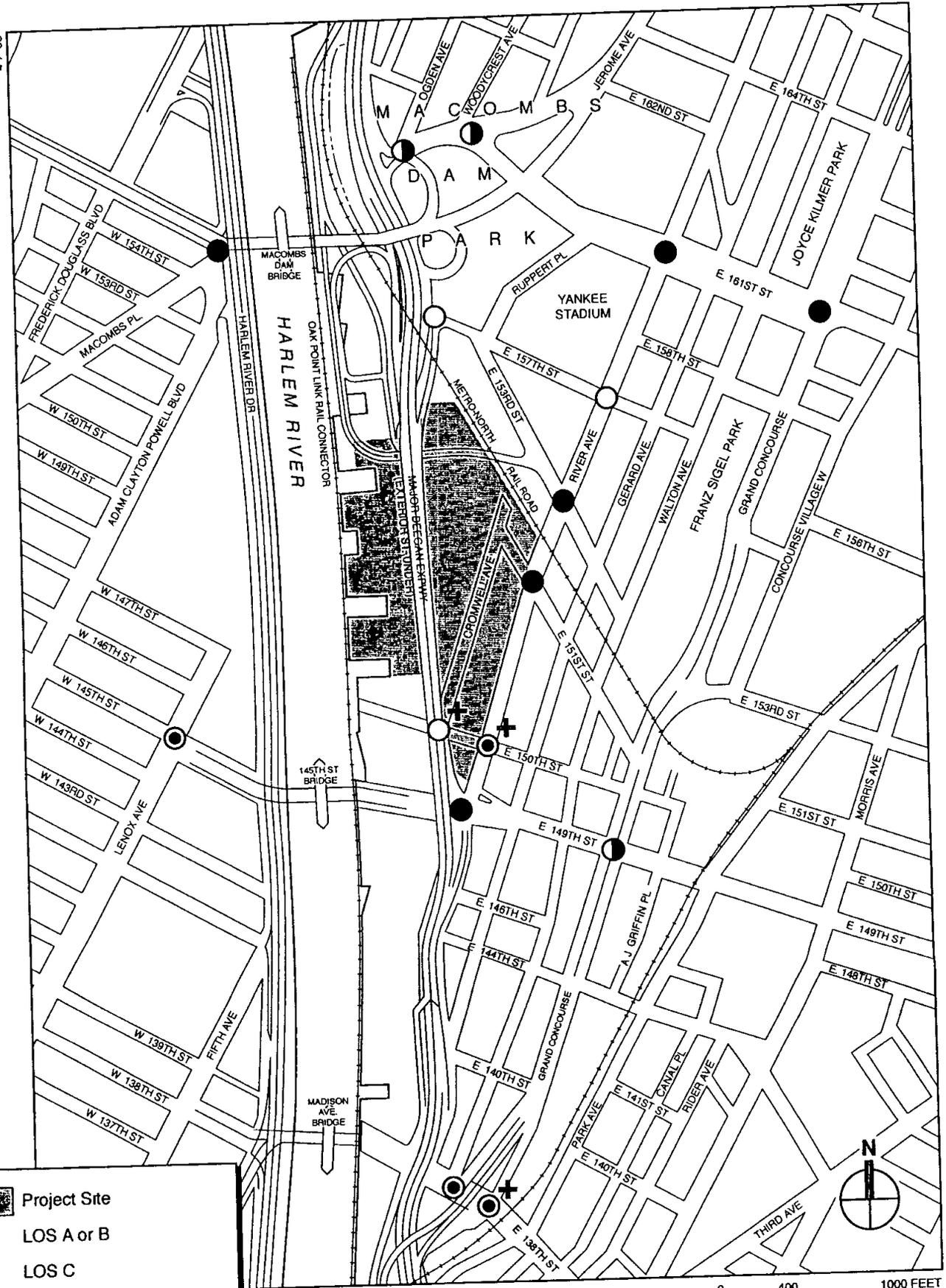
4.7 05



	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection



**No Build 2014 Pre-Game Saturday
Midday Levels of Service**
Figure 16-20



	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection

**No Build 2014 Post-Game Saturday
PM Levels of Service**
Figure 16-21

Yankee game, similar to existing conditions, the 2009 or 2014 conditions would consist of parking facilities at approximately one percent occupied.

On a typical weekday Yankee game day, the maximum occupancy would peak between 7–8 PM at about 78 percent in 2009 and 80 percent in 2014, compared to approximately 76 percent in 2004. On a typical Saturday game day, the maximum occupancy would peak between 2–3 PM at about 94 percent in 2009 and 96 percent in 2014, compared to approximately 91 percent in 2004. This is a very conservative assumption since it includes increases in Yankee fan parking, which are not really subject to annual increases.

The on-street parking occupancy would increase by one-half percent to the following maximum daily levels: approximately 85 percent in 2009 and 87 percent in 2014 occupied between 10–11 AM on weekdays without Yankee games compared to approximately 83 percent in 2004; and approximately 44 percent in 2009 and 45 percent in 2014 occupied between 12–1 PM on Saturdays without Yankee games compared to approximately 43 percent in 2004.

On a typical weekday with a Yankee game, approximately 73 percent in 2009 and 75 percent in 2014 of on-street parking would be occupied between 11 AM and 12 PM compared with approximately 72 percent in 2004. On a typical Saturday with a Yankee game, approximately 48 percent in 2009 and 49 percent in 2014 of on-street parking would be occupied between 12–1 PM compared with approximately 47 percent in 2004.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

This section presents an analysis of future traffic and parking conditions with the Proposed Project. The Proposed Project would consist of retail and parking on both sides of Exterior Street by 2009, and the development of a hotel by 2014. This section includes a determination of the volume of vehicle trips generated under Build conditions, their distribution within the study area roadway network, the analysis of future traffic levels of service, and the identification of significant impacts as per *CEQR Technical Manual* guidelines. These analyses are presented for two separate future analysis conditions—2009 and 2014. Mitigation measures are discussed in Chapter 23, “Mitigation.”

Upon completion of the Proposed Project, there would be several changes to the roadway network, including some benefits. The construction of the Proposed Project would necessitate closing 150th Street between River Avenue and Exterior Street, Cromwell Avenue from Exterior/150th Streets to its northern terminus, and 151st Street west of River Avenue. These are “minor” street segments carrying very small traffic volumes. Also as part of this project, Exterior Street between 149th Street and its northern terminus and River Avenue between 149th and 153rd Streets would be substantially upgraded to include pavement resurfacing, dedicated turning lanes into the site, and widening along certain sections to provide two full travel lanes in each direction. New traffic signals would also be installed at several intersections in order to facilitate vehicle access in and out of the proposed parking garages.

TRIP GENERATION AND MODAL SPLIT

Travel demand projections were prepared for the development of approximately one million gross square feet (gsf) of destination retail space and approximately 3,000 parking spaces located on both sides of Exterior Street, in 2009. By 2014, a 250-room hotel, including a 30,000-gsf banquet facility and 225 additional parking spaces, would be built.

Table 16-10

Trip Generation Factors for Proposed Development Program

Non-Game Day		
	Destination Retail	Hotel
Peak Hour Person Trip Rate per 1,000 sf or Hotel Room		
Weekday Midday Peak Hour	3.1 per hour	9.3 per day
Weekday PM Peak Hour	6.8 per hour	9.3 per day
Saturday Midday Peak Hour	9.2 per hour	9.3 per day
Temporal Distribution (In / Out)		
Weekday Midday Peak Hour	51.8% / 48.2%	69.0% / 31.0%
Weekday PM Peak Hour	51.8% / 48.2%	57.6% / 42.4%
Saturday Midday Peak Hour	50.7% / 49.3%	54.5% / 45.5%
Modal Split (Weekday / Saturday)		
Auto	59.0% / 59.0%	70.0% / 70.0%
Taxi	3.0% / 5.0%	15.0% / 15.0%
Subway	15% / 13%	5.0% / 5.0%
Local Bus	18% / 18%	5.0% / 5.0%
Walking/Other	5.0% / 5.0%	5.0% / 5.0%
Average Vehicle Occupancy (Weekday / Saturday)		
Auto	2.05 / 2.49	1.60 / 2.30
Taxi	2.00 / 2.80	1.40 / 2.80
Trucks/Deliveries Trip Generation Rate		
Daily Rate	0.35 per 1,000 sf	0.10 per hotel room
Trucks/Deliveries Temporal Distribution		
Weekday Midday Peak Hour	8.6%	8.6%
Weekday PM Peak Hour	5.1%	5.1%
Saturday Midday Peak Hour	1.0%	0.0%
Game Day		
	Destination Retail	Hotel
Peak Hour Person Trip Rate per 1,000 sf or Hotel Room		
Weekday Pre-Game (PM) Peak Hour	6.1 per hour	9.3 per day
Saturday Pre-Game (Midday) Peak Hour	7.4 per hour	9.3 per day
Saturday Post-Game (PM) Peak Hour	5.5 per hour	9.3 per day
Temporal Distribution (In / Out)		
Weekday Pre-Game (PM) Peak Hour	51.8% / 48.2%	57.6% / 42.4%
Saturday Pre-Game (Midday) Peak Hour	53.6% / 46.4%	54.5% / 45.5%
Saturday Post-Game (PM) Peak Hour	47.5% / 52.5%	54.5% / 45.5%
Modal Split (Weekday / Saturday)		
Auto	59.0% / 59.0%	70.0% / 70.0%
Taxi	3.0% / 5.0%	15.0% / 15.0%
Subway	15% / 13%	5.0% / 5.0%
Local Bus	18% / 18%	5.0% / 5.0%
Walking/Other	5.0% / 5.0%	5.0% / 5.0%
Average Vehicle Occupancy (Weekday / Saturday)		
Auto	2.05 / 2.49	1.60 / 2.30
Taxi	2.00 / 2.80	1.40 / 2.80
Trucks/Deliveries Trip Generation Rate		
Daily Rate	0.35 per 1,000 sf	0.10 per hotel room
Trucks/Deliveries Temporal Distribution		
Weekday Pre-Game (PM) Peak Hour	5.1%	5.1%
Saturday Pre-Game (Midday) Peak Hour	1.0%	0.0%
Saturday Post-Game (PM) Peak Hour	1.0%	0.0%
Sources: (Destination Retail) Surveys conducted by AKRF, Inc. at Queens Place (May 2004); Results of PHA survey in Atlantic Center, Brooklyn (1997); Federal Highway Administration, "Curbside Pickup and Delivery and Arterial Traffic Impacts." Final Report. (February 1981); Wilber Smith Associates, <i>Motor Trucks in the Metropolis</i> , 1969; East River Plaza FEIS (August 1999); Atlantic Center EA (February 1999) (Hotel) Surveys conducted by AKRF, Inc. at the Renaissance Plaza Hotel, Downtown Brooklyn (March 1999); Wilber Smith Associates, <i>Motor Trucks in the Metropolis</i> , 1969; USDOT; Harlem Park Development EAS (May 7, 2004)		

Trip generation rates, modal split characteristics, and vehicle occupancy rates were taken from standard professional references, census data, original survey data, information from other development studies, and reasonable planning assumptions. For each of the land use categories envisioned under the 2009 and 2014 development scenarios (including destination retail, hotel, and banquet facility), sources with similar geographic and/or user characteristics were selected. These trip generation factors are summarized in Table 16-10, and described further below.

DESTINATION RETAIL

A combination of data sources were used to project trips associated with the destination retail component of the Proposed Project. Original surveys were conducted at Queens Place (88-01 Queens Boulevard, Elmhurst, New York), and these data were supplemented with analyses performed for projects in Harlem and Brooklyn.

Queens Place is a destination retail center located on Queens Boulevard at 55th Avenue. It contains approximately 434,100 square feet of retail stores, including Target, DSW Shoe Warehouse, Macy's Furniture, Best Buy, and Daffy's. The retail stores are encircled by the site's parking structure, which contains a total of 1,200 spaces. It is accessible by auto from the Long Island Expressway (Exit 19) and Queens Boulevard, and by subway at the Grand Avenue-Newton station served by the R, V, and G lines, which is located less than 1/2-mile from the site. Five New York City Transit (NYCT) bus routes stop in the vicinity of Queens Place.

Vehicle and pedestrian door counts were conducted at Queens Place in May 2004 on a weekday and Saturday. These data were used to project the peak hours, peak hour trip rates, temporal and direction distributions and percent of travel, and vehicle occupancies for the Proposed Project. Data collected at Queens Place were supplemented with factors from previously published environmental impact statements to generate travel demand projections for the Proposed Project including East River Plaza in Harlem and Atlantic Center in Brooklyn. Delivery trips were estimated using rates from the U.S. Federal Highway Administration's Curbside Pickup and Delivery and Arterial Impacts (February 1981).

Given its proximity to Yankee Stadium, retail patronage and local traffic conditions at and near the project site would be influenced by activities at the stadium. While the weekday midday peak hour trips generated by the Proposed Project would be similar for game and non-game days, the weekday PM, Saturday pre-game, and Saturday post-game peaks vary since background traffic would be much higher before and after a Yankee game than during the typical retail peak.

Generally, the factors applied for the generation of game day trips to the Proposed Project are the same as those used for the non-game day scenario. However, two adjustments were made in anticipation of travel behavior relative to local traffic conditions associated with the stadium. The first was an adjustment in the peak periods. The peak periods of adjacent traffic on a game day would not correspond to the peak period of retail traffic. Therefore, trip rates were adjusted based on the surveys at Queens Place to reflect retail activity during the peak periods of adjacent traffic. The second adjustment was a 10 percent shifting of trips during the weekday PM, Saturday pre-game, and Saturday post-game peaks based on the assumption that patrons would choose other times of the day to visit the Proposed Project rather than immediately before or after a Yankee game. This is a conservative assumption; in reality, a much greater shift would occur away from the peak arrival and departure hours on Yankee game days. Shoppers would avoid going to the Proposed Project's retail development during the hour immediately before and after game crowds arrive and leave.

Gateway Center at Bronx Terminal Market DEIS

PROPOSED HOTEL

Trip rates, temporal distribution, direction distribution, and auto and taxi occupancies for the Proposed Project's hotel component were derived from surveys conducted at the Marriott Hotel in downtown Brooklyn. These data were also compared to the recently-approved Harlem Park development project in Manhattan. Delivery trips were estimated using rates from the U.S. Federal Highway Administration's Curbside Pickup and Delivery and Arterial Impacts (February 1981).

The Marriott Hotel and Harlem Park development projects are well served by transit. Since the proposed hotel at the Proposed Project would be further from subways and buses as well as further from major tourist destinations than the Brooklyn Marriott, modal split distributions from the hotel surveys were adjusted to reflect local conditions. Hotel trips are not expected to vary considerably between game and non-game days, so the same rates were used for both scenarios.

TOTAL TRIP GENERATION

2009 Trip Generation

The total volume of person trips and vehicle trips that would be generated by the Proposed Project by 2009 are presented in Tables 16-11 and 16-12, respectively. The auto trips in Table 16-12 were derived by dividing the person trips shown in Table 16-11 by the vehicle occupancy rates in Table 16-10 documented for each peak hour.

**Table 16-11
Person Trips Generated by Proposed Destination Retail in 2009**

	Auto	%	Taxi	%	Subway	%	Local Bus	%	Walk/Other	%	Total
Non-Game Day											
Weekday Non-Game Midday Peak Hour											
Total Inbound	958	59	49	3	244	15	292	18	81	5	1,624
Total Outbound	892	59	45	3	227	15	272	18	76	5	1,511
Weekday Non-Game PM Peak Hour											
Total Inbound	2,078	59	106	3	528	15	634	18	176	5	3,522
Total Outbound	1,934	59	98	3	492	15	590	18	164	5	3,278
Saturday Non-Game Midday Peak Hour											
Total Inbound	2,752	59	233	5	606	13	840	18	233	5	4,664
Total Outbound	2,676	59	227	5	590	13	816	18	227	5	4,536
Game Day											
Weekday Pre-Game PM Peak Hour											
Total Inbound	1,870	59	95	3	476	15	571	18	159	5	3,170
Total Outbound	1,740	59	88	3	442	15	531	18	147	5	2,950
Saturday Pre-Game Midday Peak Hour											
Total Inbound	2,330	59	197	5	513	13	711	18	197	5	3,950
Total Outbound	2,017	59	171	5	445	13	615	18	171	5	3,419
Saturday Post-Game PM Peak Hour											
Total Inbound	1,555	59	132	5	343	13	474	18	132	5	2,635
Total Outbound	1,718	59	146	5	379	13	524	18	146	5	2,912

Table 16-12
Vehicle Trips Generated by Proposed Destination Retail in 2009

	Auto	%	Taxi	%	Subway	%	Local Bus	%	Walk/Other	%	Total
Non-Game Day											
Weekday Non-Game Midday Peak Hour											
Total Inbound	80	70	17	15	6	5	6	5	6	5	114
Total Outbound	36	70	8	15	3	5	3	5	3	5	51
Weekday Non-Game PM Peak Hour											
Total Inbound	86	70	18	15	6	5	6	5	6	5	123
Total Outbound	63	70	14	15	5	5	5	5	5	5	91
Saturday Non-Game Midday Peak Hour											
Total Inbound	118	70	25	15	8	5	8	5	8	5	169
Total Outbound	98	70	21	15	7	5	7	5	7	5	141
Game Day											
Weekday Pre-Game PM Peak Hour											
Total Inbound	86	70	18	15	6	5	6	5	6	5	123
Total Outbound	63	70	14	15	5	5	5	5	5	5	91
Saturday Pre-Game Midday Peak Hour											
Total Inbound	118	70	25	15	8	5	8	5	8	5	169
Total Outbound	98	70	21	15	7	5	7	5	7	5	141
Saturday Post-Game PM Peak Hour											
Total Inbound	118	70	25	15	8	5	8	5	8	5	169
Total Outbound	98	70	21	15	7	5	7	5	7	5	141

The Proposed Project retail development in 2009 can be expected to generate approximately 3,100 person trips (i.e., by all travel modes) in the non-game weekday midday peak hour, 6,800 person trips in the non-game weekday PM peak hour, and 9,200 person trips in the non-game Saturday midday peak hour. Equivalent peak hours on game days would generate slightly lower volumes of person trips, because a portion of retail shoppers would be drawn to off-peak periods to avoid peak game day traffic arrival and departure hours. The game day peak hours are expected to generate 6,100 person trips in the pre-game weekday PM peak hour compared to 6,800 in the non-game weekday PM peak hour, and 7,400 person trips in the pre-game Saturday midday peak hour compared to 9,200 in the non-game Saturday midday peak hour; the Proposed Project is estimated to generate approximately 5,500 person trips in the post-game Saturday PM peak hour.

The Proposed Project's retail development in 2009 can be expected to generate 1,032 vehicle trips (i.e., by autos, taxis, and trucks) in the non-game weekday midday peak hour, 2,145 vehicle trips in the non-game weekday PM peak hour, and 2,434 vehicle trips in the non-game Saturday midday peak hour (it should be noted that taxis "count" as two trips—the inbound taxi with passengers and its departure either with or without passengers). The Proposed Project is estimated to generate 1,973 vehicle trips in the pre-game weekday PM peak hour, 1,946 vehicle trips in the pre-game Saturday midday peak hour, and 1,472 vehicle trips in the post-game Saturday PM peak hour. As noted previously, these may well be significantly conservative projections (i.e., higher than what may realistically be expected), as many more shoppers may choose to drive at times not as heavily trafficked by Yankee fans going to or leaving a game.

2014 Trip Generation

The total volume of person trips and vehicle trips generated by the Proposed Project's hotel in 2014 are presented in Tables 16-13 and 16-14. The auto trips in Table 16-14 were derived by dividing the person trips shown in Table 16-13 by the vehicle occupancy rates in Table 16-10 documented for each peak hour.

**Table 16-13
Person Trips Generated by the Proposed Hotel in 2014**

	Auto	Taxi	Subway	Local Bus	Walk/ Other	Total
Non-Game Day						
Weekday Non-Game Midday Peak Hour						
Total Inbound	80	17	6	6	6	114
Total Outbound	36	8	3	3	3	51
Weekday Non-Game PM Peak Hour						
Total Inbound	86	18	6	6	6	123
Total Outbound	63	14	5	5	5	91
Saturday Non-Game Midday Peak Hour						
Total Inbound	118	25	8	8	8	169
Total Outbound	98	21	7	7	7	141
Game Day						
Weekday Pre-Game PM Peak Hour						
Total Inbound	86	18	6	6	6	123
Total Outbound	63	14	5	5	5	91
Saturday Pre-Game Midday Peak Hour						
Total Inbound	118	25	8	8	8	169
Total Outbound	98	21	7	7	7	141
Saturday Post-Game PM Peak Hour						
Total Inbound	118	25	8	8	8	169
Total Outbound	98	21	7	7	7	141

**Table 16-14
Vehicle Trips Generated by the Proposed Hotel in 2014**

	Auto	Taxi	Truck	Total
Non-Game Day				
Weekday Non-Game Midday Peak Hour				
Total Inbound	50	7	2	59
Total Outbound	22	7	2	31
Weekday Non-Game PM Peak Hour				
Total Inbound	54	10	1	65
Total Outbound	40	10	1	51
Saturday Non-Game Midday Peak Hour				
Total Inbound	51	13	0	64
Total Outbound	43	13	0	56
Game Day				
Weekday Pre-Game PM Peak Hour				
Total Inbound	54	10	1	65
Total Outbound	40	10	1	51
Saturday Pre-Game Midday Peak Hour				
Total Inbound	51	13	0	64
Total Outbound	43	13	0	56
Saturday Post-Game PM Peak Hour				
Total Inbound	51	13	0	64
Total Outbound	43	13	0	56

The Proposed Project's hotel development in 2014 can be expected to generate 165 person trips (i.e., by all travel modes) in the non-game weekday midday peak hour, 214 person trips in the non-game weekday PM peak hour, and 310 person trips in the non-game Saturday midday peak hour. Equivalent peak hours on game days would generate approximately the same volumes of person trips, because hotel trips would not be significantly affected by game day traffic. The proposed hotel is estimated to generate 214 person trips in the pre-game weekday PM peak hour, 310 person trips in the pre-game Saturday midday peak hour, and 310 person trips in the post-

game Saturday PM peak hour. The proposed hotel development in 2014 can be expected to generate 90 vehicle trips (i.e., by autos, taxis, and trucks) in the non-game weekday midday peak hour, 116 vehicle trips in the non-game weekday PM peak hour, and 120 vehicle trips in the non-game Saturday midday peak hour. The Proposed Project is estimated to generate 116 vehicle trips in the pre-game weekday PM peak hour, 120 vehicle trips in the pre-game Saturday midday peak hour, and 120 vehicle trips in the post-game Saturday PM peak hour.

TRIP DISTRIBUTION AND ASSIGNMENT TO THE ROADWAY NETWORK

The volume of vehicular traffic generated by the Proposed Project was assigned to the roadway network based on an original marketing and demographics study including trip origin data available from the 2000 U.S. Census. The study estimated what share of the population within a 3-mile trade area (in Northern Manhattan and the Bronx) would be drawn to destination retailers at the project site. These neighborhood percentage shares were assigned to major approach routes including the northbound and southbound Major Deegan Expressway, the Macombs Dam and 145th Street Bridges, 149th Street, 161st Street, the Grand Concourse, and River and Jerome Avenues. An overview of the regional distribution of generated traffic is described below.

TRAFFIC ASSIGNMENTS

2009

Autos For destination retail trips, it was estimated that approximately 30 to 35 percent of autos would access the site by traveling southbound on the Major Deegan directly to Exterior Street or River Avenue and the project site, which includes trips from central Bronx and the Cross Bronx Expressway. Between 25 to 30 percent of autos would access the site by traveling northbound on the Major Deegan Expressway to 149th Street, which includes trips from southern and eastern neighborhoods in the Bronx including 138th Street. Approximately five percent of autos would cross the Harlem River at the Macombs Dam Bridge, and approximately ten percent would cross at the 145th Street Bridge. Local auto trips would come from points north and east by the following approximate totals: five percent on 149th Street, five percent on 161st Street, five to ten percent on the Grand Concourse, and five to ten percent on River and Jerome Avenues.

Because of its excellent vehicular accessibility from all directions, the project site's access would not vary significantly during Yankee games when a handful of street prohibitions disrupt local through traffic patterns. For instance, if the southbound Major Deegan Expressway flyover ramp to 153rd Street was closed as it commonly is before Yankee games, Proposed Project-bound motorists would shift to Exterior Street. Following Yankee games, when southbound River Avenue is closed between 161st and 158th Streets, traffic would shift to Jerome Avenue to Exterior Street or the Grand Concourse to 149th Street. Also following Yankee games, when the northbound Exterior Street traffic approaching 157th Street is forced onto the mainline northbound Major Deegan, motorists destined to Jerome Avenue would use River Avenue instead.

Taxis Taxis would approach the project site for destination retail drop-offs or pick-ups by approximately 20 to 25 percent on the southbound Major Deegan Expressway, 10 to 15 percent on the northbound Major Deegan Expressway, 10 to 15 percent on the Grand Concourse, and about five to ten percent on each of following routes: River and Jerome Avenues; 149th and 161st Streets; and the Macombs Dam and 145th Street Bridges.

Trucks. Deliveries to the site would predominantly approach using the Major Deegan Expressway. Approximately 60–70 percent of trucks would come from the southbound Major Deegan Expressway and 15–20 percent of trucks from the northbound Major Deegan Expressway. Approximately five percent or fewer trucks would approach using the Macombs Dam and 145th Street Bridges, and a similar percent would approach the site on 149th and 161st Streets. Because the Grand Concourse is not listed by NYCDOT as a designated truck route, trucks would not approach the site from the Grand Concourse. Approximately five to ten percent of trucks would approach on River or Jerome Avenues.

2014

Autos For hotel trips, it was estimated that approximately 45 to 55 percent of autos would access the site by traveling southbound on the Major Deegan Expressway directly to Exterior Street. Between 25 to 30 percent of autos would access the site by traveling northbound on the Major Deegan to 149th Street, which includes trips from southern and eastern neighborhoods in the Bronx including 138th Street. Approximately five percent of autos would cross the Harlem River at the Macombs Dam or 145th Street Bridges. Local auto trips would come from points north and east by the following approximate totals: fewer than five percent on 149th and 161st Streets; five to ten percent on the Grand Concourse; and fewer than five percent on River and Jerome Avenues.

Taxis. Taxis would approach the project site for hotel drop-offs or pick-ups by approximately 40 to 45 percent on the southbound Major Deegan Expressway, 20 to 25 percent on the northbound Major Deegan Expressway, and about five to ten percent on each of following routes: the Grand Concourse; River and Jerome Avenues; 149th and 161st Streets; and the Macombs Dam and 145th Street Bridges.

Trucks. Deliveries to the hotel would generally follow the same routes as the destination retail trucks.

GENERATED TRAFFIC VOLUMES

The above trip generation-modal split-trip distribution process produced specific roadway-by-roadway and intersection-by-intersection traffic volume projections within the study area, an overview of which is provided below. Specific block-by-block generated volume projections are provided in detail in Appendix A.

2009

Overall, in 2009, the Proposed Project would generate an increase in traffic volumes of about 10 to 20 percent when comparing the overall background traffic volume entering and exiting the primary traffic study area along its various streets and roadways (the cordon line for this calculation includes the Macombs Dam and 145th Street Bridges, the northbound and southbound Major Deegan Expressway Exits 4, 5, and 6, 149th Street, 161st Street, the Grand Concourse, Exterior Street, and River and Jerome Avenues). The approximately 1,000 to 2,400 vph that would be generated by the destination retail component of the Proposed Project in the non-game weekday midday and Saturday midday peak hours, respectively, would represent approximately a 10 to 20 percent increase overall as compared to the total volume of traffic that would be entering and exiting the study area on these roadways in 2009 (approximately 12,000 to 17,000 vph depending on the peak period).

The destination retail-generated traffic volumes approaching the site would be approximately: 120 to 280 vph exiting the northbound Major Deegan Expressway at 149th Street; 60 to 160 vph on westbound 149th Street, which includes part of the Grand Concourse traffic; 60 to 130 vph on the 145th Street Bridge; 70 to 180 vph on southbound River Avenue at 153rd Street, which includes part of the Jerome Avenue traffic; 10 to 50 vph on westbound 151st Street, which includes part of the Grand Concourse traffic; and 210 to 490 vph on southbound Exterior Street, which is fed by the Macombs Dam Bridge, the southbound Major Deegan Expressway Exits 5 and 6, and partially by Jerome Avenue.

Because destination retail trips are typically split 50 percent inbound and outbound for peak hours, Proposed Project traffic exiting the site would consist of similar volumes. However, Exterior Street traffic would be an exception; since access to the southbound Major Deegan Expressway is available (and preferable) by traveling north on Exterior Street to a direct southbound Major Deegan Expressway ramp, fewer trips would access the southbound Major Deegan Expressway by exiting onto southbound Exterior Street to travel under the Major Deegan Expressway viaduct on the service road.

Project-generated volumes further from the site on the Macombs Dam Bridge, the Grand Concourse, and Jerome and River Avenues north of 161st Street would be lower than the aforementioned totals because their increased distance from the site would diminish the concentration of traffic on those routes.

2014

Overall, in 2014 after the completion of the proposed hotel component of the Proposed Project, the proposed hotel itself would generate an increase in traffic volumes of only about one percent when comparing the overall background traffic volume entering and exiting the primary traffic study area along its various streets and roadways (the cordon line for this calculation is the same as presented for the 2009 destination retail component)—i.e., the approximately 100 vph that would be generated by the hotel component of the Proposed Project in the peak hours would represent approximately a one percent increase overall as compared to the total volume of traffic that would be entering and exiting the study area on these roadways in 2014, including the addition of 2009 destination retail trips.

The hotel-generated traffic volumes approaching the project site would be approximately: 15 to 20 vph exiting the northbound Major Deegan Expressway at 149th Street; five to ten vph approaching the site on westbound 149th Street; fewer than five vph approaching the site on the 145th Street Bridge; fewer than five vph on southbound River Avenue at 153rd Street; and 35 to 40 vph on southbound Exterior Street, which is fed by Jerome Avenue, the Macombs Dam Bridge, and the southbound Major Deegan Expressway Exits 5 and 6. Exiting trips generated by the proposed hotel would be comparable to inbound trips.

PROGRAMMED IMPROVEMENTS, STREET CLOSURES, AND PARKING DISPLACEMENT

EXTERIOR STREET IMPROVEMENTS

Exterior Street, currently a wide, unstriped, cobblestone street with significant damage to the roadway surface, would be completely rebuilt with the Proposed Project. Upgrades include widening to two travel lanes per direction, dedicated turning lanes into parking areas on both sides of Exterior Street, pavement resurfacing, crosswalks at exits and entrances to parking

Gateway Center at Bronx Terminal Market DEIS

areas, traffic signals at parking garage driveways, lane striping, signage, upgraded lighting, and aesthetically-pleasing streetscaping designs. Signal warrant analysis will be conducted during the period between certification of this DEIS and certification of the FEIS, as per NYCDOT guidelines. It is expected that traffic signals will be warranted at the two major garage driveways. However, should the analysis indicate otherwise, alternative measures would be needed in order to avoid significant adverse impacts at those two locations.

RIVER AVENUE IMPROVEMENTS

River Avenue would be restriped with the Proposed Project to include crosswalks at 150th and 151st Streets and the proposed garage exit, two travel lanes per direction, shared left-turn/through lanes at 150th and 151st Streets, and streetscaping treatments. Motorists would experience improved levels of service before and after Yankee games along River Avenue due to the added capacity within the four-lane section between 149th and 151st Streets.

MAJOR DEEGAN EXPRESSWAY IMPROVEMENTS

As part of their redecking of the Major Deegan Expressway project, NYSDOT is considering widening the northbound Exit 4/149th Street off-ramp to two lanes, which would increase the capacity of the 149th Street/Exterior Street/River Avenue intersection. Currently, the schedule and design of this improvement is being explored by NYSDOT. As it is not known when the widening would be constructed, the analyses in this chapter do not account for this improvement in the Build conditions. The traffic impacts have been assessed independent of the ramp widening.

MINOR STREET CLOSURES

Portions of three streets would be closed as a result of the Proposed Project. 150th Street would be closed between River Avenue and Exterior Street, Cromwell Avenue would be closed north of 150th Street, and 151st Street west of River Avenue would become an entrance to the Proposed Project's parking garage. Of the street closures, 150th Street between River Avenue and Exterior Street is the only segment that currently carries traffic in excess of 50 vehicles per hour.

A moderate number of trips (between 50 to 80 vph per direction) on 150th Street currently use this street as a cut-through between Exterior Street and River Avenue; very few motorists are through-trips along westbound 150th Street to Exterior Street—only about 20 to 30 vph. 150th Street allows southbound River Avenue motorists to access northbound Exterior Street and vice-versa without waiting at the 149th Street/Exterior Street/River Avenue intersection's traffic signal. Also, westbound 149th Street motorists destined to northbound Exterior Street bypass the traffic signal by using the stop-controlled channelized right-turn lane and make a left onto 150th Street. So, as a result of the proposed street closure, approximately 40 to 50 vph per direction would likely divert from 150th Street to the 149th Street/Exterior Street/River Avenue intersection in the 2009 and 2014 Build conditions. This is accounted for in the Build analyses.

YANKEE STADIUM PARKING DISPLACEMENT

Yankee Stadium parking facilities would be displaced by the Proposed Project, which is discussed in more detail in the Parking section. Two medium-sized off-street parking facilities consisting of approximately 400 spaces each, six small facilities with fewer than 250 spaces each, and on-street parking totaling approximately 200 spaces on Exterior Street lie within the project site and would be displaced. Although just over 2,000 parking spaces would be

displaced, observations from a typical weeknight and Saturday Yankee game indicate that no more than 800 to 1,200 of these parking spaces are occupied and only the two medium-sized facilities are typically open.

The off-street parking facilities at the Proposed Project would total 2,991 spaces in 2009, with an additional 225 spaces added in 2014. During Yankee regular season and post-season games, the Proposed Project's parking facilities would not fill to their capacity, and excess parking would be available for displaced Yankee Stadium parking activity.

Excess parking capacity at the site would accommodate nearly all displaced Yankee-game parking. But to be conservative, approximately ten percent of the peak hour trips inbound to the existing project site parking facilities, or 55 to 65 existing hourly parking trips in the weekday and Saturday pre-game peak hours, respectively, have been assumed to divert to other parking facilities such as the Concourse Village shopping center where approximately 200 or more available parking spaces have been observed during Yankee games. This diversion would result in additional trips along River Avenue, the Grand Concourse, and 161st Street. In the Saturday post-game peak hour, approximately ten percent of the peak hour trips outbound from parking at the site, or about 120 hourly parking trips, have similarly been assumed to exit the Concourse Village shopping center facility and other facilities in the area. This is accounted for in the Build analyses and the diverted trips generally do not significantly impact traffic conditions.

TRAFFIC LEVELS OF SERVICE AND IMPACTS

The assessment of potential significant traffic impacts of the Proposed Project is based on significant impact criteria defined in the *CEQR Technical Manual*. For No Build LOS A, B, or C conditions that deteriorate to unacceptable LOS D, E, or F in the future Build condition, a significant traffic impact is defined. For future No Build LOS A, B, or C conditions that deteriorate to LOS D, mitigation to mid-LOS D (45.0 seconds of delay for signalized intersections and 30.0 seconds of delay for unsignalized intersections) is required.

For a No Build LOS D, an increase of Build delay by 5 or more seconds is considered a significant impact if the Build delay meets or exceeds 45.0 seconds. For a No Build LOS E, the threshold is a 4-second increase in Build delay; for a No Build LOS F, a 3-second increase in Build delay is significant. However, if a No Build LOS F condition already has delays in excess of 120 seconds, an increase in Build delay of more than 1 second is considered significant, unless the proposed action would generate fewer than 5 vehicles through that intersection in the peak hour (signalized intersections) and fewer than 5 passenger-car-equivalents (PCEs) in the peak along the critical approach (unsignalized intersections). In addition, for unsignalized intersections, for the minor street to generate a significant impact, 90 PCEs must be identified in the Build condition in any peak hour.

2009

2009 Build traffic volumes were developed by adding 2009 project-generated volumes to 2009 No Build volumes. 2009 traffic levels of service were then evaluated and compared to levels of service without the Proposed Project in order to determine where significant impacts would occur. Table 16-15 provides a summary comparison of 2009 No Build and Build conditions; a detailed discussion of levels of service follows this table. It should be noted that three more signalized intersections and three more unsignalized intersections are evaluated in the Build condition since all access points to the project's parking and service facilities have been included (the number of traffic movements has also increased from 65 to 82 under the Build conditions).

Table 16-15
2009 No Build versus 2009 Build Traffic Level of Service Summary

Signalized Intersections (13 Total in No Build and 16 Total in Build)	No Build			Build		
	No Build Non-game Weekday Midday	No Build Non-game Weekday PM	No Build Non-game Saturday Midday	Build Non- game Weekday Midday	Build Non- game Weekday PM	Build Non- game Saturday Midday
Without Yankee Game						
Overall Intersection LOS A/B	4	3	5	7	3	4
Overall Intersection LOS C	3	3	2	2	3	5
Overall Intersection LOS D	1	4	4	2	2	4
Overall Intersection LOS E/F	5	3	2	5	8	3
Number of Signalized Intersection Movements at LOS E or F (of approximately 65 total in No Build and 82 total in Build)	18	18	15	22	30	23
	No Build Pre-game Weekday PM	No Build Pre-game Saturday Midday	No Build Post-game Saturday PM	Build Pre- game Weekday PM	Build Pre- game Saturday Midday	Build Post- game Saturday PM
With Yankee Game						
Overall Intersection LOS A/B	3	2	2	3	2	3
Overall Intersection LOS C	4	7	2	5	6	3
Overall Intersection LOS D	2	3	3	2	4	3
Overall Intersection LOS E/F	4	1	6	6	4	7
Number of Signalized Intersection Movements at LOS E or F (of approximately 65 total in No Build and 82 total in Build)	20	13	28	27	16	33
Note: The six unsignalized intersections analyzed (the east leg of East 138th Street/Grand Concourse, East 150th Street/Exterior Street, East 150th Street/River Avenue, Exterior Street/South "Pocket" Parking Lot, Exterior Street/North Truck Access, Exterior Street/South Truck Access) operate at LOS A, B or C, with the exception of East 150th Street/River Avenue, which would operate in the non-game weekday PM peak hour at LOS D, and in the pre-game weekday PM and pre-game and post-game Saturday peak hours at LOS E or F.						

- In the non-game weekday midday peak hour, the same number of signalized intersections (five) would operate at overall unacceptable LOS E or F in the Build condition when compared to the No Build condition. Four additional traffic movements, or 22 overall, would operate at LOS E or F conditions, and five intersections would be significantly impacted.
- In the non-game weekday PM peak hour, five additional signalized intersections, or a total of eight overall, would operate at overall LOS E or F in the Build condition when compared to the No Build condition. Twelve additional traffic movements, or 30 overall, would operate at LOS E or F conditions, and 10 intersections would be significantly impacted.
- In the non-game Saturday midday peak hour, one additional signalized intersection, or three overall, would operate at overall LOS E or F when compared to the No Build condition. Eight additional traffic movements, or 23 overall, would operate at LOS E or F conditions, and seven intersections would be significantly impacted.
- In the pre-game weekday PM peak hour, two additional signalized intersections, or a total of six overall, would operate at overall LOS E or F in the Build condition when compared to the No Build condition. Seven additional traffic movements, or 27 overall, would operate at LOS E or F conditions, and eight intersections would be significantly impacted.

- In the pre-game Saturday midday peak hour, three additional signalized intersections, or a total of four overall, would operate at overall LOS E or F in the Build condition when compared to the No Build condition. Three additional traffic movements, or 16 overall, would operate at LOS E or F conditions, and eight intersections would be significantly impacted.
- In the post-game Saturday PM peak hour, one additional signalized intersection, or a total of seven overall, would operate at overall LOS E or F in the Build condition when compared to the No Build condition. Four additional traffic movements, or 32 overall, would operate at LOS E or F conditions, and nine intersections would be significantly impacted.
- Five of the six unsignalized intersections analyzed would operate at acceptable levels of service during each of the traffic analysis hours. One intersection would operate at unacceptable LOS D, E, or F in four of the six traffic analysis hours.

Table 16-16 provides an overview of where and in what time period significant impacts would occur in the 2009 Build condition.

Another representation of 2009 Build levels of service can be seen in Figures 16-22 through 16-27, and mitigation alternatives for significantly-impacted locations are discussed in Chapter 23, "Mitigation."

2014

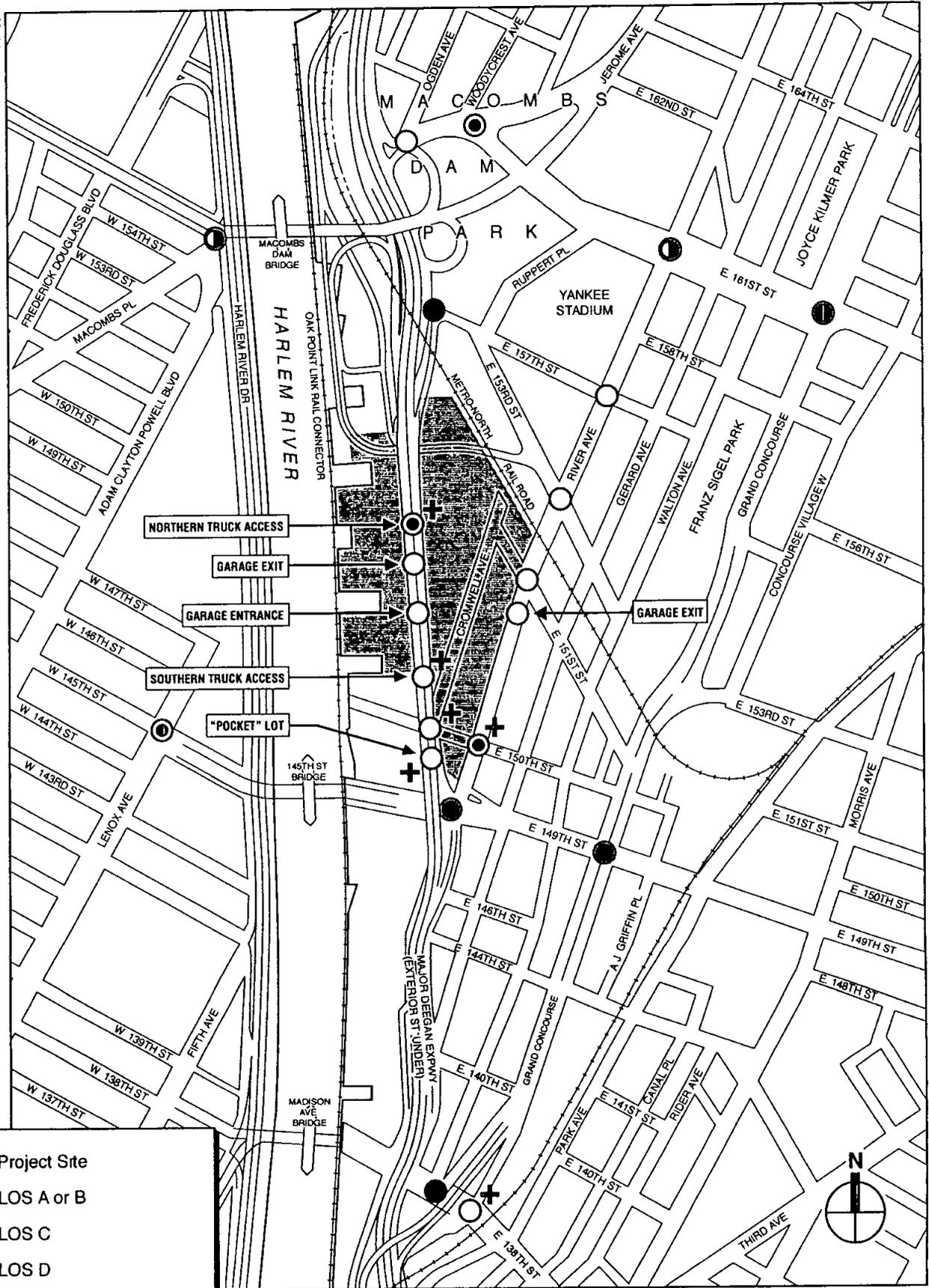
2014 Build year traffic volumes were developed by adding 2009 and 2014 project-generated volumes to 2014 No Build volumes. Year 2014 traffic levels of service were then evaluated and compared to levels of service without the Proposed Project in order to determine where significant impacts would occur. Table 16-17 provides a summary comparison of 2014 No Build and Build conditions; a detailed discussion of levels of service follows this table. It should be noted that three more signalized intersections and three more unsignalized intersections are evaluated in the Build condition since all access points to the project's parking and service facilities have been included (the number of traffic movements has also increased from 65 to 82 under the Build conditions).

- In the non-game weekday midday peak hour, the same number of signalized intersections (five) would operate at overall unacceptable LOS E or F in the Build condition when compared to the No Build condition. One additional traffic movement, or 25 overall, would operate at LOS E or F conditions, and five intersections would be significantly impacted.
- In the non-game weekday PM peak hour, five additional signalized intersections, or a total of nine overall, would operate at overall LOS E or F in the Build condition when compared to the No Build condition. Nine additional traffic movements, or 32 overall, would operate at LOS E or F conditions, and 10 intersections would be significantly impacted.
- In the non-game Saturday midday peak hour, one additional signalized intersection, or three overall, would operate at overall LOS E or F when compared to the No Build condition. Four additional traffic movements, or 24 overall, would operate at LOS E or F conditions, and seven intersections would be significantly impacted.

Table 16-16
2009 Build Condition Significant Impact Summary

Intersections	Without Yankee Game			With Yankee Game		
	Non-game Weekday Midday	Non-game Weekday PM	Non-game Saturday Midday	Pre-game Weekday PM	Pre-game Saturday Midday	Post-game Saturday PM
East 138th Street at the Grand Concourse						
East 138th Street at the Grand Concourse (unsignalized)						
East 149th Street at the Grand Concourse	•	•	•	•	•	•
East 149th Street at Exterior Street/River Avenue/northbound Major Deegan Expressway	•	•	•	•	•	•
145th Street Bridge approach at Lenox Avenue		•	•	•		•
East 150th Street at Exterior Street/Cromwell Avenue (free-flow conditions in 2009 Build)						
East 150th Street at River Avenue/Bronx Terminal Market Southern "Pocket" Parking Lot				•	•	•
East 151st Street at River Avenue		•			•	•
East 153rd Street at River Avenue		•		•	•	•
East 157th Street at River Avenue						
East 161st Street at River Avenue	•	•	•		•	•
East 161st Street at the Grand Concourse	•	•	•	•		•
East 161st Street at Jerome Avenue/Woodycrest Avenue		•	•	•		
East 157th Street at the northbound Major Deegan Expressway service road		•			•	
Jerome Avenue at Ogden Avenue						
West 155th Street at Macombs Place/Macombs Dam Bridge approach	•	•	•	•	•	•
Notes: • Means the intersection would be significantly impacted. The six new study intersections formed by the Proposed Project are not shown, they would be designed to operate at acceptable levels of service						

- In the pre-game weekday PM peak hour, one additional signalized intersection, or a total of five overall, would operate at overall LOS E or F in the Build condition when compared to the No Build condition. Six additional traffic movements, or 28 overall, would operate at LOS E or F conditions, and nine intersections would be significantly impacted.
- In the pre-game Saturday midday peak hour, five additional signalized intersections, or a total of six overall, would operate at overall LOS E or F in the Build condition when compared to the No Build condition. Three additional traffic movements, or 18 overall, would operate at LOS E or F conditions, and 10 intersections would be significantly impacted.
- In the post-game Saturday PM peak hour, one additional signalized intersection, or a total of seven overall, would operate at overall LOS E or F in the Build condition when compared to the No Build condition. Four additional traffic movements, or 34 overall, would operate at LOS E or F conditions, and nine intersections would be significantly impacted.



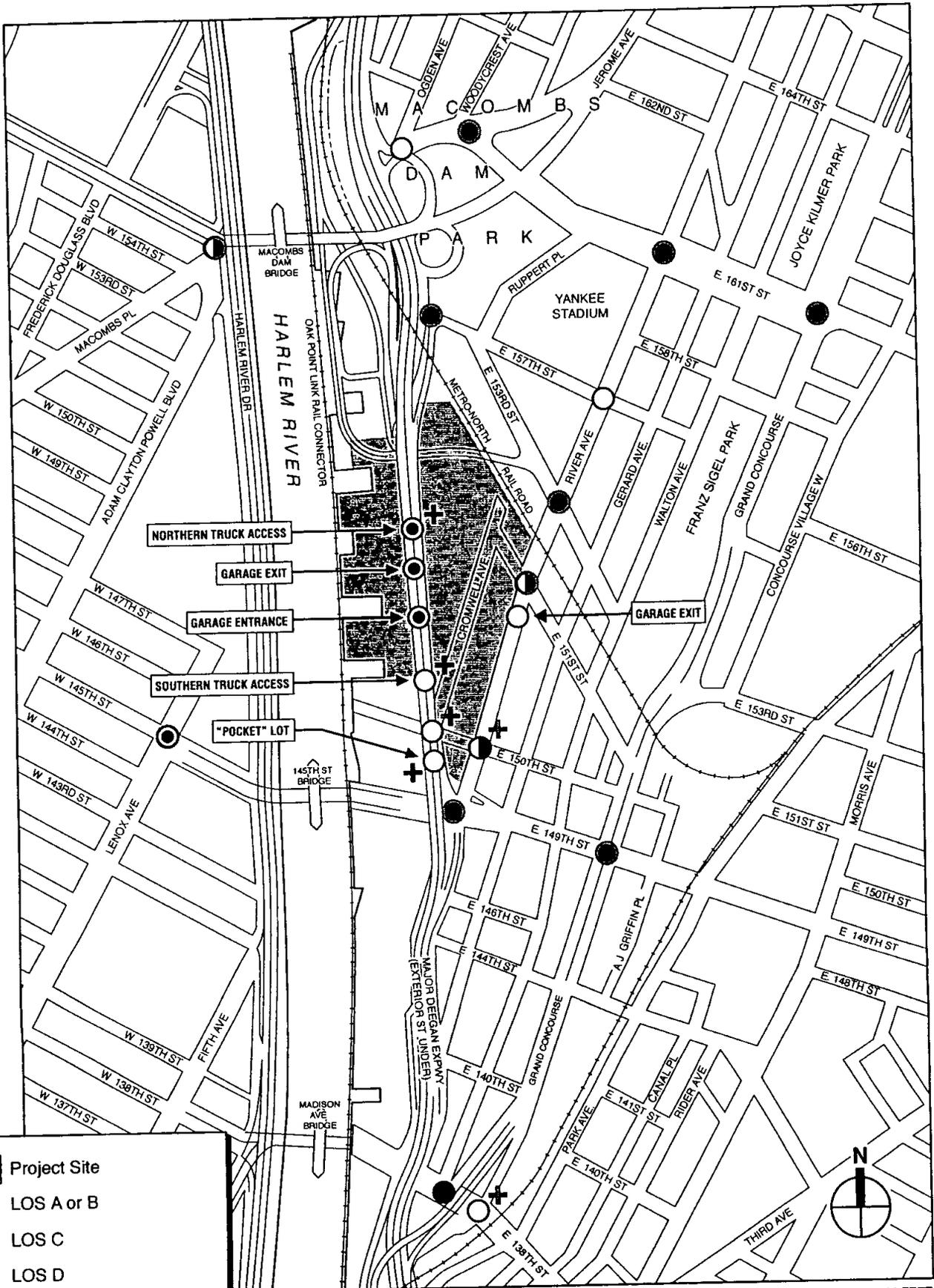
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



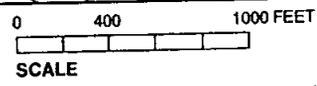
**Build 2009 Non-Game Weekday
Midday Levels of Service**

Figure 16-22

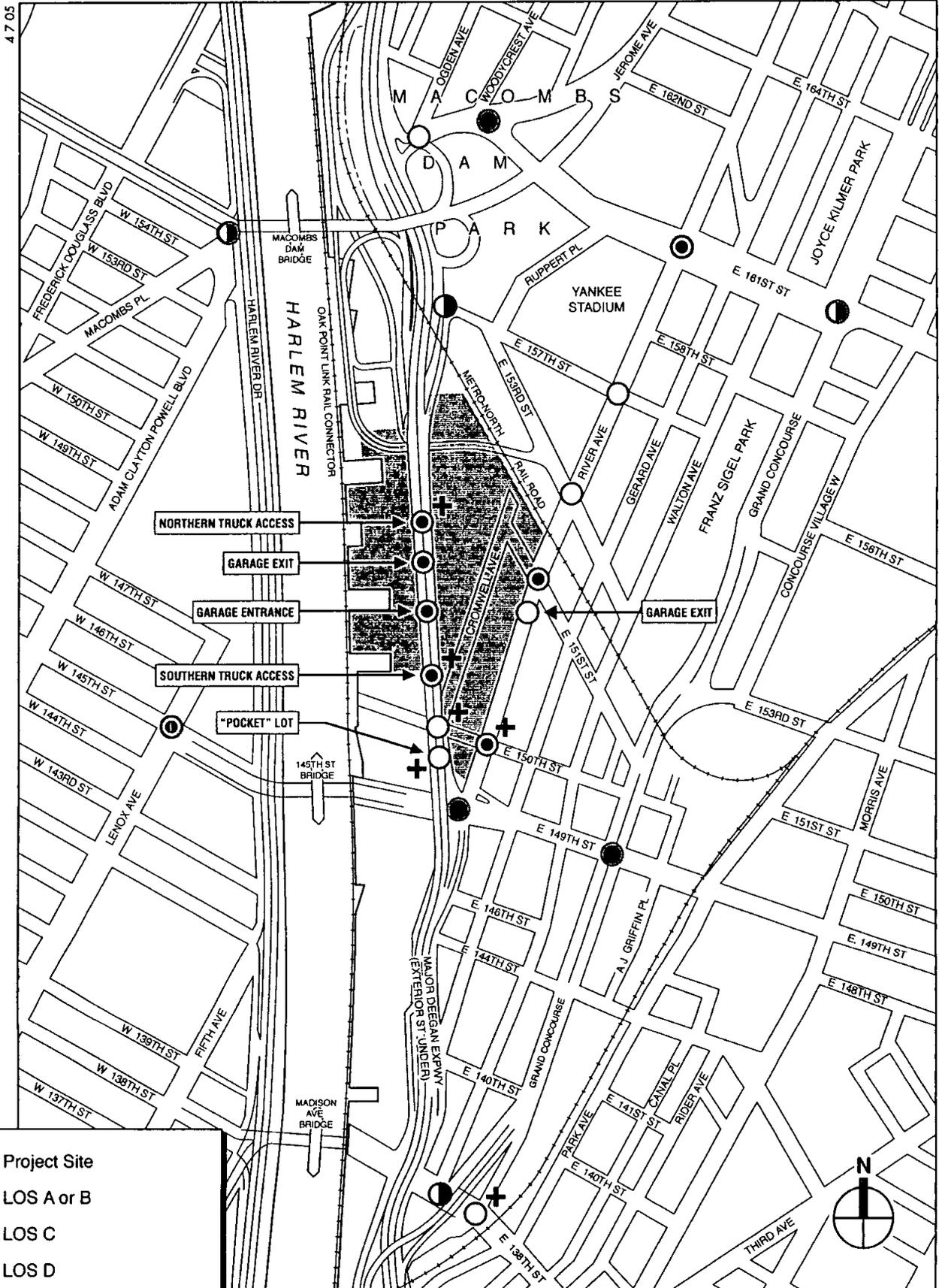
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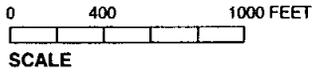
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



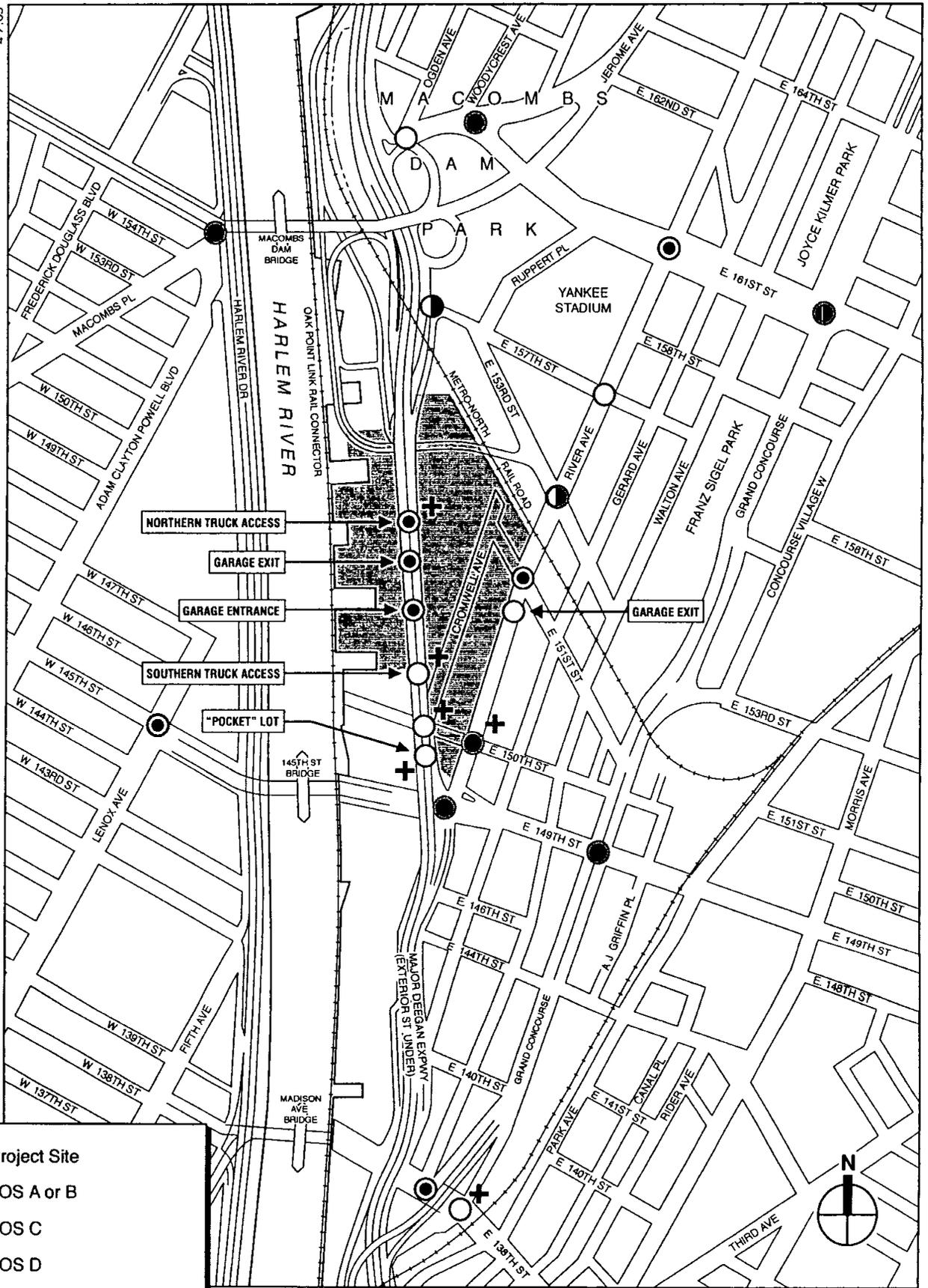
**Build 2009 Non-Game Weekday
PM Levels of Service**
Figure 16-23



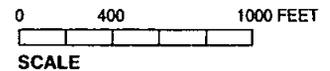
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



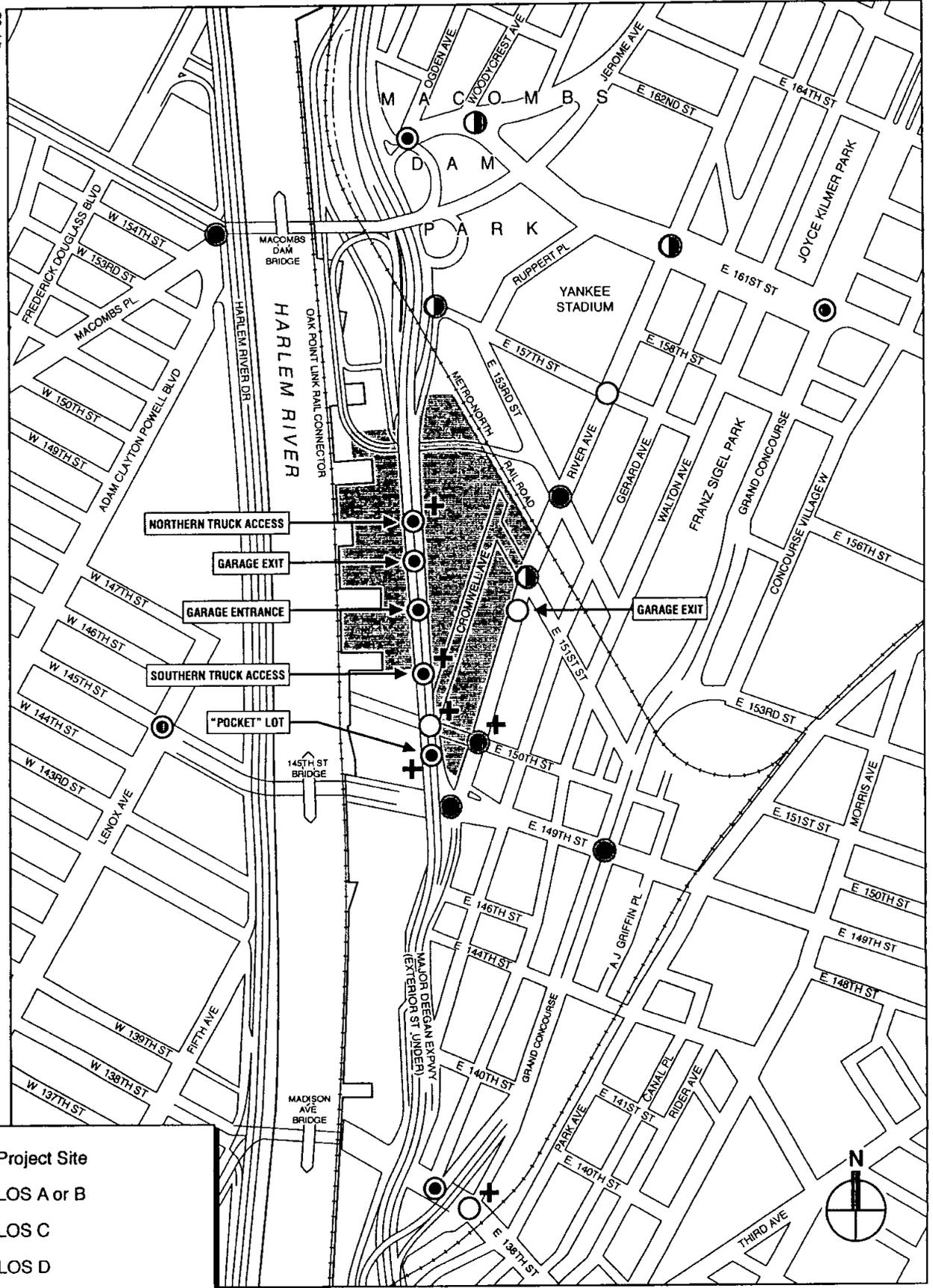
**Build 2009 Non-Game Saturday
Midday Levels of Service**



	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



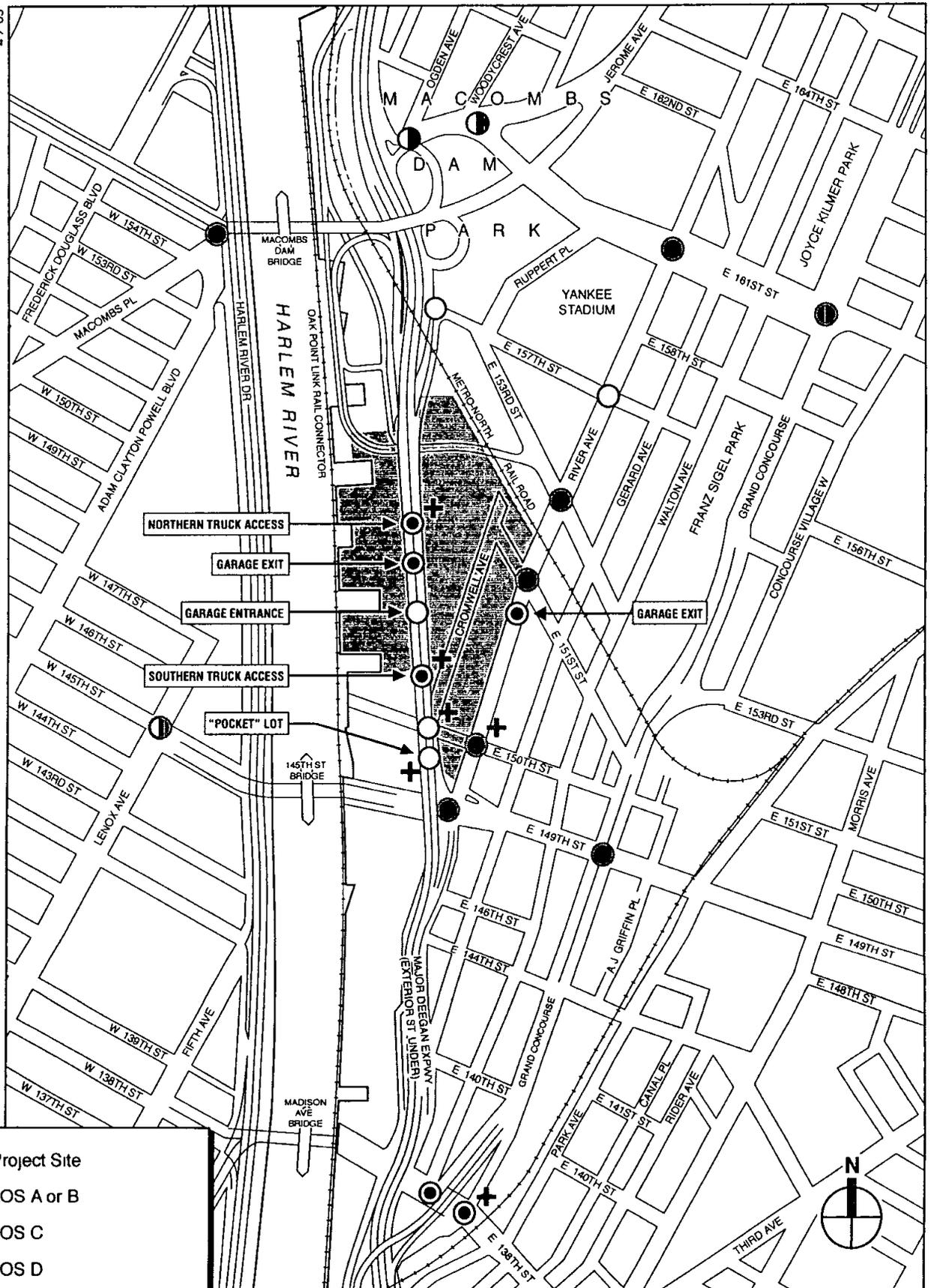
**Build 2009 Pre-Game Weekday
PM Levels of Service**
Figure 16-25



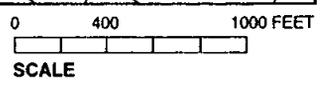
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



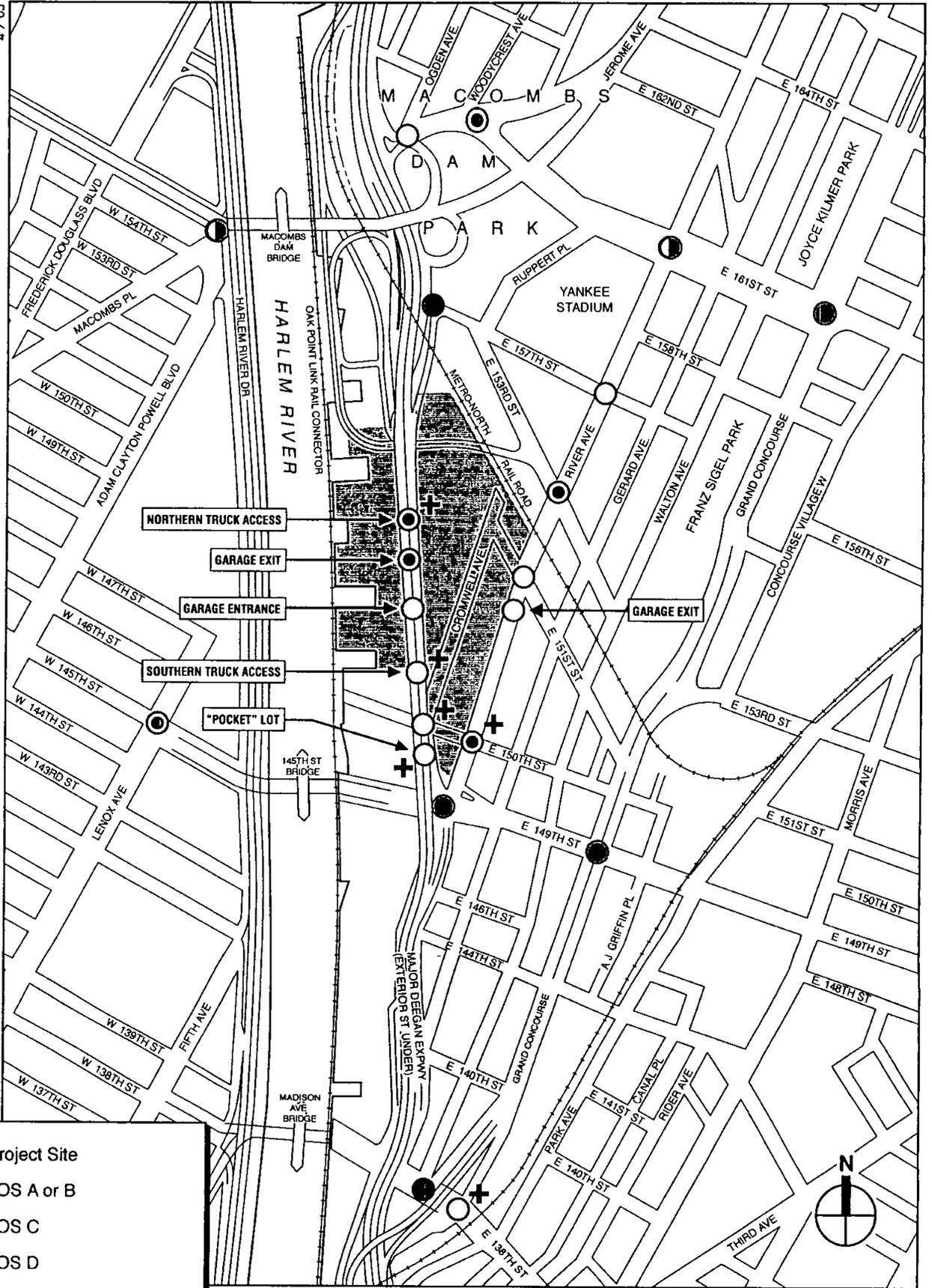
**Build 2009 Pre-Game Saturday
Midday Levels of Service**
Figure 16-26



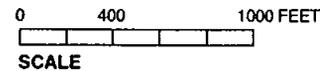
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



**Build 2009 Post-Game Saturday
PM Levels of Service**
Figure 16-27



	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



**Build 2014 Non-Game Weekday
Midday Levels of Service**
Figure 16-28

Table 16-17

2014 No Build versus Build Traffic Level of Service Summary

(13 Total in No Build and 16 Total in Build)	No Build			Build		
	No Build Non-game Weekday Midday	No Build Non-game Weekday PM	No Build Non-game Saturday Midday	Build Non-game Weekday Midday	Build Non-game Weekday PM	Build Non-game Saturday Midday
Without Yankee Game						
Overall Intersection LOS A/B	4	3	5	5	3	4
Overall Intersection LOS C	3	3	2	4	2	4
Overall Intersection LOS D	1	3	4	2	2	5
Overall Intersection LOS E/F	5	4	2	5	9	3
Number of Signalized Intersection Movements at LOS E or F (of approximately 65 total in No Build and 82 total in Build)	24	23	20	25	32	24
	No Build Pre-game Weekday PM	No Build Pre-game Saturday Midday	No Build Post-game Saturday PM	Build Pre-game Weekday PM	Build Pre-game Saturday Midday	Build Post-game Saturday PM
With Yankee Game						
Overall Intersection LOS A/B	3	2	2	3	2	3
Overall Intersection LOS C	4	6	2	5	5	3
Overall Intersection LOS D	2	4	3	3	3	3
Overall Intersection LOS E/F	4	1	6	5	6	7
Number of Signalized Intersection Movements at LOS E or F (of approximately 65 total in No Build and 82 total in Build)	22	15	30	28	18	34
Note: The six unsignalized intersections analyzed (the east leg of East 138th Street/Grand Concourse, East 150th Street/Exterior Street, East 150th Street/River Avenue, Exterior Street/South "Pocket" Parking Lot, Exterior Street/North Truck Access, Exterior Street/South Truck Access) operate at LOS A, B, or C, with the exception of East 150th Street/River Avenue, which would operate in the non-game weekday PM peak hour at LOS D, and in the pre-game weekday PM and pre-game and post-game Saturday peak hours at LOS E or F.						

- Five of the six unsignalized intersections analyzed would operate at acceptable levels of service during each of the traffic analysis hours. One intersection would operate at unacceptable LOS D, E, or F in four of the six traffic analysis hours.

Table 16-18 shows where and in what time period significant impacts would occur in the 2014 Build condition.

Another representation of 2014 Build levels of service can be seen in Figures 16-28 through 16-33, and mitigation alternatives for significantly-impacted locations are discussed in Chapter 23, "Mitigation."

Table 16-18

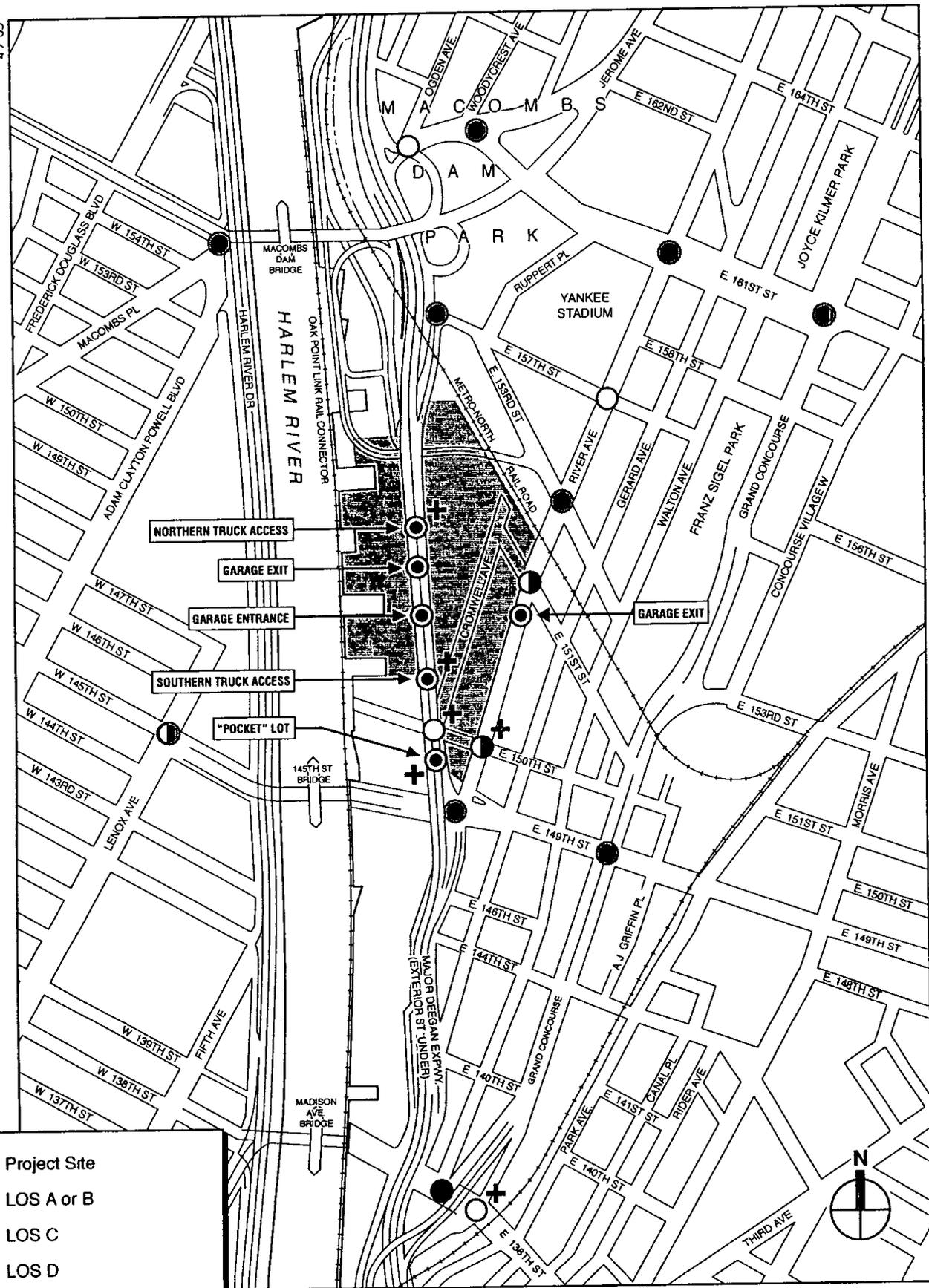
2014 Build Condition Significant Impact Summary

Intersections	Without Yankee Game			With Yankee Game		
	Non-game Weekday Midday	Non-game Weekday PM	Non-game Saturday Midday	Pre-game Weekday PM	Pre-game Saturday Midday	Post-game Saturday PM
East 138th Street at the Grand Concourse						
East 138th Street at the Grand Concourse (unsignalized)						
East 149th Street at the Grand Concourse	•	•	•	•	•	•
East 149th Street at Exterior Street/River Avenue/northbound Major Deegan Expressway	•	•	•	•	•	•
145th Street Bridge approach at Lenox Avenue		•	•	•		•
East 150th Street at Exterior Street/Cromwell Avenue (free-flow conditions in 2009 Build)						
East 150th Street at River Avenue/Bronx Terminal Market Southern "Pocket" Parking Lot				•	•	•
East 151st Street at River Avenue		•			•	•
East 153rd Street at River Avenue		•		•	•	•
East 157th Street at River Avenue						
East 161st Street at River Avenue	•	•	•		•	•
East 161st Street at the Grand Concourse	•	•	•	•	•	•
East 161st Street at Jerome Avenue/Woodycrest Avenue		•	•	•	•	
East 157th Street at the northbound Major Deegan Expressway service road		•	•	•	•	
Jerome Avenue at Ogden Avenue						
West 155th Street at Macombs Place/Macombs Dam Bridge approach	•	•	•	•	•	•

Notes: • Means the intersection would be significantly impacted.
 The six new study intersections formed by the proposed development are not shown; they would be designed to operate at acceptable levels of service.

PARKING

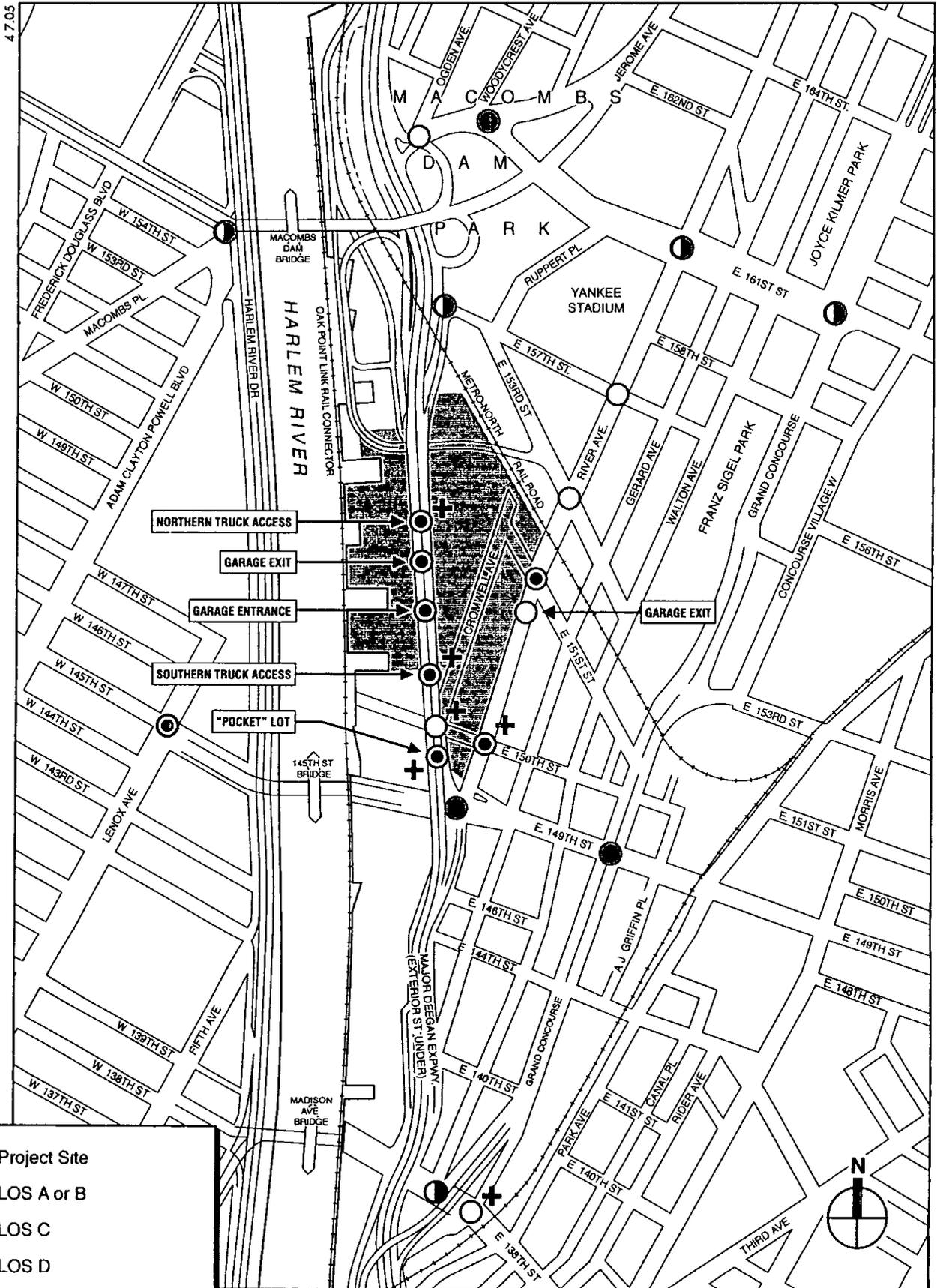
The proposed development of the project site would result in the addition of 2,991 parking spaces in 2009 with 225 more in 2014 (see Figure 16-34). It is anticipated that these parking spaces will have a payment structure with lower fees for one, two, and three hour parking than for parked cars staying more than three hours, so that fees for the longer parking duration would



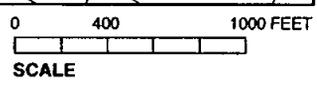
	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



**Build 2014 Non-Game Weekday
PM Levels of Service**
Figure 16-29

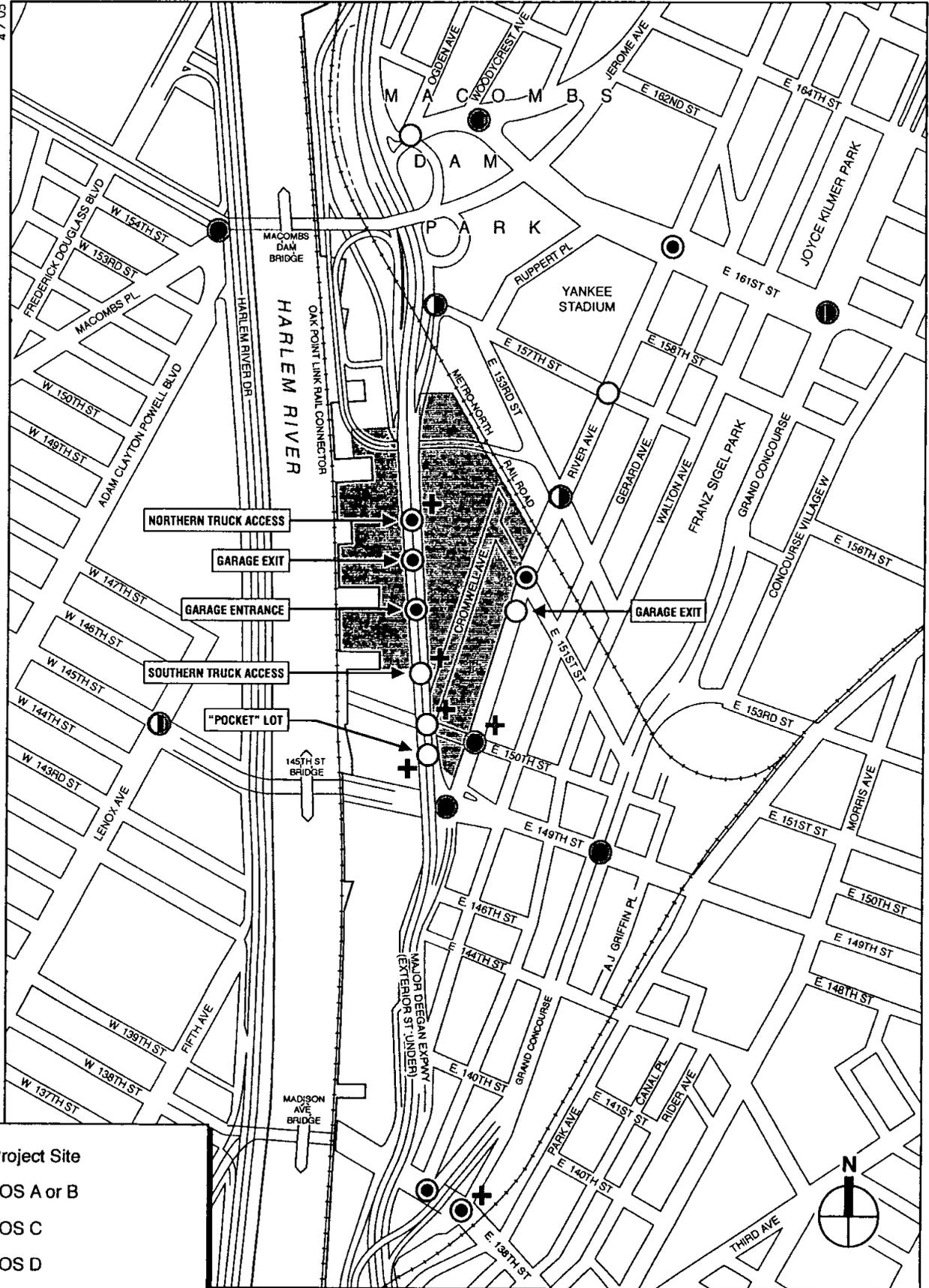


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact

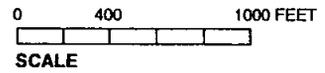


**Build 2014 Non-Game Saturday
Midday Levels of Service**

Figure 16-30

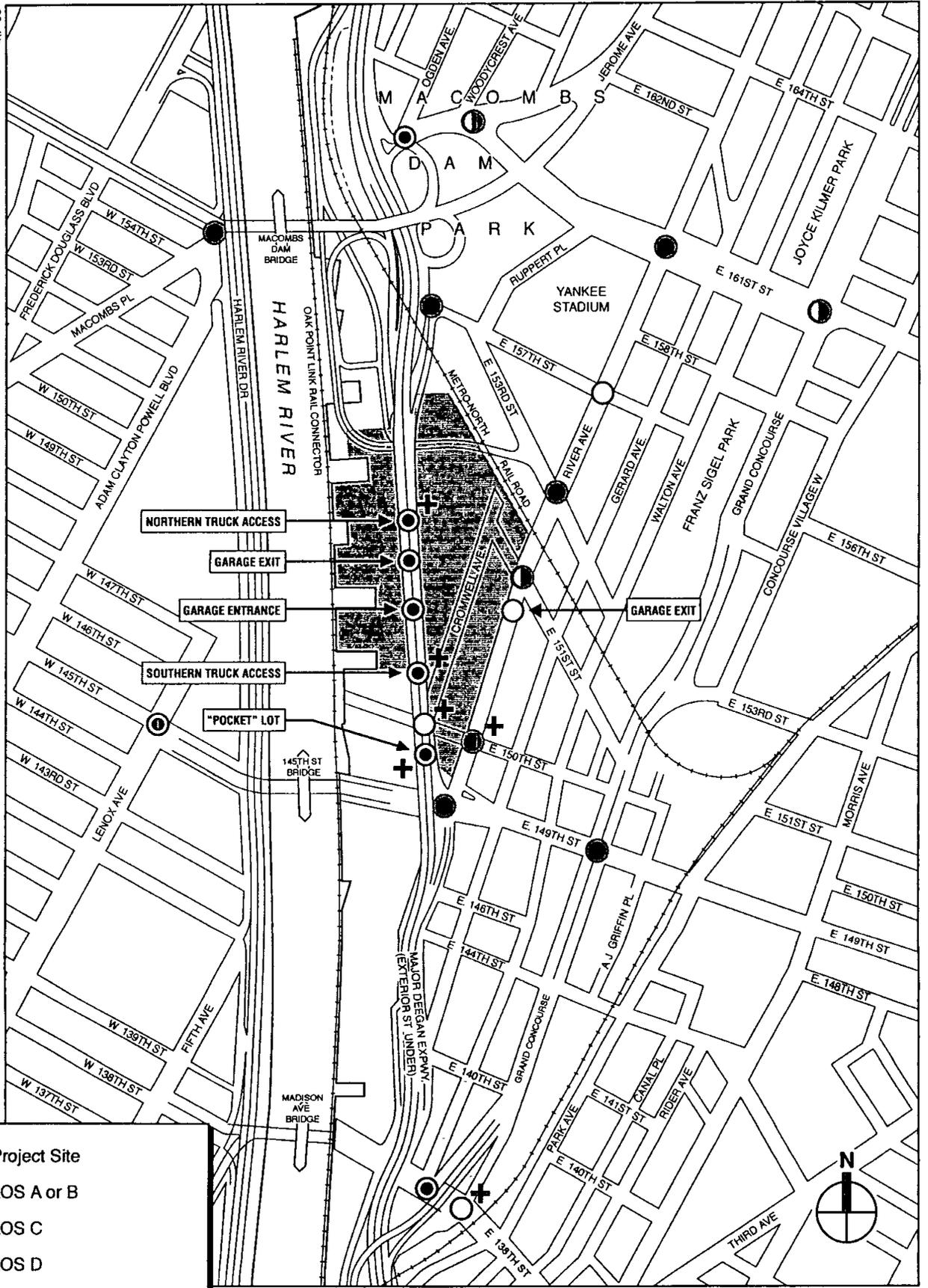


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact

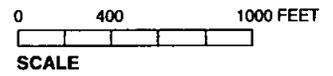


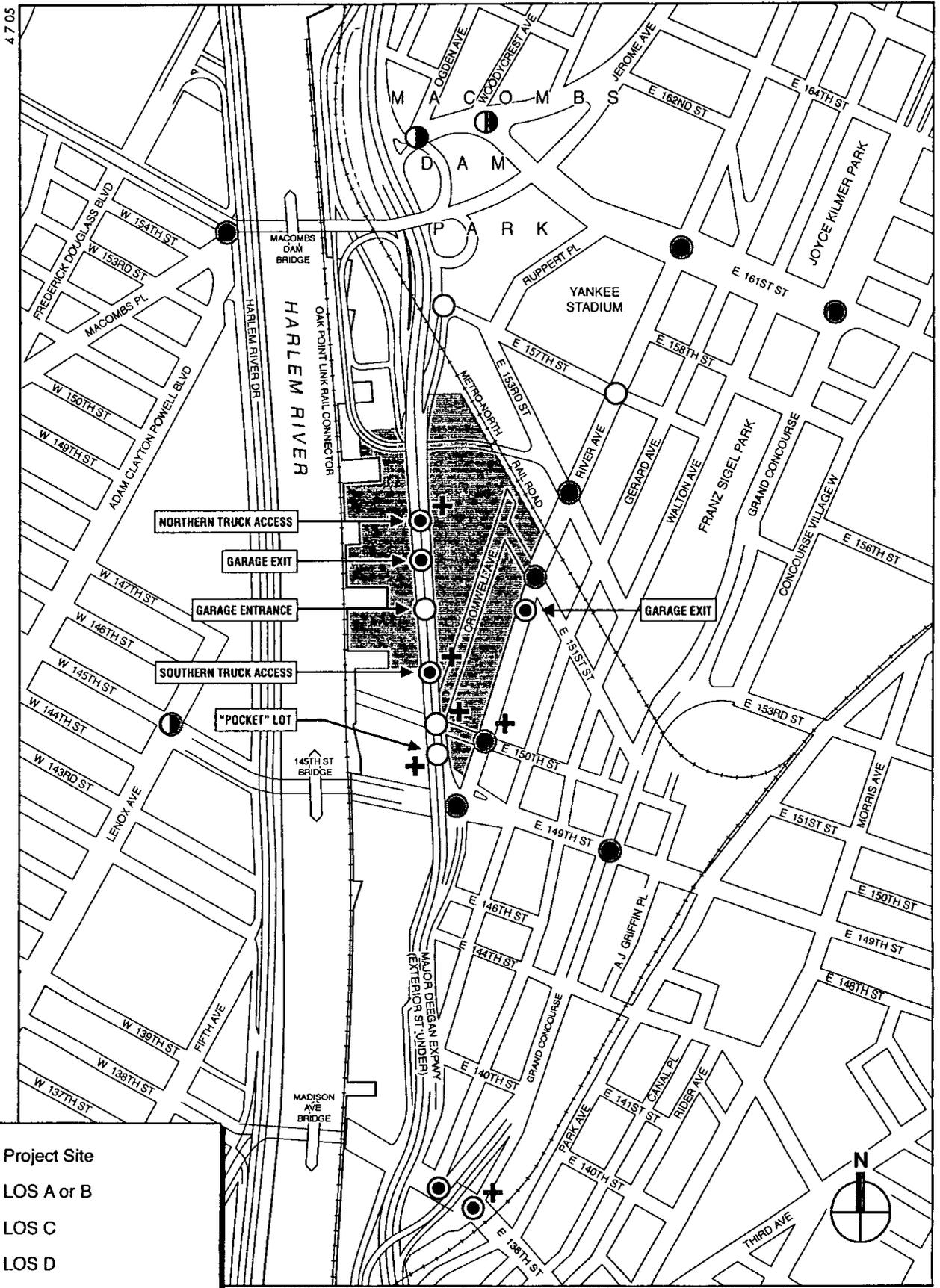
**Build 2014 Pre-Game Weekday
PM Levels of Service**

Figure 16-31

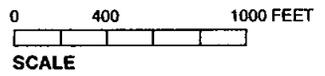


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



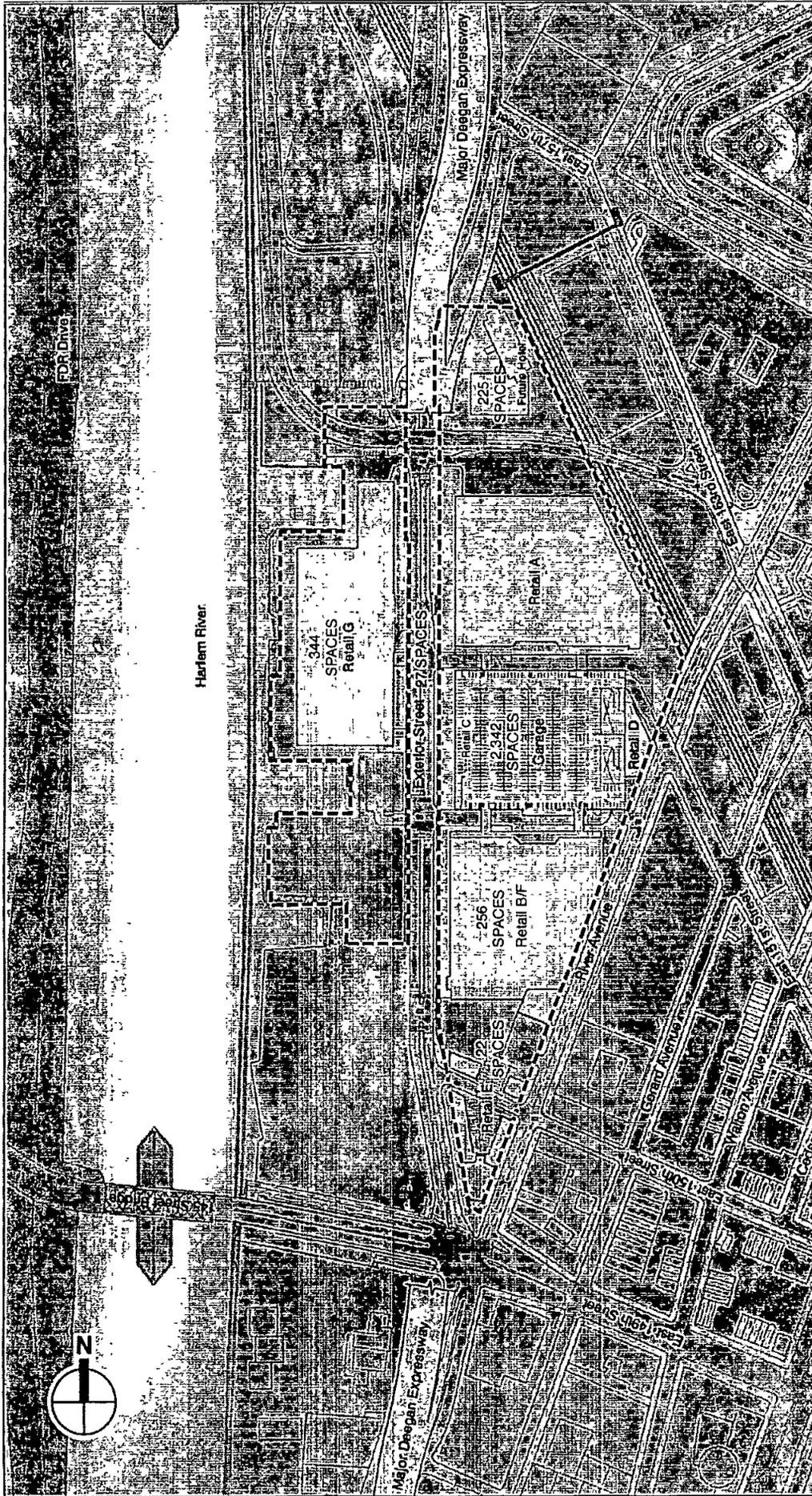


	Project Site
	LOS A or B
	LOS C
	LOS D
	LOS E or F
	Unsignalized Intersection
	Significant Impact



**Build 2014 Post-Game Saturday
PM Levels of Service**
Figure 16-33

6305



----- Project Site Boundary

0 200 500 FEET
SCALE

Figure 16-34
Proposed Parking

be commensurate with fees charged for Yankee Stadium parking lots accommodating fans on game days. A similar type of fee payment structure is used today at the Concourse Plaza Shopping Center on 161st Street.

The analyses have concluded that all site-generated traffic would be accommodated by the Proposed Project's parking facilities. However, eight off-street parking facilities and on-street parking along Exterior Street currently used by Yankee fans would be displaced when construction begins and become permanently displaced upon completion of the proposed development. According to information provided by the New York Yankees through BTM Development Partners, the displaced facilities include:

- Bronx House of Detention parking garage—shown as Lot 12 on Figure 16-9—is accessed via the west side of River Avenue between 150th and 151st Streets, and has a capacity of approximately 425 spaces;
- Northern Bronx Terminal Market parking lot—shown as Lot 13D on Figure 16-9—is accessed via the east side of Exterior Street just south of the northbound Major Deegan Expressway service road on-ramp, provides direct access to the Metro-North Rail Road overpass, and has a capacity of approximately 380 spaces;
- Middle Bronx Terminal Market parking lot—which is not shown on Yankee Stadium parking diagrams and was not open during weekday or Saturday off-street parking observations—is accessed via the east side of Exterior Street just south of the 153rd Street flyover ramp, which is overhead, and has a capacity of approximately 265 spaces;
- Southern Bronx Terminal Market parking lot—which is not shown on Yankee Stadium parking diagrams and was not open during weekday or Saturday off-street parking observations—is accessed via the east side of Exterior Street between 150th Street and the middle Bronx Terminal Market parking lot, and has a capacity of approximately 120 spaces;
- Northern Harlem River parking lot—which is not shown on Yankee Stadium parking diagrams and was not open during weekday or Saturday off-street parking observations—is accessed via the west side of Exterior Street just south of the northbound Major Deegan service road on-ramp, and has a capacity of approximately 235 spaces;
- Northern Harlem River overflow parking lot—which is not shown on Yankee Stadium parking diagrams and was not open during weekday or Saturday off-street parking observations—is located west of and accessed by going through the northern Harlem River parking lot, and has a capacity of approximately 135 spaces;
- Middle Harlem River parking lot—which is not shown on Yankee Stadium parking diagrams and was not open during weekday or Saturday off-street parking observations—is accessed via the west side of Exterior Street between the northern Harlem River lot and 150th Street, and has a capacity of approximately 235 spaces;
- Southern Harlem River parking lot—which is not shown on Yankee Stadium parking diagrams and was not open during weekday or Saturday off-street parking observations—is accessed via the west side of Exterior Street just north of 150th Street, and has a capacity of approximately 130 spaces; and
- Exterior Street on-street parking—which consists of unstriped, perpendicular parking along both sides of Exterior Street between 150th Street and the Major Deegan Expressway

northbound on-ramp—has a capacity of approximately 210 spaces (approximately 44 new parking spaces would be provided on Exterior Street by the Proposed Project).

Although approximately 1,925 striped parking spaces in off-street facilities and about 165 on-street spaces on Exterior Street would be displaced, observations from the 2004 season indicate that during typical Yankee games, no more than 800 to 1,200 of these parking spaces are occupied, and only the Bronx House of Detention and northern Bronx Terminal Market parking facilities are typically open.

Excess parking capacity at the project site would accommodate nearly all displaced Yankee-game parking. However, to be conservative, 20 percent of existing parking trips have been assumed to divert to available on-street parking between River Avenue and the Grand Concourse, and to an off-street parking facility at the Concourse Plaza Shopping Center in the weekday and Saturday pre-game and Saturday post-game peak hours, as stated in the Build analyses. The remaining 80 percent of Yankee-game parking has been assigned to the Proposed Project's parking facilities.

Using parking duration observations and a temporal distribution developed from surveys and traffic counts at Queens Place in Elmhurst, New York, a parking accumulation table was prepared for the Proposed Project on a weekday and Saturday with a Yankee game. Table 16-19 shows the project site's projected parking accumulation and Yankee-game parking by hour on a typical weekday and Saturday Yankee game day in 2009.

As shown in Table 16-19, on a typical weekday during the Yankee baseball season, the parking need would peak from approximately 5 to 8 PM with about 65 percent of the site's facilities occupied by shoppers and Yankee-game parking. On a typical Saturday during the Yankee season, the parking facilities would peak at approximately 98 percent occupancy by shoppers and Yankee-game parking between 2 and 3 PM. The parking facilities would be sized for the peak shopping holiday season demand of approximately 2,991 spaces in December, but parking would be available on Yankee game days, which would accommodate Yankee fans.

It should be noted that the accumulation by hour is computed from a calculation using trips into the parking facilities and their parking duration, which can last up to five hours for a small percentage of patrons. Because the parking accumulation estimate multiplies the inbound trips by a duration, the number of trips in subtracted by trips out will not equal the accumulation shown. If a simple "in minus out" accumulation was calculated, a significantly lower parking accumulation would result, which would not match projected conditions or observations conducted at Queens Place. The actual spaces occupied within the hour may fluctuate between the parking accumulation that is shown in the table and a portion of the inbound trips that have not yet parked. For instance, between 2–3 PM on a Saturday, the table shows the accumulation as 2,939 vehicles, but the total volume circulating within the garage searching for parking would include a portion of the inbound hourly trips, making the demand higher.

Table 16-20 shows the Bronx Terminal Market site's projected parking accumulation by hour on a typical weekday and Saturday in 2009 without a Yankee game.

Table 16-19
2009 Game Day Parking Accumulation for Destination Retail and Yankee Game

Time	Weekday			Saturday		
	In	Out	Accumulation	In	Out	Accumulation
12:00-1:00 AM	0	16	28	0	15	46
1:00-2:00 AM	0	10	18	0	10	36
2:00-3:00 AM	0	0	18	0	0	36
3:00-4:00 AM	0	0	18	0	0	36
4:00-5:00 AM	0	0	18	0	0	36
5:00-6:00 AM	0	0	18	0	0	36
6:00-7:00 AM	0	0	18	0	0	36
7:00-8:00 AM	0	0	18	0	0	36
8:00-9:00 AM	18	3	18	36	26	36
9:00-10:00 AM	38	25	48	240	104	260
10:00-11:00 AM	134	154	158	398	312	536
11:00 AM-12:00 PM	324	255	404	1,144	849	1,439
12:00-1:00 PM	475	440	676	1,331	810	2,281
1:00-2:00 PM	467	435	785	1,124	780	2,644
2:00-3:00 PM	480	435	828	1,170	980	2,939
3:00-4:00 PM	536	447	902	702	960	2,499
4:00-5:00 PM	939	818	1,344	624	1,174	1,721
5:00-6:00 PM	1,267	849	1,935	638	1,098	1,298
6:00-7:00 PM	843	670	1,941	863	882	1,372
7:00-8:00 PM	832	867	1,989	884	881	1,503
8:00-9:00 PM	284	436	1,559	437	663	1,101
9:00-10:00 PM	48	214	978	75	130	507
10:00-11:00 PM	10	573	203	13	32	185
11:00 PM-12:00 AM	0	72	44	0	15	62

Note: The total parking capacity would be approximately 2,991 spaces.

Table 16-20
2009 Non-Game Day Parking Accumulation for Destination Retail Only

Time	Weekday			Saturday		
	In	Out	Accumulation	In	Out	Accumulation
12:00-1:00 AM	0	10	28	0	15	45
1:00-2:00 AM	0	10	18	0	9	36
2:00-3:00 AM	0	0	18	0	0	36
3:00-4:00 AM	0	0	18	0	0	36
4:00-5:00 AM	0	0	18	0	0	36
5:00-6:00 AM	0	0	18	0	0	36
6:00-7:00 AM	0	0	18	0	0	36
7:00-8:00 AM	0	0	18	0	0	36
8:00-9:00 AM	18	3	18	36	26	36
9:00-10:00 AM	38	25	48	240	104	260
10:00-11:00 AM	134	144	157	312	312	449
11:00 AM-12:00 PM	324	255	404	654	675	863
12:00-1:00 PM	475	440	676	1,020	890	1,439
1:00-2:00 PM	467	435	785	1,016	930	1,697
2:00-3:00 PM	480	435	828	1,105	1,075	1,858
3:00-4:00 PM	528	447	894	725	790	1,553
4:00-5:00 PM	790	762	1,188	695	770	1,336
5:00-6:00 PM	1,014	943	1,563	620	750	1,192
6:00-7:00 PM	895	805	1,610	848	737	1,357
7:00-8:00 PM	506	652	1,203	831	838	1,443
8:00-9:00 PM	247	489	730	409	540	1,042
9:00-10:00 PM	48	106	330	75	130	482
10:00-11:00 PM	10	33	121	13	32	178
11:00 PM-12:00 AM	0	15	38	0	15	60

Note: The total parking capacity would be approximately 2,991 spaces.

Similar to the game day parking accumulation table, the non-game day accumulation by hour is computed from a calculation using trips into the parking facilities and their parking duration. As can be seen in the table, on a typical weekday without a Yankee game, the destination retail parking need would peak at approximately 5 to 6 PM with about 50 percent of the site's facilities occupied. On a typical Saturday without a Yankee game, the parking facilities would peak at just over 60 percent occupancy between 2 and 3 PM. As stated previously, these are computed parking accumulation estimates, and parking demand during any hour would be higher.

The proposed hotel, which would be completed by 2014, would include a 225-space parking lot. As shown in Table 16-21, parking accumulation calculations have indicated that the planned parking lot size would be sufficient to accommodate peak weekday and weekend parking hourly accumulations of up to 204 vehicles at 5-6 PM and 122 vehicles at 2-3 PM, respectively. To be conservative, the traffic and parking analyses have assumed that existing Yankee Stadium Lot 13D, where the proposed hotel would be located, would be displaced in 2009. Hence, no additional displacement of Yankee stadium parking would occur between 2009 and 2014.

**Table 16-21
2014 Non-Game Day Parking Accumulation for Hotel Only**

Time	Weekday			Saturday		
	In	Out	Accumulation	In	Out	Accumulation
12:00-1:00 AM	0	0	140	0	0	100
1:00-2:00 AM	0	0	140	0	0	100
2:00-3:00 AM	0	0	140	0	0	100
3:00-4:00 AM	0	0	140	0	0	100
4:00-5:00 AM	0	0	140	0	0	100
5:00-6:00 AM	0	0	140	0	0	100
6:00-7:00 AM	4	13	131	0	0	100
7:00-8:00 AM	16	30	118	0	0	100
8:00-9:00 AM	41	50	109	1	1	100
9:00-10:00 AM	38	38	109	10	4	106
10:00-11:00 AM	27	27	109	13	13	106
11:00 AM-12:00 PM	28	22	114	25	28	103
12:00-1:00 PM	40	27	128	43	37	109
1:00-2:00 PM	50	22	156	40	34	114
2:00-3:00 PM	41	28	170	51	43	122
3:00-4:00 PM	30	25	175	28	34	116
4:00-5:00 PM	45	30	190	29	32	113
5:00-6:00 PM	54	40	204	26	31	108
6:00-7:00 PM	36	52	188	35	30	112
7:00-8:00 PM	33	54	167	34	34	112
8:00-9:00 PM	20	41	147	17	26	103
9:00-10:00 PM	4	9	142	3	5	101
10:00-11:00 PM	1	3	140	1	1	100
11:00 PM-12:00 AM	0	0	140	0	0	100

Note: Assumes 140 overnight parking weekday and 100 overnight parking Saturday. The hotel parking capacity would be approximately 250 spaces. Game day parking accumulation would be the same as Non-game parking

E. THE MAJOR DEEGAN EXPRESSWAY

Because of its importance to regional travel and proximity to the project site, supplementary analyses were performed to assess the potential impacts of the Proposed Project on the Major Deegan Expressway. The key northbound and southbound Major Deegan Expressway segments in the vicinity of on-ramps and off-ramps (influence area) were analyzed, including the weaving

segment on the northbound Major Deegan Expressway between the 138th Street on-ramp and Exit 4/149th Street off-ramp, and the southbound Major Deegan Expressway diverges at Exit 5/Macombs Dam Bridge and Exit 6/Bronx Terminal Market. These segments would carry significant volumes of site-generated traffic during peak hours to the project site.

After initially analyzing these segments using Highway Capacity Software, it was determined that the results did not adequately mirror the existing conditions collected during the speed-and-delay studies on the Major Deegan Expressway. It is beyond the scope of the *2000 HCM* to analyze a highway section that is operating at over-saturated conditions. A simulation of the Major Deegan Expressway corridor using the CORSIM model was used instead, because it better replicates existing and projected future conditions in the study area. The ability to account for traffic conditions that influence the immediate study area is crucial when modeling traffic conditions before and after Yankee games, and during any peak hour when delays on the northbound Major Deegan Expressway result from traffic congestion entering the Cross Bronx Expressway interchange north of the site.

The CORSIM model reports the density in passenger cars per mile per lane (pc/mi/ln) and an average speed for the highway section being analyzed, but does not readily report the level of service. Levels of service are necessary to assess potential impacts of the Proposed Project on the highway. The *2000 HCM* defines level of service thresholds for merge and diverge areas using density in pc/mi/ln, and these thresholds have been applied to the results of the CORSIM model. The level of service thresholds for each density range is as follows:

- LOS A describes operations with very low densities (i.e., 0–10 pc/mi/ln) and high free flow speeds.
- LOS B describes operations with fairly low densities (i.e., 10.1–20 pc/mi/ln) and moderate to high free flow speeds.
- LOS C describes operations with moderate densities (i.e., 20.1–28 pc/mi/ln) and moderate free flow speeds.
- LOS D describes operations with moderate to high densities (i.e., 28.1–35 pc/mi/ln) and moderate to low free flow speeds. A mid-LOS D density of 30 pc/mi/ln is considered the high range of acceptable density. Densities greater than 30 pc/mi/ln are unacceptable but are commonplace on highways in New York City.
- LOS E describes operations with high densities (i.e., 35.1 and higher pc/mi/ln) and low free flow speeds. 45 pc/mi/ln is considered the maximum density for sustained flows at capacity on a typical freeway. Queuing can begin at densities higher than this.
- LOS F describes operations with very high densities and very low free flow speeds. Queuing is common within LOS F, which leads to failure conditions and congestion.

According to the *CEQR Technical Manual*, highway or ramp sections being analyzed—including mainline capacity sections, weaving areas, and ramp junctions—should not deteriorate more than one-half of a level of service between No Build and Build conditions when No Build level of service is in the D, E, or F range.

Additional discussions with NYCDCP staff have resulted in the following significant impact criteria, which will be used in the Build condition sections to assess potential impacts of the proposed development on the Major Deegan Expressway:

- For No Build LOS D to Build LOS D: Since the starting value of LOS E is 28 pc/mi/ln and the highest value of LOS E is 35 pc/mi/ln, one half of the difference between these two is 3.5 pc/mi/ln. Hence, an increase in the projected density of 4 pc/mi/ln or more as a result of traffic volume added between the No Build and Build conditions should be considered a significant impact.
- For No Build LOS D to Build LOS E: Since the value of mid-LOS D is 31.5 pc/mi/ln and the starting value of LOS E is 35 pc/mi/ln, one half of the difference between these two is 1.75 pc/mi/ln. Therefore, an increase in the projected density of 2 pc/mi/ln or more between No Build and Build should be considered a significant impact.
- For No Build LOS E to Build LOS F: The same criteria as No Build LOS D to Build LOS E applies.

The northbound Major Deegan Expressway would be significantly impacted in all peak hours in 2009 and 2014 within the weaving area between the 138th Street on-ramp and 149th Street off-ramp.

The southbound Major Deegan would be significantly impacted just before the Bronx Terminal Market off-ramp in the non-game Saturday midday peak hour, and all three Yankee game day peak hours. The highway would not be impacted in the area of the Macombs Dam Bridge off-ramp in any peak hour.

NORTHBOUND MAJOR DEEGAN EXPRESSWAY

EXISTING CONDITIONS

Traffic volumes on the Major Deegan mainline between the 138th Street on-ramp and 149th Street off-ramp range from 3,630 to 4,410 vph on non-game days and 1,780 to 4,640 vph on game days. Existing traffic volumes exiting the Major Deegan Expressway at the 149th Street off-ramp range from approximately 380 to 500 vph on non-game days and 280 to 660 vph on game days, and range from approximately 8 to 20 percent of the total northbound mainline volume.

Table 16-22 shows existing levels of service, speeds and densities for the northbound Major Deegan Expressway. As shown in Table 16-22, existing conditions just before the 149th Street off-ramp are only at acceptable LOS C conditions in the non-game weekday midday peak hour; all other peak periods operate at unacceptable LOS E or F conditions. Recurring delays related to the Cross Bronx Expressway interchange further north frequently cause queues to extend into this area of the northbound Major Deegan Expressway.

NO BUILD CONDITIONS

2009

Traffic volumes on the Major Deegan Expressway mainline between the 138th Street on-ramp and the 149th Street off-ramp would grow at a rate of approximately 2.5 percent between 2004 and 2009. The growth would increase traffic volumes by about 45 to 115 vph on the mainline and 10 to 20 vph on the 149th Street off-ramp.

Table 16-23 shows 2009 No Build levels of service, speeds and densities for the northbound Major Deegan Expressway.

Table 16-22

Existing Conditions on the Northbound Major Deegan Expressway

Approach	Existing Non-game Weekday MIDDAY			Existing Non-game Weekday PM			Existing Non-game Saturday MIDDAY		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
South of East 138th Street On-Ramp Merge	48.4	22.1	C	28.8	50.8	F	31.0	43.0	E
North of East 138th Street On-Ramp Merge	45.7	23.3	C	31.5	44.5	E	32.5	39.8	E
Between East 138th On-Ramp and 149th Off-Ramp	48.3	25.0	C	31.0	52.5	F	33.2	45.5	F
South of East 149th Street Off-Ramp Diverge	47.7	25.4	C	29.7	54.7	F	33.1	45.6	F
North of East 149th Street Off-Ramp Diverge	48.6	22.7	C	33.1	44.5	E	33.2	42.1	E
Approach	Existing Pre-game Weekday PM			Existing Pre-game Saturday MIDDAY			Existing Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
South of East 138th Street On-Ramp Merge	52.2	25.3	C	37.6	35.8	E	8.4	55.4	F
North of East 138th Street On-Ramp Merge	46.3	28.6	D	36.7	34.5	D	3.1	159.6	F
Between East 138th On-Ramp and 149th Off-Ramp	47.7	32.4	D	26.4	55.9	F	3.0	192.4	F
South of East 149th Street Off-Ramp Diverge	34.8	44.4	E	19.1	77.3	F	2.9	197.3	F
North of East 149th Street Off-Ramp Diverge	49.8	27.2	D	37.7	32.6	D	2.7	184.6	F

Table 16-23

2009 No Build Conditions on the Northbound Major Deegan Expressway

Approach	No Build Non-game Weekday Midday			No Build Non-game Weekday PM			No Build Non-game Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
South of East 138th Street On-Ramp Merge	48.3	22.7	C	22.1	68.0	F	31.0	43.5	E
North of East 138th Street On-Ramp Merge	45.7	23.3	C	30.2	47.6	F	32.5	40.7	E
Between East 138th On-Ramp and 149th Off-Ramp	48.3	25.7	C	31.0	52.5	F	33.0	46.7	F
South of East 149th Street Off-Ramp Diverge	47.7	25.9	C	29.7	54.7	F	33.1	46.6	F
North of East 149th Street Off-Ramp Diverge	48.6	23.3	C	33.1	46.3	F	33.2	43.0	E
Approach	No Build Pre-game Weekday PM			No Build Pre-game Saturday Midday			No Build Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
South of East 138th Street On-Ramp Merge	48.0	28.1	D	37.2	37.1	E	7.0	67.0	F
North of East 138th Street On-Ramp Merge	35.3	38.2	E	27.9	46.6	F	3.0	166.9	F
Between East 138th On-Ramp and 149th Off-Ramp	33.0	47.5	F	20.1	75.3	F	3.0	193.9	F
South of East 149th Street Off-Ramp Diverge	29.0	53.8	F	16.7	90.5	F	2.9	202.6	F
North of East 149th Street Off-Ramp Diverge	47.2	29.3	D	37.3	33.8	D	2.7	189.8	F

2009 No Build conditions just before the 149th Street off-ramp would operate at acceptable LOS C conditions in the non-game weekday midday peak hour; all other peak periods would operate at unacceptable LOS F conditions. Compared to the 2004 existing conditions, the levels of service just before the 149th Street off-ramp would be the same, except in the weekday pre-game peak hour, which would deteriorate from LOS E to F. Without design improvements or major new design initiatives at the Cross Bronx Expressway interchange, increased queues would result, causing higher densities and lower speeds in all peak hours except the non-game weekday midday peak hour.

2014

Traffic volumes on the Major Deegan Expressway mainline between the 138th Street on-ramp and 149th Street off-ramp would grow at a rate of approximately 5.1 percent between 2004 and 2014. The growth would increase traffic volumes by about 90 to 235 vph on the mainline and 15 to 45 vph on the 149th Street off-ramp.

Table 16-24 shows 2014 No Build levels of service, speeds and densities for the northbound Major Deegan Expressway.

Table 16-24
2014 No Build Conditions on the Northbound Major Deegan Expressway

Approach	No Build Non-game Weekday Midday			No Build Non-game Weekday PM			No Build Non-game Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
South of East 138th Street On-Ramp Merge	48.1	23.4	C	21.1	72.9	F	28.5	49.1	F
North of East 138th Street On-Ramp Merge	45.4	24.0	C	29.8	49.4	F	32.0	42.2	E
Between East 138th On-Ramp and 149th Off-Ramp	48.1	26.5	D	31.0	52.5	F	33.0	47.6	F
South of East 149th Street Off-Ramp Diverge	46.8	27.2	D	29.7	54.7	F	33.1	47.5	F
North of East 149th Street Off-Ramp Diverge	48.3	23.9	C	33.1	46.3	F	33.2	44.6	E
Approach	No Build Pre-game Weekday PM			No Build Pre-game Saturday Midday			No Build Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
South of East 138th Street On-Ramp Merge	24.1	56.0	F	17.6	79.4	F	5.0	96.5	F
North of East 138th Street On-Ramp Merge	21.6	62.7	F	16.2	80.8	F	3.0	171.4	F
Between East 138th On-Ramp and 149th Off-Ramp	23.1	68.0	F	15.6	97.4	F	3.0	199.9	F
South of East 149th Street Off-Ramp Diverge	22.1	70.9	F	15.4	98.3	F	2.9	203.3	F
North of East 149th Street Off-Ramp Diverge	44.3	31.0	D	36.8	34.1	D	2.7	190.4	F

2014 No Build conditions just before the 149th Street off-ramp would operate at acceptable LOS D conditions in the non-game weekday midday peak hour; all other peak periods would operate at unacceptable LOS F conditions. Compared to the 2004 existing conditions, the levels of service just before the 149th Street off-ramp would be the same, except in the weekday pre-game peak hour, which would deteriorate from LOS E to F. Without major design initiatives to improve the Cross Bronx Expressway interchange would result in higher densities and lower speeds in all peak hours except the non-game weekday midday peak hour.

BUILD CONDITIONS

2009

Traffic generated by the Proposed Project would generally enter the northbound Major Deegan Expressway further south of the study area, appear as through traffic at the 138th Street on-ramp, and exit at the 149th Street off-ramp.

Project-generated traffic volumes exiting the northbound Major Deegan Expressway destined to the project site in 2009 would range from approximately 120 to 280 vph during non-game peak hours and between 160 and 235 vph during Yankee game day peak hours. The additional project-generated exiting volumes at 149th Street represent approximately three to eight percent of the total northbound Major Deegan Expressway traffic.

Table 16-25 shows projected 2009 Build levels of service, speeds, and densities for the northbound Major Deegan Expressway.

During the non-game weekday midday peak hour, conditions just before the 149th Street off-ramp would deteriorate from LOS C in the 2009 No Build condition to LOS F in the 2009 Build condition; all other peak hours would continue to operate at LOS F conditions with additional queuing, slower speeds, and higher densities. In all peak hours, queuing would occur along the 149th Street off-ramp onto the right lane of the Major Deegan Expressway. Motorists would react to the right lane queues by slowing in the center lane, and left lane speeds would decrease somewhat as well. In the post-game Saturday peak hour conditions, speeds would continue to be below 5 mph within the segment, and queuing would occur in all three travel lanes.

NYSDOT is considering widening the 149th Street off-ramp to two lanes as part of the Major Deegan Expressway redecking project. This improvement would mitigate the 2009 Build levels of service for all peak hours to the 2009 No Build conditions just before the 149th Street off-ramp. Mitigation measures are discussed in Chapter 23, "Mitigation."

2014

Traffic generated by the Proposed Project would approach the study area similar to the 2009 Build conditions. Project-generated traffic volumes exiting the northbound Major Deegan Expressway destined to the site in 2014 would range from approximately 135 to 295 vph during non-game peak hours and between 175 and 250 vph during Yankee game day peak hours. The additional project-generated exiting volumes at 149th Street represent approximately three to nine percent of the total northbound Major Deegan Expressway traffic.

Table 16-26 shows 2014 Build levels of service, speeds, and densities for the northbound Major Deegan Expressway.

Table 16-25

2009 Build Conditions on the Northbound Major Deegan Expressway

Approach	Build Non-game Weekday Midday			Build Non-game Weekday PM			Build Non-game Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
South of East 138th Street On-Ramp Merge	20.8	54.3	F	8.3	145.2	F	8.2	145.3	F
North of East 138th Street On-Ramp Merge	14.9	72.4	F	8.8	133.9	F	8.1	137.5	F
Between East 138th On-Ramp and 149th Off-Ramp	15.7	80.0	F	11.2	122.0	F	9.9	131.1	F
South of East 149th Street Off-Ramp Diverge	14.6	85.5	F	12.1	113.3	F	10.7	120.8	F
North of East 149th Street Off-Ramp Diverge	44.4	25.5	C	32.9	36.7	E	32.6	35.9	E
Approach	Build Pre-game Weekday PM			Build Pre-game Saturday Midday			Build Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
South of East 138th Street On-Ramp Merge	7.7	149.5	F	9.5	132.1	F	4.1	126.8	F
North of East 138th Street On-Ramp Merge	8.0	141.4	F	9.4	125.9	F	2.8	186.7	F
Between East 138th On-Ramp and 149th Off-Ramp	10.4	127.6	F	11.8	117.9	F	3.0	200.7	F
South of East 149th Street Off-Ramp Diverge	12.4	106.8	F	13.5	102.8	F	3.0	201.0	F
North of East 149th Street Off-Ramp Diverge	41.3	27.6	D	36.7	30.6	D	2.7	179.2	F

During the non-game weekday midday peak hour, conditions just before the 149th Street off-ramp would deteriorate from LOS D in the 2014 No Build condition to LOS F in the 2014 Build condition; all other peak hours would continue to operate at LOS F conditions with additional queuing, slower speeds and higher densities. Similar to 2009 Build conditions, in all peak hours, queuing would occur along the 149th Street off-ramp onto the right lane of the Major Deegan Expressway. Motorists would react to the right lane queues by slowing in the center lane, and left lane speeds would decrease somewhat as well. In the post-game Saturday peak hour conditions, speeds would be below three mph within the segment, and queuing would occur in all three travel lanes.

The 149th Street off-ramp widening improvement would mitigate the 2014 Build levels of service for all peak hours to the 2014 No Build conditions just before the 149th Street off-ramp. Mitigation measures are discussed in Chapter 23, "Mitigation."

Table 16-26

2014 Build Conditions on the Northbound Major Deegan Expressway

Approach	Build Non-game Weekday Midday			Build Non-game Weekday PM			Build Non-game Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
South of East 138th Street On-Ramp Merge	13.7	83.5	F	8.1	148.3	F	8.8	139.8	F
North of East 138th Street On-Ramp Merge	11.5	94.9	F	8.9	132.0	F	8.4	131.0	F
Between East 138th On-Ramp and 149th Off-Ramp	12.0	105.2	F	11.3	121.3	F	9.8	132.1	F
South of East 149th Street Off-Ramp Diverge	12.4	101.3	F	12.1	113.8	F	10.7	120.0	F
North of East 149th Street Off-Ramp Diverge	43.2	26.4	D	32.9	37.2	E	32.7	35.7	E
Approach	Build Pre-game Weekday PM			Build Pre-game Saturday Midday			Build Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
South of East 138th Street On-Ramp Merge	7.6	154.0	F	7.9	150.4	F	3.9	139.2	F
North of East 138th Street On-Ramp Merge	7.8	144.7	F	8.0	140.1	F	2.8	184.8	F
Between East 138th On-Ramp and 149th Off-Ramp	9.9	131.8	F	10.1	129.8	F	3.0	199.0	F
South of East 149th Street Off-Ramp Diverge	11.8	110.6	F	12.7	103.3	F	3.1	199.0	F
North of East 149th Street Off-Ramp Diverge	41.0	27.3	D	36.4	29.2	D	2.7	180.5	F

SOUTHBOUND MAJOR DEEGAN EXPRESSWAY

EXISTING CONDITIONS

Traffic volumes on the southbound Major Deegan mainline between the Bronx Terminal Market/Exit 6 off-ramp and the Macombs Dam Bridge/Exit 5 off-ramp range from 3,070 to 3,870 vph on non-game days and 2,180 to 3,410 vph on game days. Existing traffic volumes exiting the Major Deegan Expressway at the Bronx Terminal Market off-ramp range from approximately 310 to 360 vph on non-game days and 145 to 1,250 vph on game days, and range from approximately 4 to 36 percent of the total southbound mainline volume. Exiting traffic

volumes at the Macombs Dam Bridge off-ramp range from approximately 710 to 720 vph on non-game days and 640 to 1,030 vph on game days, and range from approximately 18 to 30 percent of the total southbound mainline volume.

Table 16-27 shows existing levels of service, speeds, and densities for the southbound Major Deegan Expressway.

**Table 16-27
Existing Conditions on the Southbound Major Deegan Expressway**

Approach	Existing Non-game Weekday Midday			Existing Non-game Weekday PM			Existing Non-game Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
North of BTM Off-ramp Diverge	52.3	22.2	C	52.5	27.1	D	52.2	25.8	C
South of BTM Off-ramp Diverge	53.2	19.3	C	53.1	24.3	C	53.0	22.6	C
Between BTM Off-ramp and Macombs Dam Bridge Off-ramp	53.4	19.3	C	53.1	24.2	C	53.2	22.5	C
North of Macombs Dam Bridge Off-ramp Diverge	50.8	17.3	B	50.9	21.6	C	51.0	20.1	C
South of Macombs Dam Bridge Off-ramp Diverge	53.5	14.8	B	53.1	19.9	C	53.3	18.1	C
Approach	Existing Pre-game Weekday PM			Existing Pre-game Saturday Midday			Existing Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
North of BTM Off-ramp Diverge	32.6	47.7	F	31.7	36.6	E	19.0	61.5	F
South of BTM Off-ramp Diverge	48.7	23.6	C	43.2	16.9	B	19.1	57.8	F
Between BTM Off-ramp and Macombs Dam Bridge Off-ramp	51.9	22.1	C	43.8	16.6	B	18.9	58.2	F
North of Macombs Dam Bridge Off-ramp Diverge	49.3	19.9	C	41.9	14.9	B	17.8	52.9	F
South of Macombs Dam Bridge Off-ramp Diverge	53.2	15.2	B	44.2	11.6	B	19.4	45.0	E

As shown in Table 16-27, existing conditions just before the Bronx Terminal Market and Macombs Dam Bridge off-ramps are at acceptable LOS D conditions or better in the non-game peak hours. However, on Yankee game days, the southbound Major Deegan Expressway operates at LOS E or F conditions just before the Bronx Terminal Market off-ramp in all game-day peak hours, and just before the Macombs Dam Bridge off-ramp, LOS F conditions occur in the Saturday post-game peak hour (LOS B and C conditions occur in the pre-game peak hours).

Gateway Center at Bronx Terminal Market DEIS

Before and after Yankee games, large volumes of vehicles exit and enter the Major Deegan Expressway in this area to access parking areas, or are attempting to cross the Macombs Dam Bridge, which are the cause of poor levels of service on game days.

NO BUILD CONDITIONS

2009

Traffic volumes on the Major Deegan Expressway mainline between the Bronx Terminal Market and Macombs Dam Bridge off-ramps would grow at a rate of approximately 2.5 percent between 2004 and 2009. The growth would increase traffic volumes by about 55 to 95 vph on the mainline, 5 to 30 vph on the Bronx Terminal Market off-ramp, and 15 to 25 vph on the Macombs Dam Bridge off-ramp.

Table 16-28 shows 2009 No Build levels of service, speeds, and densities for the southbound Major Deegan.

Table 16-28

2009 No Build Conditions on the Southbound Major Deegan Expressway

Approach	No Build Non-game Weekday Midday			No Build Non-game Weekday PM			No Build Non-game Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
North of BTM Off-ramp Diverge	52.1	22.9	C	52.5	27.7	D	52.1	26.5	D
South of BTM Off-ramp Diverge	53.1	19.9	C	52.8	25.1	C	52.8	23.1	C
Between BTM Off-ramp and Macombs Dam Bridge Off-ramp	53.3	19.8	C	53.1	25.1	C	53.1	23.0	C
North of Macombs Dam Bridge Off-ramp Diverge	50.6	17.9	B	50.9	22.3	C	50.7	20.6	C
South of Macombs Dam Bridge Off-ramp Diverge	53.2	15.1	B	52.9	20.8	C	53.0	18.6	C
Approach	No Build Pre-game Weekday PM			No Build Pre-game Saturday Midday			No Build Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
North of BTM Off-ramp Diverge	26.4	60.3	F	31.7	36.6	E	18.9	63.5	F
South of BTM Off-ramp Diverge	47.3	24.8	C	43.2	17.1	B	19.0	60.0	F
Between BTM Off-ramp and Macombs Dam Bridge Off-ramp	51.2	22.9	C	43.8	16.9	B	18.8	60.7	F
North of Macombs Dam Bridge Off-ramp Diverge	48.9	20.5	C	41.9	15.1	B	17.8	54.7	F
South of Macombs Dam Bridge Off-ramp Diverge	52.9	15.5	B	44.2	11.9	B	19.2	47.1	F

2009 No Build conditions before the Bronx Terminal Market and Macombs Dam Bridge off-ramps are projected to operate at acceptable LOS D conditions or better in the non-game peak hours. Levels of service would be identical to the existing conditions with the exception of the southbound Major Deegan Expressway before the Bronx Terminal Market off-ramp in the non-game Saturday midday peak hour, which would deteriorate from LOS C to LOS D.

However, on Yankee game days, the southbound Major Deegan Expressway would continue to operate at LOS E or F conditions just before the Bronx Terminal Market off-ramp in all game-day peak hours. Just before the Macombs Dam Bridge off-ramp, LOS F conditions would occur in the Saturday post-game peak hour (LOS B and C conditions occur in the pre-game peak hours), similar to existing conditions. Small increases in traffic due to annual growth would cause increased density and lower speeds.

2014

Traffic volumes on the Major Deegan Expressway mainline between the Bronx Terminal Market and Macombs Dam Bridge off-ramps would grow at a rate of approximately 5.1 percent between 2004 and 2014. The growth would increase traffic volumes by about 110 to 200 vph on the mainline, 5 to 65 vph on the Bronx Terminal Market off-ramp, and 30 to 50 vph on the Macombs Dam Bridge off-ramp.

Table 16-29 shows 2014 No Build levels of service, speeds, and densities for the southbound Major Deegan Expressway.

2014 No Build conditions before the Bronx Terminal Market and Macombs Dam Bridge off-ramps would operate at acceptable LOS D conditions or better in the non-game peak hours. Levels of service would be identical to the existing conditions with the exception of the southbound Major Deegan Expressway before the Bronx Terminal Market off-ramp in the non-game Saturday midday peak hour, which would deteriorate from LOS C to LOS D, and before the Macombs Dam Bridge off-ramp in the non-game weekday midday peak hour, which would deteriorate from LOS B to LOS C.

However, on Yankee game days, the southbound Major Deegan Expressway would continue to operate at LOS E or F conditions just before the Bronx Terminal Market off-ramp in all game-day peak hours, and just before the Macombs Dam Bridge off-ramp, LOS F conditions occur in the Saturday post-game peak hour (LOS B and C conditions occur in the pre-game peak hours), similar to existing and 2009 No Build conditions. Small increases in traffic beyond 2009 No Build conditions would cause increased density and lower speeds.

BUILD CONDITIONS

2009

Traffic generated by the Proposed Project would enter the southbound Major Deegan further north of the study area, either in the North Bronx, Westchester, or at the Cross Bronx Expressway interchange and predominantly exit at the Bronx Terminal Market off-ramp and less frequently exit at the Macombs Dam Bridge exit.

Table 16-29

2014 No Build Conditions on the Southbound Major Deegan Expressway

Approach	No Build Non-game Weekday Midday			No Build Non-game Weekday PM			No Build Non-game Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
North of BTM Off-ramp Diverge	52.0	23.3	C	51.6	28.9	D	51.8	27.3	D
South of BTM Off-ramp Diverge	53.1	20.2	C	52.7	25.8	C	52.8	23.9	C
Between BTM Off-ramp and Macombs Dam Bndge Off-ramp	53.3	20.1	C	52.9	25.7	C	53.0	23.8	C
North of Macombs Dam Bridge Off-ramp Diverge	50.5	18.2	C	50.6	23.0	C	50.6	21.3	C
South of Macombs Dam Bridge Off-ramp Diverge	53.2	15.2	B	52.8	21.0	C	53.0	19.1	C
Approach	No Build Pre-game Weekday PM			No Build Pre-game Saturday Midday			No Build Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
North of BTM Off-ramp Diverge	21.8	74.2	F	30.3	40.2	E	18.9	65.1	F
South of BTM Off-ramp Diverge	46.3	25.8	C	43.2	17.4	B	19.0	61.8	F
Between BTM Off-ramp and Macombs Dam Bndge Off-ramp	50.1	23.8	C	43.8	17.2	B	18.7	62.5	F
North of Macombs Dam Bndge Off-ramp Diverge	48.3	21.2	C	41.9	15.3	B	17.7	56.5	F
South of Macombs Dam Bridge Off-ramp Diverge	52.3	16.1	B	44.2	12.2	B	19.2	48.6	F

At the Bronx Terminal Market off-ramp, project-generated traffic volumes destined to the project site in 2009 would range from approximately 170 to 370 vph during non-game peak hours and between 225 and 330 vph during Yankee game day peak hours. Between 15 and 30 vph on non-game days and 5 to 10 vph on game days would exit at the Macombs Dam Bridge exit. The additional project-generated exiting volumes on the southbound Major Deegan Expressway mainline exiting at both off-ramps represent approximately five to nine percent of the total southbound Major Deegan Expressway traffic.

Table 16-30 shows 2009 Build levels of service, speeds, and densities for the southbound Major Deegan Expressway.

Table 16-30

2009 Build Conditions on the Southbound Major Deegan Expressway

Approach	Build Non-game Weekday MIDDAY			Build Non-game Weekday PM			Build Non-game Saturday MIDDAY		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
North of BTM Off-ramp Diverge	51.4	24.4	C	49.4	32.0	D	47.7	31.8	D
South of BTM Off-ramp Diverge	52.8	19.9	C	51.4	25.9	C	51.3	24.2	C
Between BTM Off-ramp and Macombs Dam Bridge Off-ramp	53.3	19.7	C	52.5	25.4	C	52.8	23.5	C
North of Macombs Dam Bridge Off-ramp Diverge	50.7	17.7	B	50.5	22.6	C	50.6	21.0	C
South of Macombs Dam Bridge Off-ramp Diverge	53.6	15.0	B	52.7	20.7	C	53.2	18.3	C
Approach	Build Pre-game Weekday PM			Build Pre-game Saturday MIDDAY			Build Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
North of BTM Off-ramp Diverge	19.0	86.3	F	11.8	108.7	F	18.5	69.1	F
South of BTM Off-ramp Diverge	46.2	24.4	C	42.4	17.6	B	19.0	59.6	F
Between BTM Off-ramp and Macombs Dam Bridge Off-ramp	50.3	22.4	C	43.8	17.1	B	18.7	60.5	F
North of Macombs Dam Bridge Off-ramp Diverge	48.6	19.9	C	41.9	15.2	B	17.8	54.4	F
South of Macombs Dam Bridge Off-ramp Diverge	52.0	15.2	B	44.1	11.8	B	19.2	46.9	F

During the non-game weekday midday peak hour, conditions just before the Bronx Terminal Market off-ramp would deteriorate from acceptable LOS D in the 2009 No Build conditions to unacceptable LOS D in the 2009 Build conditions; the same area would be significantly impacted in all three Yankee game day peak hours as densities progressed further into LOS F conditions. Levels of service would not change just before the Macombs Dam Bridge off-ramp between 2009 No Build and Build conditions. Mitigation measures are discussed in Chapter 23, "Mitigation."

2014

Traffic generated by the Proposed Project would approach the site on the southbound Major Deegan in generally the same proportions in 2014 as it would in 2009. At the proposed off-ramp, project-generated traffic volumes destined to the Proposed Project in 2014 would range from approximately 175 to 360 vph during non-game peak hours and between 225 and 330 vph during Yankee game day peak hours. Between 20 and 40 vph on non-game days and 5 to 15 vph on game days would exit at the Macombs Dam Bridge exit. The additional project-generated exiting volumes on the southbound Major Deegan Expressway mainline exiting at both off-ramps would again represent approximately five to nine percent of the total southbound Major Deegan Expressway traffic.

Table 16-31 shows 2014 Build levels of service, speeds, and densities for the southbound Major Deegan Expressway.

Table 16-31
2014 Build Conditions on the Southbound Major Deegan Expressway

Approach	Build Non-game Weekday Midday			Build Non-game Weekday PM			Build Non-game Saturday Midday		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
Without Yankee Game									
North of BTM Off-ramp Diverge	51.4	25.1	C	49.0	33.1	D	45.8	34.1	D
South of BTM Off-ramp Diverge	52.7	20.7	C	51.1	26.8	D	51.1	24.9	C
Between BTM Off-ramp and Macombs Dam Bridge Off-ramp	53.1	20.5	C	52.5	26.1	D	52.9	24.1	C
North of Macombs Dam Bridge Off-ramp Diverge	50.3	18.5	C	50.3	23.3	C	50.7	21.4	C
South of Macombs Dam Bridge Off-ramp Diverge	53.2	15.6	B	52.7	21.0	C	53.0	19.2	C
Approach	Build Pre-game Weekday PM			Build Pre-game Saturday Midday			Build Post-game Saturday PM		
	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS
With Yankee Game									
North of BTM Off-ramp Diverge	16.3	96.4	F	11.5	108.4	F	18.1	72.6	F
South of BTM Off-ramp Diverge	46.5	23.3	C	42.2	17.0	B	19.0	61.2	F
Between BTM Off-ramp and Macombs Dam Bridge Off-ramp	50.9	21.2	C	43.5	16.5	B	18.8	61.9	F
North of Macombs Dam Bridge Off-ramp Diverge	49.0	18.8	C	41.9	14.7	B	17.7	56.3	F
South of Macombs Dam Bridge Off-ramp Diverge	52.8	14.4	B	44.1	11.5	B	19.2	47.1	F

During the non-game weekday midday peak hour, levels of service just before the Bronx Terminal Market off-ramp would deteriorate from acceptable LOS D in the 2014 No Build conditions to unacceptable LOS D in the 2014 Build conditions, similar to the 2009 Build conditions; the same area would be significantly impacted in all three Yankee game day peak hours as densities progressed further into LOS F conditions. As was the case in the 2009 Build conditions, levels of service would not change just before the Macombs Dam Bridge off-ramp between 2014 No Build and Build conditions. Mitigation measures are discussed in Chapter 23, "Mitigation." *

A. INTRODUCTION

As described in Chapter 1, "Project Description," the Gateway Center at Bronx Terminal Market is a proposal to redevelop a 26-acre portion of the current Bronx Terminal Market site with retail, parking, a hotel, and a public open space and waterfront esplanade. The Proposed Project would be completed in two phases: the first phase, consisting of primarily retail uses, would be finished by 2009, whereas the hotel component would be completed by 2014. Potential impacts resulting from the Proposed Project on transit and pedestrian facilities in the vicinity of the project area were evaluated. This chapter includes a description of the existing and future operating conditions of these facilities, including a quantified bus line haul analysis and identification of the potential for significant adverse impacts that require mitigation.

The project travel demand estimates, which include travel by vehicular, transit, and walk only modes, are presented in Chapter 16, "Traffic and Parking." The impact studies consider five peak analysis periods: non-game day weekday PM; non-game day Saturday midday; game day weekday PM; pre-game day Saturday midday; and post-game day Saturday midday. These periods were selected to reflect the hours in which the combination of project-generated trips and background volumes would have the greatest potential to result in significant adverse impacts. During other time periods, it is anticipated that either project-generated trips and/or background volumes would be lower.

The analysis results show that new trips associated with the Proposed Project would not result in significant subway or stairway impacts, but there could be one impacted local bus route—Bx19, which runs along 149th Street. The project would also impact the north crosswalk at the intersection of 149th Street and River Avenue.

B. METHODOLOGY

As described in Chapter 16, "Traffic and Parking," a travel demand projection was developed to identify the transportation elements likely to be affected by the Proposed Project. The trip generation factors and estimates for the Proposed Project described in detail in that chapter are presented here as Tables 17-1 through 17-3. Based on criteria specified in the 2001 *City Environmental Quality Review (CEQR) Technical Manual*, it was determined that a quantified assessment of transit station operations, bus line haul, and pedestrian circulation was required. As estimated trips generated by the Proposed Project would not exceed impact thresholds for subway line-haul, this element was not analyzed.

Table 17-1

Trip Generation Factors for Proposed Development Program

Non-Game Day		
	Destination Retail	Hotel
Peak Hour Person Trip Rate per 1,000 sf or Hotel Room		
Weekday Midday Peak Hour	3.1 per hour	9.3 per day
Weekday PM Peak Hour	6.8 per hour	9.3 per day
Saturday Midday Peak Hour	9.2 per hour	9.3 per day
Temporal Distribution (In / Out)		
Weekday Midday Peak Hour	51.8% / 48.2%	69.0% / 31.0%
Weekday PM Peak Hour	51.8% / 48.2%	57.6% / 42.4%
Saturday Midday Peak Hour	50.7% / 49.3%	54.5% / 45.5%
Modal Split (Weekday / Saturday)		
Auto	59.0% / 59.0%	70.0% / 70.0%
Taxi	3.0% / 5.0%	15.0% / 15.0%
Subway	15% / 13%	5.0% / 5.0%
Local Bus	18% / 18%	5.0% / 5.0%
Walking/Other	5.0% / 5.0%	5.0% / 5.0%
Average Vehicle Occupancy (Weekday / Saturday)		
Auto	2.05 / 2.49	1.60 / 2.30
Taxi	2.00 / 2.80	1.40 / 2.80
Trucks/Deliveries Trip Generation Rate		
Daily Rate	0.35 per 1,000 sf	0.10 per hotel room
Trucks/Deliveries Temporal Distribution		
Weekday Midday Peak Hour	8.6%	8.6%
Weekday PM Peak Hour	5.1%	5.1%
Saturday Midday Peak Hour	1.0%	0.0%
Game Day		
	Destination Retail	Hotel
Peak Hour Person Trip Rate per 1,000 sf or Hotel Room		
Weekday Pre-Game (PM) Peak Hour	6.1 per hour	9.3 per day
Saturday Pre-Game (Midday) Peak Hour	7.4 per hour	9.3 per day
Saturday Post-Game (PM) Peak Hour	5.5 per hour	9.3 per day
Temporal Distribution (In / Out)		
Weekday Pre-Game (PM) Peak Hour	51.8% / 48.2%	57.6% / 42.4%
Saturday Pre-Game (Midday) Peak Hour	53.6% / 46.4%	54.5% / 45.5%
Saturday Post-Game (PM) Peak Hour	47.5% / 52.5%	54.5% / 45.5%
Modal Split (Weekday / Saturday)		
Auto	59.0% / 59.0%	70.0% / 70.0%
Taxi	3.0% / 5.0%	15.0% / 15.0%
Subway	15% / 13%	5.0% / 5.0%
Local Bus	18% / 18%	5.0% / 5.0%
Walking/Other	5.0% / 5.0%	5.0% / 5.0%
Average Vehicle Occupancy (Weekday / Saturday)		
Auto	2.05 / 2.49	1.60 / 2.30
Taxi	2.00 / 2.80	1.40 / 2.80
Trucks/Deliveries Trip Generation Rate		
Daily Rate	0.35 per 1,000 sf	0.10 per hotel room
Trucks/Deliveries Temporal Distribution		
Weekday Pre-Game (PM) Peak Hour	5.1%	5.1%
Saturday Pre-Game (Midday) Peak Hour	1.0%	0.0%
Saturday Post-Game (PM) Peak Hour	1.0%	0.0%
Sources: (Destination Retail): Surveys conducted by AKRF, Inc. at Queens Place (May 2004); Results of PHA survey in Atlantic Center, Brooklyn (1997); Federal Highway Administration, "Curbside Pickup and Delivery and Arterial Traffic Impacts." Final Report. (February 1981); Wilber Smith Associates, <i>Motor Trucks in the Metropolis</i> , 1969, East River Plaza FEIS (August 1999), Atlantic Center EA (February 1999) (Hotel): Surveys conducted by AKRF, Inc. at the Renaissance Plaza Hotel, Downtown Brooklyn (March 1999); Wilber Smith Associates, <i>Motor Trucks in the Metropolis</i> , 1969; USDOT; Harlem Park Development EAS (May 7, 2004)		

**Table 17-2
Person Trips Generated by Proposed Destination Retail in 2009**

	Auto	%	Taxi	%	Subway	%	Local Bus	%	Walk/Other	%	Total
Non-Game Day											
Weekday Non-Game Midday Peak Hour											
Total Inbound	958	59	49	3	244	15	292	18	81	5	1,624
Total Outbound	892	59	45	3	227	15	272	18	76	5	1,511
Weekday Non-Game PM Peak Hour											
Total Inbound	2,078	59	106	3	528	15	634	18	176	5	3,522
Total Outbound	1,934	59	98	3	492	15	590	18	164	5	3,278
Saturday Non-Game Midday Peak Hour											
Total Inbound	2,752	59	233	5	606	13	840	18	233	5	4,664
Total Outbound	2,676	59	227	5	590	13	816	18	227	5	4,536
Game Day											
Weekday Pre-Game PM Peak Hour											
Total Inbound	1,870	59	95	3	476	15	571	18	159	5	3,170
Total Outbound	1,740	59	88	3	442	15	531	18	147	5	2,950
Saturday Pre-Game Midday Peak Hour											
Total Inbound	2,330	59	197	5	513	13	711	18	197	5	3,950
Total Outbound	2,017	59	171	5	445	13	615	18	171	5	3,419
Saturday Post-Game PM Peak Hour											
Total Inbound	1,555	59	132	5	343	13	474	18	132	5	2,635
Total Outbound	1,718	59	146	5	379	13	524	18	146	5	2,912

**Table 17-3
Person Trips Generated by the Proposed Hotel in 2014**

	Auto	%	Taxi	%	Subway	%	Local Bus	%	Walk/Other	%	Total
Non-Game Day											
Weekday Non-Game Midday Peak Hour											
Total Inbound	80	70	17	15	6	5	6	5	6	5	114
Total Outbound	36	70	8	15	3	5	3	5	3	5	51
Weekday Non-Game PM Peak Hour											
Total Inbound	86	70	18	15	6	5	6	5	6	5	123
Total Outbound	63	70	14	15	5	5	5	5	5	5	91
Saturday Non-Game Midday Peak Hour											
Total Inbound	118	70	25	15	8	5	8	5	8	5	169
Total Outbound	98	70	21	15	7	5	7	5	7	5	141
Game Day											
Weekday Pre-Game PM Peak Hour											
Total Inbound	86	70	18	15	6	5	6	5	6	5	123
Total Outbound	63	70	14	15	5	5	5	5	5	5	91
Saturday Pre-Game Midday Peak Hour											
Total Inbound	118	70	25	15	8	5	8	5	8	5	169
Total Outbound	98	70	21	15	7	5	7	5	7	5	141
Saturday Post-Game PM Peak Hour											
Total Inbound	118	70	25	15	8	5	8	5	8	5	169
Total Outbound	98	70	21	15	7	5	7	5	7	5	141

SUBWAY STATION ELEMENTS

Subway station operations were assessed according to methods and evaluation criteria presented in the *CEQR Technical Manual*.

To assess subway stairway and control area (turnstiles, service gates, etc.) operations, the user volume is compared to the element's design capacity, resulting in a volume-to-capacity (v/c) ratio. For stairways, the design capacity considers the effective width of a tread, which accounts for railings or other obstructions, the friction between upward and downward patrons, and the average area required for circulation. For control area elements, capacity is measured by the number and width of an element and the New York City Transit (NYCT) optimum capacity per element. For both stairways and control area elements, volumes and capacities are presented for 15-minute intervals.

The estimated v/c ratio is compared to NYCT criteria to determine a level-of-service (LOS) for the operation of an element. Table 17-4 shows the LOS and corresponding v/c ratios for stairways and control area elements.

**Table 17-4
Level of Service Criteria for Subway Station Elements**

LOS	V/C Ratio	
	Stairways	Turnstiles/Gates
A	0.00 to 0.45	0.00 to 0.20
B	0.45 to 0.70	0.20 to 0.40
C	0.70 to 1.00	0.40 to 0.60
D	1.00 to 1.33	0.60 to 0.80
E	1.33 to 1.67	0.80 to 1.00
F	1.67 or Greater	Greater than 1.00

Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual* (December 2001).

For stairways, at LOS A and B, there is sufficient area to allow pedestrians to freely select their walking speed and bypass slower pedestrians. When cross and reverse flow movement exists, only minor conflicts may occur. At LOS C, movement is fluid although somewhat restricted. While there is sufficient room for standing without personal contact, circulation through queuing areas may require adjustments to walking speed. At LOS D, walking speed is restricted and reduced. Reverse and cross flow movement is severely restricted because of congestion and the difficult passage of slower moving pedestrians. At LOS E and F, walking speed is restricted, there is insufficient area to bypass others and opposing movement is difficult. Often, forward progress is achievable only through shuffling, with queues forming.

The determination of significant impacts for station elements varies based on their type and use. For turnstiles, service gates, and escalators, an increase in volume that results in a v/c of greater than 1.00 may be considered significant, since a value of 1.00 represents the design capacity of the element. For stairways, impacts are considered significant based on the minimum amount of additional capacity, which would mitigate the location to its No Build operating conditions. For a location with a Build LOS D, a widening of six inches or more needed to restore future No Build conditions is considered significant; for a Build LOS E condition, a widening of three inches or more is considered significant; and for a Build LOS F condition, a widening of 1 inch or more is considered significant.

NEW YORK CITY TRANSIT BUS LINE HAUL OPERATIONS

Line haul capacities are evaluated when a proposed action is anticipated to generate a perceptible number of passengers on a particular bus route. Typically, when an abundance of bus routes are available within the transit study area, projected trips would be dispersed and not overburden one or more nearby bus routes. However, if a perceptible amount of bus trips are anticipated for an already heavily-utilized bus route, its peak load point and bus stops closest to the project site are evaluated to identify the potential for the buses to exceed their practical capacities. NYCT operates two types of buses—standard and articulated. During peak hours, standard buses operate with up to 70 passengers per bus, while articulated buses operate with up to 145 passengers per bus. According to NYCT guidelines, an increase in bus load levels to above the maximum capacity at any load point is defined as a significant impact. Although increasing bus service is also subjected to operational and fiscal constraints, its implementation is typically more feasible than increasing the service frequency of a subway route. Therefore, mitigation of bus line-haul capacity impacts, where appropriate, would be recommended for NYCT's approval.

Bus ridership data were provided by NYCT in December 2004. These data are part of NYCT's ongoing program to monitor weekday bus operations and are used to identify service adjustments. To estimate weekend volumes the total weekday and Saturday ridership were compared for each of the routes serving the project site. Then, weekend peak period loading conditions were estimated based on the comparative difference to weekday ridership. It was observed that a very small number of attendees to Yankee Stadium arrive by local bus. Therefore, the ridership for Game Day and Non-game Day conditions is considered to be the same.

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalks, crosswalks, and corner reservoir capacities in relation to the demand imposed on them was assessed using the methodologies presented in the *Highway Capacity Manual (HCM) Special 2000*. Sidewalks were analyzed in terms of pedestrian flow. The calculation of the average pedestrians per foot per minute (PFM) of effective walkway width is the basis for LOS analysis. However, due to the tendency of pedestrians to move in congregated groups, a platoon factor (+4 PFM) is applied in the calculation of pedestrian flow to more accurately estimate the dynamics of walking. This procedure generally results in a LOS one level poorer than the average flow.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of traffic signals. Street corners must be able to provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the street or moving around in the corner). The HCM methodologies apply a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated space used by circulating pedestrians.

The total "time-space" available for these activities is the net area of the corner (in square feet) multiplied by the cycle length, which is expressed in square feet per minute. The analysis then determines the total circulation time for all pedestrian movements at the corner (expressed as pedestrians per minute). The ratio of net time-space divided by pedestrian circulation time provides the LOS measurement of square feet per pedestrian (SFP).

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the width of the street) and the permitted crossing time. This measure is expressed in square feet per minute. The average time required for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of time-space available in the crosswalk to the average crossing time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for vehicular turning movements that traverse the crosswalk. Additionally, in the first seconds of the “walk” cycle, the initial movements of pedestrians queued to cross the street create a surge effect. To account for this effect, the LOS analysis incorporates a “surge” factor to estimate worst-case conditions.

Table 17-5 shows the LOS standards for sidewalks, corner reservoirs, and crosswalks. The description of these LOS is similar to those described above for subway station elements.

**Table 17-5
Level of Service Criteria for Pedestrian Elements**

LOS	Sidewalks	Corner Reservoirs and Crosswalks
A	5 PFM or less	60 SFP or More
B	5 to 7 PFM	40 to 60 SFP
C	7 to 10 PFM	24 to 40 SFP
D	10 to 15 PFM	15 to 24 SFP
E	15 to 25 PFM	6 to 15 SFP
F	More than 25 PFM	Less than 6 SFP

Notes:
 PFM = pedestrians per foot per minute.
 SFP = square feet per pedestrian.
Source: *Highway Capacity Manual 2000.*

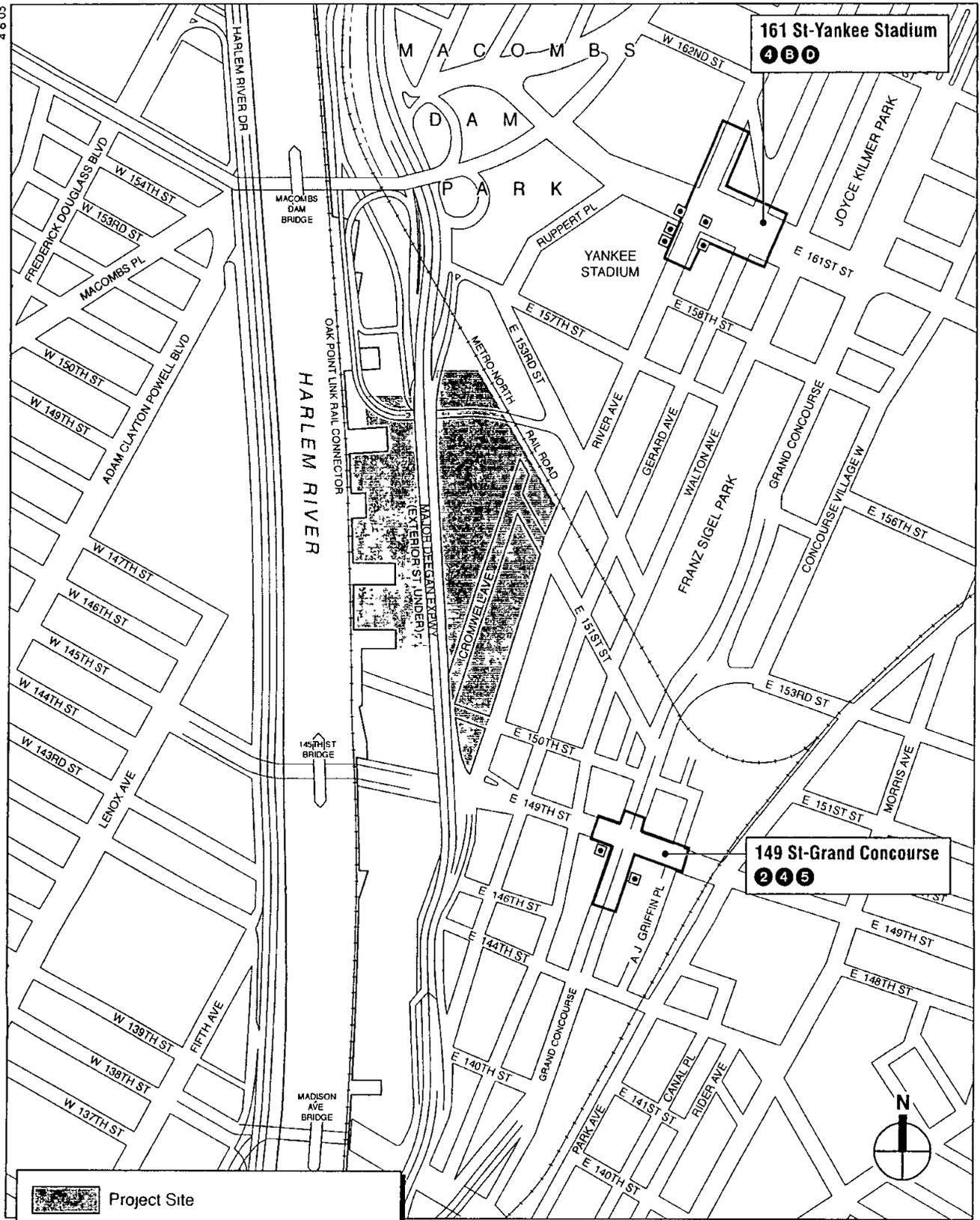
The *CEQR Technical Manual* specifies that a LOS D condition or better is considered reasonable for sidewalks, corner reservoirs, and crosswalks within the Manhattan Central Business District (CBD). For crosswalks and corner reservoirs, a LOS D condition requires a minimum of 15 SFP, while for sidewalks, a LOS D condition requires a maximum of 15 PFM.

For areas akin to the study area, project-related sidewalk impacts are considered significant and require examination of mitigation if there is an increase of 2 PFM over No Build conditions that are characterized by flow rates greater than 13 PFM (mid-LOS D). For corners and crosswalks, a decrease of 1 SFP under the Build condition when the No Build condition has an average occupancy of less than 20 SFP (LOS D) is considered significant. However, if there is less than a 200-person increase at a location within the peak hour, any impact is not considered significant since such increases would not typically be perceivable.

C. EXISTING CONDITIONS

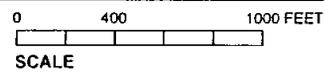
Existing transit and pedestrian levels are based on field surveys conducted on April 28, May 1, May 5 and May 8, 2004. Bus ridership data collected for specific routes and peak load points were obtained from NYCT in December 2004.

Due to the Proposed Project’s retail composition and proximity to Yankee Stadium, five peak periods have been analyzed. Three of these peak periods are game day peaks, which occur



 Project Site

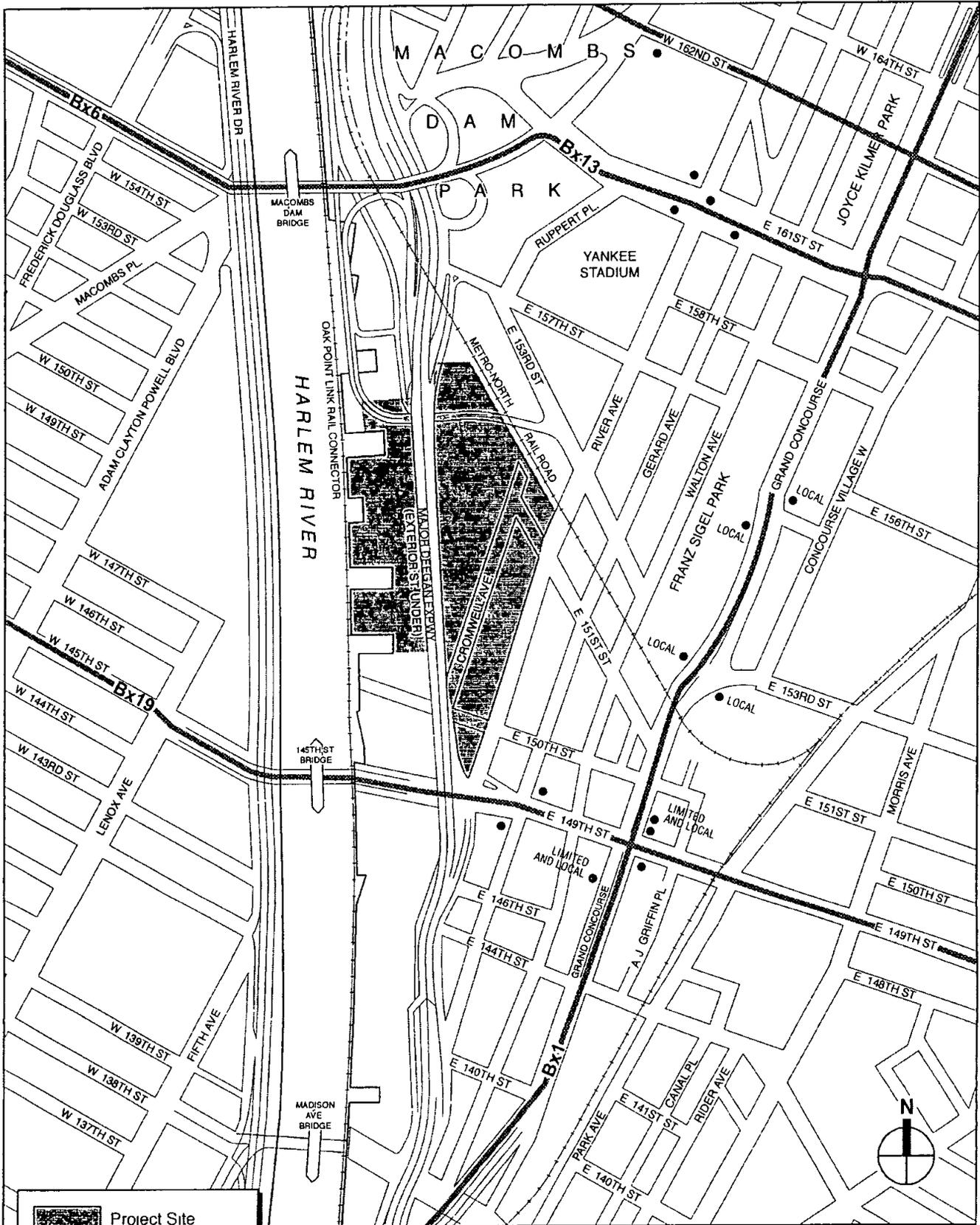
 Subway Analysis Location
(Stations include additional stairways not assessed in the EIS)



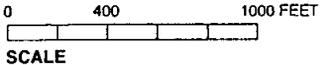
Subway Station Analysis Locations

Figure 17-1

4.6.05



	Project Site
	Nearby Bus Stop
	MTA Bus Route



MTA Bus Stop Location and Bus Routes

Figure 17-2

before or after baseball games: game day weekday PM peak, which occurs pre-game and during the traditional PM peak hour; game day Saturday midday peak, which occurs before a weekend game; and a game day Saturday PM peak, which occurs after a weekend game. The non-game day peak periods include the weekday PM peak and a Saturday midday peak period.

TRANSIT STUDY AREA

The project site is located in an area served by several subway and bus routes. A description of each of these transit modes, followed by a detailed analysis of key subway station elements and local bus routes that would be affected by trips associated with the Proposed Project, is provided below.

SUBWAY SERVICE

Two NYCT subway stations are in close proximity to the project site, as shown in Figure 17-1. The 2/4/5 149th Street-Grand Concourse Station and the 4/B/D 161st Street-Yankee Stadium Station are located to the southeast and northeast of the project site, respectively.

2 Subway Line.

- The 2 train operates express service primarily along Broadway and Seventh Avenue in Manhattan. Its full route is between Wakefield/241st Street in the Bronx and Brooklyn College in Brooklyn.

4/5 Subway Lines.

- The 4/5 trains operate express service primarily along Lexington and Park Avenues in Manhattan. The 4 train's full route is between Woodlawn in the Bronx and Crown Heights in Brooklyn. The 5 train operates between Eastchester Avenue in the Bronx and Brooklyn College in Brooklyn.

B/D Subway Lines.

- The B and D trains primarily operate along Sixth Avenue in Manhattan. The B train provides weekday service between Bedford Park Boulevard in the Bronx and Brighton Beach in Brooklyn. The D train provides service between 205th Street in the Bronx and Stillwell Avenue in Brooklyn.

BUS SERVICE

The quantitative analysis of buses considers the publicly-operated local bus routes serving the study area, since these would be most affected by project related trips.

Local bus routes operated by NYCT, which provide regular service to the study area, are shown in Figure 17-2. All local routes use standard buses with a guideline capacity of 70 passengers per bus, with the exception of the Bx1, which is an articulated Local and Limited service bus with a guideline capacity of 145 passengers. Table 17-6 provides a summary of the NYCT local bus routes and their weekday frequencies of operation.

PEDESTRIAN STUDY AREA

The pedestrian study area considers the sidewalks, corner reservoirs, and crosswalks that would be most affected by new trips generated by the Proposed Project. Since transit trips also contain

a walking component, the pedestrian network considers the major routes from subway stations and bus stops. The resultant study area includes intersections along River Avenue and Grand Concourse between 149th and 153rd Streets.

**Table 17-6
NYCT Local Bus Routes Serving Lower Manhattan**

Bus Route	Start Point	End Point	Routing	Freq. of Bus Service (Headway in Minutes)			
				AM	Midday	PM	Evening/ Saturday
Bx1 Lcl	Riverdale	Mott Haven	via Grand Concourse	12	12	15	15
Bx1 Ltd	Riverdale	Mott Haven	via Grand Concourse	15	30	18	-
Bx6	Riverside Drive	Hunts Point	via 161st & 163rd Sts	5	7	6	10
Bx13	GWB Bus Terminal	Yankee Stadium	via Ogden Ave & W 181st St	7	10	8	10
Bx19	Riverbank State Park	NY Botanical Garden	via Southern Blvd & 149 St	6	8	6	9

Source: New York City Transit, Bronx and Manhattan Bus Map (2004).

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

Since all study area subway stations have multiple entrances and central control areas, the quantified analysis was limited to the elements that would be most heavily used by trips to and from the project site. Based on the travel demand estimates detailed in Chapter 16, "Traffic and Parking" and presented above in Tables 17-1 through 17-3, and travel patterns associated with the area's transit uses, it was determined that quantified analyses would be required for street-level stairway station elements. At the 161st Street-Yankee Stadium Station, operating conditions at the southern most five of seven available stairways were evaluated. Operating conditions at two street-level stairways (SW and SE corners) were analyzed at the 149th Street-Grand Concourse Station (See Figure 17-1).

Table 17-7 summarizes the game day and non-game day peak period operating levels for each of the station elements described above. This summary table outlines the most constrained operating condition for each stairway and the peak period in which it occurs. Detailed analysis tables are shown in Appendix B. As shown, all stairways currently operate at LOS D or better during all peak analysis periods with the exception of three street-level stairways located at the 161st Street-Yankee Stadium Station during the game day Saturday PM peak period.

NYCT BUS LINE HAUL LEVELS

Among the numerous bus routes operating within or near the study area, five local bus routes are expected to serve the majority of the project-generated trips. Two of these routes are the articulated Bx1 Local and Limited each of which have stops along Grand Concourse between 149th Street and 151st Street. The Bx6 and Bx13 bus routes provide access just north of the project site along 161st Street near River Avenue. The Bx19 bus route operates along 149th Street.

Table 17-7

2004 Existing Conditions: Summary of Subway Station Analysis

Location/Stairway	Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
	V/SVCD Ratio	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
149th Street/Grand Concourse Station 2/4/5							
S1	149th Street/Grand Concourse (SW corner)	0.40	C				X
S2	149th Street/Grand Concourse (SE corner)	0.29	B			X	
161st Street-Yankee Stadium Station 4/B/D							
S1	161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	0.72	D	X			
S2	161st Street/River Avenue (SW corner, closest to intersection)	1.61	F		X		
S3	161st Street/River Avenue (SW corner, furthest from intersection)	1.56	F		X		
S4	161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	0.59	C		X		
S5	161st Street/River Avenue (SE corner)	1.49	F		X		
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the 2001 <i>CEQR Technical Manual</i> .							

To assess the potential impacts for the routes described above, ridership data was acquired from NYCT in early December 2004. As shown on Table 17-8, each of the five bus routes presently operates within the guideline capacity (145 passengers per articulated bus or 70 passengers per standard bus) at their respective maximum load points.

STREET-LEVEL PEDESTRIAN OPERATIONS

As described above, the study area sidewalks, corner reservoirs, and crosswalks were assessed for the three game and two non-game day peak periods. Existing peak 15-minute volumes were developed for eight study area intersections: one along Exterior Street, four along River Avenue, and three along Grand Concourse, at their respective intersections with 149th Street, 150th Street, 151st Street and 153rd Street. Of these eight intersections, only the 150th Street and River Avenue intersection operates without a traffic signal. Vehicular and pedestrian movements at this location are controlled by a two-way stop sign, which allows unrestricted pedestrian flow along each intersection crosswalk. Tables 17-9 through 17-11 show the LOS analyses for the remaining seven intersections and their corresponding connecting sidewalks. These tables outline maximum operating constraints at each pedestrian element, and the peak period in which they occur. Appendix B provides the detailed analysis tables.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

Transit and pedestrian conditions in the future without the proposed actions were assessed to establish a baseline No Build condition against which to evaluate the potential project impacts. Both the 2009 and 2014 No Build years incorporate general background growth, effects of nearby developments, and transportation improvements that may affect transit service and pedestrian movements in the study area.

Table 17-8
2004 Existing Conditions: Bus Line Haul

Peak Period	Buses Per Hour	Direction		Direction	
		Max Load Point	Average Passengers	Max Load Point	Average Passengers
Bx1 Bus Route		Northbound		Southbound	
Game Day Saturday Midday	10	Grand Concourse / Tremont Ave	11	Grand Concourse / Tremont Ave	12
Game Day Saturday PM	8	Grand Concourse / Tremont Ave	47	Grand Concourse / Tremont Ave	43
Game Day Weekday PM	8	Grand Concourse / Tremont Ave	47	Grand Concourse / Tremont Ave	43
Non-Game Day Saturday Midday	10	Grand Concourse / Tremont Ave	11	Grand Concourse / Tremont Ave	12
Non-Game Day Weekday PM	8	Grand Concourse / Tremont Ave	47	Grand Concourse / Tremont Ave	43
Bx1 Limited Bus Route		Northbound		Southbound	
Game Day Weekday PM	6	Grand Concourse / 170 St	49	Grand Concourse / Tremont Ave	64
Non-Game Day Weekday PM	6	Grand Concourse / 170 St	49	Grand Concourse / Tremont Ave	64
Bx6 Bus Route		Eastbound		Westbound	
Game Day Saturday Midday	9	160 St / Melrose Ave	37	160 St / Melrose Ave	31
Game Day Saturday PM	9	161 St / River Ave	46	161 St / River Ave	49
Game Day Weekday PM	9	161 St / River Ave	46	161 St / River Ave	49
Non-Game Day Saturday Midday	9	160 St / Melrose Ave	37	160 St / Melrose Ave	31
Non-Game Day Weekday PM	9	161 St / River Ave	46	161 St / River Ave	49
Bx13 Bus Route		Northbound		Southbound	
Game Day Saturday Midday	6	161 St / River Ave	31	161 St / River Ave	23
Game Day Saturday PM	9	161 St / River Ave	53	Ogden Ave / University	27
Game Day Weekday PM	9	161 St / River Ave	53	Ogden Ave / University	27
Non-Game Day Saturday Midday	6	161 St / River Ave	31	161 St / River Ave	23
Non-Game Day Weekday PM	9	161 St / River Ave	53	Ogden Ave / University	27
Bx19 Bus Route		Eastbound		Westbound	
Game Day Saturday Midday	10	149 St / Third Ave	39	149 St / River Ave	33
Game Day Saturday PM	12	149 St / Third Ave	37	145 St / Lenox Ave	45
Game Day Weekday PM	12	149 St / Third Ave	37	145 St / Lenox Ave	45
Non-Game Day Saturday Midday	10	149 St / Third Ave	39	149 St / River Ave	33
Non-Game Day Weekday PM	12	149 St / Third Ave	37	145 St / Lenox Ave	45

Note: Ridership data provided by NYCT, December 2004

Table 17-9

2004 Existing Conditions: Summary Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Maximum Platoon		Game Day Peak Periods			Non-Game Day Peak Periods	
		PFM	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue between 157th St and 153rd St	West	7+	C		X			
	East	5-	A	X	X	X		
River Avenue between 153rd St. and 151st St	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
River Avenue between 151st St and 150th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
151st St. between Walton Ave and Grand Concourse	North	5+	B		X			
	South	4	A	X	X	X	X	X
Grand Concourse between 151st St and 150th St	West	5+	B		X	X		
	East	5+	B		X	X		
150th St. between Walton Ave. and Grand Concourse	North	4	A	X	X	X	X	X
	South	4	A	X	X	X	X	X
Grand Concourse between 150th St. and 149th St	West	5+	B			X		X
	East	5-	A	X	X	X	X	
Exterior St. between 150th St. and 149th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
River Avenue between 150th St and 149th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
149th St. between Walton Ave. and Grand Concourse	North	5-	A				X	X
	South	5-	A			X		X

Note: PFM = pedestrians per foot per minute

Table 17-10

2004 Existing Conditions: Summary Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner Reservoir	Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	Northeast	116	A		X			
	Southeast	146	A		X			
	Southwest	33	C		X			
	Northwest	32	C		X			
River Avenue and 151st Street	Northeast	1589	A		X			
	Southeast	2618	A		X			
	Southwest	1986	A		X			
	Northwest	1749	A		X			
Grand Concourse and 151st Street	Southwest	140	A			X		
	Northwest	114	A			X		
Grand Concourse and 150th Street	Northeast	131	A		X			
	Southeast	75	A		X			
	Southwest	66	A		X			
	Northwest	95	A		X			
Exterior St. and 149th Street	Southwest	114	A			X		
	Northwest	1289	A		X			
River Avenue and 149th Street	Northeast	767	A				X	
	Southeast	658	A			X		
Grand Concourse and 149th Street	Northeast	166	A	X				
	Southeast	359	A			X		
	Southwest	131	A					X
	Northwest	170	A					X

Note: SFP = square feet per pedestrian

Table 17-11

2004 Existing Conditions: Summary Pedestrian LOS Analysis for Crosswalks

Location	Corner Reservoir	Maximum Surge LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	North	171	A		X			
	East	70	A		X			
	South	180	A		X			
	West	22	D		X			
River Avenue and 151st Street	North	4030	A		X			
	East	923	A		X			
	South	412	A				X	
	West	892	A		X			
Grand Concourse and 151st Street	North	75	A			X		
	South	177	A			X		
	West	53	B			X		
Grand Concourse and 150th Street	North	108	A		X			
	East	32	C		X			
	South	60	A		X			
	West	38	C		X			
Exterior St. and 149th Street	North	828	A		X			
	South	412	A			X	X	
River Avenue and 149th Street	North	110	A		X			
	East	798	A			X		
	South	412	A			X	X	
Grand Concourse and 149th Street	North	114	A	X				
	East	63	A			X		
	South	74	A			X		
	West	86	A					X

Note: SFP = square feet per pedestrian

TRANSIT AND PEDESTRIAN VOLUME PROJECTIONS

Future 2009 No Build conditions peak hour transit and pedestrian levels were based on volume projections developed using the CEQR-recommended 0.50-percent annual background growth rate projected over 5 years. As with 2009 No Build conditions, 2014 will use a similar growth rate projected over 10 years. There are no major projects scheduled to be developed within the study area between 2004 and 2009 or 2014 that would increase trips in the study area; therefore, the Proposed Project's No Build analysis only incorporates the fixed background growth rate. The combination of the above calculations projected onto the 2004 existing conditions pedestrian network resulted in the transit and pedestrian volumes used in both the 2009 and 2014 No Build operational analyses.

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

The same station elements at the 161st Street–Yankee Stadium Station 4/B/D and the 149th Street–Grand Concourse Station 2/4/5 were analyzed with the addition of the projected No Build volumes for both the 2009 and 2014 No Build conditions. Tables 17-12 and 17-13 summarize the maximum operating constraints for each street-level stairway and its corresponding peak period for both No Build conditions. A detailed description of all 2009 and 2014 No Build analyses is found in Appendix B. As shown, all stairways currently operate at LOS D or better during all peak analysis periods with the exception of three street-level stairways located at the 161st Street–Yankee Stadium Station during the game day Saturday midday, game day Saturday PM peak period, and the game day weekday PM peak period.

Table 17-12
2009 No Build Condition: Summary of Subway Station Analysis

Location/Stairway		Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		V/SVCD Ratio	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
149th Street-Grand Concourse Station 2/4/5								
S1	149th Street-Grand Concourse (SW corner)	0.41	C					X
S2	149th Street-Grand Concourse (SE corner)	0.30	B			X		
161st Street-Yankee Stadium Station 4/B/D								
S1	161st Street-River Avenue (SW corner, elevated entrance on median, 4 only)	0.74	D	X				
S2	161st Street-River Avenue (SW corner, closest to intersection)	1.65	F		X			
S3	161st Street-River Avenue (SW corner, furthest from intersection)	1.60	F		X			
S4	161st Street-River Avenue (SE corner, elevated entrance on median, 4 only)	0.61	D		X			
S5	161st Street-River Avenue (SE corner)	1.53	F		X			
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .								

Table 17-13
2014 No Build Conditions: Summary Subway Station Analysis

Location/Stairway		Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		V/SVCD Ratio	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
149th Street-Grand Concourse Station 2/4/5								
S1	149th Street-Grand Concourse (SW corner)	0.42	C					X
S2	149th Street-Grand Concourse (SE corner)	0.30	B			X		
161st Street-Yankee Stadium Station 4/B/D								
S1	161st Street-River Avenue (SW corner, elevated entrance on median, 4 only)	0.76	D	X				
S2	161st Street-River Avenue (SW corner, closest to intersection)	1.69	F		X			
S3	161st Street-River Avenue (SW corner, furthest from intersection)	1.64	F		X			
S4	161st Street-River Avenue (SE corner, elevated entrance on median, 4 only)	0.62	D		X			
S5	161st Street-River Avenue (SE corner)	1.57	F		X			
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .								

Gateway Center at Bronx Terminal Market DEIS

NYCT BUS LINE HAUL LEVELS

To assess the potential impacts to each of the five NYCT local bus routes previously described, a quantified bus line haul and maximum load analysis was conducted. Passenger volume projections for the 2009 No Build condition were developed using a CEQR-recommended background growth rate superimposed onto the average passenger volumes at the existing maximum load points. As shown in Tables 17-14 and 17-15, all routes would continue to operate below guideline capacities at their maximum load points.

**Table 17-14
2009 No Build Conditions: Bus Line Haul**

Peak Period	Buses Per Hour	Maximum Load By Direction			Maximum Load By Direction		
		2004 Existing	2009 Increment	2009 No Build	2004 Existing	2009 Increment	2009 No Build
Bx1 Bus Route		Northbound			Southbound		
Game Day Saturday Midday	10	11	1	12	12	1	13
Game Day Saturday PM	8	47	2	49	43	2	45
Game Day Weekday PM	8	47	2	49	43	2	45
Non-Game Day Saturday Midday	10	11	1	12	12	1	13
Non-Game Day Weekday PM	8	47	2	49	43	2	45
Bx1 Limited Bus Route		Northbound			Southbound		
Game Day Weekday PM	6	49	2	51	64	2	66
Non-Game Day Weekday PM	6	49	2	51	64	2	66
Bx6 Bus Route		Eastbound			Westbound		
Game Day Saturday Midday	9	37	2	39	31	2	33
Game Day Saturday PM	9	46	2	48	49	2	51
Game Day Weekday PM	9	46	2	48	49	2	51
Non-Game Day Saturday Midday	9	37	2	39	31	2	33
Non-Game Day Weekday PM	9	46	2	48	49	2	51
Bx13 Bus Route		Northbound			Southbound		
Game Day Saturday Midday	6	31	2	33	23	2	25
Game Day Saturday PM	9	53	2	55	27	2	29
Game Day Weekday PM	9	53	2	55	27	2	29
Non-Game Day Saturday Midday	6	31	2	33	23	2	25
Non-Game Day Weekday PM	9	53	2	55	27	2	29
Bx19 Bus Route		Eastbound			Westbound		
Game Day Saturday Midday	10	39	2	41	33	2	35
Game Day Saturday PM	12	37	2	39	45	2	47
Game Day Weekday PM	12	37	2	39	45	2	47
Non-Game Day Saturday Midday	10	39	2	41	33	2	35
Non-Game Day Weekday PM	12	37	2	39	45	2	47

Note: Ridership data provided by NYCT, December 2004

Table 17-15
2014 No Build Conditions: Bus Line Haul

Peak Period	Buses Per Hour	Maximum Load By Direction			Maximum Load By Direction		
		2004 Existing	2014 Increment	2014 No Build	2004 Existing	2014 Increment	2014 No Build
Bx1 Bus Route		Northbound			Southbound		
Game Day Saturday Midday	10	11	1	12	12	1	13
Game Day Saturday PM	8	47	2	49	43	2	45
Game Day Weekday PM	8	47	2	49	43	2	45
Non-Game Day Saturday Midday	10	11	1	12	12	1	13
Non-Game Day Weekday PM	8	47	2	49	43	2	45
Bx1 Limited Bus Route		Northbound			Southbound		
Game Day Weekday PM	6	49	3	52	64	3	67
Non-Game Day Weekday PM	6	49	3	52	64	3	67
Bx6 Bus Route		Eastbound			Westbound		
Game Day Saturday Midday	9	37	2	39	31	2	33
Game Day Saturday PM	9	46	2	48	49	3	52
Game Day Weekday PM	9	46	2	48	49	3	52
Non-Game Day Saturday Midday	9	37	2	39	31	2	33
Non-Game Day Weekday PM	9	46	2	48	49	3	52
Bx13 Bus Route		Northbound			Southbound		
Game Day Saturday Midday	6	31	2	33	23	2	25
Game Day Saturday PM	9	53	3	56	27	2	29
Game Day Weekday PM	9	53	3	56	27	2	29
Non-Game Day Saturday Midday	6	31	2	33	23	2	25
Non-Game Day Weekday PM	9	53	3	56	27	2	29
Bx19 Bus Route		Eastbound			Westbound		
Game Day Saturday Midday	10	39	2	41	33	2	35
Game Day Saturday PM	12	37	2	39	45	2	47
Game Day Weekday PM	12	37	2	39	45	2	47
Non-Game Day Saturday Midday	10	39	2	41	33	2	35
Non-Game Day Weekday PM	12	37	2	39	45	2	47

Note: Ridership data provided by NYCT, December 2004

STREET-LEVEL PEDESTRIAN OPERATIONS

The 2009 and 2014 No Build peak period volume projections were applied to the pedestrian analysis networks described previously. Tables 17-16 through 17-21 show the maximum potential operating constraints at each pedestrian element and the peak period in which said constraints occur. Appendix B presents the detailed results for all of these analysis locations. All sidewalks, crosswalks, and corner reservoir analysis locations would continue to operate at an acceptable LOS D or better.

Table 17-16

2009 No Build Condition: Summary of Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Maximum Platoon		Game Day Peak Periods			Non-Game Day Peak Periods	
		PFM	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue between 157th St. and 153rd St.	West	8	C		X			
	East	5-	A	X	X	X		
River Avenue between 153rd St. and 151st St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
River Avenue between 151st St. and 150th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
151st St. between Walton Ave. and Grand Concourse	North	5+	B		X			
	South	4	A	X	X	X	X	X
Grand Concourse between 151st St. and 150th St.	West	5+	B		X	X		
	East	5+	B		X	X		
150th St. between Walton Ave. and Grand Concourse	North	4	A	X	X	X	X	X
	South	4	A	X	X	X	X	X
Grand Concourse between 150th St. and 149th St.	West	6	B					X
	East	5-	A	X	X	X	X	
Exterior St. between 150th St. and 149th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
River Avenue between 150th St. and 149th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
149th St. between Walton Ave. and Grand Concourse	North	5-	A				X	X
	South	5-	A			X		X

Note: PFM = pedestrians per foot per minute

Table 17-17

2014 No Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Maximum Platoon		Game Day Peak Periods			Non-Game Day Peak Periods	
		PFM	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue between 157th St. and 153rd St.	West	8	C		X			
	East	5-	A	X	X	X		
River Avenue between 153rd St. and 151st St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
River Avenue between 151st St. and 150th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
151st St. between Walton Ave. and Grand Concourse	North	5+	B		X			
	South	4	A	X	X	X	X	X
Grand Concourse between 151st St. and 150th St.	West	5+	B		X	X		
	East	5+	B		X	X		
150th St. between Walton Ave. and Grand Concourse	North	4	A	X	X	X	X	X
	South	4	A	X	X	X	X	X
Grand Concourse between 150th St. and 149th St.	West	6	B					X
	East	5-	A	X	X	X	X	
Exterior St. between 150th St. and 149th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
River Avenue between 150th St. and 149th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
149th St. between Walton Ave. and Grand Concourse	North	5-	A				X	X
	South	5-	A			X		X

Note: PFM = pedestrians per foot per minute

Table 17-18

2009 No Build Condition: Summary of Pedestrian LOS Analysis—Corner Reservoirs

Location	Corner Reservoir	Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	Northeast	114	A		X			
	Southeast	143	A		X			
	Southwest	32	C		X			
	Northwest	31	C		X			
River Avenue and 151st Street	Northeast	1589	A		X			
	Southeast	2618	A		X			
	Southwest	1903	A		X			
	Northwest	1684	A		X			
Grand Concourse and 151st Street	Southwest	137	A		X			
	Northwest	111	A			X		
Grand Concourse and 150th Street	Northeast	128	A		X			
	Southeast	73	A		X			
	Southwest	64	A		X			
	Northwest	93	A		X			
Exterior Street and 149th Street	Southwest	114	A			X		
	Northwest	1289	A		X			
River Avenue and 149th Street	Northeast	755	A				X	
	Southeast	685	A			X		
Grand Concourse and 149th Street	Northeast	162	A	X				
	Southeast	350	A			X		
	Southwest	127	A					X
	Northwest	167	A					X

Note: SFP = square feet per pedestrian

Table 17-19

2014 No Build Conditions: Summary Pedestrian LOS Analysis—Corner Reservoirs

Location	Corner Reservoir	Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	Northeast	111	A		X			
	Southeast	140	A		X			
	Southwest	31	C		X			
	Northwest	30	C		X			
River Avenue and 151st Street	Northeast	1532	A		X			
	Southeast	2480	A		X			
	Southwest	1903	A		X			
	Northwest	1684	A		X			
Grand Concourse and 151st Street	Southwest	133	A		X			
	Northwest	109	A			X		
Grand Concourse and 150th Street	Northeast	124	A		X			
	Southeast	71	A		X			
	Southwest	62	A		X			
	Northwest	90	A		X			
Exterior Street and 149th Street	Southwest	107	A			X		
	Northwest	1208	A		X			
River Avenue and 149th Street	Northeast	733	A				X	
	Southeast	626	A			X		
Grand Concourse and 149th Street	Northeast	158	A	X				
	Southeast	342	A			X		
	Southwest	124	A					X
	Northwest	162	A					X

Note: SFP = square feet per pedestrian

Table 17-20

2009 No Build Condition: Summary Pedestrian LOS Analysis—Crosswalks

Location	Corner Reservoir	Maximum Surge LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	North	168	A		X			
	East	68	A		X			
	South	175	A		X			
	West	21	D		X			
River Avenue and 151st Street	North	4030	A		X			
	East	923	A		X			
	South	412	A				X	
	West	855	A		X			
Grand Concourse and 151st Street	North	73	A			X		
	South	171	A			X		
	West	52	B			X		
Grand Concourse and 150th Street	North	105	A		X			
	East	31	C		X			
	South	59	B		X			
	West	37	C		X			
Exterior Street and 149th Street	North	828	A		X			
	South	412	A			X	X	
River Avenue and 149th Street	North	108	A		X			
	East	798	A			X		
	South	412	A			X	X	
Grand Concourse and 149th Street	North	111	A		X			
	East	61	A			X		
	South	72	A			X		
	West	84	A					X

Note: SFP = square feet per pedestrian

Table 17-21

2014 No Build Conditions: Summary Pedestrian LOS Analysis—Crosswalks

Location	Corner Reservoir	Maximum Surge LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	North	163	A		X			
	East	67	A		X			
	South	172	A		X			
	West	21	D		X			
River Avenue and 151st Street	North	4030	A		X			
	East	865	A		X			
	South	384	A				X	
	West	855	A		X			
Grand Concourse and 151st Street	North	71	A			X		
	South	169	A			X		
	West	51	B			X		
Grand Concourse and 150th Street	North	103	A		X			
	East	30	C		X			
	South	57	A		X			
	West	36	C		X			
Exterior Street and 149th Street	North	772	A		X			
	South	384	A			X	X	
River Avenue and 149th Street	North	105	A		X			
	East	798	A			X		
	South	384	A			X	X	
Grand Concourse and 149th Street	North	108	A	X				
	East	60	A			X		
	South	70	A			X		
	West	82	A					X

Note: SFP = square feet per pedestrian

E. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

The future with the proposed actions would result in increased transit and pedestrian trips as compared to the No Build condition. This section describes the projected travel patterns of the site-related trips and assesses their potential impacts on nearby transit and pedestrian facilities.

TRIP DISTRIBUTION AND ASSIGNMENT

As described in Chapter 1, "Project Description," pedestrian access to the Proposed Project would be provided at numerous points along the northeast, east, and southern boundaries of the project site. At the northeast corner of the project site, pedestrian access would be from both sides of 151st Street between River Avenue and Exterior Street. Entrances would also be located on the eastern boundary of the project site from the west sidewalk of River Avenue between 151st Street and 149th Street, which includes access along both sidewalks of 150th Street between River Avenue and Exterior Street. Access to the project site from the south, and to the core retail uses at the center of the project site, would be at the 149th Street and Exterior Street intersection and along Exterior Street between 149th Street and the 153rd Street overpass. The person trips associated with vehicular travel are assumed to use the project's on-site garages and surface lots and the associated internal pedestrian circulation infrastructure to access the proposed hotel and retail destinations. Therefore, these trips would not appear on the study area's pedestrian network outside the project site. Taxi person trips would only appear as pedestrian trips on the sidewalk and corner reservoirs adjacent to the project site and would not affect other pedestrian elements within the study area. The following assumptions were used to assign transit and walk-only trips to the building entrances.

- Subway trips would utilize the numerous subway services available in the study area. The assignment of these trips is based on the available routes within the study area and transfer opportunities within the New York City subway system. The volume of project-generated trips occurring during each peak period is described in Chapter 16, "Traffic and Parking" and in Tables 17-2 and 17-3, above. Approximately 50 percent of these subway trips are assumed to arrive via Bronx-bound trains or depart via Manhattan-bound trains. The 2/4/5 subway lines are expected to absorb the majority of the project-generated subway trips (approximately 60 percent of the total) at the 149th Street-Grand Concourse Station. The remaining 40 percent would be distributed to the 4/B/D subway lines at the 161st Street-Yankee Stadium.
- As with the subway person trips, bus person trips would be distributed to the numerous bus services available in the study area. The volume of project generated trips occurring during each peak period is described in Chapter 16, "Traffic and Parking" and in Tables 17-2 and 17-3, above. The Bx1 bus route would absorb 50 percent of all bus trips, during weekday PM commuter peak hours 20 percent of these trips would be made via the Bx1 Limited or express buses. All other bus person trips would use the remaining local bus routes in the study area and were distributed as follows: 8 percent along the Bx6 route, 19 percent along the Bx13 route, and 23 percent to the Bx19 bus route. The assignment of bus person trips began with designating specific bus stops at which users would access the nearby bus routes, then tracing these trips through logical walking routes to the Proposed Project's street-level pedestrian access along River Avenue, 151st, 150th, 149th, and Exterior Streets.
- While all trips would require a walking component that connects the origins and destinations with their respective mode of transportation, a portion of the trips are made only by walking.

The volume of project-generated trips occurring during each peak period is described in Chapter 16, "Traffic and Parking" and in Tables 17-2 and 17-3, above. The assignment of these trips, during each of the five peak periods, accounts for the area's pedestrian network, employment centers, and populated neighborhoods nearby.

The Proposed Project would include an approximately two-acre public open space and waterfront esplanade that would provide passive recreational use. Based on travel demand for active recreational rates presented in the *CEQR Technical Manual*, the open space would generate fewer than 20 pedestrian trips in each of the peak 15-minute analysis periods. These trips would be linked to two sources: 1) area residents, and 2) visitors to the project's other components. Local resident trips, retail trips, and hotel trips are already accounted for as part of the 2014 Build conditions networks.

TRANSIT AND PEDESTRIAN VOLUME PROJECTIONS

Future 2009 and 2014 Build condition peak hour transit and pedestrian levels were based on volume projections developed using the above-referenced trip distribution and assignments superimposed onto the No Build transit and pedestrian networks. This combination resulted in the transit and pedestrian volumes used in both the 2009 and 2014 Build operational analyses.

ANALYSIS RESULTS

SUBWAY STATION OPERATIONS

Peak 15-minute subway ridership levels were estimated by adding the project increments to No Build levels. Table 17-22 summarizes the maximum operating constraint for each street-level stairway and its corresponding peak period for the analysis of both the 2009 and 2014 Build conditions. Appendix B presents the detailed results for all of these analysis locations. As shown, all stairways would operate at LOS D or better during all peak analysis periods with the exception of the following stairways at the 161st Street–Yankee Stadium Station:

Game Day Saturday Midday Peak Period

- The S5 stairway (SE corner) would continue to operate at LOS F in both the 2009 and 2014 Build conditions with no increase in the V/SVCD ratio.

Game Day Saturday PM Peak Period

- The S2 stairway (SW corner, closest to intersection) would continue to operate at LOS F in both the 2009 and 2014 Build conditions with only slight increases in the V/SVCD ratio.
- The S3 stairway (SW corner, furthest from intersection) would continue to operate at LOS F in both the 2009 and 2014 Build conditions with only slight increases in the V/SVCD ratio.
- The S5 stairway (SE corner) would continue to operate at LOS F in both the 2009 and 2014 Build conditions with no increase in the V/SVCD ratio.

Game Day Weekday PM Peak Period

- The S5 stairway (SE corner) will continue to operate at LOS E in both the 2009 and 2014 Build conditions with only slight increases in the V/SVCD ratio.

Table 17-22

2009 Build Conditions: Summary Subway Station Analysis

Location/Stairway		Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		V/SVCD Ratio	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
149th Street-Grand Concourse Station 2/4/5								
S1	149th Street-Grand Concourse (SW corner)	0.64	D					X
S2	149th Street-Grand Concourse (SE corner)	0.30	B			X		
161st Street-Yankee Stadium Station 4/B/D								
S1	161st Street-River Avenue (SW corner, elevated entrance on median, 4 only)	0.76	D	X				
S2	161st Street-River Avenue (SW corner, closest to intersection)	1.67	F		X			
S3	161st Street-River Avenue (SW corner, furthest from intersection)	1.62	F		X			
S4	161st Street-River Avenue (SE corner, elevated entrance on median, 4 only)	0.71	D		X			
S5	161st Street-River Avenue (SE corner)	1.54	F		X			
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .								

Table 17-23

2014 Build Conditions: Summary Subway Station Analysis

Location/Stairway		Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		V/SVCD Ratio	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
149th Street-Grand Concourse Station 2/4/5								
S1	149th Street-Grand Concourse (SW corner)	0.65	B					X
S2	149th Street-Grand Concourse (SE corner)	0.30	A			X		
161st Street-Yankee Stadium Station 4/B/D								
S1	161st Street-River Avenue (SW corner, elevated entrance on median, 4 only)	0.78	D	X				
S2	161st Street-River Avenue (SW corner, closest to intersection)	1.72	F		X			
S3	161st Street-River Avenue (SW corner, furthest from intersection)	1.67	F		X			
S4	161st Street-River Avenue (SE corner, elevated entrance on median, 4 only)	0.69	D		X			
S5	161st Street-River Avenue (SE corner)	1.58	F		X			
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .								

As described in Section B, "Methodology" of this chapter, station stairway impacts are considered significant when the minimum amount of additional capacity required to mitigate a stairway location to its No Build operating conditions is greater than the minimum widening recommended by 2001 *CEQR Technical Manual*. These recommendations are as follows: for a location with a Build LOS D, a widening of six inches or more needed to restore future No Build conditions is considered significant; for a Build LOS E condition, a widening of three inches or more is considered significant; and for a Build LOS F condition, a widening of 1 inch or more is considered significant.

The S2, S3 and S5 stairways, operating at a Build LOS F, would require less than an 1-inch widening to return service conditions to their No Build condition. Therefore, based on the criteria above, these widenings are below the CEQR-recommended thresholds and would not constitute a significant adverse subway station impact.

NYCT BUS LINE HAUL LEVELS

Peak hour bus ridership levels were estimated by adding the additional trips associated with Proposed Project to the maximum load per bus detailed in the No Build condition.

As described in Section B, "Methodology" of this chapter, impacts to bus line haul is considered significant if the Proposed Project would operate above the guideline capacity. As shown in Tables 17-24 and 17-25, four of the five analyzed bus routes would continue to operate below the guideline capacity, however, there would be overcrowding on the Bx19 during the 2009 and 2014 Build conditions' non-game day Saturday midday peak periods. During these peak periods the eastbound Bx19 Local route would operate above its guideline capacity of 70 passengers for a standard bus, with an increase in passengers per vehicle from 41 in the No Build condition to 71 in the Build condition, at the maximum load location.

Mitigation measures for this impact are described in Chapter 23, "Mitigation."

STREET-LEVEL PEDESTRIAN OPERATIONS

Pedestrian trips associated with the Proposed Project would result in increased volumes at the analysis locations. The analysis conducted for both the 2009 and 2014 Build conditions accounts for the distribution of project-generated trips overlaid on the No Build network's sidewalk, corner reservoir, and crosswalk analysis locations. As shown in Tables 17-27 to 17-31, all of the analysis locations would operate at LOS D or better.

As described in Section B, "Methodology" of this chapter, impacts to corners and crosswalks are considered significant if the Proposed Project would result in a deterioration in level-of-service from No Build LOS D or better to Build LOS E or F, or when the available circulation space is decreased by 1 SFP or more at a location with a No Build LOS E or F. Based on these criteria, there would not be any significant adverse impacts resulting from the Proposed Project with the exception of the north crosswalk at 149th Street and River Avenue, as described below.

Table 17-24
2009 Build Conditions: Bus Line Haul

Peak Period	Buses Per Hour	Maximum Load By Direction			Maximum Load By Direction		
		2009 No Build	2009 Increment	2009 Build	2009 No Build	2009 Increment	2009 Build
Bx1 Bus Route		Northbound			Southbound		
Game Day Saturday Midday	10	12	26	38	13	28	41
Game Day Saturday PM	8	49	21	70	45	19	64
Game Day Weekday PM	8	49	21	70	45	23	68
Non-Game Day Saturday Midday	10	12	33	45	13	34	47
Non-Game Day Weekday PM	8	49	24	73	45	25	70
Bx1 Limited Bus Route		Northbound			Southbound		
Game Day Weekday PM	6	51	7	58	66	8	72
Non-Game Day Weekday PM	6	51	8	59	66	8	72
Bx6 Bus Route		Eastbound			Westbound		
Game Day Saturday Midday	9	39	11	50	33	12	45
Game Day Saturday PM	9	48	9	63	51	8	65
Game Day Weekday PM	9	48	11	59	51	12	63
Non-Game Day Saturday Midday	9	39	14	62	33	15	66
Non-Game Day Weekday PM	9	48	12	60	51	13	64
Bx13 Bus Route		Northbound			Southbound		
Game Day Saturday Midday	6	33	8	41	25	9	31
Game Day Saturday PM	9	55	7	62	29	6	35
Game Day Weekday PM	9	55	5	60	29	5	34
Non-Game Day Saturday Midday	6	33	10	43	25	11	36
Non-Game Day Weekday PM	9	55	6	61	29	6	35
Bx19 Bus Route		Eastbound			Westbound		
Game Day Saturday Midday	10	41	25	66	35	28	63
Game Day Saturday PM	12	39	18	57	47	19	66
Game Day Weekday PM	12	39	15	54	47	15	62
Non-Game Day Saturday Midday	10	41	30	71*	35	30	65
Non-Game Day Weekday PM	12	39	17	56	47	16	63

Note: * Exceeds CEQR recommended NYCT guideline capacity of passengers per bus.

Table 17-25
2014 Build Conditions: Bus Line Haul

Peak Period	Buses Per Hour	Maximum Load By Direction			Maximum Load By Direction		
		2014 No Build	2014 Increment	2014 Build	2014 No Build	2014 Increment	2014 Build
Bx1 Bus Route		Northbound			Southbound		
Game Day Saturday Midday	10	12	25	37	13	28	41
Game Day Saturday PM	8	49	21	70	45	19	64
Game Day Weekday PM	8	49	21	70	45	23	68
Non-Game Day Saturday Midday	10	12	33	45	13	34	47
Non-Game Day Weekday PM	8	49	24	73	45	25	70
Bx1 Limited Bus Route		Northbound			Southbound		
Game Day Weekday PM	6	51	7	58	66	8	72
Non-Game Day Weekday PM	6	51	8	59	66	8	72
Bx6 Bus Route		Eastbound			Westbound		
Game Day Saturday Midday	9	39	11	50	33	12	45
Game Day Saturday PM	9	48	9	63	51	8	65
Game Day Weekday PM	9	48	11	59	51	12	63
Non-Game Day Saturday Midday	9	39	14	62	33	15	66
Non-Game Day Weekday PM	9	48	12	60	51	13	64
Bx13 Bus Route		Northbound			Southbound		
Game Day Saturday Midday	6	33	8	41	25	9	31
Game Day Saturday PM	9	55	7	62	29	6	35
Game Day Weekday PM	9	55	5	60	29	5	34
Non-Game Day Saturday Midday	6	33	10	43	25	11	36
Non-Game Day Weekday PM	9	55	6	61	29	6	35
Bx19 Bus Route		Eastbound			Westbound		
Game Day Saturday Midday	10	41	25	66	35	23	58
Game Day Saturday PM	12	39	18	57	47	19	66
Game Day Weekday PM	12	39	15	54	47	15	62
Non-Game Day Saturday Midday	10	41	30	71*	35	30	65
Non-Game Day Weekday PM	12	39	17	56	47	16	63

Note: * Exceeds CEQR recommended NYCT guideline capacity of 70 passengers per bus

Table 17-26
2009 Build Conditions: Summary Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Maximum Platoon		Game Day Peak Periods			Non-Game Day Peak Periods	
		PFM	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue between 157th St and 153rd St.	West	8	C		X			
	East	5+	B	X	X	X		
River Avenue between 153rd St and 151st St.	West	5-	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
River Avenue between 151st St and 150th St.	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
151st St between Walton Ave and Grand Concourse	North	6	B		X			
	South	4	A	X	X	X	X	X
Grand Concourse between 151st St and 150th St.	West	5+	B	X	X	X		
	East	5+	B		X	X		
150th St between Walton Ave. and Grand Concourse	North	4	A	X	X	X	X	X
	South	4	A	X	X	X	X	X
Grand Concourse between 150th St and 149th St.	West	6	B					X
	East	5	A/B				X	
Exterior St between 150th St. and 149th St.	West	4	A	X	X	X	X	X
	East	5-	A	X	X	X	X	X
River Avenue between 150th St and 149th St.	West	5+	B	X				
	East	5-	A	X			X	
149th St between Walton Ave. and Grand Concourse	North	6	B				X	X
	South	5+	B			X		

Note: PFM = pedestrians per foot per minute

Table 17-27
2009 Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Maximum Platoon		Game Day Peak Periods			Non-Game Day Peak Periods	
		PFM	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue between 157th St. and 153rd St	West	8	C		X			
	East	5+	B	X	X	X		
River Avenue between 153rd St. and 151st St.	West	5-	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
River Avenue between 151st St and 150th St	West	4	A	X	X	X	X	X
	East	4	A	X	X	X	X	X
151st St between Walton Ave and Grand Concourse	North	6	B		X			
	South	4	A	X	X	X	X	X
Grand Concourse between 151st St. and 150th St.	West	5+	B	X	X	X		
	East	5+	B	X	X	X		
150th St between Walton Ave and Grand Concourse	North	4	A	X	X	X	X	X
	South	4	A	X	X	X	X	X
Grand Concourse between 150th St and 149th St	West	6	B			X		X
	East	5	A/B				X	
Exterior St between 150th St. and 149th St.	West	5-	A				X	
	East	5-	A	X	X	X	X	X
River Avenue between 150th St and 149th St.	West	5+	B	X			X	
	East	5-	A	X			X	
149th St between Walton Ave and Grand Concourse	North	6	B				X	X
	South	5+	B			X		

Note: PFM = pedestrians per foot per minute

Table 17-28

2009 Build Conditions: Summary Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner Reservoir	Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	Northeast	108	A		X			
	Southeast	127	A		X			
	Southwest	29	C		X			
	Northwest	28	C		X			
River Avenue and 151st Street	Northeast	375	A	X				
	Southeast	362	A				X	
	Southwest	226	A				X	
	Northwest	187	A				X	
Grand Concourse and 151st Street	Southwest	134	A			X		
	Northwest	95	A	X				
Grand Concourse and 150th Street	Northeast	122	A		X			
	Southeast	70	A		X			
	Southwest	58	A		X			
	Northwest	82	A		X			
Exterior St. and 149th Street	Southwest	114	A			X		
	Northwest	173	A	X				
River Avenue and 149th Street	Northeast	78	A	X				
	Southeast	157	A	X				
Grand Concourse and 149th Street	Northeast	124	A	X				
	Southeast	294	A			X		
	Southwest	67	A			X		
	Northwest	89	A			X		

Note: SFP = square feet per pedestrian

Table 17-29

2014 Build Conditions: Summary Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner Reservoir	Maximum LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	Northeast	108	A		X			
	Southeast	127	A		X			
	Southwest	29	C		X			
	Northwest	28	C		X			
River Avenue and 151st Street	Northeast	375	A	X				
	Southeast	362	A				X	
	Southwest	226	A				X	
	Northwest	187	A				X	
Grand Concourse and 151st Street	Southwest	134	A			X		
	Northwest	101	A				X	
Grand Concourse and 150th Street	Northeast	119	A		X			
	Southeast	68	A		X			
	Southwest	56	A		X			
	Northwest	81	A		X			
Exterior St. and 149th Street	Southwest	114	A			X		
	Northwest	173	A	X				
River Avenue and 149th Street	Northeast	78	A	X				
	Southeast	157	A	X				
Grand Concourse and 149th Street	Northeast	124	A	X				
	Southeast	294	A			X		
	Southwest	67	A			X		
	Northwest	89	A			X		

Note: SFP = square feet per pedestrian

Table 17-30

2009 Build Conditions: Summary Pedestrian LOS Analysis for Crosswalks

Location	Corner Reservoir	Maximum Surge LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	North	168	A		X			
	East	58	B		X			
	South	175	A		X			
	West	19	D		X			
River Avenue and 151st Street	North	167	A					X
	East	295	A	X				X
	South	131	A					X
	West	175	A					X
Grand Concourse and 151st Street	North	64	A			X		
	South	162	A			X		
	West	52	B			X		
Grand Concourse and 150th Street	North	102	A		X			
	East	29	C		X			
	South	58	B		X			
	West	32	C		X			
Exterior Street and 149th Street	North	110	A	X				
	South	412	A			X	X	
River Avenue and 149th Street *	North	15	D				X	
	East	79	A				X	
	South	412	A			X	X	
Grand Concourse and 149th Street	North	75	A	X				
	East	54	B			X		
	South	59	B			X		
	West	44	B					X

Note: SFP = square feet per pedestrian
 * Significant adverse impact along the north crosswalk in both the Game Day and Non-Game Day Saturday Midday Peak Periods

Table 17-31

2014 Build Conditions: Summary Pedestrian LOS Analysis for Crosswalks

Location	Corner Reservoir	Maximum Surge LOS		Game Day Peak Periods			Non-Game Day Peak Periods	
		SFP	LOS	Saturday Midday	Saturday PM	Weekday PM	Saturday Midday	Weekday PM
River Avenue and 153rd Street	North	163	A		X			
	East	56	B		X			
	South	172	A		X			
	West	18	D		X			
River Avenue and 151st Street	North	139	A					X
	East	243	A					X
	South	116	A					X
	West	162	A					X
Grand Concourse and 151st Street	North	63	A			X		
	South	159	A			X		
	West	51	B			X		
Grand Concourse and 150th Street	North	100	A		X			
	East	29	C		X			
	South	56	B		X			
	West	32	C		X			
Exterior Street and 149th Street	North	103	A	X			X	
	South	384	A			X	X	
River Avenue and 149th Street *	North	15	D				X	
	East	75	A				X	
	South	384	A			X	X	
Grand Concourse and 149th Street	North	75	A	X				
	East	53	B		X			
	South	58	B		X			
	West	43	B					X

Note: SFP = square feet per pedestrian
 * Significant adverse impact along the north crosswalk in both the Game Day and Non-Game Day Saturday Midday Peak Periods

Gateway Center at Bronx Terminal Market DEIS

Game Day Saturday Midday Peak Period

- The north crosswalk at 149th Street and River Avenue would decrease from a 2009 No Build LOS A with 146 SFP and a 2014 No Build LOS A with 142 SFP, to a Build LOS D with 17 SFP in both the 2009 and 2014 Build conditions.

Non-Game Day Saturday Midday Peak Period

- The north crosswalk at 149th Street and River Avenue would decrease from a 2009 No Build LOS A with 115 SFP and a 2014 No Build LOS A with 113 SFP, to a Build LOS D with 15 SFP in both the 2009 and 2014 Build conditions.

Mitigation measures for this impact are described in Chapter 23, "Mitigation."

*

A. INTRODUCTION

This chapter examines the potential for air quality impacts from the Proposed Project. Air quality impacts can be either direct or indirect. Direct impacts stem from air contaminant emissions generated by stationary sources at a proposed development site, such as emissions from fuel burned on site for heating, ventilation, and air conditioning (HVAC) systems. Indirect impacts are caused by potential emissions from nearby existing stationary sources and the potential for emissions due to mobile sources/vehicles generated by the project. The Proposed Project will include the potential for both direct and indirect impacts.

The Proposed Project would also include a public parking garage, ventilation of air from the garage could potentially result in air quality impacts in the immediate vicinity of the ventilation outlets. In addition, potential effects of stationary source emissions of air toxics from existing nearby industrial facilities on the proposed hotel use will be assessed.

B. POLLUTANTS FOR ANALYSIS

Ambient air quality is affected by air pollutants produced by both motor vehicles and stationary sources. Emissions from motor vehicles are referred to as mobile source emissions, while emissions from fixed facilities are referred to as stationary source emissions. Typically, ambient concentrations of carbon monoxide (CO) and lead are predominantly influenced by mobile source emissions. Emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO and NO₂, collectively referred to as NO_x) come from both mobile and stationary sources. Emissions of sulfur dioxide (SO₂) are associated mainly with stationary sources, and sources utilizing non-road diesel such as diesel trains, marine engines and non-road vehicles such as construction engines, but diesel-powered vehicles, primarily heavy duty trucks and buses, also currently contribute somewhat to these emissions; diesel fuel regulations which will begin to take effect in 2006 will reduce SO₂ emissions from mobile sources to extremely low levels. Particulate matter (PM) is emitted from both stationary and mobile sources. Fine particulate matter is also formed when emissions of NO_x, sulfur oxides (SO_x), ammonia, organic compounds, and other gases react or condense in the atmosphere. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and volatile organic compounds (VOCs), emitted mainly from industrial processes and mobile sources.

CARBON MONOXIDE

CO, a colorless and odorless gas, is produced in the urban environment primarily by the incomplete combustion of gasoline and other fossil fuels. In urban areas most CO emissions are from motor vehicles. Since CO is a reactive gas which does not persist in the atmosphere, CO concentrations can vary greatly over relatively short distances; elevated concentrations are usually limited to locations near crowded intersections, heavily traveled and congested

roadways, parking lots, and garages. Consequently, CO concentrations must be predicted on a local, or microscale, basis.

The Proposed Project would result in changes in traffic patterns and an increase in traffic volume in the study area and could potentially result in local increases in CO concentrations. Therefore, a mobile source analysis was conducted at critical intersections in the study area to evaluate future CO concentrations with and without the Proposed Project. A parking garage analysis was also conducted to evaluate future CO concentrations with the operation of the proposed parking garage.

NITROGEN OXIDES, VOCS, AND OZONE

NO_x are of principal concern because of their role, together with VOC, as precursors in the formation of ozone. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow, and occur as the pollutants are carried downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of NO_x and VOC emissions from all sources are therefore generally examined on a regional basis. The direct contribution of the Proposed Project to regional emissions of these pollutants would include any added stationary source emissions. The potential change in regional mobile source emissions of these pollutants due to the Proposed Project is related to the total vehicle miles traveled added or subtracted on various roadway types throughout the New York and New Jersey metropolitan area, which is designated as a severe non-attainment area for ozone by United States Environmental Protection Agency (USEPA).

The Proposed Project would not have a significant effect on the overall volume of vehicular travel in the metropolitan area; therefore, no measurable impact on regional NO_x emissions or on ozone levels is predicted. An analysis of project related emissions of these pollutants from mobile sources was not warranted.

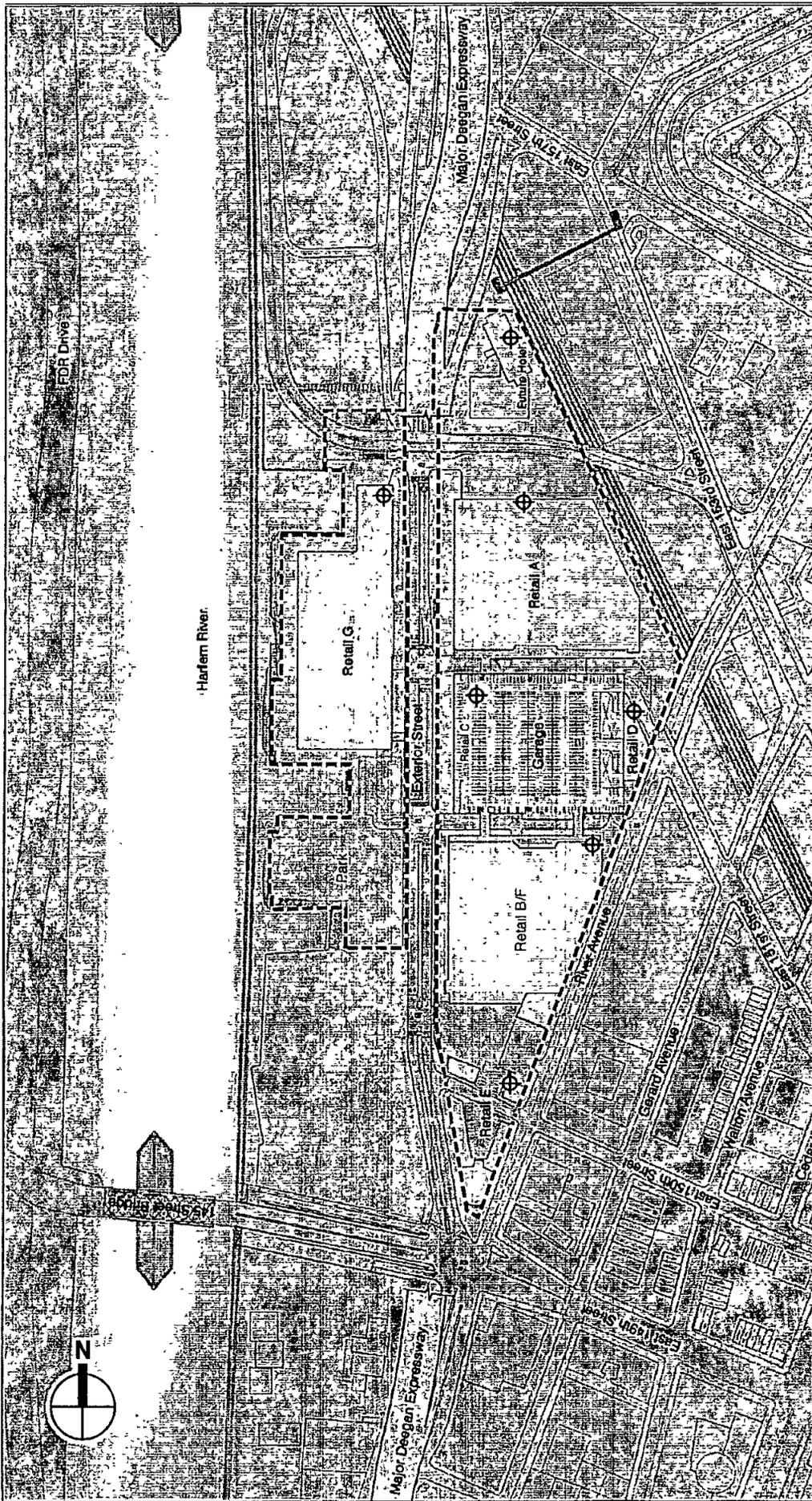
However, potential impacts from the fuel to be burned for the Proposed Project's HVAC systems were evaluated.

LEAD

Lead emissions in air are principally associated with industrial sources and motor vehicles that use gasoline containing lead additives. Most U.S. vehicles produced since 1975, and all produced after 1980, are designed to use unleaded fuel. As these newer vehicles have replaced the older ones, motor vehicle related lead emissions have decreased. As a result, ambient concentrations of lead have declined significantly. Nationally, the average measured atmospheric lead level in 1985 was only about one-quarter the level in 1975.

In 1985, USEPA announced new rules drastically reducing the amount of lead permitted in leaded gasoline. The maximum allowable lead level in leaded gasoline was reduced from the previous limit of 1.1 to 0.5 grams per gallon effective July 1, 1985, and to 0.1 grams per gallon effective January 1, 1986. Monitoring results indicate that this action has been effective in significantly reducing atmospheric lead concentrations. Even at locations in the New York City area where traffic volumes are very high, atmospheric lead concentrations are far below the national standard of 1.5 micrograms per cubic meter (3-month average).

No significant sources of lead are associated with the Proposed Project, and, therefore, analysis was not warranted.



--- Project Site Boundary
⊕ HVAC Source Location

Figure 18-1
Air Quality Analysis—HVAC Source Locations

RESPIRABLE PARTICULATE MATTER—PM₁₀ AND PM_{2.5}

PM is a broad class of air pollutants that includes discrete particles of a wide range of sizes and chemical compositions, as either liquid droplets (aerosols) or solids suspended in the atmosphere. The constituents of PM are both numerous and varied, and they are emitted from a wide variety of sources (both natural and anthropogenic). Major anthropogenic sources include the combustion of fossil fuels (e.g., vehicular exhaust, power generation, boilers, engines and home heating), chemical and manufacturing processes, all types of construction, agricultural activities, as well as wood-burning stoves and fireplaces. Particulate matter also acts as a substrate for the adsorption of other pollutants, often toxic and some likely carcinogenic compounds.

As described below, respirable PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers, or PM_{2.5}, and particles with an aerodynamic diameter of less than or equal to 10 micrometers, or PM₁₀, which includes PM_{2.5}. PM_{2.5} has the ability to reach the lower regions of the respiratory tract, delivering with it other compounds that adsorbed to the surfaces of the particles, and is also extremely persistent in the atmosphere. PM_{2.5} is mainly derived from combustion material that has volatilized and then condensed to form primary particulate matter (often soon after the release from an exhaust pipe or stack) or from precursor gases reacting in the atmosphere to form secondary PM.

Diesel-powered vehicles, especially heavy duty trucks and buses, are a significant source of respirable PM. PM₁₀ and PM_{2.5} concentrations may, consequently, be locally elevated near roadways with high volumes of heavy diesel-powered vehicles. The proposed project will increase the number of diesel powered vehicles and could potentially result in local increases of respirable PM concentrations. Therefore, an analysis of potential impacts from PM₁₀ and PM_{2.5} was conducted at critical intersections in the study area.

SULFUR DIOXIDE

SO₂ emissions are primarily associated with the combustion of sulfur-containing fuels: oil and coal.

Due to the federal restrictions on the sulfur content in diesel fuel for on-road vehicles, no significant quantities are emitted from vehicular sources. Monitored SO₂ concentrations in New York City are below the national standards. Vehicular sources of SO₂ are not significant and therefore, an analysis of this pollutant from mobile sources was not warranted.

As part of the Proposed Project, only natural gas (not No. 2 fuel oil) would be burned by the HVAC system boilers. Therefore, potential future levels of SO₂ from the HVAC systems were not examined.

AIR TOXICS

In addition to the criteria pollutants discussed above, air toxics from industrial sources are of concern. Emissions of air toxics from industries are regulated by the USEPA. Federal ambient air quality standards do not exist for non criteria air toxics; however, the New York State Department of Environmental Conservation (NYSDEC) has issued standards for certain non-criteria compounds, including beryllium, gaseous fluorides, and hydrogen sulfide. NYSDEC has also developed guideline concentrations for numerous air toxic compounds. The NYSDEC guidance document DAR-1 (December 2003) contains a compilation of annual and short term

(1-hour) guideline concentrations for these compounds. The NYSDEC guidance thresholds represent ambient levels that are considered safe for public exposure.

C. AIR QUALITY REGULATIONS, STANDARDS, AND BENCHMARKS

NATIONAL AND STATE AIR QUALITY STANDARDS

As required by the Clean Air Act, primary and secondary NAAQS have been established for six major air pollutants: CO, NO₂, ozone, respirable PM (both PM_{2.5} and PM₁₀), SO₂, and lead. Primary standards set limits to protect public health, including the health of 'sensitive' populations such as asthmatics, children, and the elderly. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. For NO₂, ozone, lead and PM, the primary and secondary standards are the same; there is no secondary standard for CO. USEPA promulgated additional NAAQS which became effective September 16, 1997: a new 8-hour standard for ozone, which will replace the existing 1-hour standard, and in addition to retaining the PM₁₀ standards, USEPA adopted 24-hour and annual standards for PM_{2.5}. The standards for these pollutants are presented in Table 18-1. These standards have also been adopted as the ambient air quality standards for New York State.

STATE IMPLEMENTATION PLAN (SIP)

The Clean Air Act, as amended in 1990 (CAA) defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by USEPA, the state is required to develop and implement a State Implementation Plan (SIP), which is a state's plan on how it will meet the NAAQS under the deadlines established by the CAA.

USEPA has recently re-designated New York City as in attainment for CO. The CAA requires that a maintenance plan ensure continued compliance with the CO NAAQS for former non-attainment areas. New York City is also committed to implementing site-specific control measures throughout the city to reduce CO levels, should unanticipated localized growth result in elevated CO levels during the maintenance period.

Manhattan has been designated as a moderate NAA for PM₁₀. On December 17, 2004, USEPA took final action designating the five boroughs of New York City as well as Nassau, Rockland, Suffolk, Westchester and Orange counties as non-attainment under the NAAQS for PM_{2.5}. State and local governments are required to develop implementation plans designed to meet the standards by early 2008.

Table 18-1
Ambient Air Quality Standards

Pollutant	Primary		Secondary	
	ppm	$\mu\text{g}/\text{m}^3$	ppm	$\mu\text{g}/\text{m}^3$
Carbon Monoxide (CO)				
Maximum 8-Hour Concentration ¹	9	10,000	None	
Maximum 1-Hour Concentration ¹	35	40,000		
Lead				
Maximum Arithmetic Mean Averaged Over 3 Consecutive Months	NA	1.5	NA	1.5
Nitrogen Dioxide (NO₂)				
Annual Arithmetic Average	0.053	100	0.053	100
Ozone (O₃)				
1-Hour Average ²	0.12	235	0.12	235
8-Hour Average ³	0.08	157	0.08	157
Total Suspended Particles (TSP)				
Annual Mean	NA	45	None	
Rural Open Space		55		
Rural Residential		65		
Urban Residential		75		
Urban Industrial				
Maximum 24-Hour Concentration	NA	250		
Respirable Particulate Matter (PM₁₀)				
Average of 3 Annual Arithmetic Means	NA	50	NA	50
24-Hour Concentration ¹	NA	150	NA	150
Fine Respirable Particulate Matter (PM_{2.5})				
Average of 3 Annual Arithmetic Means	NA	15	NA	15
24-Hour Concentration ⁴	NA	65	NA	65
Sulfur Dioxide (SO₂)				
Annual Arithmetic Mean	0.03	80	NA	NA
Maximum 24-Hour Concentration ¹	0.14	365	NA	NA
Maximum 3-Hour Concentration ¹	NA	NA	0.50	1,300
<p>Notes: ppm – parts per million $\mu\text{g}/\text{m}^3$ – micrograms per cubic meter NA – not applicable</p> <p>Particulate matter concentrations are in $\mu\text{g}/\text{m}^3$. Concentrations of all gaseous pollutants are defined in ppm — approximately equivalent concentrations in $\mu\text{g}/\text{m}^3$ are presented.</p> <p>TSP levels are regulated by a New York State Standard only. All other standards are National Ambient Air Quality Standards (NAAQS)</p> <p>¹ Not to be exceeded more than once a year</p> <p>² Applies only to areas designated as Non Attainment.</p> <p>³ Three-year average of the annual fourth highest daily maximum 8-hr average concentration</p> <p>⁴ Not to be exceeded by the 98th percentile averaged over 3 years</p> <p>Sources: 40 CFR Part 50. National Primary and Secondary Ambient Air Quality Standards, 6 NYCRR Part 257 Air Quality Standards.</p>				

Nassau, Rockland, Suffolk, Westchester and the five counties of New York City have been designated as severe non-attainment for ozone 1-hour standard. In November 1998, New York State submitted its *Phase II Alternative Attainment Demonstration for Ozone*, which was finalized and approved by USEPA effective March 6, 2002, addressing attainment of the one-hour ozone NAAQS by 2007. New York State has recently submitted revisions to the SIP; these SIP revisions included additional emission reductions that USEPA requested to demonstrate attainment of the standard, and an update of the SIP estimates using two new USEPA models—the mobile source emissions model MOBILE6, and the non-road emissions model NONROAD—which have been updated to reflect current knowledge of engine emissions, and the latest mobile and non-road engine emissions regulations. On April 15, 2004, USEPA designated these same counties as moderate non-attainment for the new 8-hour ozone standard which became effective as of June 15, 2004. USEPA will revoke the 1-hour standard in June, 2005; however, the specific control measures for the 1-hour standard included in the SIP will be required to stay in place until the 8-hour standard is attained. The discretionary emissions reductions in the SIP would also remain but could be revised or dropped based on modeling. A new SIP for ozone will be adopted by the state no later than June 15, 2007, with a target attainment deadline of June 15, 2010.

DETERMINING THE SIGNIFICANCE OF AIR QUALITY IMPACTS

Any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see Table 18-1) would be deemed to have a potential significant adverse impact. In addition, in order to maintain concentrations lower than the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas, threshold levels have been defined for certain pollutants; any action predicted to increase the concentrations of these pollutants above the thresholds would be deemed to have a potential significant adverse impact, even in cases where violations of the NAAQS are not predicted.

DE MINIMIS CRITERIA REGARDING CO IMPACTS

New York City has developed *de minimis* criteria to assess the significance of the incremental increase in CO concentrations that would result from the Proposed Project, as set forth in the *City Environmental Quality Review (CEQR) Technical Manual*. These criteria set the minimum change in CO concentration that defines a significant environmental impact. Significant increases of CO concentrations in New York City are defined as: (1) an increase of 0.5 ppm or more in the maximum 8-hour average CO concentration at a location where the predicted No Action 8-hour concentration is equal to or between 8 and 9 ppm; or (2) an increase of more than half the difference between baseline (i.e., No Action) concentrations and the 8-hour standard, when No Action concentrations are below 8 0 ppm.

DE MINIMIS CRITERIA REGARDING PM_{2.5} IMPACTS

The New York City Department of Environmental Protection (NYCDEP) is currently employing interim guidance criteria for evaluating the potential PM_{2.5} impacts from NYCDEP projects subject to City Environmental Quality Review (CEQR). The interim guidance criteria currently employed by NYCDEP for determination of potential significant adverse impacts from PM_{2.5} are as follows:

- Predicted 24-hour (daily) average increase in $PM_{2.5}$ concentrations greater than $5 \mu\text{g}/\text{m}^3$ at a discrete location of public access, either at ground or elevated levels (microscale analysis); and
- Predicted annual average increase in ground-level $PM_{2.5}$ concentrations greater than $0.1 \mu\text{g}/\text{m}^3$ on a neighborhood scale. Receptors in the annual $PM_{2.5}$ neighborhood scale models are placed at a minimum distance of 15 meters, or at a distance of one meter per 1,000 daily vehicle miles traveled on the roadway, from the nearest moving lane, based on the NYCDEP procedure for neighborhood scale corridor $PM_{2.5}$ modeling.

D. METHODOLOGY FOR PREDICTING POLLUTANT CONCENTRATIONS

MOBILE SOURCES

The prediction of vehicle-generated CO and PM (PM_{10} and $PM_{2.5}$) concentrations in an urban environment incorporates meteorological phenomena, traffic conditions, and physical configurations. Air pollutant dispersion models mathematically simulate how traffic, meteorology, and geometry combine to affect pollutant concentrations. The mathematical expressions and formulations contained in the various models attempt to describe an extremely complex physical phenomenon as closely as possible. However, because all models contain simplifications and approximations of actual conditions and interactions and it is necessary to predict the reasonable worst case condition, most of these dispersion models predict conservatively high concentrations of pollutants, particularly under adverse meteorological conditions.

The mobile source analyses for the Proposed Project employs a model approved by USEPA that has been widely used for evaluating air quality impacts of projects in New York City, other parts of New York State, and throughout the country. The modeling approach includes a series of conservative assumptions relating to meteorology, traffic, and background concentration levels resulting in a conservatively high estimate of expected pollutant concentrations that could ensue from the Proposed Project. The assumptions used in the PM analysis for $PM_{2.5}$ were based on the latest $PM_{2.5}$ draft interim guidance developed by the NYCDEP.

DISPERSION MODEL FOR MICROSCALE ANALYSES

Maximum CO concentrations adjacent to streets near the project site, resulting from vehicle emissions, were predicted using the CAL3QHC model Version 2.0.¹ The CAL3QHC model employs a Gaussian (normal distribution) dispersion assumption and includes an algorithm for estimating vehicular queue lengths at signalized intersections. CAL3QHC predicts emissions and dispersion of CO from idling and moving vehicles. The queuing algorithm includes site-specific traffic parameters, such as signal timing and delay calculations (from the 2000 *Highway Capacity Manual* traffic forecasting model), saturation flow rate, vehicle arrival type, and signal actuation (i.e., pre-timed or actuated signal) characteristics to accurately predict the number of idling vehicles. The CAL3QHC model has been updated with an extended module,

¹ *User's Guide to CAL3QHC, A Modeling Methodology for Predicted Pollutant Concentrations Near Roadway Intersections*, Office of Air Quality, Planning Standards, USEPA, Research Triangle Park, North Carolina, Publication USEPA-454/R-92-006.

CAL3QHCR, which allows for the incorporation of hourly meteorological data into the modeling, instead of worst-case assumptions regarding meteorological parameters. This refined version of the model is employed in the CO analysis if maximum predicted future CO concentrations are greater than the applicable ambient air quality standards or when *de minimis* thresholds are exceeded using the first-level CAL3QHC modeling. CAL3QHCR is also used for PM analyses because it is more appropriate for calculating 24-hour and annual average concentrations.

METEOROLOGY

In general, the transport and concentration of pollutants from vehicular sources are influenced by three principal meteorological factors: wind direction, wind speed, and atmospheric stability. Wind direction influences the accumulation of pollutants at a particular prediction location (receptor), and atmospheric stability accounts for the effects of vertical mixing in the atmosphere.

Tier I Analyses—CAL3QHC

CO calculations were performed using the CAL3QHC model. In applying the CAL3QHC model, the wind angle was varied to determine the wind direction resulting in the maximum concentrations at each receptor.

Following the USEPA guidelines¹, CO computations were performed using a wind speed of 1 meter per second, and the neutral stability class D. The 8-hour average CO concentrations were estimated by multiplying the predicted 1-hour average CO concentrations by a factor of 0.70 to account for persistence of meteorological conditions and fluctuations in traffic volumes. A surface roughness of 3.21 meters was chosen. At each receptor location, the wind angle that maximized the pollutant concentrations was used in the analysis regardless of frequency of occurrence. These assumptions ensured that worst-case meteorology was used to estimate impacts.

TIER II ANALYSES—CAL3QHCR

A Tier II analysis performed with the CAL3QHCR model, which includes the modeling of hour-by-hour concentrations based on hourly traffic data and five years of monitored hourly meteorological data, was used to predict maximum 24-hour and annual average PM concentrations. The data consists of surface data collected at LaGuardia Airport and upper air data collected at Brookhaven, New York for the period 1999-2003. All hours are modeled, and the highest resulting concentration for each averaging period is presented.

ANALYSIS YEAR

The CO microscale analyses were performed for existing conditions (2004) and the years 2009 and 2014. The year 2009 represents project completion without the hotel and the year 2014 represents project completion with the hotel. The future year analyses were performed both without the Proposed Project (the No Build condition) and with the Proposed Project (the Build condition). The PM analysis was performed for the year 2009 only because the emissions are higher than 2014 and the truck increments are negligible between 2009 and 2014.

¹ *Guidelines for Modeling Carbon Monoxide from Roadway Intersections*. USEPA Office of Air Quality Planning and Standards, Publication USEPA-454/R-92-005

VEHICLE EMISSIONS DATA

Vehicular CO and PM emission factors were computed using the USEPA mobile source emissions model, MOBILE6.2¹. This is the most current, recently released emissions model capable of calculating engine emission factors for various vehicle types, based on the fuel (gasoline, diesel, or natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway types, number of starts per day, and engine soak time, and various other factors that influence emissions, such as inspection maintenance programs. The inputs and use of MOBILE6.2 incorporates the most current guidance available from the NYSDEC and NYCDEP.

Vehicle classification data were based on field studies and data obtained from other traffic studies. The general categories of vehicle types for specific roadways were further categorized into subcategories based on their relative fleet-wide breakdown.² Appropriate credits were used to accurately reflect the inspection and maintenance program. The inspection and maintenance programs require inspections of automobiles and light trucks to determine if pollutant emissions from the vehicles' exhaust systems are below emission standards. Vehicles failing the emissions test must undergo maintenance and pass a repeat test to be registered in New York State.

An ambient temperature of 52.5° Fahrenheit was used. This temperature, calculated based on the latest guidance from USEPA and NYSDEC, represents the average temperature measured at the Central Park meteorological station during the 10 highest 8-hour CO events measured at the East 34th Street and Brooklyn transit NYSDEC monitoring stations in 2000 through 2002.

TRAFFIC DATA

Traffic data for the air quality analysis were derived from existing traffic counts, projected future growth in traffic, and other information developed as part of the traffic analysis for the Proposed Project (see Chapter 16, "Traffic and Parking"). Traffic data for the future without and with the Proposed Project were employed in the respective air quality modeling scenarios and included consideration of traffic from nearby Yankee Stadium. The weekday PM (5:15 to 6:15 PM) pre-game and weekend PM (4:00 to 5:00 PM) post-game peak periods were subjected to micro-scale analysis for CO. These time periods were selected for the mobile source analysis because they produce the maximum anticipated project-generated traffic and have poor level of service and therefore have the greatest potential for significant air quality impacts

For the PM_{2.5} analysis (considering the highest truck increments) the peak midday (1-2 PM) and PM (5-6 PM) periods for the weekday non-game scenario were used as a baseline. Other hours were determined by adjusting those peak period volumes with the 24 hour distributions of actual vehicle counts collected for the project. The baseline used in the PM₁₀ analysis was the same as the peak hours in the CO analysis. When applicable in the project build condition, the parking garage "ins and outs" from the 24 hour parking accumulation tables were used because the critical intersections selected for analysis included the entrance and exit to the project parking garages.

¹ USEPA, User's Guide to MOBILE6.1 and MOBILE6.2 Mobile Source Emission Factor Model, EPA420-R-02-028, October 2002

² The MOBILE6.2 emissions model utilizes 28 vehicle categories by size and fuel. Traffic counts and predictions are based on broader size categories, and then broken down according to the fleet-wide distribution of subcategories and fuel types (diesel, gasoline, or alternative)

BACKGROUND CONCENTRATIONS

Background concentrations are those pollutant concentrations not directly accounted for through the modeling analysis, which directly accounts for vehicle-generated emissions on the streets within 1,000 feet and line-of-sight of the receptor location. Background concentrations must be added to modeling results to obtain total pollutant concentrations at a study site.

The 8-hour average background concentration used in this analysis was 2.0 ppm for the 2009 and 2014 predictions. This value, obtained from NYCDEP, is based on CO concentrations measured at NYSDEC monitoring stations. For PM₁₀ a value of 46 µg/m³ was used for the 24-hour averaging period and a value of 22 µg/m³ was used for the annual averaging period. Both values represent the highest of the latest three years, measured at the IS-52 NYSDEC monitoring station. For PM_{2.5}, background concentrations are not considered, since impacts are determined on an incremental basis only.

MOBILE SOURCE ANALYSIS SITES

A total of four analysis sites were selected for microscale analysis (see Table 18-2). These intersections were selected because they are the locations in the study area where the largest levels of project-generated traffic are expected and, therefore, where the greatest air quality impacts and maximum changes in the concentrations would be expected. (Sites 1 through 3 were analyzed for CO, only Site 2 was analyzed for PM₁₀ and only Site 4 was analyzed for PM_{2.5}

**Table 18-2
Mobile Source Analysis Intersection Locations**

Analysis Site	Location	Pollutants
1	E 161st Street and Grand Concourse	CO
2	E 151st Street and River Ave	CO/PM ₁₀
3	E.149th Street and River Ave/Exterior St.	CO
4	Exterior Street and Project Site Parking Garages	PM _{2.5}

RECEPTOR LOCATIONS

Multiple receptors (i.e. precise locations at which concentrations are predicted) were modeled at each of the selected sites; receptors were placed along the approach and departure links at spaced intervals. The receptors were placed at sidewalk or roadside locations near intersections with continuous public access. For PM_{2.5} annual impacts, receptors were placed at a distance of 15 meters from the nearest moving lane (i.e., neighborhood scale).

PARKING GARAGE

The Proposed Project would result in the operation of three public parking garages. One would be a 344-space public parking lot below Retail Building G. A second one would be a 256-space mechanically vented public parking garage below Retail Building B/F. The third one would be a 2,342-space multi-level and naturally ventilated public parking garage between Retail Building C (on the exterior street level) and Retail Building D (on the River Avenue level). Emissions from vehicles using the parking garages could potentially affect ambient levels of CO in the immediate vicinity of the ventilation outlets. An analysis was performed using the methodology set forth in the *CEQR Technical Manual Appendices 1 and 3*.

Emissions from vehicles entering, parking, and exiting the garage were estimated using the USEPA MOBILE6.2 mobile source emission model and an ambient temperature of 52.5°F. This temperature, calculated based on the latest guidance from USEPA, NYSDEC, and NYCDEP, represents the average temperature measured at the Central Park meteorological station during the 10 highest 8-hour CO events measured at the East 34th Street NYSDEC monitoring station in 2000 through 2002. For all arriving and departing vehicles, an average speed of five miles per hour was conservatively assumed for travel within the parking garages. In addition, all departing vehicles were assumed to idle for 1 minute before proceeding to the exit. The concentration of CO within the mechanically vented garage was calculated assuming a minimum ventilation rate, based on New York City Building Code requirements, of one cubic foot per minute of fresh air per gross square foot of garage area. To determine compliance with the NAAQS, CO concentrations were determined for the maximum 8-hour average period. (No exceedances of the 1-hour standard would occur, and the 8-hour values are the most critical for impact assessment since no violations of the 1-hour standard have been measured in New York City within the last 10 years.)

The CO concentrations were determined for the time periods when overall garage usage would be the greatest, considering the hours when the greatest number of vehicles would exit the facility. Departing vehicles were assumed to be operating in a "cold-start" mode, emitting higher levels of CO than arriving vehicles. Maximum emissions would result in the highest CO levels and the greatest potential impacts. Traffic data for the parking garage analysis were derived from the trip generation analysis described in the traffic section of the EAS.

STATIONARY SOURCES

A stationary source analysis was conducted to evaluate potential impacts from the Proposed Project due to the project's HVAC systems. In addition, an assessment was conducted to determine the potential for impacts due to industrial activities within the project area.

HVAC ANALYSIS

An analysis of potential air quality impacts from the HVAC system boilers for the Proposed Project was performed using the Industrial Source Complex Short Term (ISCST3) dispersion model developed by USEPA, and described in *User's Guide for the Industrial Source Complex (ISC3) Dispersion Models* (USEPA-454/B-95-003a). The ISCST3 model calculates pollutant concentrations from one or more points (e.g., exhaust stacks) based on hourly meteorological data, and has the capability of calculating pollutant concentrations at locations when the plume from the exhaust stack is affected by the aerodynamic wakes and eddies (downwash) produced by nearby structures. The ISCST3 analyses of potential impacts from exhaust stacks were made assuming stack tip downwash, buoyancy-induced dispersion, gradual plume rise, urban dispersion coefficients and wind profile exponents, no collapsing of stable stability classes, and elimination of calms. ISCST3 was run both with and without the building downwash algorithms enabled and with PRIME algorithms to determine impacts within the building cavity zone. The meteorological data set consisted of the latest 5 years of meteorological data that are available: surface data collected at La Guardia Airport (1999-2003) and concurrent upper air data collected at Brookhaven, New York.

The stack exit for the HVAC boilers were placed on the roof of each proposed building at locations closest to the proposed hotel (a sensitive receptor) and on the east-side of the project site closer to nearby neighborhoods (the west-side of the proposed development is bordered by the Harlem River). The stack locations for each proposed building are presented in Figure 18-1.

The current design for the proposed hotel includes individually heated units, rather than central heating. Our analysis assumes a single exhaust stack for the hotel heating system on the roof. This is a conservative assumption since it concentrates the source emissions at a single point.

The HVAC analysis includes two impact scenarios. The first scenario determines the impacts of each of each HVAC stack from the retail buildings on the proposed hotel (project-on-project impacts). The second scenario determines the impacts of each stack including the proposed hotel on all other receptors used in the analysis (see below).

A receptor grid was generated for the analysis that included 100 meter spacing out to 0.5 kilometers (km) and 500 meter spacing from 0.5 km out to 2.5 km. Additional discrete receptors within 0.4 km were placed at educational facilities and parks. Since the proposed hotel will be a sensitive receptor itself, receptors were placed on the hotel's facade at multiple elevations. This is modeled, not real. Also, due to the height of the HVAC stack on the hotel, additional receptors were placed at elevated locations on residential buildings of 18 stories or higher within 1 km of the project site.

The HVAC systems for the proposed development sites will use natural gas as fuel, with a minor electrical component. The pollutant of concern when burning natural gas is nitrogen oxides (NO_x). In addition, PM_{2.5} impacts were considered in the analysis. Emission rates of NO_x from HVAC boilers were calculated using natural gas combustion emission factors obtained from Section 1.4 of USEPA's AP-42. The emission factors were multiplied by fuel consumption to obtain maximum hourly emission rates. Estimates of fuel consumption were based on the proposed size (in square feet) of each development site and values for fuel usage presented in the *CEQR Technical Manual*. The annual average NO₂ impacts from the Proposed Project were conservatively calculated assuming that all of the nitrogen oxides emitted by these operations were NO₂. The estimated emission rates and stack parameters used for the analysis are provided in Table 18-3 below

Table 18-3
Emission Rates and Stack Heights for Proposed Development Sites

Development Site	Parameter			
	Annual Avg. NO _x Emission Rate (g/sec)	Annual Avg. PM _{2.5} Emission Rate (g/sec)	Peak 24-hour PM _{2.5} Emission Rate (g/sec)	Stack Height (feet)
Retail Building A	3.44E-02	2.61E-03	9.54E-03	84
Retail Building B/F	3.97E-02	3.02E-03	1.10E-02	96
Retail Building C	1.71E-03	1.30E-04	4.74E-04	71.5
Retail Building D	6.09E-04	4.63E-05	1.69E-04	50
Retail Building E	1.51E-03	1.14E-04	4.18E-04	48
Retail Building G	2.01E-02	1.52E-03	5.57E-03	47
Proposed Hotel	1.88E-02	1.43E-03	5.21E-03	230

The Proposed Project also would include the installation of an emergency generator which would be fueled by No. 2 oil. The generator would be used in the event of the sudden loss of power from the electrical grid. Occasionally, the generator would be tested for a short period of time to ensure its availability and reliability in the event of an actual emergency. Emergency generators are exempt from NYSDEC air permitting requirements, but would likely require a registration issued by NYCDEP. The emergency generator would be installed and operated in accordance with NYCDEP requirements, as well as other applicable codes and standards. Potential air quality impacts from the emergency generator are considered insignificant since the

emergency generator would be used only for testing purposes outside of an actual emergency, and the frequency and duration of such tests would be minimal.

BACKGROUND CONCENTRATIONS

To estimate the maximum expected total pollutant concentrations at a given receptor, the predicted levels were added to corresponding background concentrations (See Table 18-4). The background levels were based on concentrations monitored at the nearest NYSDEC ambient air monitoring station. The measured background concentration was added to the predicted contribution from the modeled source to determine the maximum predicted total pollutant concentration. It was conservatively assumed that the maximum background concentrations occur on all days. For PM_{2.5} background concentrations are not considered, since impacts are determined on an incremental basis only.

Table 18-4
Maximum Background Pollutant Concentration

Pollutant	Average Period	Location	Concentration ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)
NO ₂	Annual	IS52, The Bronx	60	100
Sources: 2001-2003 Annual New York State Air Quality Report Ambient Air Monitoring System, NYSDEC				

INDUSTRIAL SOURCES

Pollutants emitted from the exhaust vents of existing permitted industrial facilities were examined to identify potential adverse impacts on the proposed hotel associated with the Proposed Project.

Screening

Potential effects from existing industrial operations in the surrounding area on the Proposed Project were analyzed. All industrial air pollutant emission sources within 400 feet of the proposed project boundaries were considered for inclusion in the air quality impact analyses.

A request was made to NYCDEP's Bureau of Environmental Compliance (BEC) to obtain the most current information regarding the release of air pollutants from all existing manufacturing or industrial sources within the entire study area. The BEC air permit data provided was compiled into a database of source locations, air emission rates, and other data pertinent to determining source impacts. A comprehensive search was also performed to identify NYSDEC Title V permits and permits listed in the USEPA Envirofacts database.¹ Facilities that appeared in the Envirofacts database but did not also possess a NYCDEP certificate to operate would be cross-referenced against NYSDEC's Air Guide-1 software emissions database, which presents a statewide compilation of permit data for toxic air pollutants, to obtain emissions data and stack parameters.

A field survey was conducted on September 22, 2004, to determine the operating status of permitted industries and identify any potential industrial sites not included in the permit databases. The results of the field survey were compared against BEC data sources.

The potential ambient concentrations of each air toxic contaminant were determined using a screening database from the USEPA Industrial Source Complex (ISC3) dispersion model.

¹ USEPA, Envirofacts Data Warehouse, http://oaspub.epa.gov/enviro/ef_home2.air.

Predicted worst-case impacts on the Proposed Project were compared with the short-term guideline concentrations (SGCs) and annual guideline concentrations (AGCs) recommended in NYSDEC's DAR-1 AGC/SGC tables. These guideline concentrations present the airborne concentrations, which are applied as a screening threshold to determine if the users of the proposed hotel could be significantly impacted by nearby sources of air pollution.

DISPERSION MODELING

Since impacts exceeding a NYSDEC guideline concentration were predicted using the screening procedure, a refined ISC3 modeling analysis was performed for determining ambient concentrations for that pollutant. The refined ISC3 model calculates pollutant concentrations from one or more sources based on hourly meteorological data. Computations with the ISC3 model to determine impacts from point sources were made assuming stack tip downwash, buoyancy-induced dispersion, gradual plume rise, urban dispersion coefficients and wind profile exponents, no collapsing of stable stability classes, and elimination of calms. This modeling was performed with the appropriate five-year meteorological data discussed below.

E. EXISTING CONDITIONS

EXISTING MONITORED AIR QUALITY CONDITIONS (2003)

Monitored background data were utilized to determine the background. Monitored concentrations of CO, SO₂, particulate matter, NO₂, lead, and ozone ambient air quality data for the area are shown in Table 18-5. These values are the most recent monitored data that have been made available by NYSDEC for nearby monitoring stations. There were no monitored violations of the NAAQS for the pollutants at these sites in 2003.

**Table 18-5
Representative Monitored Ambient Air Quality Data**

Pollutants	Location	Units	Period	Concentrations			Number of Exceedances of Federal Standard	
				Mean	Highest	Second Highest	Primary	Secondary
CO	Botanical Gardens	ppm	8-hour	-	2.2	2.2	0	-
			1-hour	-	4.1	3.4	0	-
SO ₂	IS 52	ppm	Annual	0.011	-	-	0	-
			24-hour	-	0.052	0.051	0	-
			3-hour	-	0.089	0.080	-	0
Respirable Particulates (PM ₁₀)	IS 52	µg/m ³	Annual	22	-	-	0	0
			24-hour	-	60	46	0	0
Respirable Particulates (PM _{2.5})	IS 52	µg/m ³	Annual	14.8	-	-	-	-
			24-hour	-	52	51.1	-	-
NO ₂	IS 52	ppm	Annual	0.03	-	-	0	0
Lead	Susan Wagner	µg/m ³	3-month	-	0.01	0.01	0	-
O ₃	IS 52	ppm	1-hour	-	0.109	0.107	0	0

Source: 2003 Annual New York State Air Quality Report, NYSDEC 2004 (Draft)

PREDICTED EXISTING POLLUTANT CONCENTRATIONS

As noted previously, receptors were placed at multiple sidewalk locations next to the intersections under analysis. The receptor with the highest predicted CO concentrations was used to represent these intersection sites for the existing conditions. CO concentrations were calculated for each receptor location, at each intersection, for each peak period specified above.

Table 18-6 shows the maximum predicted existing (2004) CO 8-hour average concentrations at these intersections. (No 1-hour values are shown since predicted values are much lower than the standard.) At all receptor sites, the maximum predicted 8-hour average concentrations are within the national standard of 9 ppm.

Table 18-6
(2004) Maximum Predicted 8-Hour
Average Carbon Monoxide Existing Concentrations
(parts per million)

Site	Location	Time Period	Existing 8-Hour Concentration (ppm)
1	161st Street and Grand Concourse	Weekday PM	5.0
		Saturday PM	5.2
2	151st Street and River Ave	Weekday PM	3.5
		Saturday PM	3.8
3	149th Street and River Ave/Exterior St.	Weekday PM	6.4
		Saturday PM	6.4

Notes:
8-hour CO standard is 9 ppm.
An adjusted ambient background concentration of 2.0 ppm is included in the no build values presented above

F. THE FUTURE WITHOUT THE PROPOSED ACTIONS

MOBILE SOURCE ANALYSIS

CO

CO concentrations without the Proposed Project were determined for the 2009 and 2014 analysis years using the methodology previously described. Table 18-7 presents the future maximum predicted 8-hour average CO concentrations without the Proposed Project (i.e., 2009 and 2014 No Build values) at the analysis intersections in the project study area. The values shown are the highest predicted concentrations for the receptor locations for each of the time periods analyzed. As indicated in the table, the No Build concentrations are below the corresponding standard of 9 ppm.

PM₁₀

PM₁₀ concentrations without the proposed project were determined for the 2009 analysis year using the methodology previously described for the intersection of 151st Street and River Avenue. As indicated in Table 18-8, the No Build concentrations are below the corresponding standards of 150 µg/m³ and 50 µg/m³ for the 24-hour and annual averaging periods, respectively.

Table 18-7
Future (2009 & 2014) Maximum Predicted 8-Hour
Average Carbon Monoxide No Build Concentrations
(parts per million)

Site	Location	Time Period	2009 No Build 8-Hour Concentration (ppm)	2014 No Build 8-hour Concentration (ppm)
1	161st Street and Grand Concourse	Weekday PM	3.7	3.5
		Saturday PM	3.8	3.6
2	151st Street and River Ave	Weekday PM	2.9	2.6
		Saturday PM	3.1	2.8
3	149th Street and River Ave/Exterior St.	Weekday PM	4.6	4.3
		Saturday PM	4.7	4.4

Notes:
 8-hour CO standard is 9 ppm.
 An adjusted ambient background concentration of 2.0 ppm is included in the no build values presented above.

Table 18-8
No Build (2009) Maximum Predicted PM₁₀ Concentrations

Site	Location	24-Hour Concentration $\mu\text{g}/\text{m}^3$	Annual Concentration $\mu\text{g}/\text{m}^3$
2	151st Street and River Avenue	50.34	23.78

Note: 24-hour standard $150 \mu\text{g}/\text{m}^3$, Annual standard $50 \mu\text{g}/\text{m}^3$ Includes background concentrations of $46 \mu\text{g}/\text{m}^3$ and $22 \mu\text{g}/\text{m}^3$ for the 24-hour and annual averaging periods, respectively.

G. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

INTRODUCTION

The Proposed Project would result in increased mobile source emissions in the immediate vicinity of the project site. The Proposed Project could also affect the surrounding community with emissions from HVAC equipment. The following sections present the results of the studies performed to analyze the potential impacts on the surrounding community from project related sources.

MOBILE SOURCE ANALYSIS

CO

CO concentrations with the Proposed Project were determined for the 2009 and 2014 analysis years using the methodology previously described. Tables 18-9 and 18-10 present the future maximum predicted 8-hour average CO concentration with the Proposed Project (i.e., 2009 and 2014 Build Values) at the three intersections studied. Since no violations of the 1-hour CO standard have been measured in New York City within the last 10 years, 1-hour averages were not summarized in this report (although all 1-hour predicted CO concentrations would be well within the applicable standard).

**Table 18-9
Future (2009) Maximum Predicted 8-Hour Average
Carbon Monoxide Project Build Concentrations (parts per million)**

Site	Location	Time Period	2009 Project Build 8-Hour Concentration ^a (ppm)	Not-To-Exceed <i>De minimis</i> Criteria ^b (ppm)
1	161st Street and Grand Concourse	Weekday PM	4.0	6.35
		Saturday PM	4.4	6.40
2	151st Street and River Ave	Weekday PM	3.4	5.95
		Saturday PM	3.7	6.05
3	149th Street and River Ave/Exterior St.	Weekday PM	4.8	6.80
		Saturday PM	4.7	6.85

Notes:
a An adjusted ambient background concentration of 2.0 ppm is included in the project build values presented above.
b The not-to-exceed value is derived by adding the minimum acceptable increase of CO concentrations, (set forth in the *CEQR Technical Manual*) to the no-build concentration
8-hour CO standard is 9 ppm.

**Table 18-10
Future (2014) Maximum Predicted 8-Hour Average
Carbon Monoxide Project Build Concentrations (parts per million)**

Site	Location	Time Period	2014 Project Build 8-Hour Concentration ^a (ppm)	Not-To-Exceed <i>De minimis</i> Criteria ^b (ppm)
1	161st Street and Grand Concourse	Weekday PM	3.7	6.25
		Saturday PM	4.0	6.30
2	151st Street and River Ave	Weekday PM	3.2	5.80
		Saturday PM	3.4	5.90
3	149th Street and River Ave/Exterior St.	Weekday PM	4.4	6.65
		Saturday PM	4.4	6.70

Notes:
a An adjusted ambient background concentration of 2.0 ppm is included in the project build values presented above.
b The not-to-exceed value is derived by adding the minimum acceptable increase of CO concentrations (set forth in the *CEQR Technical Manual*) to the no-build concentration
8-hour CO standard is 9 ppm.

The values shown are the highest predicted concentration for each of the time periods analyzed. Also shown in the tables is the *de minimis* criteria used to determine the significance of the incremental increase in CO concentrations that would result from the Proposed Project. The *de minimis* criteria are derived using procedures outlined in the *CEQR Technical Manual* (2001) that set a minimum allowable change in 8-hour average CO concentrations due to the Proposed Project.

The results indicate that in the future with the Proposed Project, there would be no potentially significant adverse mobile source air quality impacts (i.e., *de minimis* criteria were not

exceeded). In addition, with or without the Proposed Project in 2009 or 2014, maximum predicted ambient CO concentrations at the intersections analyzed would be less than the corresponding ambient air quality standards.

PM₁₀

PM₁₀ concentrations with the proposed project were determined for the 2009 analysis year using the methodology previously described. As indicated in Table 18-11, the Build concentrations are below the corresponding standards of 150 µg/m³ and 50 µg/m³ for the 24-hour and annual averaging periods, respectively.

**Table 18-11
Build (2009) Maximum Predicted PM₁₀ Concentrations**

Site	Location	24-Hour Concentration µg/m ³	Annual Concentration µg/m ³
2	151st Street and River Avenue	53.29	24.62
Note: 24-hour standard 150 µg/m ³ , Annual standard 50µg/m ³ . Includes background concentrations of 46 µg/m ³ and 22 µg/m ³ for the 24-hour and annual averaging periods, respectively.			

PM_{2.5}

PM_{2.5} concentrations with and without the Proposed Project were determined for the year 2009 using the methodology previously described. The results of this analysis are presented in Table 18-12 for the 24-hour and annual time periods. As indicated in the table, the predicted incremental increases of PM_{2.5} concentrations for both time periods are under the corresponding interim guidance levels. Therefore, the Proposed Project is not considered to have significant PM_{2.5} impacts.

**Table 18-12
Future (2009) Maximum Predicted PM_{2.5}
Incremental Increases (µg/m³)**

Site	Location	Averaging Period	Modeled Conc.		Project Increment	Interim Guidance Threshold
			With Project	Without Project		
4	Exterior Street and Garage	24-hour	1.04	0.63	0.41	5
		Annual	0.211	0.185	0.026	0.1

PARKING GARAGE

Based on the methodology previously described, the maximum predicted 8-hour average CO concentrations from the three proposed parking facilities were analyzed using two receptor points; a near side receptor on the same side of the street as the parking facility and a far side receptor on the opposite side of the street from the parking facility. The total CO impacts included both background CO levels and contributions from traffic on adjacent roadways. When more than one roadway was adjacent to the parking facility, the roadway with higher traffic (i.e., greater CO levels) was used in the analysis

For the 2,342 space multi-level, naturally ventilated parking garage between Retail Buildings C and D, the predicted CO concentrations at the near and far receptors analyzed on River Avenue

are 0.27 ppm and 0.38 ppm, respectively. Therefore, including a background level of 2.0 ppm and on-street traffic with an estimated CO concentration of 0.46 ppm for the far receptor, the maximum predicted 8-hour average CO concentrations with the Proposed Project would be 2.23 ppm for the near receptor, and 2.83 ppm for the far receptor.

For the 344 space, naturally ventilated parking lot below Retail Building G, the predicted CO concentrations at the near and far receptors analyzed on Exterior Street are 0.06 ppm and 0.04 ppm, respectively. Therefore, including a background level of 2.0 ppm and on-street traffic with an estimated CO concentration of 0.29 ppm for the far receptor, the maximum predicted 8-hour average CO concentrations with the Proposed Project would be 2.06 ppm for the near receptor, and 2.33 ppm for the far receptor.

For the 256 space, mechanically ventilated parking garage below Retail Building B, the predicted CO concentrations at the near and far receptors analyzed on Exterior Street are 0.22 ppm and 0.10 ppm, respectively. Therefore, including a background level of 2.0 ppm and on-street traffic with an estimated CO concentration of 0.27 ppm for the far receptor, the maximum predicted 8-hour average CO concentrations with the Proposed Project would be 2.22 ppm for the near receptor, and 2.37 ppm for the far receptor. It should be noted that a single vent was used for the purpose of this analysis and it was placed on the south end of the garage near the loading docks and closest to Exterior Street at a height of twelve feet. This was a conservative assumption since design plans call for three or four vents across the south end of the building near the loading docks or roof level vents, four stories high.

As indicated above, the CO impacts from the three parking facilities were substantially below the applicable standard of 9 ppm. Therefore, it can be concluded that the parking facilities would not result in any significant adverse air quality impacts.

HVAC EQUIPMENT

The primary stationary source of air pollutants associated with the project would be the emissions from the natural gas-fired HVAC systems. The pollutants of primary concern are nitrogen dioxide and PM_{2.5}. The maximum concentrations were estimated using peak hourly emission rates for the HVAC boilers. The modeling analysis considered the impacts of the development sources on the proposed hotel and waterfront esplanade, as well as numerous off-site receptors, previously described. As indicated in Table 18-13, the maximum predicted ambient concentration of NO₂ is below the corresponding NAAQS, and Table 18-14 shows that the maximum predicted PM_{2.5} is below the NYCDEP interim guidance values. Therefore, it can be concluded that the HVAC systems for the proposed retail buildings and hotel would not result in significant adverse air quality impacts.

Table 18-13
Maximum Predicted NO_x Concentrations HVAC Stationary Source Analysis

Pollutant	Background Concentration (ug/m ³)	Maximum Predicted Concentration (ug/m ³)	Total Maximum Predicted Concentration (ug/m ³)	NAAQS (ug/m ³)
NO ₂	60	0.68	60.68	100

Table 18-14
HVAC Stationary Source Analysis
Maximum Predicted PM_{2.5} Concentrations

Pollutant	Averaging Period	Maximum Predicted Concentration (µg/m ³)	Interim Guidance Value (µg/m ³)
PM _{2.5}	24-hour	1.5	5
	Annual	0.052	0.3

INDUSTRIAL SOURCE IMPACTS

The results of the field survey indicated that only a single industrial facility was within 400 feet of the proposed hotel. The USEPA ISC3 dispersion model was utilized for the analysis, with the air contaminant emission rates from the nearby industrial facility and an estimated distance of 105 feet from the air emission source to the proposed hotel. A single contaminant (trichloroethylene) has the potential to exceed the New York State Department of Environmental Conservation (NYSDEC) Air Guide-1 annual concentration based on the modeling analyses conducted. Therefore, to preclude the potential for significant adverse air quality impacts from the industrial source, an (E) designation for air quality will be incorporated into the rezoning proposal. The text of the (E) designation is as follows:

- In order to ensure there will be no potential adverse air quality impacts, if trichloroethene emissions continue at the adjacent business, all windows on the east face of the development on Block 2539, Lot 60, up to a height of 45 feet above local grade must be inoperable. Similarly, air intakes must not be placed up to a height of 45 feet above local grade in this location.

CONSISTENCY WITH NEW YORK STATE AIR QUALITY IMPLEMENTATION PLAN

Maximum predicted CO concentrations with the Proposed Project would be less than the corresponding ambient air standard. Therefore, the Proposed Project would be consistent with the New York State Improvement Plan (SIP) for the control of CO. *

A. INTRODUCTION

Noise pollution in an urban area comes from many sources. Some sources are activities essential to the health, safety, and welfare of the city's inhabitants, such as noise from emergency vehicle sirens, garbage collection operations, and construction and maintenance equipment. Other sources, such as traffic, stem from the movement of people and goods, activities that are essential to the viability of the city as a place to live and do business. Although these and other noise-producing activities are necessary to a city, the noise they produce is, at times, undesirable. Urban noise detracts from the quality of the living environment and there is increasing evidence that excessive noise may represent a threat to public health.

The noise analysis of the Proposed Project consists of three parts:

- A screening analysis to determine whether there are any locations where traffic generated by the Proposed Project would have the potential to cause significant noise impacts;
- A detailed analysis at any location where traffic generated by the Proposed Project would have the potential to result in significant adverse noise impacts, to determine the magnitude of the increase in noise level; and
- An analysis to determine the level of building attenuation necessary to ensure that interior noise levels at the project site satisfy applicable interior noise criteria.

In summary, the analysis concludes that project-generated traffic would not be expected to produce significant increases in noise levels at any location near and/or adjacent to the project site. In addition, with the proposed buildings' design measures, noise levels within the proposed buildings would comply with all applicable requirements. Therefore, the Proposed Project would not result in any significant adverse noise impacts.

B. NOISE FUNDAMENTALS

Quantitative information on the effects of airborne noise on people is well documented. If sufficiently loud, noise may adversely affect people in several ways. For example, noise may interfere with human activities, such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Although it is possible to study these effects on people on an average or statistical basis, all the stated effects of noise on people vary greatly with the individual. Several noise scales and rating methods are used to quantify the effects of noise on people. These scales and methods consider such factors as loudness, duration, time of occurrence, and changes in noise level with time.

“A”-WEIGHTED SOUND LEVEL (DBA)

Noise is typically measured in units called decibels (dB), which are ten times the logarithm of the ratio of the sound pressure squared to a standard reference pressure squared. Because loudness is important in the assessment of the effects of noise on people, the dependence of loudness on frequency must be taken into account in the noise scale used in environmental assessments. Frequency is the rate at which sound pressures fluctuate in a cycle over a given quantity of time, and is measured in Hertz (Hz), where 1 Hz equals 1 cycle per second. Frequency defines sound in terms of pitch components. In the measurement system, one of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network—known as A-weighting—that simulate the response of the human ear. For most noise assessments the A-weighted sound pressure level in units of dBA is used in view of its widespread recognition and its close correlation with perception. In this analysis, all measured noise levels are reported in dBA or A-weighted decibels. Common noise levels in dBA are shown in Table 19-1.

**Table 19-1
Common Noise Levels**

Sound Source	(dBA)
Military jet, air raid siren	130
Amplified rock music	110
Jet takeoff at 500 meters	100
Freight train at 30 meters	95
Train horn at 30 meters	90
Heavy truck at 15 meters	80
Busy city street, loud shout	80
Busy traffic intersection	80
Highway traffic at 15 meters, train	70
Predominantly industrial area	60
Light car traffic at 15 meters, city or commercial areas or residential areas close to industry	60
Background noise in an office	50
Suburban areas with medium density transportation	50
Public library	40
Soft whisper at 5 meters	30
Threshold of hearing	0
Note: A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness.	
Source: Cowan, James P. Handbook of Environmental Acoustics. Van Nostrand Reinhold, New York, 1994. Egan, M. David, Architectural Acoustics McGraw-Hill Book Company, 1988.	

COMMUNITY RESPONSE TO CHANGES IN NOISE LEVELS

The average ability of an individual to perceive changes in noise levels is well documented (see Table 19-2). Generally, changes in noise levels of less than 3 dBA are barely perceptible to most listeners, whereas 10 dBA changes are normally perceived as doublings (or halvings) of noise levels. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Table 19-2
Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound
Source: Bolt Beranek and Neuman, Inc., <i>Fundamentals and Abatement of Highway Traffic Noise</i> , Report No PB-222-703. Prepared for Federal Highway Administration, June 1973.	

It is also possible to characterize the effects of noise on people by studying the aggregate response of people in communities. The rating method used for this purpose is based on a statistical analysis of the fluctuations in noise levels in a community, and integrates the fluctuating sound energy over a known period of time, most typically during 1 hour or 24 hours. Various government and research institutions have proposed criteria that attempt to relate changes in noise levels to community response. One commonly applied criterion for estimating this response is incorporated into the community response scale proposed by the International Standards Organization (ISO) of the United Nations (see Table 19-3). This scale relates changes in noise level to the degree of community response and permits direct estimation of the probable response of a community to a predicted change in noise level.

Table 19-3
Community Response to Increases in Noise Levels

Change (dBA)	Category	Description
0	None	No observed reaction
5	Little	Sporadic complaints
10	Medium	Widespread complaints
15	Strong	Threats of community action
20	Very strong	Vigorous community action
Source: International Standards Organization, <i>Noise Assessment with Respect to Community Responses</i> , ISO/TC 43 (New York, United Nations, November 1969)		

NOISE DESCRIPTORS USED IN IMPACT ASSESSMENT

Because the sound pressure level unit of dBA describes a noise level at just one moment and very few noises are constant, other ways of describing noise over extended periods have been

developed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific time period as if it had been a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level," L_{eq} , can be computed. L_{eq} is the constant sound level that, in a given situation and time period (e.g., 1 hour, denoted by $L_{eq(1)}$, or 24 hours, denoted as $L_{eq(24)}$), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors such as L_1 , L_{10} , L_{50} , L_{90} , and L_x , are sometimes used to indicate noise levels that are exceeded 1, 10, 50, 90 and x percent of the time, respectively. Discrete event peak levels are given as L_1 levels. L_{eq} is used in the prediction of future noise levels, by adding the contributions from new sources of noise (i.e., increases in traffic volumes) to the existing levels and in relating annoyance to increases in noise levels.

The relationship between L_{eq} and levels of exceedance is worth noting. Because L_{eq} is defined in energy rather than straight numerical terms, it is not simply related to the levels of exceedance. If the noise fluctuates very little, L_{eq} will approximate L_{50} or the median level. If the noise fluctuates broadly, the L_{eq} will be approximately equal to the L_{10} value. If extreme fluctuations are present, the L_{eq} will exceed L_{90} or the background level by 10 or more decibels. Thus the relationship between L_{eq} and the levels of exceedance will depend on the character of the noise. In community noise measurements, it has been observed that the L_{eq} is generally between L_{10} and L_{50} . The relationship between L_{eq} and exceedance levels has been used in this analysis to characterize the noise sources and to determine the nature and extent of their impact at all receptor locations.

For the purposes of this analysis, the maximum 1-hour equivalent sound level ($L_{eq(1)}$) has been selected as the noise descriptor to be used in the noise impact evaluation. $L_{eq(1)}$ is the noise descriptor used in the *City Environmental Quality Review (CEQR) Technical Manual* for noise impact evaluation, and is used to provide an indication of highest expected sound levels. $L_{10(1)}$ is the noise descriptor used in the *CEQR Technical Manual* for building attenuation. Hourly statistical noise levels (particularly L_{10} and L_{eq} levels) were used to characterize the relevant noise sources and their relative importance at each receptor location.

C. NOISE STANDARDS AND CRITERIA

NEW YORK CITY NOISE CODE

The New York City Noise Control Code promulgates sound-level standards for motor vehicles, air compressors, and paving breakers; requires that all exhausts be muffled; and prohibits all unnecessary noise adjacent to schools, hospitals, or courts. The code further limits construction activities to weekdays between 7 AM and 6 PM.

This Code contains ambient noise quality criteria and standards based on existing land use zoning designations. Table 19-4 summarizes the ambient noise quality criteria contained in the Code. Conformance with the noise level values contained in the Code is determined by considering noise emitted directly from stationary activities within the boundaries of a project. Construction activities and noise sources outside the boundaries of a project are not included within the provisions of this law.

Table 19-4
City of New York Ambient Noise Quality Zone Criteria (dBA)

Ambient Noise Quality Zone (ANQZ)	Daytime Standards* (7 AM-10 PM)	Nighttime Standards* (10 PM-7 AM)
Low-Density Residential (R1 to R3) Land Uses (N1)	60	50
High-Density Residential (R4 to R10) Land Uses (N2)	65	55
Commercial (C1 to C8) and Manufacturing (M1 to M3) Land Uses (N3)	70	70

Note: * $L_{eq}(1 \text{ hour})$.
Source: City of New York Local Law No. 64.

NEW YORK CEQR NOISE STANDARDS

The New York City Department of Environmental Protection (NYCDEP) has set external noise exposure standards. These standards are shown in Table 19-5 and 19-6. Noise exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable. The standards shown are based on maintaining an interior noise level for the worst-case hour L_{10} less than or equal to 45 dBA. Attenuation requirements are shown in Table 19-6.

Table 19-5
Noise Exposure Guidelines
For Use in City Environmental Impact Review¹

Receptor Type	Time Period	Acceptable General External Exposure	Airport ³ Exposure	Marginally Acceptable General External Exposure	Airport ³ Exposure	Marginally Unacceptable General External Exposure	Airport ³ Exposure	Clearly Unacceptable General External Exposure	Airport ³ Exposure
1 Outdoor area requiring serenity and quiet ²		$L_{10} \leq 55$ dBA	Ldn ≤ 60 dBA	55 < $L_{10} \leq 65$ dBA	60 < Ldn ≤ 65 dBA	65 < $L_{10} \leq 80$ dBA	(1) 65 < Ldn ≤ 70 dBA, (II) 70 \leq Ldn	$L_{10} > 80$ dBA	Ldn ≤ 75 dBA
2 Hospital, Nursing Home		$L_{10} \leq 55$ dBA		65 < $L_{10} \leq 70$ dBA		70 < $L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
3 Residence, residential hotel or motel	7 AM to 10 PM	$L_{10} \leq 65$ dBA		55 < $L_{10} \leq 70$ dBA		70 < $L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
	10 PM to 7 AM	$L_{10} \leq 55$ dBA		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
4 School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
5 Commercial or office		Same as Residential Day (7 AM-10 PM)	Same as Residential Day (7 AM-10 PM)	Same as Residential Day (7 AM-10 PM)	Same as Residential Day (7 AM-10 PM)				
6 Industrial, public areas only ³	Note 4	Note 4	Note 4	Note 4	Note 4				

Notes: ¹ Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards, all values are for the worst hour in the time period
² Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and old-age homes
³ One may use the FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey
⁴ External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards)
Source: New York City Department of Environmental Protection (adopted policy 1983)

Table 19-6

Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Acceptable	Marginally Unacceptable		Clearly Unacceptable		
Noise Level With Proposed Action	$65 < L_{10} \leq 70$	$70 < L_{10} \leq 75$	$75 < L_{10} \leq 80$	$80 < L_{10} \leq 85$	$85 < L_{10} \leq 90$	$90 < L_{10} \leq 95$
Attenuation*	25 dB(A)	(I) 30 dB(A)	(II) 35 dB(A)	(I) 40 dB(A)	(II) 45 dB(A)	(III) 50 dB(A)
Note:	* The above composite window-wall attenuation values are for residential dwellings. Commercial office spaces and meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.					
Source:	New York City Department of Environmental Protection					

In addition, the *CEQR Technical Manual* uses the following criteria to determine whether a Proposed Project would result in a significant adverse noise impact. The impact assessments compare the project's Build condition $L_{eq(1)}$ noise levels to those calculated for the No Build condition, for receptors potentially affected by the Proposed Project.

If the No Build levels are less than 60 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period, the threshold for a significant impact would be an increase of at least 5 dBA $L_{eq(1)}$. For the 5 dBA threshold to be valid, the resultant Build condition noise level would have to be equal to or less than 65 dBA. If the No Build noise level is equal to or greater than 62 dBA $L_{eq(1)}$, or if the analysis period is a nighttime period (defined in the CEQR standards as being between 10 PM and 7 AM), the incremental significant impact threshold would be 3 dBA $L_{eq(1)}$. (If the No Build noise level is 61 dBA $L_{eq(1)}$, the maximum incremental increase would be 4 dBA, since an increase higher than this would result in a noise level higher than the 65 dBA $L_{eq(1)}$ threshold.)

D. NOISE PREDICTION METHODOLOGY

GENERAL METHODOLOGY

The noise analysis for the Proposed Project used both proportional modeling techniques and the TNM model (the Federal Highway Administration's [FHWA] *Traffic Noise Model* version 2.5). Proportional modeling techniques were used for two purposes: First, as a screening mechanism, to identify locations where there would be the potential for significant noise impacts due to the Proposed Project, and; second, for analysis at locations where traffic is the dominant noise source, and there are no complicating factors. At locations where there is rail noise and/or a dominant noise source, a confluence of roadways (e.g. streets, Major Deegan Expressway, etc.), unusual roadway surfaces (e.g. cobblestone), or special conditions, the TNM model was used to determine the noise component due to roadway traffic.

The noise analysis examined weekday PM and late night (LN), and weekend midday (MD), PM, and late night (LN) peak hour traffic values. These are the time periods when the Proposed Project has its maximum traffic generation and therefore the maximum potential for significant noise impacts.

The proportional modeling technique, the TNM model, and the procedures used for analysis are described below.

PROPORTIONAL MODELING TECHNIQUE

Proportional modeling techniques were used to determine locations that had the potential for having significant noise impacts, and to determine potential project impacts at locations where traffic is the dominant noise source and where there are no other complicating factors. The proportional model is an approved methodology for mobile source analysis and is described in the *CEQR Technical Manual*.

Using this technique, the prediction of future traffic noise levels is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine No Build and Build levels. Using this methodology, vehicular traffic volumes were converted into Passenger Car Equivalent (PCE) values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of 13 cars; one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars; and one bus (vehicles designed to carry more than nine passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

$$F\ NL - E\ NL = 10 * \log_{10} (F\ PCE / E\ PCE)$$

where:

F NL = Future Noise Level

E NL = Existing Noise Level

F PCE = Future PCEs

E PCE = Existing PCEs

With this methodology, assuming traffic is the dominant noise source at a particular location if the existing traffic volume on a street is 100 PCE and if the future traffic volume were increased by 50 PCE to a total of 150 PCE, the noise level would increase by 1.8 dBA. Similarly, if the future traffic were increased by 100 PCE, or doubled to a total of 200 PCE, the noise level would increase by 3.0 dBA.

TNM MODEL

At locations where there is rail noise and/or a dominant noise source, a confluence of roadways (e.g. streets, Major Deegan Expressway, etc.), unusual roadway surfaces (e.g. cobblestone), or special conditions, the TNM model was used to determine the noise component due to roadway traffic. The FHWA Traffic Noise Model, TNM 2.5, calculates the noise contribution of each roadway segment to a given noise receptor. The noise from each vehicle type is determined as a function of the reference energy-mean emission level, corrected for vehicle volume, speed, roadway grade, roadway segment length, and source-receptor distance. Further adjustments needed to model the propagation path include shielding provided by rows of buildings, the effects of different ground types, source and receptor elevations, and effect of any intervening noise barriers.

There were two locations for which the TNM model was used. At the first location, noise from the elevated subway is the dominant noise source. At this location the following procedure was used in the analysis:

- Existing noise levels were determined by field measurements;

- The traffic component of the existing noise levels was calculated based on traffic on adjacent streets using the TNM model and existing traffic conditions;
- Elevated subway noise was determined by subtracting the TNM calculated traffic component from the measured (total) noise levels; and
- Future noise levels for 2009 and 2014 were determined by adding the calculated elevated subway noise component to TNM calculated traffic components, based on traffic on the adjacent street.

For conditions with rail (i.e. elevated subway) noise, it was assumed that rail noise for future conditions would remain similar to the calculated values based upon 2004 baseline conditions.

The second location where the TNM model was utilized is a location where the local street, Exterior Street, has a cobblestone surface, and reflections from buildings on both sides of the street, and the elevated Major Deegan Expressway result in almost a tunnel-like condition that significantly increases typical traffic noise. At this location the following procedure was used in the analysis:

- Existing noise levels were determined by field measurements;
- The TNM model was used to calculate existing noise levels due to traffic on Exterior Street;
- Adjustment factors were determined to account for the added effect of the cobblestone roadway surface on Exterior Street, and reflections from the buildings on Exterior Street and the undersurface of the Major Deegan Expressway;
- Future No Build noise levels for 2009 and 2014 were determined by adding these adjustment factors to the TNM modeled Exterior Street traffic components; and
- For Future Build conditions, it was assumed that Exterior Street would be repaved with asphalt which would reduce the calculated adjustment factors by approximately 4-5 dBA, and future Build noise levels for 2009 and 2014 were determined by adding these reduced adjustment factors to the TNM modeled Exterior Street traffic component.

E. EXISTING CONDITIONS

SITE DESCRIPTION

The project site is located in the West Haven neighborhood of the Bronx and is bounded by Metro North Rail Road tracks to the north, River Avenue to the east, 149th Street to the south, and the Harlem River to the west. The Major Deegan Expressway and Exterior Street (also known as Major Deegan Boulevard, the street under the Expressway) bisect the project site. The project site is currently zoned M2-1; however, the Proposed Project would rezone the site to C4-4. The rezoning of the site to C4-4 would place the site in an N3 Ambient Noise Quality Zone (ANQZ). $L_{eq(1)}$ noise level limits for this type of zone are 70 dBA for both daytime (7 AM to 10 PM) and nighttime (10 PM to 7 AM) hours.

SELECTION OF NOISE RECEPTOR LOCATIONS

Three noise receptor locations were chosen on the streets in the vicinity of the project site. Site 1 is located at River Avenue and 153rd Street, Site 2 is located on 149th Street between Walton and Gerard Avenues, and Site 3 was located on Exterior Street north of 150th Street (see Figure 19-1). These sites are representative of other locations in the immediate area, and are generally



Noise Receptor Locations
Figure 19-1

the locations where maximum project impacts would be expected. These sites were used to assess the potential impacts due to project-generated traffic noise.

NOISE MONITORING

Noise monitoring at the three receptor locations (Sites 1 through 3) was performed on June 4, 12, 18, and 19, 2004. At each of these sites, 20-minute spot measurements were taken during the two weekday periods and three weekend period that reflect peak hours of trip generation: PM weekday (5:00 PM – 7:00 PM), late night (LN) weekday (10:00 PM – 11:00 PM), midday (MD) weekend (12:00 PM – 2:00 PM), PM weekend (5:00 PM – 7:00 PM) and late night (LN) weekend (10:00 PM – 11:00 PM). Given the site's proximity to Yankee Stadium and the traffic generated by Yankee games, noise monitoring at the three receptor locations was performed both with and without a Yankee game in progress.

EQUIPMENT USED DURING NOISE MONITORING

The instrumentation used for the 20-minute measurements of mobile source noise was a Brüel & Kjær Type 2260 ½-inch microphone connected to a Larson Davis Laboratories (LDL) preamplifier attached to an LDL Model 700 Type 1 (according to ANSI Standard S1.4-1983) sound level meter. This assembly was mounted at a height of 5 feet above the ground surface on a tripod and at least 6 feet away from any large sound-reflecting surface to avoid major interference with sound propagation. The meter was calibrated before and after readings with a Brüel & Kjær Type 4231 sound-level calibrator using the appropriate adaptor. Measurements at each location were made on the A-scale (dBA). The data were digitally recorded by the sound level meter and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq} , L_1 , L_{10} , L_{50} , and L_{90} . A windscreen was used during all sound measurements except for calibration. Only traffic-related noise was measured; noise from other sources (e.g. emergency sirens, aircraft flyovers, etc.) was excluded from the measured noise levels. Weather conditions were noted to ensure a true reading as follows: wind speed under 12 mph; relative humidity under 90 percent; and temperature above 14°F and below 122°F. All measurement procedures conformed with the requirements of ANSI Standard S1.13-1971 (R1976).

RESULTS OF BASELINE MEASUREMENTS

Noise monitoring results at the three receptor locations are summarized in Tables 19-7 and 19-8. At Site 1 the measured noise was due to a combination of traffic and rail noise sources; at Site 2, traffic on 149th Street was the dominant noise source; and at Site 3 traffic on Exterior Street (and the reflections of that traffic off the surrounding buildings and understructure of the Major Deegan Expressway) was the dominant noise source. Table 19-7 shows noise levels at the three receptor locations with a Yankee game, and Table 19-8 shows noise levels at the three receptor locations without a Yankee game.

In terms of the CEQR criteria, existing noise levels at Sites 1 and 2 are in the "marginally acceptable" category and existing noise levels at Site 3 are in the "clearly unacceptable" category, both with and without a Yankee game during one or more time periods.

As discussed above in the methodology section, for Site 1 the TNM model was used to compute elevated subway noise levels. Existing traffic parameters (i.e., traffic volumes, vehicles mixes, vehicle speeds, etc.) were input to the TNM model, and the difference between the measured noise level and TNM calculated traffic component was the elevated subway noise. The elevated subway components are shown in Appendix C.

**Table 19-7
Measured Existing Noise Levels
With Yankee Game (in dBA)**

Site	Measurement Location	Day	Time	L _{eq}	L ₁	L ₁₀	L ₅₀	L ₉₀
1	River Avenue and 153rd Street	Weekday	PM	71.3	81.4	73.8	68.4	64.6
		Weekday	LN	71.6	81.8	73.8	69.0	65.6
		Weekend	MD	67.3	74.8	69.4	64.6	60.2
		Weekend	PM	66.9	73.0	69.6	65.4	61.4
		Weekend	LN	64.4	72.4	67.0	62.2	59.8
2	149th Street between Walton and Gerard Avenues	Weekday	PM	70.8	79.2	73.4	68.4	63.4
		Weekday	LN	67.7	77.2	70.0	65.4	62.2
		Weekend	MD	67.8	75.6	71.2	65.6	62.2
		Weekend	PM	68.8	77.0	71.6	66.4	63.2
		Weekend	LN	68.1	75.2	70.6	66.4	62.8
3	Exterior Street north of 150th Street	Weekday	PM	79.2	84.4	81.4	78.4	74.4
		Weekday	LN	76.5	83.8	80.0	74.6	67.4
		Weekend	MD	76.5	86.8	77.4	73.8	72.4
		Weekend	PM	74.3	81.2	77.6	72.2	68.0
		Weekend	LN	76.5	83.8	80.0	74.0	71.6

Note: Field measurements were performed by AKRF, Inc. on June 4 and 12, 2004

**Table 19-8
Measured Existing Noise Levels
Without Yankee Game (in dBA)**

Site	Measurement Location	Day	Time	L _{eq}	L ₁	L ₁₀	L ₅₀	L ₉₀
1	River Avenue and 153rd Street	Weekday	PM	69.8	80.0	72.5	66.5	62.0
		Weekday	LN	65.9	73.5	70.0	63.5	59.5
		Weekend	MD	68.1	81.0	69.5	63.5	60.0
		Weekend	PM	68.6	77.0	71.0	66.0	63.5
		Weekend	LN	69.8	79.5	72.5	67.0	62.5
2	149th Street between Walton and Gerard Avenues	Weekday	PM	70.4	78.5	72.5	68.0	64.5
		Weekday	LN	66.6	75.5	69.5	64.0	60.0
		Weekend	MD	70.6	78.0	74.0	68.5	64.5
		Weekend	PM	72.4	80.5	73.5	68.0	65.0
		Weekend	LN	70.1	77.5	73.0	68.0	65.0
3	Exterior Street north of 150th Street	Weekday	PM	78.4	85.5	81.5	76.5	73.0
		Weekday	LN	76.0	84.5	79.5	73.5	70.0
		Weekend	MD	75.3	82.5	77.5	74.0	70.5
		Weekend	PM	75.9	82.5	79.0	74.0	69.5
		Weekend	LN	74.4	81.5	78.0	71.5	67.0

Note: Field measurements were performed by AKRF, Inc. on June 18 and 19, 2004.

Similarly, as discussed in the methodology section, for Site 3 the TNM model was used to calculate an adjustment factor to account for the cobblestone roadway surface on Exterior Street and reflections due to the surrounding buildings on Exterior Street and from the undersurface of

the elevated Major Deegan Expressway. Existing traffic parameters (i.e., traffic volumes, vehicles mixes, vehicle speeds, etc.) were input to the TNM model, and difference between the measured noise levels and TNM calculated Exterior Street noise levels was used to calculate adjustment factors. The adjustment factor calculations are shown in Appendix C.

F. THE FUTURE WITHOUT THE PROPOSED ACTIONS

2009

Using the modeling methodology previously described, future noise levels without the Proposed Project in the year 2009 were calculated for conditions both with and without a Yankee game (see Tables 19-9 and 19-10). Future 2009 No Build noise levels at all sites both with and without a Yankee game would be less than 0.5 dBA higher than existing noise levels. Changes of this magnitude would be insignificant and imperceptible.

**Table 19-9
Future 2009 No Build Noise Levels
With Yankee Game (in dBA)**

Site	Day	Time	Existing $L_{eq}(t)$	2009 No Build $L_{eq}(t)$	Change
1	Weekday	PM	71.3	71.3	0.0
	Weekday	LN	71.6	71.6	0.0
	Weekend	MD	67.3	67.3	0.0
	Weekend	PM	66.9	66.9	0.0
	Weekend	LN	64.4	64.5	0.1
2	Weekday	PM	70.8	70.9	0.1
	Weekday	LN	67.7	67.8	0.1
	Weekend	MD	67.8	67.9	0.1
	Weekend	PM	68.8	68.9	0.1
	Weekend	LN	68.1	68.2	0.1
3	Weekday	PM	79.2	79.2	0.0
	Weekday	LN	76.5	76.8	0.3
	Weekend	MD	76.5	76.7	0.2
	Weekend	PM	74.3	74.3	0.0
	Weekend	LN	76.5	76.5	0.0

In terms of the CEQR criteria, 2009 future No Build noise levels at Sites 1 and 2 would remain in the "marginally acceptable" category and 2009 future No Build noise levels at Site 3 would remain in the "clearly unacceptable" category, both with and without a Yankee game during one or more time periods.

**Table 19-10
Future 2009 No Build Noise Levels
Without Yankee Game (in dBA)**

Site	Day	Time	Existing $L_{eq(t)}$	2009 No Build $L_{eq(t)}$	Change
1	Weekday	PM	69.8	69.8	0.0
	Weekday	LN	65.9	65.9	0.0
	Weekend	MD	68.1	68.1	0.0
	Weekend	PM	68.6	68.6	0.0
	Weekend	LN	69.8	69.8	0.0
2	Weekday	PM	70.4	70.5	0.1
	Weekday	LN	66.6	66.8	0.2
	Weekend	MD	70.6	70.7	0.1
	Weekend	PM	72.4	72.5	0.1
	Weekend	LN	70.1	70.2	0.1
3	Weekday	PM	78.4	78.5	0.1
	Weekday	LN	76.0	76.0	0.0
	Weekend	MD	75.3	75.5	0.2
	Weekend	PM	75.9	75.9	0.0
	Weekend	LN	74.4	74.5	0.1

2014

Using the modeling methodology previously described, future noise levels without the Proposed Project in the year 2014 were calculated for conditions both with and without a Yankee game (see Tables 19-11 and 19-12). Future 2014 No Build noise levels at all sites both with and without a Yankee game would be less than 0.5 dBA higher than existing noise levels. Changes of this magnitude would be insignificant and imperceptible.

**Table 19-11
Future 2014 No Build Noise Levels
With Yankee Game (in dBA)**

Site	Day	Time	Existing $L_{eq(t)}$	2014 No Build $L_{eq(t)}$	Change
1	Weekday	PM	71.3	71.3	0.0
	Weekday	LN	71.6	71.6	0.0
	Weekend	MD	67.3	67.4	0.1
	Weekend	PM	66.9	66.9	0.0
	Weekend	LN	64.4	64.5	0.1
2	Weekday	PM	70.8	71.0	0.2
	Weekday	LN	67.7	67.9	0.2
	Weekend	MD	67.8	68.0	0.2
	Weekend	PM	68.8	69.0	0.2
	Weekend	LN	68.1	68.3	0.2
3	Weekday	PM	79.2	79.3	0.1
	Weekday	LN	76.5	76.6	0.1
	Weekend	MD	76.5	76.7	0.2
	Weekend	PM	74.3	74.4	0.1
	Weekend	LN	76.5	76.6	0.1

**Table 19-12
Future 2014 No Build Noise Levels
Without Yankee Game (in dBA)**

Site	Day	Time	Existing $L_{eq}(t)$	2014 No Build $L_{eq}(t)$	Change
1	Weekday	PM	69.8	69.9	0.1
	Weekday	LN	65.9	65.9	0.0
	Weekend	MD	68.1	68.2	0.1
	Weekend	PM	68.6	68.6	0.0
	Weekend	LN	69.8	69.8	0.0
2	Weekday	PM	70.4	70.6	0.2
	Weekday	LN	66.6	66.9	0.3
	Weekend	MD	70.6	70.8	0.2
	Weekend	PM	72.4	72.6	0.2
	Weekend	LN	70.1	70.3	0.2
3	Weekday	PM	78.4	78.5	0.1
	Weekday	LN	76.0	76.0	0.0
	Weekend	MD	75.3	75.7	0.4
	Weekend	PM	75.9	76.0	0.1
	Weekend	LN	74.4	74.6	0.2

In terms of the CEQR criteria, 2009 future No Build noise levels at Sites 1 and 2 would remain in the “marginally acceptable” category and 2009 future No Build noise levels at Site 3 would remain in the “clearly unacceptable” category, both with and without a Yankee game during one or more time periods.

F. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

2009

Using the modeling methodology previously described, future noise levels with the Proposed Project in the year 2009 were calculated for conditions both with and without a Yankee game (see Tables 19-13 and 19-14). Future 2009 Build noise levels at all sites both with and without a Yankee game would be less than 0.5 dBA higher than future 2009 No Build noise levels. (At Site 3 Build noise levels would be less than No Build noise levels due to the resurfacing of Exterior Street and the replacement of the cobblestone surface with asphalt.) Changes of this magnitude would be imperceptible and insignificant.

In terms of the CEQR criteria, 2009 future No Build noise levels at Sites 1 and 2 would remain in the “marginally acceptable” category and 2009 future No Build noise levels at Site 3 would remain in the “clearly unacceptable” category, both with and without a Yankee game during one or more time periods.

**Table 19-13
Future 2009 Build Noise Levels
With Yankee Game (in dBA)**

Site	Day	Time	2009 No Build $L_{eq(t)}$	2009 Build $L_{eq(t)}$	Change
1	Weekday	PM	71.3	71.4	0.1
	Weekday	LN	71.6	71.8	0.2
	Weekend	MD	67.3	67.3	0.0
	Weekend	PM	66.9	67.0	0.1
	Weekend	LN	64.5	64.7	0.2
2	Weekday	PM	70.9	71.2	0.3
	Weekday	LN	67.8	67.9	0.1
	Weekend	MD	67.9	68.2	0.3
	Weekend	PM	68.9	69.1	0.2
	Weekend	LN	68.2	68.3	0.1
3	Weekday	PM	79.2	78.2	-1.0
	Weekday	LN	76.8	73.1	-3.7
	Weekend	MD	76.7	74.9	-1.8
	Weekend	PM	74.3	72.2	-2.1
	Weekend	LN	76.5	73.3	-3.2

**Table 19-14
Future 2009 Build Noise Levels
Without Yankee Game (in dBA)**

Site	Day	Time	2009 No Build $L_{eq(t)}$	2009 Build $L_{eq(t)}$	Change
1	Weekday	PM	69.8	70.2	0.4
	Weekday	LN	65.9	65.9	0.0
	Weekend	MD	68.1	68.5	0.4
	Weekend	PM	68.6	69.0	0.4
	Weekend	LN	69.8	69.9	0.1
2	Weekday	PM	70.5	70.8	0.3
	Weekday	LN	66.8	66.9	0.1
	Weekend	MD	70.7	70.9	0.2
	Weekend	PM	72.5	72.8	0.3
	Weekend	LN	70.2	70.3	0.1
3	Weekday	PM	78.5	77.3	-1.2
	Weekday	LN	76.0	72.1	-3.9
	Weekend	MD	75.5	74.1	-1.4
	Weekend	PM	75.9	72.2	-3.7
	Weekend	LN	74.5	70.7	-3.8

Noise levels in the western portion of the 2-acre public open space that would be developed as part of the Proposed Project (i.e., adjacent to Exterior Street) would be slightly less than the values at Site 3 on Exterior Street. Noise levels at the open space would decrease by approximately 3 dBA per doubling of distance going west from Exterior Street. Maximum $L_{eq(1)}$ noise levels in the proposed open space would range from approximately 75 to 76 dBA; maximum $L_{10(1)}$ noise levels would be approximately 3 dBA higher than the $L_{eq(1)}$ noise levels. Noise levels at portions of the proposed waterfront esplanade would be lower due to the attenuation with distance from Exterior Street (and the Major Deegan Expressway) and the barrier effect of the Proposed Project's buildings. A guideline level of 55 dBA $L_{10(1)}$ for outdoor areas requiring serenity and quiet has been established in the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for Use in City Environmental Impact Review" (presented here as Table 19-5). Even with the barrier effect of the proposed buildings and the distance attenuation, noise levels at the waterfront esplanade, as well as at the proposed open space, would be higher than 55 dBA $L_{10(1)}$. Therefore, based upon these guideline values, the Proposed Project would result in a significant impact by creating a new open space in an area with elevated noise levels. There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open spaces to below the 55 dBA $L_{10(1)}$ guideline noise level. (A sound barrier on Exterior Street would present problems with respect to aesthetics and safety, and unless the barrier extended well above the height of the elevated roadway, it would not be effective in reducing noise from the Major Deegan Expressway.) While noise levels in the open space would be above the 55 dBA $L_{10(1)}$ guideline and are therefore identified as a significant impact, they would be comparable to noise levels in a number of well-used and attractive open spaces in New York City that are also located adjacent to heavily trafficked roadways, such as the Hudson River Park, Empire State Park, and the East River Esplanade.

2014

Using the modeling methodology previously described, future noise levels with the Proposed Project in the year 2014 were calculated for conditions both with and without a Yankee game (see Tables 19-15 and 19-16). Future 2014 Build noise levels at all sites both with and without a Yankee game would be less than 1.0 dBA higher than future 2014 No Build noise levels. (At Site 3 Build noise levels would be less than No Build noise levels due to the resurfacing of Exterior Street and the replacement of the cobblestone surface with asphalt.) Changes of this magnitude would be imperceptible and insignificant.

In terms of the CEQR criteria, 2009 future No Build noise levels at Sites 1 and 2 would remain in the "marginally acceptable" category and 2009 future No Build noise levels at Site 3 would remain in the "clearly unacceptable" category, both with and without a Yankee game during one or more time periods.

As discussed above, noise levels in the western portion of the 2-acre public open space that would be developed as part of the Proposed Project (i.e., adjacent to Exterior Street) would be slightly less than to the values at Site 3 on Exterior Street. Noise levels would decrease by approximately 3 dBA per doubling of distance going west from Exterior Street. Maximum $L_{eq(1)}$ noise levels in the proposed open space would range from approximately 75 to 76 dBA. Maximum $L_{10(1)}$ noise levels in the proposed open space would be approximately 3 dBA higher than the $L_{eq(1)}$ noise levels. Noise levels at the portions of the proposed waterfront esplanade would be lower due to the attenuation with distance from Exterior Street (and the Major Deegan Expressway) and the barrier effect of the Proposed Project's buildings. However, as discussed above, noise levels in the proposed public open space and waterfront esplanade would be higher

than the 55 dBA $L_{10(1)}$ noise level for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for Use in City Environmental Impact Review." (presented here as Table 19-5). Therefore, based upon these guideline values, creation of the new public open space would be considered a significant noise impact. There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open space below the 55 dBA $L_{10(1)}$ guideline noise level. While noise levels in the open space would be above the 55 dBA $L_{10(1)}$ guideline noise level, they would be comparable to noise levels in a number of well-used and attractive open spaces in New York City that are also located adjacent to heavily trafficked roadways, such as the Hudson River Park, Empire State Park, and the East River Esplanade.

**Table 19-15
Future 2014 Build Noise Levels
With Yankee Game (in dBA)**

Site	Day	Time	2014 No Build $L_{eq(1)}$	2014 Build $L_{eq(1)}$	Change
1	Weekday	PM	71.3	71.4	0.1
	Weekday	LN	71.6	71.6	0.0
	Weekend	MD	67.4	67.7	0.3
	Weekend	PM	66.9	67.1	0.2
	Weekend	LN	64.5	64.7	0.2
2	Weekday	PM	71.0	71.3	0.3
	Weekday	LN	67.9	68.0	0.1
	Weekend	MD	68.0	68.3	0.3
	Weekend	PM	69.0	69.3	0.3
	Weekend	LN	68.3	68.4	0.1
3	Weekday	PM	79.3	78.4	-0.9
	Weekday	LN	76.6	73.2	-3.4
	Weekend	MD	76.7	75.1	-1.6
	Weekend	PM	74.4	72.6	-1.8
	Weekend	LN	76.6	72.8	-3.8

**Table 19-16
Future 2014 Build Noise Levels
Without Yankee Game (in dBA)**

Site	Day	Time	2014 No Build $L_{eq(1)}$	2014 Build $L_{eq(1)}$	Change
1	Weekday	PM	69.9	70.2	0.3
	Weekday	LN	65.9	65.9	0.0
	Weekend	MD	68.2	68.5	0.3
	Weekend	PM	68.6	69.1	0.5
	Weekend	LN	69.8	69.9	0.1
2	Weekday	PM	70.6	70.9	0.3
	Weekday	LN	66.9	67.0	0.1
	Weekend	MD	70.8	71.0	0.2
	Weekend	PM	72.6	72.9	0.3
	Weekend	LN	70.3	70.4	0.1
3	Weekday	PM	78.5	77.5	-1.0
	Weekday	LN	76.0	72.2	-3.8
	Weekend	MD	75.7	74.3	-1.4
	Weekend	PM	76.0	72.9	-3.1
	Weekend	LN	74.6	70.8	-3.8

ATTENUATION REQUIREMENTS

As shown in Table 19-6, the *CEQR Technical Manual* has set noise attenuation quantities for buildings based on exterior noise levels. Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower, and are determined based on exterior $L_{10(1)}$ noise levels. The proposed buildings' designs include the use of well-sealed, double-glazed windows and air conditioning (i.e., alternate means of ventilation). With these measures, the window/wall attenuation would provide up to 40 dBA reduction for all facades of the proposed buildings. Based upon the $L_{10(1)}$ values measured at the project site, these design measures would provide sufficient attenuation to achieve the CEQR requirements.

Also, the buildings' mechanical systems (i.e., heating, ventilation, and air conditioning systems) would be designed to meet all applicable noise regulations and noise levels from the proposed buildings' mechanical system would avoid producing levels that would result in any significant increase in ambient noise levels. *

A. INTRODUCTION

This chapter summarizes the preliminary construction program for the Proposed Project and assesses the potential for construction-period impacts. The stages of construction and their associated activities are first described, followed by the types of impacts likely to occur. The assessment also describes methods that may be employed to minimize construction-period impacts.

Although there would be localized, temporary disruptions, the analysis concludes that there would not be any significant adverse impacts due to the construction period except for historic resources. The proposed demolition of the project site structures identified as historic resources would constitute a significant adverse impact. However, measures to mitigate this impact are being developed in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and are detailed in Chapter 23, "Mitigation "

B. CONSTRUCTION STAGES

It is anticipated that the Proposed Project would be constructed in two phases. The first phase of construction is expected to begin in 2005 and last approximately 48 months. It includes the development of Retail Buildings A, B/F, C, D, and E and the parking garage. The second phase would include development of the hotel and is expected to begin in 2012 and continue for approximately 24 months. The analysis focuses on the first phase of construction, which includes the bulk of the Proposed Project and would last longer. The second phase is much smaller with one element and therefore, would likely have fewer impacts. Construction would proceed in several stages, some of which would overlap; installation of erosion and sediment control devices; environmental remediation, demolition and grading; infrastructure improvement; site preparation, foundations and pile driving; superstructure construction; and building finishes, parking, and final site finishes and improvements (e.g., sidewalks, landscaping, lighting). It is anticipated that construction activities and material temporary storage would be on-site and on adjacent streets. The majority of truck access would be from the Major Deegan Expressway.

Building A, which was formerly located on the northeast portion of the project site, was in very poor condition. The New York City Economic Development Corporation, acting on the behalf of the Office of the Deputy Mayor for Economic Development and Rebuilding through prior arrangement with the applicant, recently required the demolition of this building because of its condition. Demolition of this building was completed in February 2005.

ENVIRONMENTAL REMEDIATION AND BUILDING DEMOLITION

Construction of the Proposed Project would begin with environmental remediation to address hazardous materials currently existing on the site and demolition of the existing structures. The environmental remediation would be conducted under a Remedial Work Plan (RWP) and Health

and Safety Plan (HASP) to be approved by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH). As described in Chapter 11, "Hazardous Materials," measures would be taken to avoid potential adverse impacts during construction activities due to the presence of subsurface soil and groundwater contamination resulting from on- and potentially off-site sources, asbestos-containing materials (ACMs), and lead-based paint. Demolition, excavation, and construction activities could disturb hazardous materials and increase pathways for human exposure. However, impacts would be avoided by performing construction activities in accordance with the following protocols:

- Prior to, or as part of initial construction activities for the project, all remaining petroleum storage tanks (and any associated contaminated soil) would be removed in accordance with applicable federal, state, and local requirements (see Chapter 11, "Hazardous Materials").
- All material that needs to be disposed of (e.g., excess fill) would be disposed of off-site in accordance with applicable federal, state, and local requirements. In addition, any petroleum-contaminated soil or other contaminated soil encountered during excavation would be properly disposed of. The volume of soil to be removed is estimated to be 33,520 cubic yards.
- If dewatering is required for construction, there would be a potential for contact with contaminated groundwater, though levels of contamination appear too low to be a significant health concern. Although testing to date indicates that the groundwater would meet New York City Department of Environmental Protection (NYCDEP) sewer discharge requirements, additional testing would be performed, as conditions may vary around the site and, if necessary, pretreatment would be conducted prior to the water discharge to the City's sewer system, as required by NYCDEP permit/approval requirements.
- Since much of the soil sampled does not meet the most stringent guidelines for unrestricted use, any areas of exposed soil (e.g., open spaces not covered by impervious surfaces) would be capped with at least two feet of clean soil.
- All activities involving disturbance of existing soils would be conducted in accordance with a HASP that would detail measures to reduce the potential for exposure (e.g., dust control) and measures to identify and manage known contamination (e.g., petroleum storage tanks) and unexpectedly encountered contamination. In the event that soil containing petroleum or other contaminated materials is discovered during excavation activities, such soil would be segregated, characterized through appropriate sampling, and disposed of or capped on site in accordance with all applicable federal, state, and local regulations and guidelines.
- Prior to any demolition activities, a comprehensive asbestos survey of all structures would be conducted that included the sampling of all suspect materials to confirm the presence or absence of asbestos. Based on the findings of the survey, the identified ACMs would be removed and disposed of in accordance with all federal, state and local regulations.
- Any demolition activities with the potential to disturb lead-based paint would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62 - Lead Exposure in Construction).

With the implementation of these measures, no significant adverse impacts related to hazardous materials would result from demolition and/or construction activities on the project site.

The remediation and demolition stage is expected to last approximately nine months and employ between 20 and 45 workers. On a typical day, approximately 2 to 25 truck trips would be generated.

EXCAVATION AND GRADING

The site would be excavated for utilities and below grade uses. As mentioned above, all material that needs to be disposed of (e.g., excess/unsuitable fill) would be disposed of off-site in accordance with applicable federal, state, and local requirements. In addition, any petroleum-contaminated soil or other contaminated soil encountered during excavation would be properly disposed of.

The site would be graded so that the foundations could be excavated, and final elevations established. Existing foundations and roadways would be cleared. The Proposed Project's building footprints would be established above the 100-year floodplain. The fill would be suitable for supporting roadways, parking areas, and as a base for the proposed structures. The Proposed Project would utilize as much of the demolition-related fill as possible.

In total, the Proposed Project would require the removal of an estimated 33,520 cubic yards of fill. This phase would last two to three months and employ between 20 and 40 workers. On a typical day, approximately 40 truck trips would be generated. Backfilling construction debris on site may also require New York City Department of Sanitation (NYCDS) approval, and 6 NYCRR Part 360 approval for the disposal of solid waste from NYSDEC.

INFRASTRUCTURE IMPROVEMENTS

Infrastructure improvements at the site would include utility connections such as water, sewer, electric, gas, and telecommunications. As described in Chapter 13, "Infrastructure," new water lines would be installed both within the City's right of way and the project site for the Proposed Project. This includes the construction of a 12-inch diameter water main within Exterior Street parallel to the existing 20-inch service. Water mains located within City streets proposed to be demapped would be capped and removed/abandoned in accordance with NYCDEP requirements. Sanitary sewers would be constructed within Exterior Street. These sewers would connect to either the 50- by 62-inch interceptor at the intersection of Exterior Street and 149th Street or directly to the City's interceptor located within Exterior Street. The Proposed Project also would include construction of a NYCDEP storm sewer within Exterior Street in accordance with the City's amended drainage plan for the area. The drainage plan would be amended as part of the mapping action associated with the Proposed Project. The plan would be developed to utilize the existing outfalls from the project site into the Harlem River. The construction of the new water, sanitary sewer, and storm sewer lines would involve trenching on the site, and limited off-site trenching in City streets. This stage and the site preparation stage would overlap. Discharge of stormwater to the NYCDEP storm sewer would require implementation of a Stormwater Pollution Prevention Plan (SWPPP) in compliance with NYSDEC General Permit GP-02-01 for stormwater discharges from construction activity.

SITE PREPARATION, FOUNDATIONS AND PILE DRIVING

Following demolition and grading, construction of the Proposed Project's foundation and below-grade elements would begin. For structures of this type, the foundations would typically be slab on-grade with supporting piles. Blasting is not anticipated to occur during construction. This

phase of work would require approximately 9 to 12 months and employ between 50 and 100 workers. On a typical day, 20 truck trips would be generated.

SUPERSTRUCTURE

Following installation of foundations, the construction of the buildings' superstructures would commence. Construction of the buildings' superstructures is anticipated to last approximately 6 to 10 months. As the frame is installed, work would commence on interior infrastructure—mechanical, electrical, and plumbing systems—and enclosure. Interior construction would take approximately 8 to 12 months. It would be phased to overlap with the completion of the core and shell so that a significant amount of interior work is performed before the core and shell are completed.

BUILDING FINISHES AND SIDEWALKS

This phase of building construction is the exterior and interior finishes. The work would involve final roofing and finishing details on the exterior walls. While this construction is taking place, the sidewalks would be built. This phase is anticipated to take about six to nine months. Thus, between the superstructure and building finishes, these two phases of construction should take about 22 months.

C. CONSTRUCTION EQUIPMENT AND ACTIVITIES

Typical equipment used for demolition, excavation, and foundation work would include excavators, bulldozers, backhoes, pile driving and compaction equipment, tractors, jackhammers, and concrete pumping trucks. Other equipment that would be used include hoist complexes, dump trucks and loaders, concrete trucks, and back hoes. Trucks would deliver concrete and other building materials, and remove excavated material as well as demolition and construction debris. The construction equipment likely to be used during erection of the superstructure would include compressors, cranes, derricks, hoists, bending jigs, and welding machines. During facade and roof construction, hoists may continue to be used. Trucks would remain in use for material supply and construction waste removal. Interior and finishing work would employ a large number of construction workers, and a wide variety of fixtures and supplies would have to be delivered to the site.

The majority of construction activities would take place Monday through Friday, although the delivery or installation of certain equipment could occur on weekend days. Hours of construction are regulated by the New York City Department of Buildings and apply in all areas of the City. These requirements are reflected in the collective bargaining agreements with major construction trade unions. In accordance with those regulations, almost all work could occur between 7 AM and 6 PM on weekdays, although some workers would arrive and begin to prepare work areas before 7 AM. Occasionally, Saturday or overtime hours would be required to complete some time-sensitive tasks. Movement of certain oversized materials, to comply with the requirements of the New York City Department of Transportation (NYCDOT), would occur at night. Construction would require temporary sidewalk and parking lane closures and vehicular travel lane narrowing on Exterior Street and River Avenue.

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

2009

As with the development of any large site, construction of the Proposed Project may be disruptive to the surrounding area. The following analysis describes the economic benefits associated with the construction and the temporary effects on land use, neighborhood character, open space, historic resources, water quality, natural resources, hazardous materials, traffic, air quality, noise, and public health.

ECONOMIC IMPACTS

Construction of the Proposed Project would have direct, positive impacts resulting from expenditures on labor, materials, and services, and indirect benefits created by expenditures by material suppliers, construction workers, and others involved in the project. Construction of the Proposed Project would also contribute to increased tax revenues for the city and state, including those from personal income taxes. According to the applicant, direct wages and salaries to be generated by construction of the Proposed Project would total approximately \$94.35 million in New York City and New York State; indirect and generated construction related wages and salaries would total another \$46.53 million in New York City and \$76.85 million in New York State.

LAND USE AND NEIGHBORHOOD CHARACTER

As is typical with large construction projects, during periods of peak construction activity there would be some disruption, predominantly noise, to the nearby area; however, as an industrial site located near the waterfront, the area of the proposed construction is largely separated from the community. There would be construction trucks and construction workers coming to the site. There would also be noise, sometimes intrusive, from building construction as well as trucks and other vehicles backing, loading, and unloading. Because the site is close to the shoreline and the neighboring uses are primarily transportation (i.e., the Major Deegan Expressway) and low-density industrial, the construction would affect only a small number of adjacent uses. The disruptions would be temporary in nature, with the noisiest period of construction anticipated to last only 18 months (the grading, pile driving, and superstructure phases). Overall, while the construction at the site would be evident to the local community, the limited duration of construction, in particular the limited intrusive periods of construction, should not result in significant or long-term adverse impacts on the local land use patterns or character of the nearby area.

HISTORIC RESOURCES

As described in Chapter 7, "Historic Resources," the Bronx Terminal Market (Buildings B, D, F, G, H, and J) and the Bronx House of Detention have been determined eligible for listing on the State and National Registers of Historic Places (S/NR-eligible) by OPRHP. Therefore, the demolition of Buildings B, D, F-H, J, and the Bronx House of Detention pursuant to construction of the Proposed Project would be a significant adverse impact on historic resources. Measures to mitigate this impact are being developed with OPRHP and detailed in Chapter 23, "Mitigation."

NATURAL RESOURCES

As noted previously, the entire shoreline adjacent to the project site is engineered with rip-rap slopes, timber bulkheads or relieving platforms. Short-term construction related impacts to state-regulated tidal wetlands and adjacent area would be associated with the proposed improvements to the waterfront and water's edge. Portions of the existing timber bulkheads between the piers (the interpier areas) would be removed at or just above spring high tide and replaced by a softer, sloped, and more stable rip-rap edge. The affected areas would be portions of: the northern bulkhead along the southern interpier area, both bulkheads along the middle interpier area, and the southern bulkhead along the northern interpier area. Upland areas close to the bulkhead are referred to as the adjacent area in NYSDEC Tidal Wetlands regulations. Adjacent area disturbance during construction would also include replacement of existing-disturbed sparsely vegetated adjacent area with a landscaped public open space and esplanade in the south and esplanade in the north, as well as possibly some covering of adjacent areas with impervious material (asphalt or concrete) for parking and a retail building. The project involves no filling of state-regulated Tidal Wetlands or U.S. waters. Removal of timber bulkhead and replacement with rip-rap shoreline stabilization will require approvals from USACOE and NYSDEC. The project is expected to have no significant impacts and may have a beneficial ecological affect on the adjacent area because of the enhanced landscaping and vegetation. The applicant would also remove and properly dispose of all debris along the shoreline, as well as debris accumulated on the mudflats.

Currently, the project site provides minimal wildlife habitat other than small areas with ruderal vegetation along the waters edge. The small woodlot in the eastern portion of the site, and vacant buildings that may be used by urban wildlife typical of highly developed portions of cities such as pigeons, starlings, house sparrows, rodents, and small mammals. The potential loss of some individuals of these wildlife species common to urban areas would not result in a significant adverse impact on the bird and wildlife community of the New York City region. Therefore, no adverse impacts to terrestrial resources are anticipated as a result of construction activities.

Activities which could result in potential water quality impacts include replacement of bulkheads with rip-rap and upland construction activities. Water quality changes associated with increases in suspended sediment and re-suspension of contaminated sediments from replacement of the bulkheads and concomitant improvement of the existing rip-rap edge have the potential to result in short-term impacts to water quality due to temporary increases in suspended sediment and potential release of contaminants from disturbed sediments. These water quality impacts would be minimal and are expected to dissipate shortly after shoreline activities are completed. Potential impacts to fish and benthic macroinvertebrates due to temporary water quality impacts and noise associated with in-water construction activities would be localized and would not be expected to significantly impact aquatic biota.

The proposed improvements to the shoreline (bulkhead removal and replacement with rip-rap, and removal of accumulated debris found on the mudflats of the interpiers) would disturb a small area of benthic habitat. Benthic organisms would be expected to recolonize these areas. Disturbance to benthic communities during construction would be minimal and would not significantly impact the food supply for fish foraging in the area. In fact, a larger area of benthic habitat would be created through the replacement of portions of the vertical timber bulkheads with the sloped, rip-rapped edge.

During construction, there also would be increased potential for on-site erosion and sedimentation at construction sites where soils would be disturbed. A SWPPP would be prepared

for the Proposed Project in accordance with established engineering practices as part of the NYSDEC State Pollutant Discharge Elimination System (SPDES) permitting process. To minimize potential water quality effects associated with the discharge of stormwater during construction activities, best management practices for erosion and sediment control and other measures of the SWPPP would be implemented. With these measures in place, erosion and stormwater pollution would be minimized during construction, thereby avoiding adverse impacts to surface water and aquatic organisms in Harlem River near the construction site.

HAZARDOUS MATERIALS

The construction-period hazardous materials impacts of the Proposed Project are described above in "Environmental Remediation and Building Demolition."

TRAFFIC AND PARKING

Construction of the Proposed Project is not expected to have extensive or long-term impacts on traffic or parking conditions in the surrounding area.

During the construction period, a portion of Exterior Street and River Avenue would experience sidewalk and parking lane closures for construction vehicle use and other construction-related activities. Also, the vehicular travel lanes would be narrowed to one 10 to 12 foot lane in each direction on these streets.

As described in Chapter 1, "Project Description," several existing streets would be closed as a result of the proposed actions (150th Street between River Avenue and Exterior Street; 151st Street between River and Cromwell Avenues; and Cromwell Avenue between Exterior Street and the Metro North Rail Road tracks). These are currently not through streets and are used almost exclusively by workers and patrons of the Bronx Terminal Market and any potential workers at the Bronx House of Detention. These streets receive minimal traffic. Therefore, the elimination of these streets would have no major impact on area visitors or residents during the construction period.

The Proposed Project would generate trips from workers traveling to and from the site, as well as from the movement of goods and equipment. The estimated average number of construction workers on site at any one time would vary, depending on the stage of construction, as follows:

- Demolition would require about 20 to 45 individuals on-site;
- Grading and filling, infrastructure improvements, and foundation work would require the labor of an average of 50 to 75 persons, depending on the exact tasks being performed;
- Workers required for the construction of the core and shell of the proposed buildings would grow to approximately 75 to 125 people; and
- Workers for the interior construction would include approximately 100 to 150 people.

These activities would not necessarily occur simultaneously; it is estimated that at the peak activity of construction approximately 200 to 300 workers would be at the site during the period when superstructure construction and interior infrastructure installation are taking place simultaneously.

Given typical construction hours, worker trips would be concentrated in off-peak hours and would not represent a notable increment during peak travel periods. Construction work shifts typically begin by 7:00 AM and finish around 3:00 or 3:30 PM. Most construction workers

arrivals would be occurring before the typical traffic peak in the area, and construction worker departures would generally occur just before the evening commuter peak period. Moreover, it is expected that the majority of construction workers would use mass transit in the area to get to and from work on a daily basis, with the D and 4 subway lines stopping at the nearby 161st Street subway station and with several bus routes serving the area. Therefore, vehicle trips associated with construction workers commuting to or from work would not be likely to have significant adverse impacts on surrounding streets.

Truck movements would be spread throughout the day on weekdays, and would generally occur between the hours of 7:30 AM and 3:30 PM, depending on the period of construction. Some materials deliveries, such as for pre-cast concrete and structural steel, may occur during off-peak hours. The following numbers of trucks (for materials delivery and removal of debris/scrap from construction operations) are anticipated during the various construction stages:

- Demolition: two trucks per day (25 trucks on heaviest days);
- Below-grade work: 10 trucks per day (40 trucks on heaviest days); and
- Superstructure construction: 25 trucks per day (45 trucks on heaviest days).

It is assumed that most construction would typically be performed during one daily shift. However, if it becomes necessary to expedite an area of construction, there a second shift or Saturday work could be added at times, subject to City approval. In addition, oversized pieces of material would be delivered at night.

The peak construction year is expected to be 2008. The 2004 existing traffic volume network for the weekday midday peak hour was grown at a 0.5 percent per year growth rate, similar to the Build year traffic analyses, to 2008. Also, traffic volume adjustments to account for street closures were applied to the construction year traffic volumes.

As previously stated, Exterior Street and River Avenue would be narrowed to 10 to 12 foot lanes in each direction during construction. But since those roads today operate with only one effective travel lane in each direction, the lane widths during the construction period should be sufficient to accommodate traffic volumes on these streets.

Construction truck trips to the site would generally be distributed uniformly throughout the day, with slightly larger numbers arriving in the morning. The majority would arrive at and depart the site using the Major Deegan Expressway through the following major routes: exit at the northbound Exit 4-149th Street off-ramp and take either Exterior Street or River Avenue to the site, or exit at the southbound Exit 6-Bronx Terminal Market ramp to Exterior Street or Exit 6 flyover ramp to 153rd Street and take River Avenue to the site. Departure trips would follow the same routes in the reverse direction.

In order to determine potential construction year impacts, the 2008 traffic volumes were analyzed and compared with and without construction occurring. Since up to 45 construction trucks distributed throughout an eight hour shift would not exceed six in or out trips during the weekday midday peak hour, no significant traffic impacts are expected from these trucks except, possibly, at the intersection of 149th Street, the Major Deegan Expressway northbound off-ramp, Exterior Street, and River Avenue where minor increases in volumes coupled with some construction worker auto trips could occur. Potential traffic impacts at this intersection would be mainly attributable to the narrowed width on Exterior Street and River Avenue for construction activities plus the addition of about six construction truck trips in the weekday midday peak hour would also have slight adverse impacts on the near-capacity intersection. Traffic conditions at this one critical intersection in the area would be monitored during construction for delays, and a

traffic control agent could be deployed there during peak construction traffic periods if recurring delays occur during construction.

Cumulative Construction Impacts

It is possible that the construction of a new Yankee Stadium and three roadway improvement projects would overlap with the construction of the Proposed Project. The retail phase of the Bronx Terminal Market would be completed by 2009. That same year, the new Yankee Stadium is projected to be built, and roadway construction projects on the Major Deegan Expressway, 161st Street, 149th Street would begin or be completed. The cumulative effects of these simultaneous construction projects are discussed below.

The Proposed Project's construction schedule is not known, but would most likely begin construction in 2006 or 2007, peak in 2008, and be completed by 2009. The Proposed Project would require the closure of all of Cromwell Avenue and 150th Street between River Avenue and Exterior Street. During construction, River Avenue and Exterior Street would be narrowed to one lane per direction bordering the site.

The New York Yankees recently announced plans to relocate Yankee Stadium one block north of its current location by 2009. Although the new stadium construction schedule is not known, it would most likely begin construction in 2006 or 2007 and finish by 2009. The relocation would necessitate the closure of 162nd Street between Jerome Avenue and River Avenue.

The New York State Department of Transportation (NYSDOT) is currently planning to reconstruct the deck of the elevated portion of the Major Deegan Expressway corridor between 138th Street and the Macombs Dam Bridge, including temporary widening of the elevated deck and several ramps so that the current six lanes of traffic can be maintained throughout reconstruction. This is a major construction project expected to begin in 2009 and last approximately three years. It would not add capacity or alter traffic patterns in the area.

The New York City Department of Transportation (NYCDOT) is currently planning to reconstruct the 161st Street tunnel below the Grand Concourse as part of the Grand Concourse streetscaping and rehabilitation project between 161st and 166th Streets. This project is in its scoping phase and the schedule is not known, but NYCDOT has stated that the capacity of the 161st Street/Grand Concourse intersection would remain the same during construction and upon completion.

The New York City Department of Design and Construction (NYCDDC) will be rehabilitating 149th Street between Exterior Street/River Avenue and Anthony J. Griffin Place beginning in 2005 and ending in 2007 to widen sidewalks, reconstruct the street, relocate utilities, and possibly create a striped median. DDC has stated that this would not change the operation or capacity of the Exterior Street/River Avenue or the Grand Concourse intersections on 149th Street within the study area, and all lanes will be maintained during construction.

The cumulative effects of the simultaneous construction projects would include street closures on Cromwell Avenue between Exterior Street and 151st Street, 150th Street between River Avenue and Exterior Street, and 162nd Street between Jerome Avenue and River Avenue. Traffic counts have indicated that traffic on Cromwell Avenue and 150th Street is predominantly related to the existing Bronx Terminal Market, and closing the two streets would only divert a small amount of peak hour traffic to Exterior Street or River Avenue. Traffic on 162nd Street would divert to the nearby 164th or 165th Street intersections between River and Jerome Avenues.

Streets that would be narrowed, but remain open, would include a section of River Avenue, Exterior Street, Jerome Avenue, 149th Street and 161st Street. During peak hours, a small to moderate amount of traffic may divert during construction on or adjacent to the aforementioned streets, which could add traffic volumes to the Grand Concourse and minor east-west cross streets between 138th Street and 165th Street.

Additional traffic due to the cumulative effects of construction workers and construction site deliveries would mainly occur during off-peak hours. Deliveries would be spread throughout the day on weekdays, and would generally occur between the hours of 7:30 AM and 3:30 PM, depending on the period of construction. Given typical construction hours, worker trips would be concentrated in off-peak hours and would not represent a measurable increment during peak travel periods.

AIR QUALITY

Fugitive Dust Emissions

Fugitive dust emissions from land-clearing operations can occur from excavation, hauling, dumping, spreading, grading, compaction, wind erosion, and traffic over unpaved areas. Demolition typically produces particulates up to a height equal to that of the structure being removed. Actual quantities of emissions depend on the extent and nature of the clearing operations, the type of equipment employed, the physical characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. The U.S. Environmental Protection Agency (USEPA) has suggested, in general, an overall emission rate of about 1.2 tons of particulate/acre/month for active construction from all phases of land-clearing operations with no fugitive dust control measures. However, this is a national estimate and actual emissions would vary widely depending on many factors, including the intensity and type of land-clearing operations. Much of the fugitive dust generated by construction activities consists of relatively large-size particles, which are expected to settle within a short distance from the construction site and not significantly affect the buildings or people nearby. In addition, demolition would involve low-rise buildings, with the exception of the Bronx House of Detention. Dust emissions from demolition tend to travel, on average, a distance equivalent to the height of the building. Thus, dust emissions from demolition would not be expected to travel a distance far from the site, and most dust particulates from demolition would be expected to remain on-site.

For this project, demolition, below-grade work, and construction would be conducted with the care mandated by the site's proximity to active uses. All appropriate fugitive dust control measures—including watering of exposed areas and dust covers for trucks—would be employed. All necessary measures would be implemented to ensure that the New York City Air Pollution Control Code regulating construction-related dust emissions is followed. In addition, under the Brownfield Cleanup Program (BCP), a Community Air Monitoring Plan (CAMP) for particulates and volatile organic compounds (VOCs) would be prepared for the project and approved by NYSDOH. As a result, no significant air quality impacts from fugitive dust emissions would be anticipated.

Mobile Source Emissions

Mobile source emissions are emissions of air pollutants from motor vehicles, referred to as mobile sources. During construction, such emissions may result from: (1) trucks delivering construction materials and removing debris; (2) workers' private vehicles; and (3) construction equipment. Localized increases in mobile source emissions would be minimized by

incorporating traffic maintenance requirements into the construction contract documents to ensure that idling of delivery trucks or other equipment would not be permitted during periods when they are being unloaded or are not in active use

While it would be expected that there would be a localized increase in mobile source emissions, these emissions are not expected to significantly impact air quality. Moreover, any such impacts, while minimal, would also be temporary. Therefore, no significant air quality construction impacts from mobile sources are anticipated.

NOISE

Impacts on community noise levels during construction of the Proposed Project include noise and vibration from construction equipment operation, and noise from construction and delivery vehicles traveling to and from the site. The level of impact of these noise sources depends on the noise characteristics of the equipment and activities involved, the construction schedule, and the location of potentially sensitive noise receptors.

Noise and vibration levels at a given location also depend on the distance from the construction site. Typical noise levels of construction equipment that may be employed during the construction process are listed in Table 20-1. Noise levels caused by construction activities would vary widely, depending on the phase and location of construction.

Increased noise levels caused by construction activities can be expected to be greatest during the early stages of construction, including six to eight months of pile-driving activities. The most notable noise sources that would be associated with construction would be the short-term use of equipment to demolish existing buildings, and then the longer-term use of delivery trucks and dump trucks throughout the period of new construction.

Construction noise is regulated by the New York City Noise Control Code and by USEPA noise emission standards for construction equipment. These local and federal requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emissions standards; that, except under exceptional circumstances, construction activities be limited to weekdays between the hours of 7 AM and 6 PM; and that construction materials be handled and transported in such a manner as not to create unnecessary noise. These regulations would be carefully followed. In addition, appropriate low-noise emission level equipment and operational procedures would be used. Compliance with noise control measures would be ensured by including them in the contract documents as material specification and by directives to the construction contractor.

PUBLIC HEALTH

During construction of the Proposed Project, traffic associated with passenger vehicles, as well as heavy-duty trucks, is expected to increase, potentially contributing to increases in particulate matter (PM) levels in the area. However, these emissions are not expected to significantly affect public health and local asthma incidents. Most of the increase in vehicle trips associated with the Proposed Project would be from gasoline vehicles, which emit relatively little PM. The total peak number of heavy-diesel vehicles generated by the Proposed Project during construction at any intersection is below the threshold (21 trucks per hour at any intersection) currently being used on projects sponsored by the NYCDEP to determine whether an air quality impact analysis of PM smaller than 2.5 microns is necessary.

Table 20-1
Typical Noise Emission Levels for Construction Equipment

Equipment Item	Noise Level at 50 Feet (dBA)
Air Compressor	81
Asphalt Spreader (paver)	89
Asphalt Truck	88
Backhoe	85
Bulldozer	87
Compactor	80
Concrete Plant	83 ⁽¹⁾
Concrete Spreader	89
Concrete Mixer	85
Concrete Vibrator	76
Crane (demck)	76
Delivery Truck	88
Diamond Saw	90 ⁽²⁾
Dredge	88
Dump Truck	88
Front End Loader	84
Gas-driven Vibro-compactor	76
Hoist	76
Jack Hammer (Paving Breaker)	88
Line Drill	98
Motor Crane	93
Pile Driver/Extractor	101
Pump	76
Roller	80
Shovel	82
Truck	88
Vibratory Pile Driver/Extractor	89 ⁽³⁾

Notes: ¹ Wood, E.W. and A R Thompson, Sound Level Survey, Concrete Batch Plant, Limerick Generating Station, Bolt Beranek and Newman Inc , Report 2825, Cambridge, MA, May 1974
² New York State Department of Environmental Conservation, Construction Noise Survey, Report No. NC-P2, Albany, NY, April 1974
³ F.B. Foster Company, Foster Vibro Driver/Extractors, Electric Series Brochure, W-925-10-75-5M.

Sources: Patterson, W.N., R.A. Ely, and S.M Swanson, Regulation of Construction Activity Noise, Bolt Beranek and Newman, Inc , Report 2887, for the Environmental Protection Agency, Washington, D C., November 1974, except for notated items.

2014

A widening of the Major Deegan Expressway is planned for completion by 2011-2012. This reconstruction would improve access to the area, including the project site.

The second phase of the Proposed Project would involve the construction of a 250-room hotel at the north end of the site. The hotel would be about 247,500 gross square feet (gsf) in size and would take approximately 24 months to construct. In comparison, the first phase would involve the development of approximately 2 million gsf of retail and parking uses over a 48-month construction period. Any construction impacts associated with the second phase would be less than those described for the first phase. Therefore, no significant adverse impacts are expected from the second phase of construction of the Proposed Project. *

A. INTRODUCTION AND METHODOLOGY

This chapter assesses the potential for public health related impacts associated with the Proposed Project.

For determining whether a public health assessment is appropriate, the 2001 *CEQR Technical Manual* lists the following as public health concerns for which a public health assessment may be warranted:

- Increased vehicular traffic or emissions from stationary sources resulting in significant adverse air quality impacts;
- Increased exposure to heavy metals (e.g. lead) and other contaminants in soil/dust resulting in significant adverse impacts;
- 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;
- Solid waste management practices that could attract vermin and result in an increase in pest populations (e.g. rats, mice, cockroaches, and mosquitoes);
- Potentially significant adverse impacts to sensitive receptors from noise or odors;
- Vapor infiltration from contaminants within a building or underlying soil (e.g., contamination originating from gasoline stations or dry cleaners) that may result in significant adverse hazardous materials or air quality impacts;
- Actions for which the potential impact(s) result in an exceedance of accepted federal, state, or local standards; or
- Other actions, which might not exceed the preceding thresholds, but might nonetheless result in significant public health concerns, including projects such as the New York City Adult Mosquito Control Programs, the Williamsburg Bridge Lead Removal Project, and the New York City Comprehensive Solid Waste Management Plan

The Proposed Project would not meet any of the thresholds warranting a public health assessment. As discussed in Chapter 18, "Air Quality," the Proposed Project would not result in any significant adverse air quality impacts. The Proposed Project would not engage in any solid waste management practices that could attract vermin and result in an increase in pest populations. The project sponsor has entered into agreements with NYSDEC under the auspices of the New York State Brownfield Cleanup Program (BCP) to investigate and, where necessary, remediate contamination on large portions of the site as part of its redevelopment. Under this program, a draft Remedial Work Plan (RWP) would be submitted to NYSDEC and the New York State Department of Health (NYSDOH), including remedial actions, as necessary, to be performed before, during, and/or after construction of the Proposed Project. All activities

involving disturbance of existing soils would be conducted in accordance with a Health and Safety Plan (HASP) that would detail measures, including health and safety guidelines and work practices, to reduce the potential for exposure (e.g., dust control). With the implementation of the RWP, no significant adverse impacts related to hazardous materials would result from demolition and/or construction activities on the project site or operation of the Proposed Project. Although noise levels in the western portion of the 2-acre public open space that would be developed as part of the Proposed Project (i.e., adjacent to Exterior Street) would be above the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for Use in City Environmental Impact Review" guideline level of 55 dBA L10(1) for outdoor areas requiring serenity and quiet, they would be comparable to noise levels in a number of well-used and attractive open spaces in New York City that are also located adjacent to heavily trafficked roadways, such as the Hudson River Park, Empire State Park, and the East River Esplanade.

While the Proposed Project would not meet any of the thresholds warranting a public health assessment, in order to address comments made during the scoping of the Proposed Project, this chapter presents a discussion of asthma, its prevalence in New York City and its possible causes and triggers, and then presents an assessment of the potential public health effects from the Proposed Project.

This analysis concludes that potential PM_{2.5} emissions from mobile and stationary sources related to the Proposed Project are not expected to result in adverse public health impacts.

B. HEALTH EFFECTS RELATED TO ASTHMA¹

Urban populations, such as those in New York City, are generally considered to have higher asthma rates than non-urban populations.² Given concern that exposure to PM—in particular, emissions of fine particulate matter with an aerodynamic diameter less than 2.5 micrometers in diameter (PM_{2.5}), emissions from activities associated with the Proposed Project—could either aggravate pre-existing asthma or induce asthma in an individual with no prior history of the disease, the potential for emissions of PM_{2.5} to precipitate onset of an exacerbation is examined in the following discussion. Particulate matter is a broad class of air pollutants that exist as liquid droplets or solids, with a wide range of sizes and chemical composition. Particulate matter is emitted by a variety of sources, both natural and man-made. Natural sources include the condensed and reacted forms of natural organic vapors, salt particles resulting from the evaporation of sea spray, wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and debris from live and decaying plant and animal life, particles eroded from beaches, desert, soil and rock, particles from volcanic and geothermal eruptions and forest fires. Major man-made sources of particulate include the combustion of fossil fuels, such as vehicular exhaust, power generation and home heating, chemical and manufacturing processes, all types of construction, agricultural activities and wood-burning fireplaces. Since the chemical and physical properties of PM vary widely, the

¹ Portions of the text contained in this section are derived from the October 2, 2001 Final Environmental Impact Statement for the Fulton Fish Market at Hunts Point prepared by Urbitran Associates, Inc. and the June 26, 2003 Final Supplemental Environmental Impact Statement for the Newtown Creek Water Pollution Control Plant Track 3 project, prepared by AKRF, Inc.

² Andrew, Aligne C, et al. Strong Children's Research Center, Rochester General Hospital, and American Academy of Pediatrics Center for Child Health Research, Rochester, New York, USA.

assessment of the public health effects of the airborne pollutants in ambient air is extremely complicated. The principal health effects of airborne PM are on the respiratory system.

This discussion will include a review of the risk factors for asthma development and exacerbation; current prevalence, morbidity and mortality estimates of asthma, and whether the scientific literature indicates a causal relationship between truck traffic and the occurrence of asthma.

BACKGROUND

Asthma is a complex disease with multiple causes and substantial inter-individual variation in the severity of symptoms. Asthma is a chronic inflammatory disorder of the airways characterized by variable airflow obstruction and airway hyper-responsiveness in which prominent clinical manifestations include wheezing and shortness of breath.¹ During an asthma "attack," an individual experiences difficulty breathing which, if severe enough, and treatment is not rendered, may be fatal in rare instances.² Asthmatic episodes may be triggered by specific substances, environmental conditions, and stress, as discussed below.

Although somewhat of a simplification, asthma can be categorized as having either an allergic or a non-allergic basis.^{3,4,5} Allergic asthma is usually associated with a family history of allergic disease, increased levels of certain immune system proteins, and/or positive responses to specific diagnostic tests. Although exercise, cold air, and respiratory infections may also exacerbate asthma for allergic asthmatics, allergen exposure may be most important for eliciting airway inflammation and hyper-responsiveness. About 75 percent of people suffering from asthma have allergic asthma.⁶ In contrast, people suffering from non-allergic asthma experience symptoms in their airways when confronted with such conditions as exercise, breathing cold air, or respiratory infections.⁷

Studies have demonstrated an increase in daily mortality, hospitalizations, and emergency department utilization for asthma, attributable to air quality diminution from increased levels of sulfur dioxide, ozone, and PM. Recently published research found a 0.5 percent increase in death rates for every increase in the PM₁₀ concentration level of 10 µg/m³, even where ambient levels were well below the NAAQS standards.

¹ Sheffer, A.L., and V.S. Taggart 1993 The National Asthma Education Program. expert panel report guidelines for the diagnosis and management of asthma. *Med Care* 1993 31 (suppl).MS20-MS28.

² McFadden, Jr., E R 1987 Asthma. In *Harrison's Principles of Internal Medicine*. (Eds E Braunwald, K J Isselbacher, R G. Petersdorf, J D. Wilson, J B Martin, and A.S. Fauchi), McGraw-Hill Book Company, New York, NY, pp. 1060-1065

³ Scadding, J.G. 1985. "Chapter 1: Definition and clinical categorization." In *Bronchial Asthma Mechanisms and Therapeutics* Second Edition (Eds Weiss, E.B, M S Segal, and M Stein), Little, Brown, and Company, Boston, MA, pp. 3-13

⁴ McFadden, 1987

⁵ Sears, M.R. 1997. "Epidemiology of childhood asthma " *Lancet* 350 1015-1020.

⁶ Centers for Disease Control (CDC). 1998. "Surveillance for Asthma – United States, 1960-1995 " *Morbidity and Mortality Weekly Report* 48(4) 1015-1028

⁷ McFadden, 1987

PREVALENCE OF ASTHMA

In 1998, the CDC reported that the estimated self-reported prevalence of asthma among children was between 7 and 10 percent among children.¹ According to the CDC report, over the last two decades the self-reported prevalence of asthma increased 75 percent among all persons of all ages and 160 percent in children between 0 and 4 years of age. The rate of asthma is increasing most rapidly in children under age 5. New York is thought to be the state with the second-largest number of affected children. Another report estimated that asthma prevalence in Western countries doubled between 1977 and 1997.² Other parts of the world besides the West, have also reported an increase in asthma prevalence in urban areas. Though changes in infectious disease patterns,³ decreased physical activity, increasing prevalence of obesity,⁴ and increased time spent indoors are hypothesized to be contributing factors to the increase in the prevalence of asthma, the subject is one of continuing research.

ASTHMA MORBIDITY AND MORTALITY

While asthma morbidity and mortality rates have been rising throughout the United States over the last few decades,⁵ New York City has experienced a disproportionate increase. For instance, from 1982 to 1985, the number of deaths from asthma in New York City among individuals between 5 and 34 years of age was three times the expected number of deaths based on national rates.⁶

In addition, asthma is the leading cause of hospitalization for children ages between 0 and 14 and ranks among the leading causes of hospitalization for all age groups.⁷ In 2000, the hospitalization rate for asthma among children aged 0 to 4 was 10.8 per 1,000 children in New York City, compared to 6.4 per 1,000 in the United States.⁸ Asthma exacerbations resulting in hospitalizations appear to be particularly frequent and severe among minority, inner-city children, but the disproportionality among affected groups is likely to be due to factors other than genetic differences. A recent study by investigators at the Mount Sinai School of Medicine found an enormous difference in the rate at which children living in poor New York City neighborhoods were hospitalized for asthma, compared to children in wealthy neighborhoods. This difference reflects some combination of variations in asthma prevalence, triggers for asthma exacerbations, access to health care, and hospitalization practices. However, between

¹ CDC, 1998.

² Cookson, W.O.C.M., and M.F. Moffatt. 1997. "Asthma: an epidemic in the absence of infection?" *Science* 275:41-42.

³ Ibid.

⁴ Platts-Mills, T A E., R B Sporik, M.D. Chapman, and P.W. Heymann. 1997. "The role of domestic allergens." In *The Rising Trends in Asthma* Ciba Foundation Symposium 206. John Wiley and Sons, New York, NY, pp. 173-189.

⁵ CDC, 1998.

⁶ Weiss, K B , and D.K. Wagener. 1990. "Changing patterns of asthma mortality: identifying target populations at high risk." *Journal of the American Medical Association (JAMA)* 264:1683-1687.

⁷ Garg, R., Karpatti, A., Leighton, J., Perrin, M., Shah, M., 2003. *Asthma Facts, Second Edition*. New York City Department of Health and Mental Hygiene.

⁸ Ibid.

1990 and 2000 the overall asthma hospitalization rate in New York City decreased by 17 percent.¹ Asthma hospitalization rates for children decreased in all boroughs of New York City during this period, including by 15 percent in the Bronx, and the asthma hospitalization rate for preschool children from low-income areas decreased by 24 percent.²

There are striking differences in the number of hospitalizations among New York City boroughs. Compared with the other boroughs, hospitalization and death rates are highest in the Bronx.^{3,4} Neighborhood pockets of asthma are also apparent, with East Harlem reporting the highest rate of asthma hospitalizations—approximately 1,718 hospitalizations per 100,000 persons.⁵ Asthma among children is also a serious medical concern in the Hunts Point area of the Bronx. A survey completed by the New York City Department of Health of students of the three elementary schools in Hunts Point in Spring 2000 revealed that over 20 percent of local children have asthma, over three times the national average. The reasons for the borough and local disparities in asthma are not known, but may be due to differences in economic status and ethnicity; exposure to different asthma triggers; or access to medical care.^{6,7}

In the West Haven community, asthma hospitalization rates among children in 2000 were reported to be 10.00 cases per 1,000 persons. This is slightly higher than the reported average for the borough of the Bronx (9.16 cases per 1,000 persons), and higher than the average rate for the city as a whole (6.06 cases per 1,000 persons).⁸

CAUSES AND TRIGGERS

The dramatic increase in asthma among children has spurred scientists and clinicians to search for causes and risk factors for the disease. The rapidity of the increase points away from a significant change in population genetics, which would evolve over a much longer time scale, and towards some characteristic(s) of modern life. Factors that have been investigated epidemiologically (and sometimes experimentally) include indoor air pollution, outdoor air pollution, behaviors, food and food additives, medical practices, and illness in infancy. The reasons for the dramatic increase in asthma prevalence are currently unknown, although a number of hypotheses have been developed and investigated. Current hypotheses tend to focus on three areas: (1) increases in individual sensitivity (possibly due to reduced respiratory infections); (2) increases in exposures to allergens (due to change in ambient air pollution and/or indoor air quality), and (3) increases in airway inflammation of sensitized individuals (due to

¹ Garg et al., 2003.

² Ibid.

³ Carr, W., L. Zeitel, and K. Weiss 1992. "Variations in asthma hospitalization and deaths in New York City." *American Journal of Public Health* 82:59-65.

⁴ De Palo, V A, P H. Mayo, P. Friedman, and M.J. Rosen. 1994. "Demographic influences on asthma hospital admission rates in New York City" *Chest* 106:447-451.

⁵ Garg et al., 2003.

⁶ Weiss, K.B., P.J. Gergen, and E.F. Crain 1992. Inner-city asthma: the epidemiology of an emerging U.S. public health concern. *Chest* 101:362S-367S.

⁷ Platts-Mills, 1997

⁸ Garg et al., 2003.

factors such as viral infections). No single factor is likely to explain the increase rates of asthma, however, and various factors will dominate in specific areas, homes, and individuals.

In theory, one can distinguish between “causes” and “triggers” of asthma. Causes are those factors that make a person susceptible to asthmatic attacks in the first place, while triggers are those factors that elicit asthmatic symptoms at a particular time. Triggers are more easily studied, but may not be the underlying causes of the disease. For example, although a genetic predisposition to allergy is an important risk factor for developing asthma, there may have been no real increase in the number of genetically susceptible children, but rather a growth in the prevalence of factors that promote asthma development or trigger an attack. For a child suffering from asthma, however, identification and elimination of triggering factors is of greatest practical importance.

Allergens in the indoor environment are definitely important triggers of asthma in the US. Organic material that cause the immune system to overreact, such as cockroach antigens, dust mite antigens, molds, pet and rodent dander and urine, are the principal indoor air quality triggers of asthma attacks in children. Some of these antigens are probably more common in poor quality housing, which could explain, in part, why poor children suffer high rates of asthma. Other indoor pollutants, such as tobacco smoke and natural gas combustion products, can also exacerbate asthma symptoms. “Improvements” in housing, such as increased insulation and reduced ventilation to save on energy costs, and increased amounts of wall-to-wall carpeting and stuffed furniture, may have the unintended affects of promoting growth of dust mites and molds, and of concentrating antigens, irritants, and PM indoors. These changes in housing over recent decades could help explain the widespread increases in asthma rates. In addition, the effect of indoor pollutants may be increased by the growing amount of time that children spend indoors, which increases a child’s exposure to antigens, and by lack of exercise, which might increase the respiratory system’s sensitivity to allergens.

Some aspects of outdoor pollution are capable of triggering asthma attacks, such as pollens. However, some researchers have suggested that outdoor air pollution is not likely to contribute significantly to the asthma epidemic because air pollution has decreased on the whole while asthma rates have increased. Yet, on a local scale, air pollution may be important, and on a larger scale, it is possible that specific pollutants, such as ozone or diesel exhaust, enhance the effects of other factors, such as allergens, even if the pollutants themselves are not triggers of asthma. Though some epidemiologic studies have found an association between 24-hour average PM₁₀ (particulate matter, less than 10 microns in diameter) levels and asthma hospitalizations and emergency department visits, others have not.¹ In addition, weather conditions, and cold air in particular, can elicit asthmatic symptoms independent of air pollution.

An additional hypothesis described by Cookson and Moffatt suggests a link between the increase in asthma and the decline of respiratory infections in modern society, which could shift the balance of the immune system in favor of factors that predispose persons to asthma and allergy. Infectious disease has been dramatically reduced in our society by the use of antibiotics and immunization programs.

The relationship between diesel exhaust and asthma has been studied experimentally and epidemiologically. Experimentally, exposure to diesel exhaust particles has been shown to

¹ Norris et al , 1999; Schwartz et al , 1993; Sheppard et al., 1999; Tolbert et al., 2000; Henry et al., 1991; Hiltermann et al , 1997; Roemer et al., 1998; Roemer et al., 1999; Roemer et al , 2000.

increase airways resistance in mice, while other studies of mice and humans have shown that diesel exhaust particles can enhance responses to allergens. Experiments in which non-asthmatic adults were exposed for an hour to diesel exhaust (containing particles and gases) found increased airways resistance and some cellular indicators of inflammatory response; however, these subjects did not experience asthma. Epidemiologically, a few studies have addressed childhood asthma in relation to distance from roads and hence, from vehicle exhaust. For example, young children in Birmingham, England admitted to hospitals with a diagnosis of asthma were more likely to live close to busy roads than children admitted for other reasons. The apparent risk of admission for asthma was increased by almost two-fold for children who live close to busy roads. Undercutting the significance of these findings was the lack of information about socioeconomic status, family history of asthma, and the indoor environment. As discussed above, other epidemiological studies have demonstrated an increase in daily mortality, hospitalizations, and emergency department utilization attributable to air quality diminution from increased levels of sulfur dioxide, ozone, and PM. In a study conducted in the Netherlands, researchers found that residence near busy streets was associated (in children, but not adults) with a one and a half fold increase in wheezing symptoms over the past year, and with a 4.8 fold higher use of asthma medications among children after controlling for various socioeconomic and indoor environmental exposures. Other studies have not found an association between asthma symptoms or hospitalizations and residence near heavy traffic.

New York City officials are well aware of the epidemic of childhood asthma in the City's many boroughs and communities, and, under the direction of the New York City Department of Health (NYCDOH), began an aggressive Asthma Initiative in 1997. The goals of the Asthma Initiative are to reduce illness and death from childhood asthma by: (1) consulting with a physician to determine the appropriate regimen of preventative and rescue medications to obtain an asthma action plan; (2) strengthening the ability of institutions, such as schools and medical facilities, to respond to the disease; (3) encouraging and coordinating asthma research; (4) facilitating interactions among health care facilities, schools, communities and governments agencies; (5) giving special attention to high-risk populations. Among the Initiative's recommendations for preventing asthma episodes are: (1) avoid cigarette smoke; (2) reduce exposure to dust mites; (3) avoid furred pets and birds; (4) eliminate or reduce roaches; (5) close windows and use an air conditioner when pollen or air pollution is bad; (6) help improve the environment. One can learn more about the Asthma Initiative by calling 1-877-ASTHMA-0.

C. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

MOBILE SOURCES

As mentioned above, asthma among children is a major public and individual health problem in the City. However, the causes of asthma and its increase over the last two decades are not certain, and the triggers for its exacerbation are only partially understood. The potential relationship between vehicular exhaust resulting from increased truck traffic and asthma, especially in communities with high rates of asthma, will continue to be studied by epidemiologists.

As described in Chapter 18, "Air Quality," the Proposed Project would result in PM emissions from the combustion of fuel from mobile sources. With respect to PM_{2.5}, fuel combustion sources are the primary components of this pollutant. Particulate matter generated by construction-related transfer of materials and other fugitive dust sources tend to be larger size PM

that settles to the ground within a relatively short distance from the source. However, fuel combustion, especially from diesel combustion sources, generates PM that mostly consists of PM_{2.5}. An analysis of PM_{2.5} from mobile sources was performed and indicated that the incremental increases of PM_{2.5} concentrations with the Proposed Project would be under the interim guidance levels employed by the New York City Department of Environmental Protection (NYCDEP). Therefore, the Proposed Project is not considered to have significant PM_{2.5} impacts, and diesel emissions from project-related truck traffic are unlikely to significantly affect public health and local asthma incidents.

STATIONARY SOURCES

The Proposed Project would also result in the emission of PM from stationary sources associated with the Proposed Project, such as emissions from fuel burned on-site for heating and hot water systems. These proposed heating systems would use natural gas as fuel.

Particulate matter emitted from sources combusting natural gas consists primarily of organic products of incomplete combustion, and is very low in metal content.¹ Further, this PM contains no biological material. Small amounts of nitrates and sulfates may be present in this PM (given the gas-phase presence of nitrogen oxides and sulfur dioxide), and NO_x, SO₂, and ammonia emissions may lead to further (but much more diffuse) formation of secondary PM, but these constituents, when present at less than 1 µg/m³ levels in air—even at the maximally affected locations—do not appear to harm health.² Many toxicological studies have shown that concentrations of hundreds of micrograms of sulfate or nitrate per cubic meter of air are required before even minimal changes in respiratory or other function can be observed, even in asthmatic subjects or in sensitive laboratory rodents.³ The specific types and amount of PM_{2.5} associated with combustion of natural gas are not known to adversely impact health, and are expected to be benign at the concentrations that would be in ambient air with the operation of the combustion sources.

As described in Chapter 18, “Air Quality,” an air quality screening analysis was conducted which determined that the Proposed Project is not likely to result in significant impacts from stationary sources. Although the issue of health effects due to PM_{2.5} is complex, it is reasonable to infer that the Proposed Project would not result in potentially significant adverse health impacts from PM. The specific types and amount of PM_{2.5} associated with combustion of natural gas are not known to adversely impact health, and are expected to be benign at the concentrations that would be in ambient air with the operation of the combustion sources.

D. CONCLUSION

The causes of asthma and its increase over the last two decades are not certain, and the triggers for its exacerbation are only partially understood. The potential relationship between vehicular

¹ AP42, Section 1.3, September, 1998 and Section 3.1, April, 2000.

² Concentrations of at least 100 micrograms of sulfate or nitrate per cubic meter of air are required before even minimal changes in respiratory function can be observed, even in asthmatic subjects or in sensitive laboratory rodents. See U.S. EPA 2001 (PM Criteria Document Draft) for extended discussion and references.

³ See U.S. EPA 2001 (PM Criteria Document Draft) for extended discussion and references.

exhaust resulting from increased truck traffic and asthma, especially in communities with high rates of asthma, requires further study. Since the Proposed Project is not considered to have significant PM_{2.5} impacts, diesel emissions from project-related truck traffic are unlikely to significantly affect public health and local asthma incidents. Also, the specific types and amount of PM_{2.5} associated with combustion of natural gas are not known to adversely impact health, and are expected to be benign at the concentrations that would be in ambient air with the operation of the Proposed Project's stationary sources of combustion. Therefore, potential PM_{2.5} emissions from mobile and stationary sources related to the Proposed Project are not expected to result in adverse public health impacts. *

Chapter 22: Future Conditions with a Relocated Yankee Stadium

A. INTRODUCTION

The New York Yankees recently announced plans to build a new stadium on the north side of East 161st Street between River Avenue and Jerome Avenues within Macombs Dam Park, directly north of the current Yankee Stadium. The new stadium is expected to have a smaller capacity, with room for 54,000 spectators (53,000 seats and 1,000 standing spaces) as opposed to the current stadium's approximately 55,500 seats. The existing stadium would be partially demolished and converted for use by Little League baseball, as well as other users. Plans for the new stadium are also expected to include the construction of new parking garages in the surrounding area, including one near the Gateway Center at Bronx Terminal Market project site on River Avenue. The Yankee Stadium project would incorporate a 4.8-acre portion of the west side of the Gateway Center at Bronx Terminal Market project site to create new active parkland to mitigate the loss of area from Macombs Dam Park. In that event, only the east side of the Gateway Center at Bronx Terminal Market project would be developed, and an additional approximately 64,000 square feet of retail space would be accommodated within Retail Buildings A and B/F, on the east side of Exterior Street. The Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop the public open space.

Development of a new Yankee Stadium will require a series of public approvals. If that project moves forward, it is expected to be completed by the first Build year of the Gateway Center at Bronx Terminal Market project, 2009. Given its prominence in the neighborhood and the uncertainty of its planning status, the Yankee Stadium proposal is considered separately from the No Build condition presented in the remainder of this EIS. Because the relocation of Yankee Stadium would alter conditions in the study area, this chapter provides an assessment of how the project could be expected to change background conditions by 2009 and 2014, and discusses any concomitant changes to the impacts identified for the Proposed Project.

B. FUTURE CONDITIONS WITH A RELOCATED YANKEE STADIUM

LAND USE, ZONING AND PUBLIC POLICY

The stadium, parkland, parking, and retail uses in future conditions with a relocated Yankee Stadium would be consistent with what currently exists in the area. As described above, new parks would be created in the area to mitigate the loss of Macombs Dam Park land for the construction of the new stadium. To that end, it is anticipated that a 4.8-acre portion of the west side of the Gateway Center at Bronx Terminal Market project site would instead be developed in conjunction with the Yankee Stadium project as a public open space with active uses. In this scenario, only the east side of Proposed Project would be developed with new retail, hotel, and accessory parking uses. As described above, the Proposed Project would not include the

development of a public open space, waterfront esplanade, or retail building on this portion of the site; instead, it is anticipated that the City, with contributions from the project sponsor, would develop a public open space. The development of the east side of the project site would still require rezoning and other land use actions, as well as the demolition of the Bronx House of Detention; however, none of the actions relating to the western portion of the site would be required. In either case, the use of the west side of the project site would meet the Bronx Waterfront Plan's objective to improve public waterfront access in the area.

Accounting for the relocation of Yankee Stadium as an independent background action, the conclusions presented in Chapter 2, "Land Use, Zoning and Public Policy" regarding the Proposed Project's potential impacts on land use, zoning and public policy would remain the same, in that there would be no significant adverse impacts. Although it would be located somewhat further to the north than the existing stadium, the new Yankee Stadium would continue to be a defining feature of the neighborhood.

SOCIOECONOMIC CONDITIONS

If the Yankee Stadium project were to develop the area west of Exterior Street as a public park, the displacement and relocation of at least that portion of the existing wholesale market would occur irrespective of the Proposed Project. In the future without the Proposed Project, the construction of new parkland and recreational facilities as part of the Yankee Stadium project and by the City would necessitate the displacement of existing wholesale market businesses west of Exterior Street. Since it is already expected that the Proposed Project would be responsible for the relocation of the wholesale market businesses (Chapter 3, "Socioeconomic Conditions," explains how the relocation of existing businesses would be addressed), the Yankee Stadium project is not expected to substantially change socioeconomic background conditions or alter impacts for the Proposed Project.

COMMUNITY FACILITIES

The relocation of Yankee Stadium and the development of new parkland and parking garages would likely result in similar demands on police, fire, and emergency services as the existing stadium. It would not directly displace any fire or police facilities, public schools, libraries, health care facilities, or day care centers. As with the existing stadium, the relocated stadium would provide space for New York Police Department staging. Therefore, the change in future background conditions accounting for the relocation of Yankee Stadium would not alter the conclusions of the Proposed Project's community facilities analysis, in that there would be no significant adverse impacts.

OPEN SPACE

The Yankee Stadium project is expected to develop new parkland to offset the loss of Macombs Dam Park land to be used for the new stadium site. As described above, as part of the parkland replacement program, it is anticipated that a 4.8-acre portion of the west side of the Gateway Center at Bronx Terminal Market project site would be developed as a public open space with active uses. In this scenario, it is expected that the project sponsor would return its leasehold interest in the western portion of the Gateway Center at Bronx Terminal Market site, and the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site. Instead, it is anticipated that the City—with contributions from the project sponsor—would develop a public open space, which

would be maintained by NYCDPR. However, even without the Proposed Project's development of a 2-acre open space on the west side of the project site, the conclusions of the open space analysis would not change, as the passive open space ratios for workers, as well as workers and residents combined, in the area would continue to exceed the New York City Department of City Planning's (DCP) guidelines. The Proposed Project's workers and visitors would enjoy proximity to the new open spaces developed in conjunction with the Yankee Stadium project and by the City.

SHADOWS

If the west side of the project site were developed as a public park in conjunction with the Yankee Stadium project, it is expected that the proposed buildings and parking garage on the east side of the site could cast shadows on this new open space. However, these shadows are expected to be limited to the mornings of the May and June analysis periods, and to the southernmost portion of the new open space. Therefore, no significant adverse shadows impacts would occur. The other new parkland to be created with the Yankee Stadium project would be too far north of the Gateway Center at Bronx Terminal Market project site to receive project shadows.

HISTORIC RESOURCES

The relocation of Yankee Stadium would not be expected to change the future background conditions of any historic resources within the 400-foot study area, with the exception of those resources on the west side of the project site. The demolition of Buildings H and J would presumably be required if a portion of the west side of the project site were developed in conjunction with the Yankee Stadium project as a public park, and the demolition of Buildings F and G would presumably be required if the City developed the remainder of the west side of the project site as a public open space. In that event, the Proposed Project's adverse impacts on historic resources would be limited to the demolition of Buildings B and D and the Bronx House of Detention.

URBAN DESIGN AND VISUAL RESOURCES

The majority of the Yankee Stadium project area is located outside of the study area for urban design and visual resources. However, the urban design of the Proposed Project's site would change, as the west side of the site would be occupied by a new public park with active uses developed in conjunction with the Yankee Stadium project and a public open space to be developed by the City. The new park and open space would substantially improve the condition of the waterfront and create a new waterfront amenity for the surrounding neighborhood. The Proposed Project would still be expected to enhance the vitality of the surrounding streets by introducing active retail uses and landscaping and increasing public access to the site and the Harlem River waterfront. Views from Manhattan to the project site area would be expected to be somewhat different, with the new stadium forming part of the skyline. The conclusions of the urban design and visual resources analysis would remain the same, in that there would be no significant adverse impacts.

NEIGHBORHOOD CHARACTER

The relocation of Yankee Stadium would not be expected to change the conclusions of the neighborhood impact analysis, as the land uses in the area would mainly remain the same. The

stadium project would offer new public access to the Harlem River waterfront on the west side of the project site, an amenity that would otherwise be provided with the Proposed Project. The creation of a new public park with elevated noise levels would occur independent of the Proposed Project.

NATURAL RESOURCES/WATER QUALITY

New habitat for terrestrial wildlife, in the form of a public park and a public open space, would be created on the west side of the project site in the future with a relocated Yankee Stadium. The presence of a relocated Yankee Stadium would not significantly alter the conclusions of the natural resources and water quality impact analysis for the Proposed Project. With or without the Yankee Stadium project, the Proposed Project would not be expected to result in any adverse impacts to natural resources or water quality.

HAZARDOUS MATERIALS

It is expected that the Yankee Stadium project would assume responsibility for the remediation of the 4.8-acre portion of the west side of the project site, if this area were to be developed by that project as a public park. In this scenario, the Proposed Project would still remediate the east side of the project site under a Remedial Work Plan, pursuant to the Brownfield Cleanup Agreement for this portion of the site.

WATERFRONT REVITALIZATION PROGRAM

As portions of the Yankee Stadium project area are within New York City's coastal zone boundary, the project would require an assessment for consistency with the City's Local Waterfront Revitalization Program (LWRP). Assuming that a 4.8-acre portion of the west side of the Gateway Center at Bronx Terminal Market project site would be developed as a public park, the stadium project, rather than the Proposed Project, would provide new waterfront access and recreational opportunities that are currently not available within the vicinity of the project site. New access and recreational opportunities also would be provided by the new public open space to be developed by the City. However, the Proposed Project would still replace the existing uses on the east side of the project site with active commercial uses, would provide improved visual access to the waterfront, and would eliminate some areas of the site that may be attractive to nuisance species. The Proposed Project would not result in any significant adverse impacts to water quality, terrestrial resources, wetlands, floodplains, aquatic resources, or endangered, threatened, or special concern species.

INFRASTRUCTURE

It is expected that the relocation of Yankee Stadium would have water consumption demands and sewage and solid waste generation similar to that of the current stadium, and would provide for its own stormwater management. In this scenario, as the west side of the project site would be developed as a public park and public open space independent of the Proposed Project and only the east side of the project site would be developed, the projected water consumption, sewage generation, and stormwater runoff of the Proposed Project would be somewhat reduced. However, the conclusions of the infrastructure analysis presented in Chapter 13, "Infrastructure," would not be altered.

SOLID WASTE AND SANITATION SERVICES

It is expected that the stadium project would have solid waste and sanitation services demands similar to those of the current stadium. As the west side of the project site would be developed as a public park and public open space independent of the Proposed Project and only the east side of the project site would be developed, the projected solid waste and sanitation demands of the Proposed Project would be somewhat reduced; however, the conclusions of the solid waste and sanitation services analysis presented in Chapter 14, "Solid Waste and Sanitation Services," would not be altered.

ENERGY

It is expected that the stadium project would have energy demands similar to those of the current stadium. As the west side of the Proposed Project would not be built, and this portion of the site would be developed as a public open space and active-use public park independent of the Proposed Project, the projected energy consumption of the Proposed Project would be somewhat reduced; however, the conclusions of the energy analysis presented in Chapter 15, "Energy," would not be altered.

TRAFFIC AND PARKING

The relocation of Yankee Stadium could be expected to slightly shift traffic patterns to and from the stadium, which could in turn improve game day traffic conditions at some traffic and parking analysis locations. For example, northbound stadium traffic on the Major Deegan Expressway utilizes the exit at 149th Street as well as the exit to the north, Yankee Stadium/161st Street, depending on what parking facility motorists expect to use. With the construction of several new parking facilities located along 161st Street, the south side of 164th Street, and on both sides of 151st Street on the east side of River Avenue, Yankee fans can be expected to divert at least to some degree away from the 149th Street exit towards the 161st Street exit. This would lighten the traffic burden on the ramps to the project site area along Exterior Street as well as to River Avenue below 157th Street, improving background traffic conditions in the majority of the Proposed Project's traffic study area.

As a result, on game days and nights, there would be a lower level of background traffic passing through critical traffic locations such as the multi-legged intersection of East 149th Street, Exterior Street, River Avenue, the 145th Street Bridge, and the northbound Major Deegan Expressway exit ramp, and other intersections along Exterior Street and River Avenue. For example, the northbound Expressway exit ramp at 149th Street is currently used by approximately 200 to 550 stadium-generated vehicles per hour for the pre-game arrival periods on weeknights and weekends. The diversion of some percentage of this amount of traffic to other intersections further north would improve traffic conditions south of the stadium on game days with project-generated traffic passing through these streets. Since these streets are much more heavily used by project-generated traffic than streets north of East 157th Street, overall conditions with a Yankee Stadium event underway are expected to improve. In this scenario, project Build conditions along the northbound Expressway approaching its diverge to East 149th Street would also improve, as well as queuing on the northbound 149th Street ramp.

In the southbound direction along the Major Deegan Expressway, stadium traffic uses several exit ramps, primarily the ramp that leads directly to the stadium's major parking garage along its southern edge, and also the southbound exit marked "Bronx Terminal Market" and the southbound exit to 161st Street. The parking facility at the southern edge of the current stadium

is expected to remain, while some of the parking facilities located further south along both River Avenue and Exterior Street would be displaced by the Proposed Project.

TRANSIT AND PEDESTRIANS

With the relocation of Yankee Stadium and the construction of several new parking facilities in the surrounding area, pedestrian trips to and from parking facilities in the surrounding area on game days would be expected to be concentrated further to the north. Therefore, background pedestrian traffic conditions in the project study area could be improved. In addition, the loss of the west side of the project site and the associated reduction in the program would result in fewer pedestrian trips from the Proposed Project. However, as described in Chapter 17, "Transit and Pedestrians," no pedestrian significant adverse impacts are expected with the Proposed Project, with the exception of the north crosswalk at 149th Street and River Avenue during the Saturday peak periods.

Any redistribution of subway trips associated with the Yankee Stadium project would not be expected to alter the conclusions of the transit analysis: that the Proposed Project would not significantly affect subway operations in the study area. Bus trips to a relocated Yankee Stadium would be expected to utilize the Bx13 and Bx6 bus lines. Therefore, the Proposed Project's projected marginal impact on the Bx19 bus line during non-game day Saturday midday peak periods would not be expected to change.

AIR QUALITY

As described above under "Traffic and Parking," the relocation of Yankee Stadium could be expected to slightly shift traffic patterns to and from the stadium, which could, in turn, improve game day traffic conditions at some analysis locations. Therefore, the potential for the Proposed Project to have mobile source air quality impacts could be less; however, the Proposed Project is not projected to have any significant adverse mobile source air quality impacts in any case. The HVAC systems for the proposed buildings and the proposed parking facilities would not result in significant adverse air quality impacts, and these conclusions would not be altered by the new background growth project. An (E) designation would still be incorporated into the proposed rezoning of the hotel site to preclude the potential for significant adverse air quality impacts from the industrial facility located within 400 feet of the proposed hotel.

NOISE

The relocation of Yankee Stadium would not be expected to change future background conditions to the extent that the conclusions of the noise impact analysis would be altered, with the exception of the proposed public open space. As described above, if a portion of the west side of the Gateway Center at Bronx Terminal Market project site were developed by the Yankee Stadium project as a public park, and the remainder of the west side of were developed by the City as a public open space, these areas would have elevated noise levels due to the proximity of the Major Deegan Expressway.

CONSTRUCTION

As described above under "Hazardous Materials," it is expected that the Yankee Stadium project would assume responsibility for the environmental remediation of the 4.8-acre portion of the west side of the project site, if this area were to be developed by that project as a public park. In

this scenario, the Proposed Project would still remediate the east side of the project site under a Remedial Work Plan, pursuant to the Brownfield Cleanup Agreement for this portion of the site.

The demolition of Buildings H and J would presumably be required if a portion of the west side of the project site were developed in conjunction with the Yankee Stadium project as a public park, and the demolition of Buildings F and G would presumably be required if the City developed the remainder of the west side of the project site as a public open space. In that event, the Proposed Project's construction-period impacts on historic resources would be limited to the demolition of Buildings B and D and the Bronx House of Detention.

As the west side of the project site would not be used by the Proposed Project if it is developed in conjunction with the Yankee Stadium project as a public park, the Proposed Project's total program would be reduced by approximately 8 percent, and therefore the project's direct, positive impacts resulting from expenditures on labor, materials, and services, increased tax revenues for the city and state, and indirect benefits created by expenditures by material suppliers, construction workers, and others involved in the project would be somewhat lessened.

The Yankee Stadium project would be expected to be completed by the Proposed Project's first Build year (2009). Therefore, some remediation and/or construction activities for the development of the west side of the project site by the Yankee Stadium project as a public park and the development of the Proposed Project on the east side of the project site could occur concurrently. However, these cumulative activities would not be expected to have greater construction-period impacts in the immediate project area than those of the Proposed Project. Otherwise, the Yankee Stadium project is not expected to change the conclusions of the construction impacts analysis.

PUBLIC HEALTH

The Proposed Project's hazardous materials, air quality, and noise analyses did not identify any adverse impacts warranting a public health analysis. As described above, the potential Yankee Stadium project is not expected to change the conclusions of the hazardous materials, air quality, or noise analyses. Therefore, the conclusion regarding the need for a public health analysis would not change with this new background growth project. *

A. INTRODUCTION

The technical analyses presented in Chapters 2 through 21 examine the potential for significant adverse impacts resulting from the Proposed Project. Where significant adverse impacts have been identified, measures are proposed to minimize or avoid them. This chapter discusses these mitigation measures in the areas of historic resources, traffic, and transit. In addition, this chapter analyzes the air quality effects of the proposed traffic mitigation measures.

B. HISTORIC RESOURCES

The demolition of the historic buildings on the project site—Buildings B, D, F, G, H, and J, and the Bronx House of Detention—would constitute a significant adverse impact on historic resources. Measures to mitigate this impact are being developed in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The mitigation measures are anticipated to include recording Buildings B, D, F, G, H, and J, and the Bronx House of Detention through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative; publishing a pamphlet describing the historical development and significance of the Bronx Terminal Market; and creating interpretive displays or markers on the site illustrating the Market's history. The mitigation measures developed with OPRHP would be recorded in either a Memorandum of Agreement (MOA) or Letter of Resolution (LOR) and implemented in order to partially mitigate the effects of the Proposed Project on historic resources.

C. TRAFFIC AND PARKING

The Proposed Project would result in significant adverse impacts at local intersections within the traffic study area and along sections of the Major Deegan Expressway near the project site. The sections that follow identify the traffic capacity and operational improvements needed at each location in order to mitigate traffic impacts.

As discussed in Chapter 16, "Traffic and Parking," a total of 21 intersections were analyzed, 15 of which are or would be signalized, and the remaining 6 of which are unsignalized. The detailed analyses of mitigation measures indicated that significant adverse impacts on the local street network can be mitigated by standard traffic engineering improvements such as signal phasing and timing modifications, parking prohibitions, lane re-striping and intersection channelization improvements, and pavement markings in all but one location. These measures represent the standard range of traffic capacity improvements that have been proposed and implemented for numerous projects in the City. At one location—the multi-legged intersection of the northbound Major Deegan Expressway exit ramp, approach from the 145th Street Bridge, 149th Street, Exterior Street, and River Avenue—major measures, including ramp widening, would be needed to mitigate impacts at that key location. Figure 23-1 illustrates the proposed traffic mitigation

measure at this location. Significant traffic impacts were also identified for sections of the Major Deegan Expressway, and mitigation measures are identified here for those sections.

A summary of traffic mitigation measures needed at each significantly impacted intersection and highway location are provided below for the 2009 and 2014 Build years. In general, the measures needed for each year are nearly identical. Detailed analyses are contained in Appendix A.

Yankee Stadium parking facilities would be displaced by the Proposed Project. However, during Yankee regular season and post-season games, the Proposed Project's parking facilities would not fill to their capacity, and excess parking would be available for displaced Yankee Stadium parking activity. Excess parking capacity at the site is expected to accommodate displaced Yankee-game parking. Therefore, no mitigation would be required.

PROJECT-RELATED STREET IMPROVEMENTS

Exterior Street, currently a wide, unstriped, cobblestone street with significant damage to the roadway surface, would be completely rebuilt with the Proposed Project. Upgrades include widening to two travel lanes per direction, dedicated turning lanes into parking areas on both sides of Exterior Street, pavement resurfacing, crosswalks at exits and entrances to parking areas, traffic signals at parking garage driveways, lane striping, signage, upgraded lighting, and aesthetically-pleasing streetscaping designs. River Avenue would be restriped with the Proposed Project to include crosswalks at 150th and 151st Streets and the proposed garage exit, two travel lanes per direction, shared left-turn/through lanes at 150th and 151st Streets, and streetscaping treatments. Motorists would experience improved levels of service before and after Yankee games along River Avenue due to the added capacity within the four-lane section between 149th and 151st Streets.

LOCAL STREET NETWORK

2009

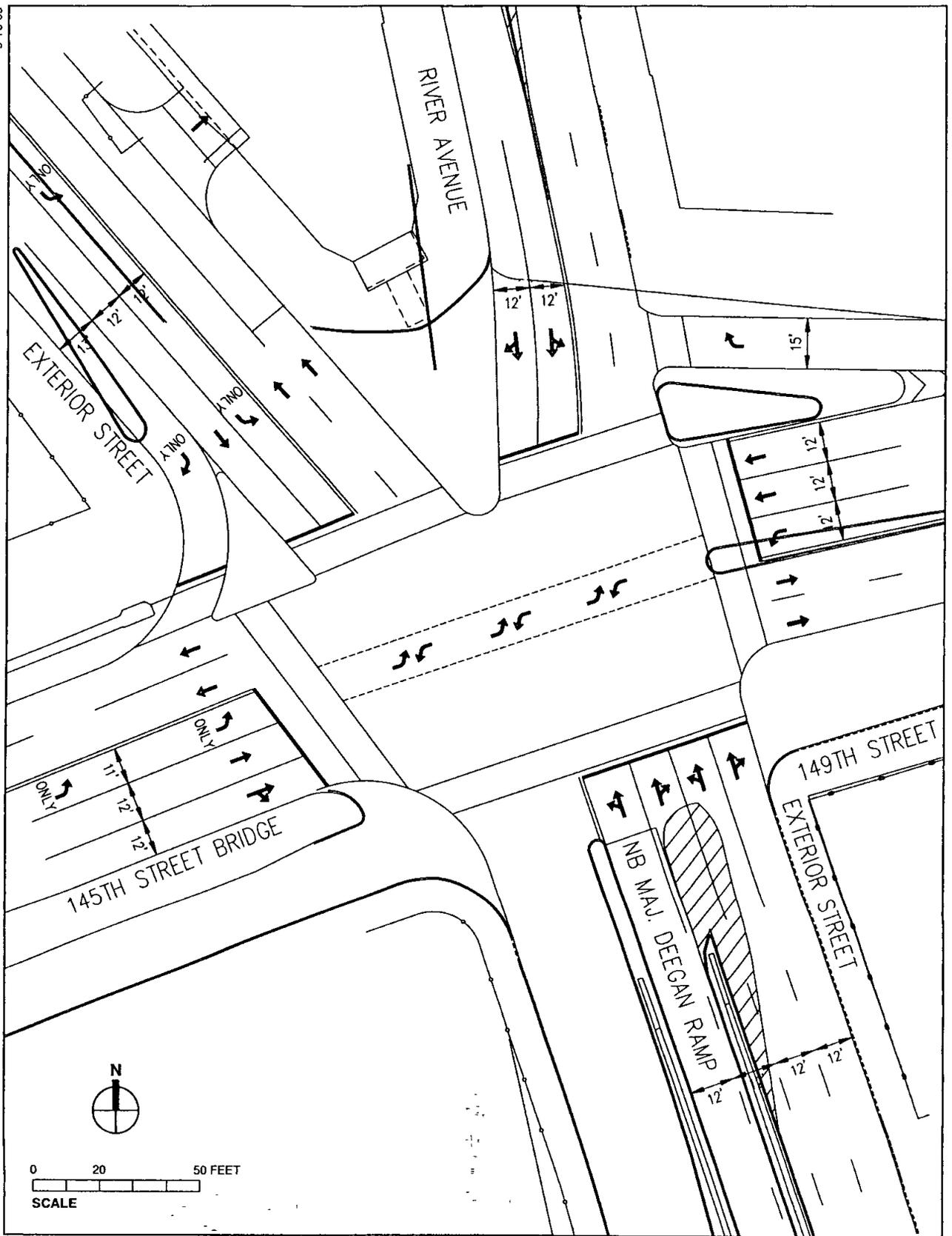
Grand Concourse and East 149th Street

Significant traffic impacts at this intersection can be mitigated by re-striping the northbound and southbound approaches to provide two 10-foot wide through lanes and one 10-foot wide shared through-right lane, and by signal timing modifications. These measures would mitigate impacts during all six analysis periods.

Grand Concourse and East 161st Street

Significant traffic impacts can be mitigated via the following set of measures: restriping the northbound approach to provide one 11-foot-wide exclusive left turn lane, two 10-foot-wide through lanes, and one 11-foot-wide exclusive right turn lane and installing signage to reinforce these lane designations; signal phasing and timing modifications; and, relocating the northbound bus stop on the Grand Concourse from its near side location to the far side of the intersection. These measures would mitigate impacts during all analysis periods. New York City Transit concurrence will be needed for the bus stop relocation, or an alternative measure will need to be identified in its place during the period between certification of the DEIS and FEIS in order to fully mitigate the impact at this location. For post-game analysis periods, parking would also need to be prohibited on the north side of westbound 161st Street approaching the intersection.

5 10 05



Proposed Traffic Mitigation at 149th Street, River Avenue, and Exterior Street

Northbound Major Deegan Expressway Exit Ramp, 145th Street Bridge Approach, 149th Street, Exterior Street, and River Avenue

This is the one intersection location at which major physical improvements would be needed for mitigation. The geometry of this intersection would need to be modified by shifting the approach and receiving lanes closer to the heart of the intersection in order to reduce vehicular conflicts, shorten the distance vehicles need to pass through the intersection, and to obtain a better overall transition of traffic from one street to another.

The following set of improvements would be needed: (1) widening the northbound exit ramp off of the Major Deegan Expressway to provide two 12-foot wide travel lanes; (2) channelizing the southbound Exterior Street approach to provide an exclusive right turn lane onto the 145th Street Bridge, and restriping southbound Exterior Street to provide one 12-foot wide exclusive left turn lane and one 12-foot wide through lane, with parking prohibited along the west side of Exterior Street approaching this intersection; (3) restriping the eastbound approach from the 145th Street Bridge (leading onto 149th Street) including removal of a section of the raised concrete median barrier in order to provide two 12-foot wide eastbound through lanes and one 11-foot wide eastbound exclusive left turn lane, and two 12-foot wide westbound receiving lanes on the bridge (8-foot wide sidewalks would be maintained on each sidewalk along the bridge); (4) shift the westbound 149th Street approach concrete divider 12 feet southward and restripe the westbound approach to the intersection to provide one 12-foot wide westbound left turn lane, two 12-foot wide westbound through lanes, and as a result the eastbound and westbound exclusive left turn lanes would be directly aligned; (5) restriping northbound Exterior Street to provide two 12-foot wide travel lanes; (6) rechannelizing the triangular-shaped concrete island that separates southbound Exterior Street and southbound River Avenue; and (7) signal phasing and timing modifications.

This set of improvements constitutes the primary mitigation option needed at this location. The proposed widening of the northbound Major Deegan Expressway exit ramp is also being studied by the New York State Department of Transportation (NYSDOT) as part of its ongoing studies of the Major Deegan Expressway. The realignment and rechannelization of the 149th Street corridor at this Exterior Street/River Avenue location is also being studied by the New York City Department of Design and Construction (NYCDDC) as part of its ongoing rehabilitation project for the 149th Street corridor in the Bronx. Coordination and information sharing has been maintained with these two agencies throughout the conduct of this EIS's traffic studies. Both agencies are aware of this project's need for mitigation improvements, and both agencies have indicated an interest in including these mitigation measures within their overall area-wide improvements. Additional reviews may be needed by NYCDOT's Bridges and Highway Design units. The implementation of the above full package of improvements would mitigate significant impacts during all traffic analysis periods.

Other mitigation options have been studied as part of this EIS as alternatives to the Major Deegan Expressway exit ramp widening, since that improvement would take the longest to implement and might not be ready for implementation by the Proposed Project's 2009 Build year. Other options studied (including the remainder of the mitigation package described above without the ramp widening) include: (1) prohibiting left turns from northbound Exterior Street onto 149th Street, redirecting them to northbound Gerard Avenue with a subsequent left turn onto westbound 149th Street, passing through the same intersection at Exterior Street/River Avenue; (2) prohibiting through and left turns from northbound Exterior Street and redirecting them to northbound Gerard Avenue with subsequent left turns onto westbound 149th Street, and

providing stop sign control for right turns from northbound Exterior Street onto eastbound 149th Street. These options would not perform as well as the primary option of widening the northbound Major Deegan Expressway exit ramp for both daily background traffic, Yankee Stadium traffic on game days, or project-generated traffic.

River Avenue and 151st Street

Significant traffic impacts projected for the weekday PM peak hour on non-game days and for the Saturday midday peak hour on game days can be mitigated via signal timing modifications. Significant traffic impacts projected for Saturday PM peak hour conditions on game days would require signal phasing and timing modifications as well as enforcement of existing parking prohibitions on the north side of westbound 151st Street approaching the intersection.

River Avenue and 153rd Street

Significant traffic impacts projected for the weekday PM peak hour on non-game days can be mitigated via signal timing modifications. Significant traffic impacts projected for weekday PM, Saturday midday, and Saturday PM peak hour conditions on a game day can be mitigated by enforcing existing parking restrictions on the northbound and southbound River Avenue approaches to the intersection; for the Saturday PM peak hour conditions, signal timing modifications would also be needed.

River Avenue and 161st Street

This intersection is expected to be significantly impacted in five of the six peak hours analyzed. For weekday midday peak hour conditions on non-game days, impacts can be mitigated by signal timing modifications. For weekday PM peak hour conditions on non-game days, it would also be necessary to prohibit parking on the east side of northbound River Avenue approaching the intersection. For Saturday midday peak hour conditions on non-game days, northbound parking prohibitions alone would be sufficient to mitigate significant impacts. There would be no significant impacts, and therefore no need for mitigation, in the weekday PM peak traffic hours on game days. For Saturday midday peak hour conditions on game days, signal timing modifications and prohibiting parking on the east side of the northbound River Avenue approach to 161st Street would be needed. For Saturday PM peak hour impacts on game days, prohibiting parking on the north side of the westbound 161st Street approach to River Avenue would be needed.

Jerome Avenue and 161st Street

Two physical improvements would be needed to mitigate significant traffic impacts: (1) re-striping the northbound approach from its current configuration with an exclusive left turn lane, a through lane, and a through-right lane, to a new configuration with a left-through lane, through lane, and an exclusive right turn lane each with 11-foot widths; and (2) shifting the southbound centerline five feet to the west by reducing the parking lane width along the southbound approach from its current 13-foot width to an 8-foot width in order to achieve a better transition for northbound traffic movements. These improvements would be needed to mitigate significant traffic impacts in the weekday PM peak hour and Saturday peak hour on non-game days and in the weekday PM peak hour and Saturday midday peak hour on game days, but these physical changes would be in place permanently for all conditions. Signal timing modifications would also be needed for weekday PM peak hour conditions on non-game days and for Saturday midday peak hour conditions on game days.

Major Deegan Expressway Northbound Ramp and Service Road, and 157th Street

Physical changes and signal timing modifications would be needed for three of the traffic analysis hours, and would therefore be installed and operational for all traffic conditions. These involve the modification of the operation of the intersection to allow both the northbound service road and the northbound Major Deegan Expressway exit ramp to operate within the same signal phase, and installing lane striping and signage, and a lane transition plan, on the northbound “receiving side” of the intersection.

Macombs Place and 155th Street

A reduction in the number of signal phases and signal timing modifications would be needed to mitigate significant traffic impacts at this location during all six traffic peak hours analyzed.

Lenox Avenue and 145th Street

Signal timing modifications would be needed to mitigate significant traffic impacts for weekday PM and Saturday midday peak hour conditions on non-game days and for weekday PM and Saturday PM peak hour conditions on game days.

River Avenue and 150th Street

In order to mitigate significant traffic impacts on game days (during all three traffic analysis peak hours), it would be necessary to prohibit parking on the north side of the westbound 150th Street approach to the intersection and to re-stripe this approach to provide one 11-foot wide exclusive left turn lane and one 11-foot wide shared right-through lane. These physical street modifications would be in-place and workable for all conditions.

2014

With the exception of the measures noted below, traffic capacity improvements needed to mitigate significant impacts under 2014 Build conditions are identical to those described above for 2009 Build conditions. In addition, at some locations, further signal timing shifts would be needed under year 2014 Build conditions.

River Avenue and 161st Street

It would be necessary to prohibit parking on the east side of the northbound River Avenue approach to the intersection in the weekday midday period on non-game days. This measure would also be needed in other traffic periods in year 2009, as described in detail above for the 2009 Build conditions.

IMPLEMENTATION

Each of the traffic engineering improvements described above would require the approval of the New York City Department of Transportation (NYCDOT). These improvement measures fall within the range of typical measures employed by NYCDOT in improving traffic conditions in all parts of the City. Approval may also be needed from the New York Police Department (NYPD) for locations where enforcement of parking prohibitions since such enforcement activity is typically within the purview of NYPD.

MAJOR DEEGAN EXPRESSWAY

The simulation analyses of existing and projected future conditions along the Major Deegan Expressway also identified significant impacts resulting from the Proposed Project at two locations: the northbound Major Deegan Expressway approaching Exit 4 (149th Street); and, the southbound Major Deegan Expressway approaching the exit ramp at 161st Street at Exits 5 and 6. These impacts would occur as a result of the retail development, which is expected to be in place by 2009; impacts requiring mitigation would be similar for 2014 Build conditions.

For the northbound Major Deegan Expressway approaching 149th Street, widening of the exit ramp would be needed in order to mitigate impacts at the local street intersection of the northbound exit ramp with 149th Street, Exterior Street, River Avenue, and the 145th Street Bridge approach to the intersection. In order to fully mitigate conditions along the northbound Major Deegan Expressway, the simulation analysis indicates that it would also be necessary to widen the approach to the exit ramp in order to provide a deceleration lane leading to the exit ramp. NYSDOT has indicated its interest in improving the conditions by widening the exit ramp, but it is uncertain at this time whether NYSDOT would also be able to create a widening along the highway mainline to provide a fully acceptable deceleration lane. The developers and traffic consultants are working with NYSDOT to provide full mitigation, but it is possible that only partial mitigation of the potential impacts at the northbound exit would be accomplished by 2009. It is also possible that should the New York Yankees continue their efforts to relocate Yankee Stadium from its current location to a new site on the north side of 161st Street, as the team has proposed, that a significant volume of Yankee game traffic that currently exits the Major Deegan Expressway at 149th Street, would in the future exit further north at 161st Street (to gain direct access to new parking facilities expected to be built ringing the new Stadium) and reduce the potential for impacts at 149th Street and possibly reduce or eliminate the need to complete any mainline widening for a deceleration lane. In the interim, the ramp widening can be accomplished and mainline widening needs can be monitored to make sure it is needed before being designed and built.

For the southbound Major Deegan Expressway approaching 161st Street (Exit 6), during game day peak periods, it would be necessary to channelize the right-most travel lane so it can serve as an exclusive deceleration lane to the exit. This channelization can be accomplished by coning off this lane starting approximately 1,000 feet upstream of the exit diverge, thereby reducing friction between exiting vehicles and traffic staying on the southbound Major Deegan Expressway by effectively restricting Major Deegan Expressway traffic to the two left-most lanes.

D. TRANSIT AND PEDESTRIANS

NYCT BUS LINE HAUL

As discussed in Chapter 17, "Transit and Pedestrians," the proposed actions would result in adverse impacts to the operations of the eastbound Bx19 bus route during both the 2009 and 2014 non-game day Saturday midday peak periods. The Bx19 route is estimated to operate just above its guideline capacity, 70 passengers for a standard bus, with an increase in passengers per vehicle from 41 in the No Build condition to 71 in the Build conditions at the maximum load location in both 2009 and 2014. In order to mitigate the impact, NYCT would need to schedule one additional eastbound bus per hour during the Saturday midday peak hour. With these improvements, the Bx19 would have adequate capacity to accommodate the project-generated increase in bus ridership.

STREET-LEVEL PEDESTRIAN OPERATIONS

The Proposed Project is expected to result in a significant adverse impact to the operations of the north crosswalk at 149th Street and River Avenue. The No Build LOS A is projected to decrease to a Build LOS D (below 20 SFP). The potential impact could be mitigated by widening the north crosswalk by four feet to a total width of 15 feet. Accounting for the proposed signal retiming which would be done in conjunction with the traffic mitigation at this intersection, an additional five foot widening for a total crosswalk width of 20 feet would be required. As shown in Table 23-1, this widening would mitigate the potential impact so that the north crosswalk would operate at LOS D (20 SFP) or better during all analysis peaks.

**Table 23-1
No Build and Build Conditions: Crosswalk Mitigation**

Intersection	Crosswalk	Width (feet)	2014 No Build Condition		2014 Build Condition		Mitigated Condition		
			SFP	LOS	SFP	LOS	Width	SFP	LOS
Non-Game Day Saturday Midday Peak Period									
149th Street & River Avenue	North	11	113	A	15	D	20	20	D

E. AIR QUALITY

Chapter 18, "Air Quality," presents the maximum predicted 8-hour carbon monoxide (CO) concentrations for the Proposed Project, and concludes that the Proposed Project would not result in significant adverse air quality impacts. Therefore, no air quality mitigation is required. Tables 23-2 and 23-3 illustrate the effect that the proposed traffic mitigation measures would have on maximum predicted CO concentrations in the 2009 and 2014 Build years. The values shown are the highest predicted concentrations for the analyzed receptor locations. The results presented in the tables demonstrate that the proposed traffic mitigation measures would not result in any violations of the CO standard or any significant impacts at the intersections analyzed.

**Table 23-2
Future (2009) Maximum Predicted 8-Hour Average
Carbon Monoxide Concentrations (parts per million)**

Site	Location	Time Period	8-Hour Concentration (ppm) with Traffic Mitigation		
			2009 No Build	2009 Build	2009 Build with Mitigation
1	E. 161st Street and Grand Concourse	Weekday PM	3.7	4.0	4.0
		Saturday PM	3.8	4.4	4.0
2	E. 151st Street and River Ave	Weekday PM	2.9	3.4	3.4
		Saturday PM	3.1	3.7	3.5
3	E. 149th Street and River Ave/Exterior St.	Weekday PM	4.6	4.8	4.9
		Saturday PM	4.7	4.7	4.9

Note: 8-hour CO standard is 9 ppm.

Table 23-3
**Future (2014) Maximum Predicted 8-Hour Average
 Carbon Monoxide Concentrations (parts per million)**

Site	Location	Time Period	8-Hour Concentration (ppm) with Traffic Mitigation		
			2014 No Build	2014 Build	2014 Build with Mitigation
1	E. 161st Street and Grand Concourse	Weekday PM	3.5	3.7	3.8
		Saturday PM	3.6	4.0	3.8
2	E. 151st Street and River Ave	Weekday PM	2.6	3.2	3.2
		Saturday PM	2.8	3.4	3.1
3	E. 149th Street and River Ave/Exterior St.	Weekday PM	4.3	4.4	4.5
		Saturday PM	4.4	4.4	4.6

Note: 8-hour CO standard is 9 ppm.

F. NOISE

Maximum $L_{eq(1)}$ noise levels in the western portion of the 2-acre public open space that would be developed as part of the Proposed Project (i.e., adjacent to Exterior Street) would range from approximately 75 to 76 dBA. Noise levels would decrease by approximately 3 dBA per doubling of distance going west from Exterior Street; maximum $L_{10(1)}$ noise levels in the proposed open space would be approximately 3 dBA higher than the $L_{eq(1)}$ noise levels. Noise levels at the portions of the proposed waterfront esplanade would be lower due to the attenuation with distance from Exterior Street (and the Major Deegan Expressway) and the barrier effect of the Proposed Project's buildings. However, even accounting for the attenuation, noise levels in the proposed open space and waterfront esplanade would be higher than the guideline level of 55 dBA $L_{10(1)}$ for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for Use in City Environmental Impact Review" (Table 19-5). Therefore, based upon these guideline values, the Proposed Project would result in a significant impact by creating a new open space in an area with elevated noise levels. There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open spaces to below the 55 dBA $L_{10(1)}$ guideline noise level. A sound barrier on Exterior Street would present problems with respect to aesthetics and safety, and unless the barrier extended well above the height of the elevated roadway, it would not be effective in reducing noise from the Major Deegan Expressway. While noise levels in the open space would be above the 55 dBA $L_{10(1)}$ guideline and are therefore identified as a significant impact, they would be comparable to noise levels in a number of well-used and attractive open spaces in New York City that are also located adjacent to heavily trafficked roadways. *

A. INTRODUCTION

This chapter analyzes alternatives to the Proposed Project. Four alternatives are considered: the No Action Alternative, in which the site would remain in its existing condition; a Retention of Expanded Market Alternative, in which the proposed retail development would be restricted to the portion of the site east of Exterior Street, and the existing market uses would be expanded within a new facility on the west side of the project site; a Development of East Project Site Only Alternative, in which only the east side of the project site would be developed; and a No Significant Adverse Unmitigated Impacts Alternative, in which the Proposed Project is modified to avoid any unmitigated significant adverse impacts.

B. NO ACTION ALTERNATIVE

Under the No Action Alternative, the site would remain as it is in current conditions, with wholesale market uses, the currently closed Bronx House of Detention, a farmer's market, and seasonal parking for Yankee Stadium. The changes to zoning and the City Map, special permits, waivers, modifications, authorizations, and certifications from the New York City Planning Commission (CPC); disposition of City-owned property; and other state or federal actions required for the Proposed Project would not be undertaken. This is the same scenario that is described throughout the EIS as "The Future without the Proposed Actions." This scenario does not include a relocated Yankee Stadium. It is summarized here, with a comparison to the potential impacts of the Proposed Project.

LAND USE, ZONING AND PUBLIC POLICY

Under the No Action Alternative, instead of being developed as a major retail and hotel complex with a public open space and waterfront esplanade, the underutilized site would continue to be used for wholesale market uses, the currently closed Bronx House of Detention, a farmer's market, and seasonal parking for Yankee Stadium. No new retail, hotel, or accessory parking would be developed on the site, and no new employees or potential visitors would be introduced to the site. The existing zoning classification of the site would remain, and no land use special permits, waivers, modifications, authorizations, or certifications would be required. While the resultant land use with the Proposed Project would be very different from the No Action Alternative, it would not result in a significant adverse impact to land use, zoning, and public policy.

SOCIOECONOMIC CONDITIONS

Unlike with the Proposed Project, in the No Action Alternative the mix of 23 businesses employing approximately 297 workers on-site would be retained; however, the project's substantial economic benefits would not be realized. There would be no direct or generated construction employment and income, or the expected local and state revenue resulting from the

construction activity. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would not occur. Under this alternative, the approximately 2,346 permanent jobs in New York City expected as a result of the proposed actions would not be created. The project's positive impacts on the local socioeconomic character and local and state revenue would not occur.

COMMUNITY FACILITIES

The No Action Alternative would not result in the new demands on police, fire, and emergency services associated with the Proposed Project; however, in any case, the demand from the Proposed Project would not be significant. In this alternative, the utilization of the Bronx House of Detention would be dependent on the New York City Department of Correction's determination of how it will meet its need to replace existing bed capacity. As described in Chapter 4, "Community Facilities," NYCDOC will need to replace a substantial portion (23 percent) of its existing bed capacity based on current jail occupancy projections. Building the new jail capacity will require either the construction of new facilities or the reopening of the less efficient facilities that are now in reserve. As with the Proposed Project, it is expected that the 44th Precinct would continue to provide adequate police protection to the area within its jurisdiction, including the project site, and fire protection would remain adequate in the project area.

OPEN SPACE

Without the Proposed Project, the passive open space ratio for workers (as well as the ratio for workers and residents combined) in the area would exceed the New York City Department of City Planning's (DCP) guidelines. Under this alternative, the approximately two acres of new public open space and waterfront esplanade that the Proposed Project would provide would not be created.

SHADOWS

In the No Action Alternative, no new shadows would be cast on Macombs Dam Park or the project-generated open space. However, the Proposed Project would cast shadows on Macombs Dam Park only during the midday hours of the winter months, and these shadows would mostly fall on paved areas; thus, the project-generated shadows would not affect park usage or vegetation growth, and no significant adverse shadow impacts would occur. The approximately two acres of new public open space and waterfront esplanade to be provided by the Proposed Project would not be created with the No Action Alternative.

HISTORIC RESOURCES

With the No Action Alternative, the structures on the project site identified as historic resources—Buildings B, D, F, G, H, and J of the Bronx Terminal Market, and the Bronx House of Detention—would remain, and thus the significant adverse impacts on historic resources resulting from the Proposed Project would not occur. With the Proposed Project, this impact would be partially mitigated by measures developed in consultation with OPRHP. Neither this alternative nor the Proposed Project would result in significant adverse impacts to archaeological resources.

URBAN DESIGN AND VISUAL RESOURCES

With the No Action Alternative, the major retail and hotel complex with a public open space and waterfront esplanade would not be developed, and the dilapidated condition and visual character of the project site would remain unchanged. Unlike the No Action Alternative, the Proposed Project is expected to enhance the vitality of the surrounding streets by introducing active retail uses and landscaping and increasing public access to the site. In addition, the project would substantially improve the condition of the Harlem River waterfront and create a new waterfront amenity for the surrounding neighborhood. Although the Proposed Project will include the creation of buildings that are taller and bulkier than most of the existing buildings, these changes are not considered to be adverse, as they would improve the visual quality of the site and would be compatible with the bulk and use of buildings in the surrounding area.

NEIGHBORHOOD CHARACTER

Under this alternative, the site would remain in use by wholesale market businesses, the currently closed Bronx House of Detention, a farmer's market, and seasonal parking for Yankee Stadium. The project site buildings would continue to block views to the waterfront from the surrounding area, and the site would not offer public access to the waterfront. The changes in neighborhood character associated with the Proposed Project would not occur with the No Action Alternative.

NATURAL RESOURCES/WATER QUALITY

Under the No Action Alternative, the site would maintain its current, predominantly paved condition, and would not provide the landscaping associated with the Proposed Project. The deterioration of the project site waterfront would continue. In addition, there would be no public access to the waterfront. In terms of its operation, the Proposed Project, unlike the No Action Alternative, would eliminate some areas of the site that may be attractive to nuisance species, and add new vegetated areas within the public open space and waterfront esplanade. Neither the Proposed Project nor the No Action Alternative would result in significant adverse impacts to water quality, terrestrial resources, wetlands, floodplains, aquatic resources, or endangered, threatened, or special concern species.

HAZARDOUS MATERIALS

Under the No Action Alternative, it is assumed that no remediation would occur on the project site. With the Proposed Project, draft Remedial Work Plans (RWP) pursuant to the Brownfield Cleanup Agreements would be submitted for approval to NYSDEC and the New York State Department of Health (NYSDOH), which would provide for remedial actions, as necessary, to be performed before, during, and/or after construction.

WATERFRONT REVITALIZATION PROGRAM

In the No Action Alternative, the project site would remain in use by wholesale market businesses, the currently closed Bronx House of Detention, a farmer's market, and seasonal parking for Yankee Stadium. In contrast, the Proposed Project would replace the existing uses on the project site with active commercial and recreational uses and would re-establish physical and visual public access to the Harlem River waterfront. The No Action Alternative would not provide new public waterfront access or recreational opportunities.

INFRASTRUCTURE

With the No Action Alternative, water consumption, sewage and solid waste generation, and stormwater runoff are not expected to change, and no impacts to these systems are expected. With the Proposed Project, new water lines and sewer line connections would be installed to provide service to the new buildings on the site. As with the No Action Alternative, the project's additional demand on infrastructure services is not expected to affect the City's water supply or local water pressure, or result in infrastructure impacts on the City's sewer system.

SOLID WASTE AND SANITATION SERVICES

Under the No Action Alternative, it is expected that the volumes of solid waste generated at the project site would not change, and no major changes are expected in the City's solid waste management handling practices. With this alternative, the Proposed Project's increase in solid waste would not occur. However, neither the No Action Alternative nor the Proposed Project would result in an adverse impact on the solid waste handling and disposal systems that serve New York City.

ENERGY

Unlike with the Proposed Project, no new energy demands would be created with the No Action Alternative. Neither this alternative nor the Proposed Project would result in any adverse impacts to energy systems.

TRAFFIC AND PARKING

The increase in vehicle trips to the project site expected with the Proposed Project would not occur with the No Action Alternative. Therefore, this alternative would not require the mitigation measures proposed for the Proposed Project, including signal phasing and timing modifications, parking prohibitions, lane re-striping and intersection channelization improvements, and pavement markings, as well as the widening of the Major Deegan Expressway ramp at 149th Street.

TRANSIT AND PEDESTRIANS

The increases in transit and pedestrian trips to the project site expected with the Proposed Project would not occur with the No Action Alternative. Therefore, this alternative would not have any adverse impacts on pedestrian conditions at the north crosswalk at the intersection of 149th Street and River Avenue, or marginal impacts on the Bx19 local bus route. Neither the Proposed Project nor this alternative would result in significant subway or stairway impacts.

AIR QUALITY

Unlike with the Proposed Project, no new mobile or stationary source emissions would be created on the project site with the No Action Alternative. Neither this alternative nor the Proposed Project would result in any significant adverse mobile or stationary source air quality impacts. In this alternative, the industrial facility in the surrounding area would not have the potential to create a significant impact on the proposed hotel; however, with the Proposed Project, an (E) designation for air quality would be incorporated into the proposed rezoning of hotel portion of the site to preclude the potential for significant adverse air quality impacts from this industrial source.

NOISE

No new sources of noise would be created on the project site with the No Action Alternative. Neither this alternative nor the Proposed Project would result in any significant adverse noise impacts, with one exception—the Proposed Project would have a significant adverse noise impact due to the creation of public open space, a noise-sensitive receptor, in an area with high ambient noise. With the No Action Alternative, this new sensitive receptor would not be created and there would be no significant adverse impact; however, the local area would not receive the benefit of the creation of public open space.

CONSTRUCTION

No construction would occur on the site in the No Action Alternative. The construction activities associated with the Proposed Project and the temporary adverse impacts would not occur. The local area and New York City would not receive the substantial economic benefits attributable to project construction.

PUBLIC HEALTH

Neither the No Action Alternative nor the Proposed Project is expected to result in significant adverse impacts to public health.

C. RETENTION OF EXPANDED MARKET ALTERNATIVE

As described in Chapter 3, "Socioeconomic Conditions," no significant adverse impacts related to the Proposed Project's displacement of the current market tenants were identified. However, in order to address comments made during the scoping of the Proposed Project, this EIS considers an alternative in which the existing wholesale market uses are retained and expanded within a new facility on the west side of the project site. In this scenario, proposed Retail Building G would not be constructed, no public open space or waterfront esplanade would be created, and an additional approximately 64,000 gross square feet of retail space would be accommodated within Retail Buildings A and B/F, on the east side of Exterior Street. Overall, the retail program would be 7 percent smaller than with the Proposed Project.

The spatial requirements assumed for the new market facility are as noted in public scoping comments: 500,000 square feet (sf), of which 200,000 sf would be refrigerated, with room for expansion; a wide central corridor; good night-lighting; secure boundaries, loading docks above street level, contiguity along the platform; large, uninterrupted open storage areas, high-capacity, high load-carrying flat concrete floors; adequate floor drainage; industrial three-phase electric service; high ceilings; and strong poured concrete, steel-reinforced walls that are rodent resistant.

LAND USE, ZONING AND PUBLIC POLICY

Under this alternative, the project site would continue to be used in part for wholesale market uses; however, these would be concentrated within a new facility approximately 26 percent larger than the space currently occupied by existing market tenants. Therefore, there would be a greater quantity of wholesale market space on the project site, and the wholesale market uses would be directly adjacent to the new retail uses across Exterior Street. It is likely that the two uses would be incompatible when located in such close proximity, as the truck traffic for the wholesale market uses would not be pedestrian friendly, and the market uses would attract a

different clientele than the proposed retail buildings on the east side of the project site. The new market facility would have to be at least five stories or 100 feet tall to create 500,000 sf of usable space; operationally, it is expected that a 5-story building would not function as well as a 1-story building for market uses, as there would be less direct in-and-out access for trucks to specific vendors. As with the Proposed Project, the currently closed Bronx House of Detention would be demolished and new retail and accessory parking would be developed on the remaining portion of the site. The east side of the project site would still require rezoning. This alternative would not provide an open space or waterfront esplanade, and therefore would not meet the Bronx Waterfront Plan's objective to improve public waterfront access.

SOCIOECONOMIC CONDITIONS

Unlike the Proposed Project, this alternative would retain the mix of 23 businesses employing approximately 297 workers on-site and would provide an opportunity for the expansion of the wholesale food market. The wholesale food market uses could generate slightly more economic benefits than they currently do, assuming that the entire expanded market is occupied; however, since less new retail would be developed, the amount of economic benefits from the proposed retail development would be somewhat diminished.

COMMUNITY FACILITIES

As with the Proposed Project, this alternative would make new demands on police, fire, and emergency services and would displace the currently closed Bronx House of Detention, but would not result in a significant adverse impact.

OPEN SPACE

As with the Proposed Project, the passive open space ratios for workers and workers and residents combined in the area would continue to exceed DCP guidelines with this alternative. However, under this alternative, the approximately two acres of new public open space and waterfront esplanade that the Proposed Project would provide would not be created.

SHADOWS

Under the Retention of Expanded Market Alternative, the approximately two acres of public open space and waterfront esplanade would not be created, and therefore no shadows would be cast on this project-created resource. However, the new market facility would have to be at least five stories or 100 feet tall to create 500,000 sf of usable space; such a facility would be much larger than the proposed Retail Building G on this portion of the site, and could potentially cast additional shadows on Macombs Dam Park. Under the Proposed Project, no significant adverse shadow impacts would occur.

HISTORIC RESOURCES

Neither this alternative nor the Proposed Project would result in significant adverse impacts to archaeological resources. The effect on architectural resources would be the same with this alternative as with the Proposed Project, since the demolition of Buildings F, G, H, and J would be required in order to construct the new wholesale market facility on the west side of the site, and the demolition of Buildings B, D, and the Bronx House of Detention would be required to construct the retail buildings on the east side of the site.

URBAN DESIGN AND VISUAL RESOURCES

Unlike the Proposed Project, the Retention of Expanded Market Alternative would not substantially improve access to or the condition of the Harlem River waterfront; nor would it create a new public open space amenity for the surrounding neighborhood. Given the small achievable footprint on the west side of the project site, a market facility would have to be at least five stories or 100 feet tall stories tall to create 500,000 sf of usable space; such a facility would be much larger than the proposed Retail Building G on this portion of the site. This alternative would introduce some active retail uses and landscaping and increase public access to the east side of the site, but these could conflict with the wholesale market, non-pedestrian-friendly activities on the west side of Exterior Street.

NEIGHBORHOOD CHARACTER

This alternative would continue to obstruct views to the waterfront from the surrounding area, and the site would not offer any public access to the waterfront. The active retail uses, landscaping, and increased public access to the east side of the site could conflict with the wholesale market, non-pedestrian-friendly activities on the west side of Exterior Street. Overall, neither the Retention of Expanded Market Alternative nor the Proposed Project would have significant adverse impacts on the character of the surrounding neighborhood.

NATURAL RESOURCES/WATER QUALITY

Under the Retention of Expanded Market Alternative, it is not expected that new habitat for terrestrial wildlife (in the form of a new public open space) would be created on the project site. Ongoing water quality improvements that are underway throughout the harbor should continue to result in some enhancement for aquatic resources habitat; however, the deterioration of the project site waterfront could continue. In addition, due to its use for wholesale market activities, there would continue to be no public access to the waterfront. With the Proposed Project, no in-water work would be required, and it is not anticipated that adverse impacts to terrestrial or aquatic resources would occur during construction. In terms of its operation, both the Proposed Project and this alternative would eliminate some areas of the site that may be attractive to nuisance species, however, only the Proposed Project would add new vegetated area within a public open space and waterfront esplanade. The new market facility to be developed with this alternative could create additional shading on the Harlem River. Both the Proposed Project and this alternative would not result in any significant adverse impacts to water quality, terrestrial resources, wetlands, floodplains, aquatic resources, or endangered, threatened, or special concern species.

HAZARDOUS MATERIALS

Under the Retention of Expanded Market Alternative, it is assumed that remediation would still be required on both sides of the project site. As described above, with the Proposed Project, a draft RWP would be submitted to and approved by NYSDEC and NYSDOH, including remedial actions, as necessary, to be performed before, during, and/or after construction.

WATERFRONT REVITALIZATION PROGRAM

Neither the Retention of Expanded Market Alternative nor the Proposed Project would result in any significant adverse impacts to coastal issues. However, the Proposed Project would re-establish physical and visual public access to the Harlem River waterfront through the creation of a public open space and waterfront esplanade.

INFRASTRUCTURE

With this alternative, water consumption, sewage and solid waste generation, and stormwater runoff are expected to be similar to those with the Proposed Project.

SOLID WASTE AND SANITATION SERVICES

Neither this alternative nor the Proposed Project would result in an adverse impact on the solid waste handling and disposal systems that serve New York City.

ENERGY

Neither this alternative nor the Proposed Project would result in any adverse impacts to energy systems.

TRAFFIC AND PARKING

In this alternative, vehicular access to the proposed retail development would occur at the parking garage between Exterior Street and River Avenue, using the same two access points as the Proposed Project (on Exterior Street and River Avenue), and at the parking behind Retail Building E.

As shown in Table 24-1, peak hour traffic volumes are projected to be slightly lower under this alternative when compared to the Proposed Project, ranging from about 0.5 percent lower in the weekday midday peak hour to 3.5 percent lower in the non-game Saturday midday peak hour. Because market activities are concentrated during the late night and early morning hours, very few market-related trips would be added to the midday and PM peak hours under this alternative, similar to existing market operations at the site. During Saturday peak hours when the market would be closed, the ±79,000-gsf reduction in the retail program of the Proposed Project would decrease vehicular trip generation further than on the weekdays when compared to the vehicular trip generation of the Proposed Project.

Vehicular traffic to the project area would follow the same traffic patterns as were assumed for the Proposed Project, and there would be insignificant reductions in traffic at the major entry points to the study area. Differences in traffic patterns would occur primarily on Exterior Street; retail-related trips that would enter and exit the surface lot on the west side of Exterior Street under the Proposed Project would, instead, enter and exit the garage on the east side of Exterior Street in this alternative. Since traffic volume differences would primarily relate to turns off and onto Exterior Street, the intersections of Exterior Street at the garage entrance/exit locations were analyzed in detail. Generally, there would be only a slight decrease in project-generated trips during all peak hours at the remaining study locations analyzed under the Proposed Project; however, those locations were not analyzed in detail for this alternative.

In this alternative, the Proposed Project's garage access points on Exterior Street would operate with fewer than 45 seconds of delay, i.e., at acceptable level of service D conditions, during all peak hours with slight modifications to the traffic signal timings recommended under the Proposed Project. Hence, with a reduction in overall vehicle trips and a negligible change in vehicle assignments except at the garage access points on Exterior Street, additional significant impacts would not likely occur under this alternative at any study locations, nor would there likely be any significant traffic improvements under this alternative.

**Table 24-1
Comparison of Retention of Expanded Market Alternative
Vehicle Trip Generation to the Proposed Project**

Peak Period	Auto		Taxi		Delivery		Total		Total
	In	Out	In	Out	In	Out	In	Out	
Weekday Midday Peak Hour									
Proposed Project	517	457	42	42	32	32	591	531	1,122
Retention of Expanded Market Alternative	514	455	42	42	32	32	588	529	1,117
Weekday PM Peak Hour (Non-Game)									
Proposed Project	1,068	983	86	86	19	19	1,173	1,088	2,261
Retention of Expanded Market Alternative	1,037	956	86	86	19	19	1,142	1,061	2,203
Weekday PM Peak Hour (Game Day)									
Proposed Project	966	889	98	98	19	19	1,083	1,006	2,089
Retention of Expanded Market Alternative	941	867	98	98	19	19	1,058	984	2,042
Saturday Midday Peak Hour (Non-Game)									
Proposed Project	1,156	1,118	136	136	4	4	1,296	1,258	2,554
Retention of Expanded Market Alternative	1,109	1,071	136	136	4	4	1,249	1,211	2,460
Saturday Midday Pre-Game Peak Hour (Game Day)									
Proposed Project	987	853	109	109	4	4	1,100	966	2,066
Retention of Expanded Market Alternative	948	820	109	109	4	4	1,061	933	1,994
Saturday PM Post-Game Peak Hour (Game Day)									
Proposed Project	675	733	88	88	4	4	767	825	1,592
Retention of Expanded Market Alternative	652	706	88	88	4	4	744	798	1,542

TRANSIT AND PEDESTRIANS

As with the Proposed Project, no significant adverse impacts on nearby subway stations would be expected with this alternative. The project's marginal impact on the Bx19 bus line would probably not occur with this alternative; however, it is expected that mitigation could be provided by New York City Transit through minor adjustments in service for this alternative or the Proposed Project. Because market activities are concentrated during the late night and early morning hours, their presence is not expected to noticeably affect pedestrian service conditions during peak periods. However, the overlapping of market trucking and retail operations in such close proximity could result in increased concerns for pedestrian safety. The crosswalk impact at 149th Street and River Avenue would still be expected with this alternative; however, this impact could be mitigated with a crosswalk widening.

AIR QUALITY

As with the Proposed Project, no significant adverse mobile or stationary source air quality impacts would be expected with this alternative. A single industrial facility within 400 feet of the proposed hotel could have the potential to create an air quality impact on the hotel; however, as with the Proposed Project, in this alternative an (E) designation for air quality would be incorporated into the proposed rezoning of the hotel portion of the site to preclude the potential for significant adverse air quality impacts from this industrial source.

NOISE

As with the Proposed Project, this alternative would slightly increase existing levels of noise on the project site; however, this would not be expected to result in any significant noise impacts. As the proposed public open space and waterfront esplanade (a noise-sensitive receptor) would not be created in this alternative, there would be no potential noise impacts on this new receptor from high ambient noise levels.

CONSTRUCTION

Given that the new wholesale market facility would be more than twice as large as the building to be constructed on the west side of the site as part of the Proposed Project (Retail Building G), it is expected that construction-period activities would be greater than those associated with the Proposed Project. In either case, impacts would be temporary, but would be disruptive at times. The construction of this alternative would still require the demolition of all the historic resources on the project site.

PUBLIC HEALTH

Neither the Retention of Expanded Market Alternative nor the Proposed Project is expected to result in adverse impacts to public health.

D. DEVELOPMENT OF EASTERN PROJECT SITE ONLY ALTERNATIVE

Under the terms of an agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site to the City. In this case, the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site, instead, it is anticipated that the City, with contributions from the project sponsor, would develop a 2-acre public open space. The City would be responsible for developing the remainder of the western portion of the site, but has not yet determined what the potential use of that site would be. In any case, development of the west side of the project site would be dependent on approvals from the NYSDEC and possibly the USACOE.

As the City has not yet determined what the potential use of the remainder of the western portion of the site could be, this scenario assumes that this portion of the west side of the project site would be undeveloped. As with the Retention of Expanded Market Alternative, it is assumed that approximately 64,000 gross square feet of additional retail space would be developed within Retail Buildings A and B/F, but otherwise the proposed program for the east side development would remain the same.

LAND USE, ZONING AND PUBLIC POLICY

Under this alternative, a portion of the west side of the project site is assumed to be undeveloped, while the east side would be developed with new retail and accessory parking uses, as with the Proposed Project. The development of the east side of the project site would still require rezoning and other land use actions, as well as the demolition of the Bronx House of Detention; however, none of the actions relating to the waterfront portion of the site would be required by the Proposed Project. This alternative would provide an open space, but this would be developed by the City, with contributions from the project sponsor, rather than by the Proposed Project. This alternative would create a slightly smaller development than the Proposed Project, but the development would be more densely developed on the east side of the site.

SOCIOECONOMIC CONDITIONS

Like the Proposed Project, this alternative would involve relocating the existing businesses on the site. As the west side of the project site would not be developed, the Proposed Project's total program would be reduced by approximately 8 percent (2,226,424 vs. 2,428,162 total gsf) and

therefore the project's positive impacts on the local socioeconomic character and local and state revenue would be somewhat lessened.

COMMUNITY FACILITIES

As with the Proposed Project, this alternative would make new demands on police, fire, and emergency services and would displace the currently closed Bronx House of Detention, but would not result in a significant adverse impact.

OPEN SPACE

With both the Proposed Project and this alternative, the passive open space ratios for workers, and workers and residents combined, in the area would well exceed DCP guidelines

SHADOWS

Under the Development of Eastern Project Site Only Alternative, the approximately two acres of public open space would be created by the City, rather than the Proposed Project; however, project-generated shadows would still be cast on this new resource. Under both this alternative and the Proposed Project, shadows would be cast on Macombs Dam Park; however, the shadows would only occur during the midday hours of the winter months and would mostly fall on paved areas, and thus would not notably affect park usage or vegetation growth. No significant adverse shadow impacts would occur with this alternative or the Proposed Project.

HISTORIC RESOURCES

Neither this alternative nor the Proposed Project would result in significant adverse impacts to archaeological resources. In this alternative, if the buildings on the west side of the project site were left in place Buildings H or J would not be demolished; however, it is assumed that these buildings would be untenanted and could continue to deteriorate, and in such condition could have a blighting effect on the new development on the east side of Exterior Street.

URBAN DESIGN AND VISUAL RESOURCES

Like the Proposed Project, the Development of Eastern Project Site Only Alternative would improve access to the Harlem River waterfront and create a new public open space amenity for the surrounding neighborhood. This alternative would introduce active retail uses and landscaping and would increase public access to the east side of the site; however, the vacant, deteriorating buildings on the west side of the project site—if left in place—would offset the effect of these enhancements.

NEIGHBORHOOD CHARACTER

Under this alternative, no new buildings would be added to the west side of the project site, and the vacant, deteriorating buildings—if left in place—could have a blighting effect on the new retail development east of Exterior Street. The project site buildings would continue to obstruct views to the waterfront from the surrounding area. The public open space to be developed by the City would offer public access to the waterfront.

NATURAL RESOURCES/WATER QUALITY

Under the Development of Eastern Project Site Only Alternative, new vegetated area would be created in the public open space to be developed by the City. Ongoing water quality improvements that are underway throughout the harbor should continue to result in some enhancement for aquatic resources habitat; however, the deterioration of a portion of the project site waterfront would continue. Neither the Proposed Project nor the Development of Eastern Project Site Only Alternative would result in significant adverse impacts to water quality, terrestrial resources, wetlands, floodplains, aquatic resources, or endangered, threatened, or special concern species.

HAZARDOUS MATERIALS

Under the Development of Eastern Project Site Only Alternative, it is assumed that remediation would occur only on the east side of the project site and the area to be developed by the City as a public open space. The remainder of the west side of the project site would remain in its current condition in terms of potential exposure to hazardous materials.

WATERFRONT REVITALIZATION PROGRAM

Neither the Development of Eastern Project Site Only Alternative nor the Proposed Project would result in significant adverse impacts to coastal resources.

INFRASTRUCTURE

With this alternative, water consumption, sewage and solid waste generation, and stormwater runoff are expected to be similar to those with the Proposed Project.

SOLID WASTE AND SANITATION SERVICES

Neither this alternative nor the Proposed Project would result in an adverse impact on the solid waste handling and disposal systems that serve New York City

ENERGY

Neither this alternative nor the Proposed Project would result in any adverse impacts to energy systems.

TRAFFIC AND PARKING

As shown in Table 24-2, peak hour traffic volumes are projected to be slightly lower (generally about 4 to 4.5 percent) under this alternative when compared to the Proposed Project. Vehicular access to the proposed retail development would occur mainly at the main garage between Exterior Street and River Avenue, using the same two access points on Exterior Street and River Avenue as would be used under the Proposed Project; parking would also be available at Building B/F and the proposed hotel. Retail-related trips that would enter and exit the surface lot on the west side of Exterior Street under the Proposed Project would instead enter and exit the garage east of Exterior Street and west of River Avenue. Since the alternative's trip assignments would be different than the Proposed Project only on Exterior Street, the garage access points on that street analyzed in the Proposed Project were analyzed under this alternative. These intersections would operate with fewer than 45 seconds of delay at acceptable level of service D

Table 24-2

**Comparison of Development of Eastern Project Site Only Alternative
Vehicle Trip Generation to the Proposed Project**

Peak Period	Auto		Taxi		Delivery		Total		
	In	Out	In	Out	In	Out	In	Out	Total
Weekday Midday Peak Hour									
Proposed Project	517	457	42	42	32	32	591	531	1,122
Development of Eastern Project Site Only Alt.	495	436	42	42	31	31	568	509	1,077
Weekday PM Peak Hour (Non-Game)									
Proposed Project	1,068	983	86	86	19	19	1,173	1,088	2,261
Development of Eastern Project Site Only Alt.	1,018	937	86	86	18	18	1,122	1,041	2,163
Weekday PM Peak Hour (Game Day)									
Proposed Project	966	889	98	98	19	19	1,083	1,006	2,089
Development of Eastern Project Site Only Alt.	922	848	98	98	18	18	1,038	964	2,002
Saturday Midday Peak Hour (Non-Game)									
Proposed Project	1,156	1,118	136	136	4	4	1,296	1,258	2,554
Development of Eastern Project Site Only Alt.	1,103	1,065	136	136	3	3	1,242	1,204	2,446
Saturday Midday Pre-Game Peak Hour (Game Day)									
Proposed Project	987	853	109	109	4	4	1,100	966	2,066
Development of Eastern Project Site Only Alt.	942	814	109	109	3	3	1,054	926	1,980
Saturday PM Post-Game Peak Hour (Game Day)									
Proposed Project	675	733	88	88	4	4	767	825	1,592
Development of Eastern Project Site Only Alt.	646	700	88	88	3	3	737	791	1,528

during all peak hours with slight modifications to the traffic signal timings recommended under the Proposed Project. Hence, with a reduction in overall vehicle trips and a negligible change in vehicle assignments except at the garage access points on Exterior Street, additional significant impacts would not likely occur due to the alternative at any study locations and significant traffic improvements would also not be expected. Generally, there would be a slight decrease in project-generated trips during all peak hours at the remaining study locations analyzed under the Proposed Project.

TRANSIT AND PEDESTRIANS

As with the Proposed Project, no significant adverse impacts on nearby subway stations would be expected with this alternative. The project's marginal impact on the Bx19 bus line would probably not occur with this alternative; however, it is expected that mitigation could be provided by New York City Transit through minor adjustments in service for this alternative or the Proposed Project. The crosswalk impact at 149th Street and River Avenue would still be expected with this alternative; however, this impact could be mitigated with a crosswalk widening.

AIR QUALITY

As with the Proposed Project, no significant adverse mobile or stationary source air quality impacts would be expected with this alternative. The industrial facility in the surrounding area could have the potential to create an air quality impact on the proposed hotel; however, as with the Proposed Project, in this alternative an (E) designation for air quality would be incorporated into the proposed rezoning of the hotel portion of the site to preclude the potential for significant adverse air quality impacts from this industrial source.

NOISE

As with the Proposed Project, this alternative would slightly increase existing levels of noise on the project site; however, this would not be expected to result in any significant noise impacts. As the proposed public open space and waterfront esplanade (a noise-sensitive receptor) would not be created in this alternative, there would be no potential noise impacts on this new receptor from high ambient noise levels.

CONSTRUCTION

Given that this alternative assumes that the west side of the project site would be undeveloped by the Proposed Project, it is expected that construction-period activities would be somewhat less than those associated with the Proposed Project. In either case, impacts would be temporary, but would be disruptive at times. If the buildings on the west side of the project site were left in place, the construction of this alternative would not include the demolition of Buildings F, G, H, and J; however, these buildings would be untenanted and could continue to deteriorate.

PUBLIC HEALTH

Neither the Development of Eastern Project Site Only Alternative nor the Proposed Project is expected to result in adverse impacts to public health.

E. NO SIGNIFICANT ADVERSE UNMITIGATED IMPACTS ALTERNATIVE

Most of the potential impacts identified for the Proposed Project could be fully mitigated, as described in Chapter 23, "Mitigation."

As discussed above, noise levels in the western portion of the public open space that would be developed as part of the Proposed Project would be higher than the 55 dBA $L_{10(1)}$ noise level for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for use in City Environmental Impact Review." There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open space to below the 55 dBA $L_{10(1)}$ guideline noise level. A sound barrier on Exterior Street would present problems with respect to aesthetics and safety, and unless the barrier extended well above the height of the elevated roadway, it would not be effective in reducing noise from the Major Deegan Expressway. While noise levels in the open space would be above the 55 dBA $L_{10(1)}$ guideline and are therefore identified as a significant impact, they would be comparable to noise levels in a number of well-used and attractive open spaces in New York City that are also located adjacent to heavily trafficked roadways.

The demolition of structures on the project site identified as historic resources would constitute a significant adverse impact on historic resources. Measures to mitigate this impact are being developed in consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP). With these measures, the adverse impact on historic resources would be partially mitigated. However, in order to eliminate the adverse impact to historic resources, this alternative would require the retention of all the historic resources on the project site. The reduced development program that would result from the elimination of the existing buildings' land area for use by the Proposed Project would not fulfill the goals of the project and it would not be built at this location. Therefore, there is no feasible alternative that would eliminate the adverse impact on historic resources.

For the northbound Major Deegan Expressway approaching 149th Street, widening of the exit ramp would be needed in order to mitigate the Proposed Project's impacts at the local street intersection of the northbound exit ramp with 149th Street, Exterior Street, River Avenue, and the 145th Street Bridge approach to the intersection. In order to fully mitigate conditions along the northbound Expressway, it would also be necessary to widen the approach to the exit ramp in order to provide a deceleration lane leading to the exit ramp. The New York State Department of Transportation (NYSDOT) has indicated its interest in improving conditions by widening the exit ramp as part of a larger Major Deegan Expressway widening and improvement project being planned by NYSDOT; however, it is uncertain at this time whether NYSDOT would also be able to create a widening along the highway mainline to provide a fully acceptable deceleration lane. Therefore, it is possible that only partial mitigation of potential impacts at the northbound exit would be accomplished by 2009 or 2014. *

Chapter 25: Irreversible and Irretrievable Commitment of Resources

There are a number of resources, both natural and built, that would be expended in the construction and operation of the Proposed Project. These resources include the building materials used in construction; energy in the form of gas and electricity consumed during construction and operation; and the human effort (time and labor) required to develop, construct, and operate various components of the Proposed Project. They are considered irretrievably committed because their reuse for some purpose other than the Proposed Project would be highly unlikely. *

APPENDIX A

Traffic and Parking

**TABLE A - 1
BRONX TERMINAL MARKET -- NON-GAME DAY
EXISTING TRAFFIC LEVELS OF SERVICE**

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse	SB	L	0.38	69.6	E	L	0.35	69.3	E	L	0.51	76.9	E
		R	0.38	69.6	E	R	0.39	71.9	E	R	0.56	76.5	E
E. 138th Street	EB	T	0.36	50.2	D	T	0.47	51.4	D	T	0.46	32.1	C
	WB	T	0.30	50.7	D	T	0.52	52.4	D	T	0.44	31.7	C
Overall Intersection	-		0.36	55.1	E	-	0.47	55.4	E	-	0.50	43.3	D
2 Grand Concourse at E. 149th Street													
Grand Concourse	NB	TR	0.99	45.2	D	TR	0.94	29.8	C	TR	1.02	55.2	E
	SB	TR	0.99	46.3	D	TR	0.93	31.3	C	TR	1.03	55.2	E
E. 149th Street	EB	TR	0.93	63.0	E	TR	0.89	54.8	D	TR	0.91	59.2	E
	WB	TR	0.93	62.0	E	TR	0.97	65.3	E	TR	0.93	61.1	E
Overall Intersection	-		0.98	52.8	D	-	0.95	43.2	D	-	1.00	57.3	E
11 Grand Concourse at E. 161st Street													
Grand Concourse	NB	LT	0.96	55.5	E	LT	1.04	59.8	E	LT	0.49	16.8	B
		R	0.66	34.3	C	R	0.20	12.0	B	R	0.08	12.1	B
Grand Concourse Main Road	SB	L	0.51	75.8	E	L	0.88	88.6	F	L	0.69	50.3	D
		T	0.98	63.2	E	T	0.97	55.6	E	T	0.61	50.3	D
Grand Concourse Service Road	SB	T	0.73	41.2	D	T	0.32	19.0	B	T	0.38	51.1	D
		R	0.87	54.6	D	R	0.76	43.6	D	R	0.37	50.4	D
E. 161st Street	EB	DefL	0.99	95.0	F	DefL	0.98	89.5	F	LTR	0.79	42.6	D
		TR	0.82	48.5	D	TR	0.91	64.7	E	-	-	-	-
	WB	LTR	0.73	40.8	D	LTR	0.98	73.6	E	DefL	0.80	69.3	E
										TR	0.87	59.6	E
Overall Intersection	-		1.01	55.4	E	-	1.05	59.8	E	-	0.71	41.0	D
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp	NB	LTR	1.04	99.7	F	LTR	1.00	86.4	F	LTR	0.98	84.4	F
River Avenue	SB	LTR	0.93	73.4	E	LTR	0.70	52.0	D	LTR	0.64	50.4	D
Exterior Street	NB	LTR	0.85	76.1	E	LTR	0.74	53.2	D	LTR	0.51	50.4	D
	SB	DefL	0.76	66.5	E	DefL	0.65	57.2	E	DefL	0.65	55.3	E
		TR	0.81	60.2	E	TR	0.39	41.0	D	TR	0.70	55.4	E
E. 149th Street	EB	LTR	0.99	65.6	E	LTR	1.03	91.9	F	LTR	1.01	69.3	E
	WB	LTR	0.95	59.8	E	LTR	0.84	41.0	D	LTR	0.99	70.4	E
Overall Intersection	-		0.98	71.1	E	-	0.94	69.3	E	-	0.91	68.1	E
16 River Avenue at E. 151st Street													
River Avenue	NB	TR	0.24	10.2	B	TR	0.33	19.9	B	TR	0.16	12.3	B
	SB	LT	0.49	13.9	B	LT	0.29	19.9	B	LT	0.24	13.4	B
E. 151st Street	WB	LR	0.08	26.2	C	LR	0.12	26.7	C	LR	0.09	18.2	B
Overall Intersection	-		0.33	12.6	B	-	0.24	20.4	C	-	0.18	13.2	B
8 River Avenue at E. 153rd Street													
River Avenue	NB	LTR	0.45	13.3	B	LTR	0.71	19.7	B	LTR	0.28	8.0	A
	SB	LTR	0.52	14.4	B	LTR	0.33	11.5	B	LTR	0.25	7.9	A
E. 153rd Street	EB	LTR	0.26	20.6	C	LTR	0.24	20.4	C	LTR	0.24	14.4	B
	WB	LTR	0.30	22.0	C	LTR	0.35	22.7	C	LTR	0.17	14.3	B
Overall Intersection	-		0.43	16.3	B	-	0.57	18.5	B	-	0.27	10.6	B
9 River Avenue at E. 157th Street													
River Avenue	NB	TR	0.46	13.5	B	TR	0.47	13.5	B	TR	0.26	7.9	A
	SB	LT	0.54	14.8	B	LT	0.34	11.7	B	LT	0.26	7.9	A
E. 157th Street	WB	LR	0.05	18.7	B	LR	0.07	18.9	B	LR	0.07	13.4	B
Overall Intersection	-		0.35	14.4	B	-	0.31	13.1	B	-	0.19	8.3	A
10 River Avenue at E. 161st Street													
River Avenue	NB	LTR	0.90	50.9	D	LTR	0.91	50.2	D	LTR	0.60	21.2	C
	SB	LTR	0.95	50.1	D	LTR	0.83	36.9	D	LTR	0.60	20.9	C
E. 161st Street Main Road	EB	T	0.18	13.7	B	T	0.22	14.1	B	T	0.35	11.0	B
	WB	T	0.57	20.3	C	T	0.46	16.9	B	T	0.56	13.5	B
E. 161st Street Service Road	EB	TR	0.62	20.2	C	TR	0.61	20.3	C	TR	0.68	16.6	B
	WB	TR	0.54	20.0	C	TR	0.59	20.7	C	TR	0.64	16.5	B
Overall Intersection	-		0.77	30.5	C	-	0.75	25.4	C	-	0.65	16.1	B

**TABLE A - 1
BRONX TERMINAL MARKET -- NON-GAME DAY
EXISTING TRAFFIC LEVELS OF SERVICE**

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
OTHER													
12 Jerome Avenue at E. 161st Street													
Jerome Avenue	NB	L	0.28	19.5	B	L	0.67	43.0	D	L	0.33	20.3	C
		TR	0.46	20.0	C	TR	0.92	49.0	D	TR	0.92	47.2	D
	SB	L	0.36	21.5	C	L	0.52	32.2	C	L	0.23	39.3	D
		TR	0.58	24.7	C	TR	0.91	51.5	D	TR	0.57	50.5	D
E. 161st Street	WB	L	0.49	16.9	B	L	0.67	21.5	C	L	0.47	37.7	D
		T	0.22	13.4	B	T	0.49	20.8	C	LT	0.13	11.8	B
Overall Intersection	-		0.53	19.9	B	-	0.78	38.5	D	-	0.68	40.7	D
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.48	24.5	C	LR	0.78	40.9	D	LR	0.49	24.6	C
Jerome Avenue	EB	T	0.42	12.7	B	T	0.46	13.3	B	T	0.41	12.4	B
	WB	TR	0.30	10.6	B	TR	0.48	12.6	B	TR	0.32	10.8	B
Overall Intersection	-		0.44	14.8	B	-	0.60	18.3	B	-	0.44	14.7	B
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.34	24.5	C	T	0.55	27.3	C	T	0.42	25.4	C
Major Deegan Expressway NB Off Ramp	NB	T	1.04	111.1	F	T	1.01	84.8	F	T	0.96	58.2	E
E. 157th Street	WB	R	0.47	30.3	C	R	0.71	36.1	D	R	0.30	27.7	C
Overall Intersection	-		0.62	66.7	E	-	0.75	50.6	D	-	0.57	40.6	D
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.47	44.6	D	L	0.77	56.6	E	L	0.38	42.7	D
		T	0.09	10.2	B	T	0.18	10.9	B	T	0.25	11.6	B
	SB	T	0.38	30.7	C	T	0.66	37.9	D	T	0.76	41.3	D
		R	1.00	63.8	E	R	0.87	32.8	C	R	0.55	19.1	B
W. 155th Street	EB	L	0.75	41.1	D	L	0.99	70.0	E	L	0.84	47.0	D
		R	0.12	11.0	B	R	0.12	11.0	B	R	0.14	11.2	B
Overall Intersection	-		0.54	42.7	D	-	0.81	41.1	D	-	0.70	28.0	C
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.69	34.7	C	L	0.58	30.0	C	L	0.70	35.2	D
		LT	0.41	23.9	C	LT	0.38	23.4	C	LT	0.28	21.6	C
		R	0.29	13.2	B	R	0.56	17.9	B	R	0.41	15.0	B
	SB	LTR	0.53	27.3	C	LTR	0.42	24.4	C	LTR	0.37	23.2	C
E. 145th Street	EB	LTR	0.76	27.4	C	LTR	0.73	26.3	C	LTR	0.73	26.3	C
	WB	L	0.80	28.0	C	L	0.85	31.7	C	L	0.85	34.1	C
		TR	0.82	24.2	C	TR	0.74	19.6	B	TR	0.58	15.2	B
Overall Intersection	-		0.77	26.0	C	-	0.70	24.4	C	-	0.76	24.1	C
UNSIGNALIZED													
5 Exterior Street at E. 150th Street													
Exterior Street	NB	LTR	0.00	8.1	A	LTR	0.00	8.1	A	LTR	0.01	8.2	A
	SB	LTR	0.02	8.1	A	LTR	0.02	8.3	A	LTR	0.02	8.0	A
E. 150th Street	EB	LTR	0.05	14.1	B	LTR	0.01	16.7	C	LTR	0.00	10.0	B
	WB	LTR	0.27	17.2	C	LTR	0.24	13.7	B	LTR	0.20	11.7	B
Overall Intersection	-		0.09	9.6	A	-	0.09	9.0	A	-	0.09	8.7	A
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.05	8.3	A	LT	0.06	7.8	A	LT	0.06	7.8	A
E. 150th Street	EB	LR	0.09	14.3	B	LR	0.07	15.6	C	LR	0.09	13.8	B
	WB	LTR	0.25	18.9	C	LTR	0.34	23.1	C	LTR	0.15	14.5	B
Overall Intersection	-		0.13	10.5	B	-	0.13	10.3	B	-	0.13	9.5	A
1b Grand Concourse at E. 138th Street													
E. 138th Street	EB	LT	0.21	9.7	A	LT	0.36	12.5	B	LT	0.25	10.3	B
Overall Intersection	-		0.21	9.7	A	-	0.36	12.5	B	-	0.25	10.3	B

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

**TABLE A - 2
BRONX TERMINAL MARKET -- GAME DAY
EXISTING TRAFFIC LEVELS OF SERVICE**

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse	SB	L	0.33	63.2	E	L	0.36	68.2	E	L	0.35	65.0	E
		R	0.38	73.5	E	R	0.41	77.2	E	R	0.48	69.6	E
E. 138th Street	EB	T	0.38	12.1	B	T	0.38	12.0	B	T	0.50	13.5	B
	WB	T	0.43	12.7	B	T	0.39	12.3	B	T	0.51	13.9	B
Overall Intersection	-		0.41	24.0	C	-	0.40	25.6	C	-	0.50	23.9	C
2 Grand Concourse at E. 149th Street													
Grand Concourse	NB	TR	1.01	44.9	D	TR	0.97	38.4	D	TR	0.98	38.9	D
	SB	TR	0.95	35.2	D	TR	0.99	46.7	D	TR	0.98	39.2	D
E. 149th Street	EB	TR	0.95	64.2	E	TR	0.76	46.1	D	TR	0.75	45.2	D
	WB	TR	0.98	69.1	E	TR	0.74	45.7	D	TR	0.76	45.6	D
Overall Intersection	-		1.00	51.7	D	-	0.93	43.6	D	-	0.92	41.5	D
11 Grand Concourse at E. 161st Street													
Grand Concourse	NB	LT	1.02	53.0	D	LT	0.65	20.4	C	LT	0.87	72.5	E
		R	0.11	10.7	B	R	0.18	13.2	B	R	0.16	72.1	E
Grand Concourse Main Road	SB	L	0.80	60.6	E	L	0.05	37.8	D	L	0.16	84.7	F
		T	0.55	55.2	E	T	0.40	37.5	D	T	0.41	50.1	D
Grand Concourse Service Road	SB	T	0.34	19.5	B	T	0.22	40.2	D	T	0.26	34.2	C
		R	0.85	55.7	E	R	0.80	45.7	D	R	0.20	33.2	C
E. 161st Street	EB	DefL	0.83	63.9	E	DefL	0.72	50.5	D	DefL	0.78	68.3	E
		TR	0.95	72.3	E	TR	0.52	36.5	D	TR	0.85	71.5	E
	WB	LTR	0.80	49.1	D	LTR	0.56	34.2	C	LTR	0.86	59.7	E
Overall Intersection	-		0.98	53.2	D	-	0.73	32.3	C	-	0.88	62.0	E
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp	NB	LTR	1.04	120.0+	F*	LTR	1.04	120.0+	F*	LTR	0.76	54.9	D
River Avenue	SB	LTR	0.47	42.4	D	LTR	0.76	65.6	E	LTR	1.04	120.0+	F*
Exterior Street	NB	LTR	0.74	58.0	E	LTR	0.84	71.3	E	LTR	0.79	54.8	D
	SB	DefL	0.84	79.3	E	DefL	0.87	82.8	F	DefL	0.52	46.8	D
		TR	0.33	39.6	D	TR	0.90	80.9	F	TR	0.70	50.8	D
E. 149th Street	EB	DefL	1.04	120.0+	F*	LTR	0.80	34.9	C	DefL	0.96	88.2	F
		TR	1.04	104.0	F	-	-	-	-	TR	0.95	57.1	E
	WB	LTR	0.94	55.1	E	LTR	0.69	32.8	C	LTR	1.04	112.4	F
Overall Intersection	-		0.95	127.8	F	-	0.87	108.9	F	-	0.96	99.0	F
16 River Avenue at E. 151st Street													
River Avenue	NB	TR	0.35	11.1	B	TR	0.38	8.3	A	TR	0.31	120.0+	F*
	SB	LT	0.41	12.9	B	LT	0.26	8.1	A	LT	0.71	120.0+	F*
E. 151st Street	WB	LR	0.16	27.4	C	LR	0.16	19.1	B	LR	0.18	19.3	B
Overall Intersection	-		0.31	12.9	B	-	0.29	9.2	A	-	0.51	114.9	F
8 River Avenue at E. 153rd Street													
River Avenue	NB	LTR	0.83	29.3	C	LTR	0.96	41.3	D	LTR	0.99	57.8	E
	SB	LTR	0.70	21.1	C	LTR	0.67	16.8	B	LTR	0.97	58.2	E
E. 153rd Street	EB	LTR	0.50	24.8	C	LTR	0.39	16.9	B	LTR	0.95	58.8	E
	WB	LTR	0.40	24.4	C	LTR	0.44	19.2	B	LTR	0.90	74.7	E
Overall Intersection	-		0.70	25.2	C	-	0.75	28.0	C	-	0.98	59.9	E
9 River Avenue at E. 157th Street													
River Avenue	NB	TR	0.43	13.1	B	TR	0.39	9.4	A	TR	0.71	16.3	B
	SB	LT	0.48	13.8	B	LT	0.51	11.0	B	Closed	-	-	-
E. 157th Street	WB	LR	0.20	20.9	C	LR	0.10	13.7	B	LR	0.21	15.7	B
Overall Intersection	-		0.37	14.1	B	-	0.35	10.5	B	-	0.52	16.2	B
10 River Avenue at E. 161st Street													
River Avenue	NB	LTR	0.56	21.9	C	LTR	0.86	62.5	E	LTR	1.04	120.0+	F*
	SB	LTR	0.54	20.6	C	LTR	0.89	53.9	D	R	1.04	118.5	F
E. 161st Street Main Road	EB	T	0.13	13.9	B	T	0.22	41.8	D	T	0.82	120.0+	F*
	WB	T	0.48	17.7	B	T	0.44	22.2	C	T	0.68	103.5	F
E. 161st Street Service Road	EB	T	0.39	16.5	B	TR	0.74	32.4	C	Closed	-	-	-
		R	0.83	34.9	C	-	-	-	-	-	-	-	-
	WB	TR	0.45	17.5	B	TR	0.77	34.6	C	TR	0.91	52.2	D
Overall Intersection	-		0.69	20.5	C	-	0.83	37.5	D	-	0.98	120.0+	F*

TABLE A - 2
BRONX TERMINAL MARKET -- GAME DAY
EXISTING TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
OTHER													
12 Jerome Ave at E. 161st Street													
Jerome Avenue	NB	L	0.71	48.0	D	L	0.34	20.3	C	L	0.80	46.4	D
		TR	0.96	49.2	D	T	0.54	22.5	C	T	0.46	20.9	C
		-	-	-	-	R	0.92	46.7	D	R	0.55	23.2	C
	SB	L	0.75	48.0	D	L	0.65	41.9	D	L	0.48	24.2	C
		TR	0.80	35.7	D	TR	0.85	46.3	D	TR	0.86	40.1	D
E. 161st Street	WB	L	0.63	19.7	B	LT	0.31	13.3	B	LT	0.98	42.5	D
		LT	0.17	45.6	D	-	-	-	-	-	-	-	-
Overall Intersection	-	-	0.78	39.2	D	-	0.59	31.7	C	-	0.92	36.4	D
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.55	26.7	C	LR	0.83	38.9	D	LR	0.76	35.5	D
Jerome Avenue	EB	T	0.60	15.2	B	T	0.71	18.2	B	T	0.42	35.8	D
	WB	TR	0.41	11.3	B	TR	0.34	10.5	B	TR	0.65	36.0	D
Overall Intersection	-	-	0.58	15.8	B	-	0.76	21.6	C	-	0.69	35.9	D
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.45	25.8	C	T	0.57	27.8	C	NA - (Free flow)		See Note (5)	
Major Deegan Expressway NB Off Ramp	NB	T	0.93	51.6	D	T	0.81	39.5	D				
E. 157th Street	WB	R	0.46	30.1	C	R	0.33	28.1	C				
Overall Intersection	-	-	0.62	38.1	D	-	0.58	32.3	C				
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.88	72.7	E	L	0.67	54.9	D	L	0.92	75.3	E
		T	0.21	21.1	C	T	0.21	23.4	C	T	0.16	21.8	C
	SB	T	0.58	37.9	D	T	0.60	39.4	D	T	0.97	72.5	E
		R	0.65	25.5	C	R	0.65	25.7	C	R	0.89	38.9	D
W. 155th Street	EB	L	1.03	120.0+	F*	L	1.04	96.7	F	L	1.04	120.0+	F*
		R	0.17	15.8	B	R	0.10	15.6	B	R	0.17	15.3	B
Overall Intersection	-	-	0.78	69.5	E	-	0.72	47.9	D	-	0.91	66.1	E
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.56	29.3	C	L	0.71	32.7	C	L	0.53	25.8	C
		LT	0.40	23.8	C	LT	0.47	25.4	C	LT	0.29	21.3	C
		R	0.62	19.6	B	R	0.37	14.3	B	R	0.37	14.5	B
	SB	LTR	0.39	23.5	C	LTR	0.63	29.5	C	LTR	0.40	23.7	C
E. 145th Street	EB	LTR	0.88	33.9	C	LTR	0.64	23.8	C	LTR	0.92	40.1	D
	WB	L	0.61	18.5	B	L	0.54	15.6	B	L	0.59	16.2	B
		TR	0.53	13.9	B	TR	0.66	17.1	B	TR	0.85	23.9	C
Overall Intersection	-	-	0.77	24.5	C	-	0.72	22.4	C	-	0.77	26.6	C
UNSIGNALIZED													
5 Exterior Street at E. 150th Street													
Exterior Street	NB	LTR	0.01	8.0	A	LTR	0.02	8.1	A	LTR	0.00	7.9	A
	SB	LTR	0.03	8.2	A	LTR	0.09	8.5	A	LTR	0.06	8.3	A
E. 150th Street	EB	LTR	0.00	20.3	C	LTR	0.04	24.1	C	LTR	0.18	15.8	C
	WB	LTR	0.23	14.1	B	LTR	0.40	17.9	C	LTR	0.42	19.7	C
Overall Intersection	-	-	8.9	A	-	-	9.9	A	-	-	10.6	B	
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.05	7.6	A	LT	0.06	7.6	A	LT	0.06	9.3	A
E. 150th Street	EB	LR	0.18	21.6	C	LR	0.35	22.1	C	LR	0.33	24.1	C
	WB	LTR	0.40	24.5	C	LTR	0.41	23.8	C	LTR	0.44	24.5	C
Overall Intersection	-	-	10.6	B	-	-	11.4	B	-	-	16.5	C	
1b Grand Concourse at E. 138th Street													
E138th Street	EB	LT	0.42	14.1	B	LT	0.36	12.5	B	LT	0.59	18.8	C
Overall Intersection	-	-	14.1	B	-	-	12.5	B	-	-	18.8	C	

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 3
BRONX TERMINAL MARKET -- NON-GAME DAY
NO BUILD 2009 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse	SB	L	0.39	72.0	E	L	0.36	71.9	E	L	0.52	80.0	F
		R	0.39	72.2	E	R	0.40	74.8	E	R	0.58	80.5	F
E. 138th Street	EB	T	0.37	52.7	D	T	0.49	54.3	D	T	0.48	33.6	C
	WB	T	0.31	53.1	D	T	0.53	55.5	E	T	0.46	33.1	C
Overall Intersection	-		0.37	57.6	E	-	0.49	58.4	E	-	0.51	45.3	D
2 Grand Concourse at E. 149th Street													
Grand Concourse	NB	TR	1.01	51.8	D	TR	0.97	34.1	C	TR	1.05	63.1	E
	SB	TR	1.02	53.2	D	TR	0.95	35.3	D	TR	1.05	62.9	E
E. 149th Street	EB	TR	0.95	66.7	E	TR	0.91	57.3	E	TR	0.93	62.4	E
	WB	TR	0.95	65.7	E	TR	0.99	70.3	E	TR	0.95	64.9	E
Overall Intersection	-		1.00	58.3	E	-	0.97	47.2	D	-	1.02	63.3	E
11 Grand Concourse at E. 161st Street													
Grand Concourse	NB	LT	0.99	70.5	E	LT	1.07	68.7	E	LT	0.51	17.1	B
		R	0.68	35.9	D	R	0.21	12.1	B	R	0.09	12.1	B
Grand Concourse Main Road	SB	L	0.54	85.7	F	L	0.90	93.3	F	L	0.71	52.4	D
		T	1.00	69.9	E	T	0.99	61.6	E	T	0.62	52.9	D
Grand Concourse Service Road	SB	T	0.75	42.7	D	T	0.33	19.2	B	T	0.39	53.2	D
		R	0.89	57.6	E	R	0.78	45.3	D	R	0.37	52.3	D
E. 161st Street	EB	DefL	1.03	109.3	F	DefL	1.00	96.6	F	LTR	0.82	44.2	D
		TR	0.84	50.5	D	TR	0.93	68.5	E	-	-	-	-
	WB	LTR	0.75	42.2	D	LTR	1.00	81.4	F	DefL	0.84	77.1	E
	-	-	-	-	-	-	-	-	-	TR	0.89	63.5	E
Overall Intersection	-		1.05	62.5	E	-	1.09	66.4	E	-	0.73	43.0	D
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Decgan Expressway NB Off Ramp	NB	LTR	1.06	106.8	F	LTR	1.02	92.7	F	LTR	1.01	91.6	F
River Avenue	SB	LTR	0.95	78.1	E	LTR	0.72	53.0	D	LTR	0.66	51.5	D
Exterior Street	NB	LTR	0.86	78.4	E	LTR	0.75	54.2	D	LTR	0.53	51.2	D
	SB	DefL	0.78	68.9	E	DefL	0.67	58.9	E	DefL	0.67	56.6	E
		TR	0.83	62.1	E	TR	0.40	41.3	D	TR	0.73	57.0	E
E. 149th Street	EB	LTR	1.03	74.7	E	LTR	1.06	100.7	F	LTR	1.04	76.7	E
	WB	LTR	0.97	64.6	E	LTR	0.86	42.9	D	LTR	1.02	77.6	E
Overall Intersection	-		1.03	76.8	E	-	0.97	74.1	E	-	0.93	73.9	E
16 River Avenue at E. 151st Street													
River Avenue	NB	TR	0.25	10.3	B	TR	0.33	20.1	C	TR	0.16	12.3	B
	SB	LT	0.50	14.1	B	LT	0.30	20.1	C	LT	0.24	13.5	B
E. 151st Street	WB	LR	0.08	26.2	C	LR	0.12	26.7	C	LR	0.09	18.2	B
Overall Intersection	-		0.33	12.8	B	-	0.25	20.5	C	-	0.19	13.2	B
8 River Avenue at E. 153rd Street													
River Avenue	NB	LTR	0.46	13.6	B	LTR	0.73	20.7	C	LTR	0.29	8.1	A
	SB	LTR	0.53	14.7	B	LTR	0.34	11.7	B	LTR	0.26	7.9	A
E. 153rd Street	EB	LTR	0.27	20.7	C	LTR	0.25	20.5	C	LTR	0.25	14.5	B
	WB	LTR	0.30	22.1	C	LTR	0.35	22.9	C	LTR	0.17	14.4	B
Overall Intersection	-		0.44	16.5	B	-	0.58	19.1	B	-	0.27	10.6	B
9 River Avenue at E. 157th Street													
River Avenue	NB	TR	0.47	13.7	B	TR	0.48	13.7	B	TR	0.26	7.9	A
	SB	LT	0.55	15.1	B	LT	0.35	11.9	B	LT	0.27	8.0	A
E. 157th Street	WB	LR	0.05	18.7	B	LR	0.07	18.9	B	LR	0.08	13.4	B
Overall Intersection	-		0.36	14.6	B	-	0.32	13.2	B	-	0.19	8.4	A
10 River Avenue at E. 161st Street													
River Avenue	NB	LTR	0.92	53.2	D	LTR	0.92	53.5	D	LTR	0.62	21.8	C
	SB	LTR	0.97	54.8	D	LTR	0.85	38.8	D	LTR	0.61	21.4	C
E. 161st Street Main Road	EB	T	0.18	13.7	B	T	0.22	14.1	B	T	0.36	11.1	B
	WB	T	0.58	20.6	C	T	0.47	17.1	B	T	0.57	13.7	B
E. 161st Street Service Road	EB	TR	0.63	20.6	C	TR	0.62	20.6	C	TR	0.70	17.2	B
	WB	TR	0.55	20.4	C	TR	0.61	21.1	C	TR	0.66	16.9	B
Overall Intersection	-		0.80	32.0	C	-	0.77	26.3	C	-	0.66	16.5	B

TABLE A - 3
BRONX TERMINAL MARKET -- NON-GAME DAY
NO BUILD 2009 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
OTHER													
12 Jerome Ave at E. 161st Street													
Jerome Avenue	NB	L	0.30	19.8	B	L	0.69	44.3	D	L	0.35	20.7	C
		TR	0.47	20.2	C	TR	0.95	53.2	D	TR	0.94	51.1	D
	SB	L	0.37	21.9	C	L	0.53	33.0	C	L	0.23	40.4	D
		TR	0.60	25.2	C	TR	0.94	55.8	E	TR	0.58	53.0	D
E. 161st Street	WB	L	0.50	17.1	B	L	0.69	22.2	C	L	0.49	39.5	D
		T	0.23	13.5	B	T	0.50	21.2	C	LT	0.13	11.8	B
Overall Intersection	-		0.55	20.2	C	-	0.80	41.1	D	-	0.69	43.2	D
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.49	24.8	C	LR	0.80	42.6	D	LR	0.50	24.8	C
Jerome Avenue	EB	T	0.43	12.9	B	T	0.48	13.5	B	T	0.42	12.5	B
	WB	TR	0.30	10.7	B	TR	0.49	12.8	B	TR	0.33	10.9	B
Overall Intersection	-		0.46	15.0	B	-	0.61	18.8	B	-	0.45	14.9	B
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.35	24.6	C	T	0.56	27.6	C	T	0.43	25.6	C
Major Deegan Expressway NB Off Ramp	NB	T	1.06	119.9	F	T	1.03	92.3	F	T	0.98	63.2	E
E. 157th Street	WB	R	0.48	30.6	C	R	0.73	36.8	D	R	0.31	27.8	C
Overall Intersection	-		0.64	70.9	E	-	0.77	53.6	D	-	0.59	42.9	D
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.48	44.9	D	L	0.79	58.0	E	L	0.39	42.9	D
		T	0.09	10.2	B	T	0.18	10.9	B	T	0.26	11.6	B
	SB	T	0.39	30.8	C	T	0.68	38.6	D	T	0.78	42.5	D
		R	1.03	70.4	E	R	0.90	34.9	C	R	0.57	19.4	B
W. 155th Street	EB	L	0.77	42.0	D	L	1.02	76.9	E	L	0.95	60.9	E
		R	0.12	11.0	B	R	0.12	11.1	B	R	0.14	11.2	B
Overall Intersection	-		0.55	45.2	D	-	0.83	43.8	D	-	0.75	31.7	C
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.70	35.5	D	L	0.60	30.9	C	L	0.72	36.7	D
		LT	0.42	24.1	C	LT	0.39	23.6	C	LT	0.29	21.7	C
		R	0.30	13.3	B	R	0.57	18.3	B	R	0.42	15.2	B
	SB	LTR	0.54	27.9	C	LTR	0.43	24.6	C	LTR	0.38	23.5	C
E. 145th Street	EB	LTR	0.78	28.2	C	LTR	0.75	26.9	C	LTR	0.76	27.1	C
	WB	L	0.82	29.7	C	L	0.90	38.1	D	L	0.89	40.8	D
		TR	0.84	25.5	C	TR	0.76	20.4	C	TR	0.60	15.4	B
Overall Intersection	-		0.79	27.0	C	-	0.75	25.7	C	-	0.78	25.4	C
UNSIGNALIZED													
5 Exterior Street at E. 150th Street													
Exterior Street	NB	LTR	0.00	8.1	A	LTR	0.00	8.2	A	LTR	0.01	8.2	A
	SB	LTR	0.02	8.2	A	LTR	0.02	8.3	A	LTR	0.02	8.0	A
E. 150th Street	EB	LTR	0.06	14.3	B	LTR	0.01	17.2	C	LTR	0.00	10.1	B
	WB	LTR	0.29	17.7	C	LTR	0.25	13.9	B	LTR	0.21	11.8	B
Overall Intersection	-		-	9.7	A	-	-	9.1	A	-	-	8.7	A
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.05	8.3	A	LT	0.06	7.9	A	LT	0.06	7.8	A
E. 150th Street	EB	LR	0.09	14.5	B	LR	0.07	16.1	C	LR	0.09	14.2	B
	WB	LTR	0.26	19.7	C	LTR	0.36	24.2	C	LTR	0.16	14.9	B
Overall Intersection	-		-	10.7	B	-	-	10.5	B	-	-	9.5	A
1b Grand Concourse at E. 138th Street													
E. 138th Street	EB	LT	0.22	9.8	A	LT	0.38	12.8	B	LT	0.26	10.4	B
Overall Intersection	-		-	9.8	A	-	-	12.8	B	-	-	10.4	B

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB
- (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 4
BRONX TERMINAL MARKET - GAME DAY
NO BUILD 2009 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)					Saturday Midday (12PM - 1PM)					Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control			Mvt.	V/C	Control			Mvt.	V/C	Control		
			Delay	LOS				Delay	LOS	Delay			LOS	Delay	LOS
SIGNALIZED															
GRAND CONCOURSE															
1a Grand Concourse at E. 138th Street															
Grand Concourse	SB	L	0.34	65.3	E	L	0.37	70.8	E	L	0.36	67.4	E		
		R	0.39	76.4	E	R	0.42	80.6	F	R	0.49	72.3	E		
E. 138th Street	EB	T	0.39	12.2	B	T	0.39	12.1	B	T	0.51	13.7	B		
	WB	T	0.44	12.9	B	T	0.40	12.4	B	T	0.52	14.1	B		
Overall Intersection	-		0.42	24.6	C	-	0.41	26.4	C	-	0.51	24.6	C		
2 Grand Concourse at E. 149th Street															
Grand Concourse	NB	TR	1.03	51.8	D	TR	1.00	44.4	D	TR	1.01	45.6	D		
	SB	TR	0.97	40.1	D	TR	1.02	53.9	D	TR	1.01	45.9	D		
E. 149th Street	EB	TR	0.98	69.0	E	TR	0.78	47.0	D	TR	0.77	45.9	D		
	WB	TR	1.01	75.4	E	TR	0.76	46.5	D	TR	0.78	46.4	D		
Overall Intersection	-		1.03	57.6	E	-	0.95	47.8	D	-	0.94	45.9	D		
11 Grand Concourse at E. 161st Street															
Grand Concourse	NB	LT	1.05	63.2	E	LT	0.67	20.9	C	LT	0.89	89.3	F		
	R		0.12	10.7	B	R	0.18	13.2	B	R	0.16	75.6	E		
Grand Concourse Main Road	SB	L	0.81	62.8	E	L	0.05	40.3	D	L	0.17	96.7	F		
	T		0.56	58.0	E	T	0.41	38.7	D	T	0.42	52.5	D		
Grand Concourse Service Road	SB	T	0.35	19.6	B	T	0.22	38.9	D	T	0.26	36.5	D		
	R		0.87	59.1	E	R	0.82	48.1	D	R	0.21	34.2	C		
E. 161st Street	EB	DefL	0.85	66.8	E	DefL	0.74	52.0	D	DefL	0.80	71.4	E		
	TR		0.97	77.4	E	TR	0.53	36.9	D	TR	0.87	74.3	E		
	WB	LTR	0.83	51.9	D	LTR	0.58	34.6	C	LTR	0.88	62.8	E		
Overall Intersection	-		1.01	58.7	E	-	0.76	33.1	C	-	0.91	70.6	E		
RIVER AVENUE															
3 River Avenue and Exterior Street at E. 149th Street															
Major Deegan Expressway NB Off Ramp	NB	LTR	1.07	120.0+	F*	LTR	1.07	120.0+	F*	LTR	0.79	56.5	E		
River Avenue	SB	LTR	0.48	42.7	D	LTR	0.78	67.9	E	LTR	1.07	120.0+	F*		
Exterior Street	NB	LTR	0.77	61.7	E	LTR	0.87	75.6	E	LTR	0.81	56.1	E		
	SB	DefL	0.86	82.1	F	DefL	0.90	87.8	F	DefL	0.54	47.2	D		
	TR		0.34	39.7	D	TR	0.93	85.6	F	TR	0.72	52.0	D		
E. 149th Street	EB	DefL	1.06	120.0+	F*	DefL	1.19	120.0+	F*	DefL	0.98	95.0	F		
	TR		1.07	113.2	F	TR	1.20+	120.0+	F*	TR	0.98	62.1	E		
	WB	LTR	0.96	59.7	E	LTR	0.63	30.2	C	LTR	1.07	120.0+	F*		
Overall Intersection	-		0.98	120.0+	F*	-	1.09	120.0+	F*	-	0.99	105.2	F		
16 River Avenue at E. 151st Street															
River Avenue	NB	TR	0.35	11.2	B	TR	0.39	8.4	A	TR	0.32	120.0+	F*		
	SB	LT	0.42	13.1	B	LT	0.27	8.2	A	LT	0.73	120.0+	F*		
E. 151st Street	WB	LR	0.17	27.5	C	LR	0.17	19.2	B	LR	0.18	19.3	B		
Overall Intersection	-		0.32	13.0	B	-	0.30	9.2	A	-	0.52	120.0+	F*		
8 River Avenue at E. 153rd Street															
River Avenue	NB	LTR	0.85	31.1	C	LTR	0.98	46.3	D	LTR	1.02	66.2	E		
	SB	LTR	0.72	21.8	C	LTR	0.69	17.5	B	LTR	1.00	65.9	E		
E. 153rd Street	EB	LTR	0.51	25.0	C	LTR	0.40	17.1	B	LTR	0.98	64.5	E		
	WB	LTR	0.42	24.8	C	LTR	0.45	19.6	B	LTR	0.92	79.9	E		
Overall Intersection	-		0.72	26.2	C	-	0.77	30.5	C	-	1.00	67.1	E		
9 River Avenue at E. 157th Street															
River Avenue	NB	TR	0.44	13.3	B	TR	0.40	9.5	A	TR	0.73	17.0	B		
	SB	LT	0.50	14.1	B	LT	0.52	11.3	B	Closed	-	-	-		
E. 157th Street	WB	LR	0.21	21.2	C	LR	0.10	13.7	B	LR	0.22	15.9	B		
Overall Intersection	-		0.38	14.3	B	-	0.36	10.7	B	-	0.53	16.9	B		
10 River Avenue at E. 161st Street															
River Avenue	NB	LTR	0.57	22.3	C	LTR	0.89	67.7	E	LTR	1.06	120.0+	F*		
	SB	LTR	0.56	21.0	C	LTR	0.91	57.9	E	R	1.07	120.0+	F*		
E. 161st Street Main Road	EB	T	0.14	13.9	B	T	0.22	43.1	D	T	0.84	120.0+	F*		
	WB	T	0.49	17.9	B	T	0.45	22.4	C	T	0.70	112.6	F		
E. 161st Street Service Road	EB	T	0.40	16.6	B	TR	0.76	33.3	C	Closed	-	-	-		
	R		0.85	36.9	D	-	-	-	-	-	-	-	-		
	WB	TR	0.46	17.7	B	TR	0.79	35.9	D	TR	0.93	56.8	E		
Overall Intersection	-		0.71	21.0	C	-	0.85	39.2	D	-	1.01	120.0+	F*		

**TABLE A - 4
BRONX TERMINAL MARKET -- GAME DAY
NO BUILD 2009 TRAFFIC LEVELS OF SERVICE**

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
OTHER													
12 Jerome Avenue at E. 161st Street													
Jerome Avenue	NB	L	0.72	49.6	D	L	0.35	20.6	C	L	0.82	49.0	D
		TR	0.99	54.7	D	T	0.55	22.9	C	T	0.47	21.1	C
		-	-	-	-	R	0.94	50.5	D	R	0.56	23.5	C
	SB	L	0.84	63.7	E	L	0.67	43.9	D	L	0.50	25.0	C
		TR	0.83	37.8	D	TR	0.87	49.2	D	TR	0.88	42.4	D
E. 161st Street	WB	L	0.64	20.2	C	LT	0.31	13.4	B	LT	1.00	48.6	D
		LT	0.18	47.4	D	-	-	-	-	-	-	-	-
Overall Intersection	-	0.80	43.0	D	-	0.60	33.4	C	-	0.95	39.9	D	
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.56	27.0	C	LR	0.85	40.8	D	LR	0.78	36.7	D
Jerome Avenue	EB	T	0.62	15.6	B	T	0.73	18.8	B	T	0.43	37.5	D
	WB	TR	0.43	11.4	B	TR	0.35	10.6	B	TR	0.67	38.5	D
Overall Intersection	-	0.60	16.1	B	-	0.78	22.4	C	-	0.71	37.9	D	
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.46	26.0	C	T	0.58	28.0	C	NA - (Free flow)		See Note (5)	
Major Deegan Expressway NB Off Ramp	NB	T	0.96	55.9	E	T	0.83	41.0	D				
E. 157th Street	WB	R	0.47	30.3	C	R	0.33	28.2	C				
Overall Intersection	-	0.64	40.1	D	-	0.60	33.0	C					
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.90	76.3	E	L	0.68	55.8	E	L	0.94	79.8	E
		T	0.21	21.6	C	T	0.22	23.9	C	T	0.16	22.2	C
	SB	T	0.59	38.3	D	TR	0.62	40.0	D	T	1.00	78.6	E
		R	0.67	26.0	C	R	0.67	26.2	C	R	0.91	41.5	D
W. 155th Street	EB	L	1.06	120.0+	F*	L	1.06	104.4	F	L	1.06	120.0+	F*
		R	0.17	15.9	B	R	0.10	15.6	B	R	0.17	15.4	B
Overall Intersection	-	0.78	73.0	E	-	0.88	50.2	D	-	0.93	70.8	E	
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.58	30.0	C	L	0.72	33.5	C	L	0.55	26.1	C
		LT	0.42	24.1	C	LT	0.49	25.7	C	LT	0.29	21.5	C
		R	0.64	20.1	C	R	0.38	14.5	B	R	0.38	14.6	B
	SB	LTR	0.40	23.7	C	LTR	0.64	30.1	C	LTR	0.41	23.9	C
E. 145th Street	EB	LTR	0.91	36.2	D	LTR	0.66	24.3	C	LTR	0.94	43.4	D
	WB	L	0.63	19.2	B	L	0.55	16.0	B	L	0.60	16.6	B
		TR	0.55	14.2	B	TR	0.67	17.6	B	TR	0.87	25.5	C
Overall Intersection	-	0.79	25.5	C	-	0.73	22.9	C	-	0.79	28.0	C	
UN SIGNALIZED													
5 Exterior Street at E. 150th Street													
Exterior Street	NB	LTR	0.01	8.0	A	LTR	0.02	8.1	A	LTR	0.00	8.0	A
	SB	LTR	0.03	8.3	A	LTR	0.10	8.6	A	LTR	0.07	8.3	A
E. 150th Street	EB	LTR	0.00	20.9	C	LTR	0.04	25.2	D	LTR	0.19	16.1	C
	WB	LTR	0.24	14.3	B	LTR	0.42	18.8	C	LTR	0.45	20.9	C
Overall Intersection	-	-	9.0	A	-	-	10.1	B	-	-	10.9	B	
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.05	7.6	A	LT	0.06	7.6	A	LT	0.06	9.4	A
E. 150th Street	EB	LR	0.19	23.0	C	LR	0.38	23.7	C	LR	0.35	25.5	D
	WB	LTR	0.42	26.1	D	LTR	0.44	25.3	D	LTR	0.46	26.1	D
Overall Intersection	-	-	10.9	B	-	-	11.8	B	-	-	17.3	C	
1b Grand Concourse at E. 138th Street													
E. 138th Street	EB	LT	0.44	14.6	B	LT	0.37	12.8	B	LT	0.62	20.2	C
Overall Intersection	-	-	14.6	B	-	-	12.8	B	-	-	20.2	C	

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 5
BRONX TERMINAL MARKET -- NON-GAME DAY
NO BUILD 2014 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse	SB	L	0.40	74.6	E	L	0.37	74.7	E	L	0.54	83.9	F
		R	0.40	74.7	E	R	0.41	77.9	E	R	0.59	84.8	F
E. 138th Street	EB	T	0.37	55.4	E	T	0.50	57.4	E	T	0.49	35.2	D
	WB	T	0.32	55.7	E	T	0.55	58.9	E	T	0.47	34.7	C
Overall Intersection	-	-	0.38	60.3	E	-	0.50	61.6	E	-	0.53	47.5	D
2 Grand Concourse at E. 149th Street													
Grand Concourse	NB	TR	1.04	59.5	E	TR	0.99	39.6	D	TR	1.07	71.5	E
	SB	TR	1.04	60.8	E	TR	0.98	40.5	D	TR	1.08	72.4	E
E. 149th Street	EB	TR	0.98	72.0	E	TR	0.94	60.3	E	TR	0.95	66.5	E
	WB	TR	0.98	71.0	E	TR	1.02	77.4	E	TR	0.98	69.7	E
Overall Intersection	-	-	1.03	64.9	E	-	1.00	52.5	D	-	1.05	70.4	E
11 Grand Concourse at E. 161st Street													
Grand Concourse	NB	LT	1.01	83.0	F	LT	1.10	78.6	E	LT	0.53	17.4	B
		R	0.69	37.3	D	R	0.21	12.2	B	R	0.09	12.1	B
Grand Concourse Main Road	SB	L	0.57	99.3	F	L	0.92	98.2	F	L	0.73	54.7	D
		T	1.03	76.6	E	T	1.02	68.2	E	T	0.64	55.7	E
Grand Concourse Service Road	SB	T	0.77	44.3	D	T	0.34	19.3	B	T	0.40	55.3	E
		R	0.91	62.7	E	R	0.80	47.6	D	R	0.38	54.5	D
E. 161st Street	EB	DefL	1.08	120.0+	F*	DefL	1.03	104.5	F	LTR	0.84	46.1	D
		TR	0.86	52.7	D	TR	0.95	73.3	E	-	-	-	-
	WB	LTR	0.78	43.8	D	DefL	0.67	51.0	D	DefL	0.89	88.2	F
		-	-	-	-	TR	1.10	118.7	F	TR	0.91	66.8	E
Overall Intersection	-	-	1.10	69.5	E	-	1.16	75.1	E	-	0.74	45.2	D
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp	NB	LTR	1.09	116.0	F	LTR	1.05	100.8	F	LTR	1.03	98.5	F
River Avenue	SB	LTR	0.98	84.1	F	LTR	0.74	54.5	D	LTR	0.67	52.1	D
Exterior Street	NB	LTR	0.89	82.7	F	LTR	0.77	55.6	E	LTR	0.53	51.5	D
	SB	DefL	0.80	72.2	E	DefL	0.68	60.2	E	DefL	0.68	57.6	E
		TR	0.85	64.9	E	TR	0.41	41.5	D	TR	0.74	58.4	E
E. 149th Street	EB	LTR	1.07	86.7	F	LTR	1.08	110.1	F	DefL	1.00	95.0	F
		-	-	-	-	-	-	-	-	TR	1.20+	120.0+	F*
	WB	LTR	1.00	72.5	E	LTR	0.88	44.9	D	LTR	1.05	85.4	F
Overall Intersection	-	-	1.04	84.8	F	-	0.98	79.5	E	-	1.18	120.0+	F*
16 River Avenue at E. 151st Street													
River Avenue	NB	TR	0.26	10.3	B	TR	0.34	20.2	C	TR	0.16	12.3	B
	SB	LT	0.51	14.3	B	LT	0.31	20.2	C	LT	0.25	13.6	B
E. 151st Street	WB	LR	0.08	26.2	C	LR	0.12	26.7	C	LR	0.09	18.3	B
Overall Intersection	-	-	0.34	12.9	B	-	0.26	20.6	C	-	0.19	13.3	B
8 River Avenue at E. 153rd Street													
River Avenue	NB	LTR	0.48	14.0	B	LTR	0.75	21.7	C	LTR	0.30	8.2	A
	SB	LTR	0.55	14.9	B	LTR	0.35	11.8	B	LTR	0.27	8.0	A
E. 153rd Street	EB	LTR	0.27	20.8	C	LTR	0.25	20.5	C	LTR	0.25	14.5	B
	WB	LTR	0.31	22.3	C	LTR	0.36	23.0	C	LTR	0.18	14.5	B
Overall Intersection	-	-	0.45	16.8	B	-	0.60	19.6	B	-	0.28	10.7	B
9 River Avenue at E. 157th Street													
River Avenue	NB	TR	0.49	13.9	B	TR	0.49	14.0	B	TR	0.27	8.0	A
	SB	LT	0.56	15.4	B	LT	0.36	12.0	B	LT	0.27	8.0	A
E. 157th Street	WB	LR	0.06	18.7	B	LR	0.08	18.9	B	LR	0.08	13.4	B
Overall Intersection	-	-	0.36	14.9	B	-	0.33	13.4	B	-	0.20	8.4	A
10 River Avenue at E. 161st Street													
River Avenue	NB	LTR	0.95	59.8	E	LTR	0.96	60.4	E	LTR	0.63	22.4	C
	SB	LTR	1.00	61.1	E	LTR	0.87	41.4	D	LTR	0.63	22.2	C
E. 161st Street Main Road	EB	T	0.19	13.8	B	T	0.23	14.2	B	T	0.37	11.2	B
	WB	T	0.60	21.0	C	T	0.49	17.3	B	T	0.59	14.0	B
E. 161st Street Service Road	EB	TR	0.65	21.0	C	TR	0.64	21.0	C	TR	0.72	17.7	B
	WB	TR	0.57	20.7	C	TR	0.62	21.6	C	TR	0.68	17.5	B
Overall Intersection	-	-	0.82	34.6	C	-	0.79	27.9	C	-	0.68	17.0	B

**TABLE A - 5
BRONX TERMINAL MARKET -- NON-GAME DAY
NO BUILD 2014 TRAFFIC LEVELS OF SERVICE**

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
OTHER													
12 Jerome Ave at E. 161st Street													
Jerome Avenue	NB	L	0.31	20.1	C	L	0.71	46.4	D	L	0.36	21.1	C
		TR	0.48	20.4	C	TR	0.97	58.0	E	TR	0.97	56.2	E
	SB	L	0.39	22.5	C	L	0.54	33.5	C	L	0.24	41.7	D
		TR	0.61	25.6	C	TR	0.96	60.9	E	TR	0.60	55.9	E
E. 161st Street	WB	L	0.52	17.4	B	L	0.70	22.8	C	L	0.50	41.3	D
		T	0.23	13.6	B	T	0.52	21.7	C	LT	0.13	11.9	B
Overall Intersection	-	-	0.56	20.5	C	-	0.82	44.1	D	-	0.71	46.1	D
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.50	25.1	C	LR	0.82	44.9	D	LR	0.51	25.1	C
Jerome Avenue	EB	T	0.44	13.0	B	T	0.49	13.6	B	T	0.43	12.7	B
	WB	TR	0.31	10.7	B	TR	0.50	13.0	B	TR	0.34	11.0	B
Overall Intersection	-	-	0.47	15.2	B	-	0.63	19.3	B	-	0.46	15.0	B
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.36	24.7	C	T	0.57	27.8	C	T	0.44	25.7	C
Major Deegan Expressway NB Off Ramp	NB	T	1.09	120.0+	F*	T	1.06	100.5	F	T	1.01	70.0	E
E. 157th Street	WB	R	0.49	30.8	C	R	0.75	37.6	D	R	0.32	28.0	C
Overall Intersection	-	-	0.65	75.5	E	-	0.79	56.9	E	-	0.60	46.1	D
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.49	45.1	D	L	0.81	59.8	E	L	0.40	43.0	D
		T	0.09	10.3	B	T	0.19	11.0	B	T	0.26	11.7	B
	SB	T	0.40	31.0	C	T	0.69	39.3	D	T	0.80	43.7	D
		R	1.05	78.3	E	R	0.92	37.6	D	R	0.58	19.6	B
W. 155th Street	EB	L	0.78	43.1	D	L	1.04	84.2	F	L	0.97	65.5	E
		R	0.12	11.1	B	R	0.13	11.1	B	R	0.15	11.3	B
Overall Intersection	-	-	0.57	48.1	D	-	0.85	46.7	D	-	0.77	33.0	C
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.72	36.7	D	L	0.62	31.9	C	L	0.75	38.4	D
		LT	0.43	24.3	C	LT	0.40	23.8	C	LT	0.29	21.8	C
		R	0.30	13.4	B	R	0.59	18.7	B	R	0.43	15.3	B
	SB	LTR	0.57	28.8	C	LTR	0.45	24.9	C	LTR	0.39	23.6	C
E. 145th Street	EB	LTR	0.80	29.1	C	LTR	0.77	27.7	C	LTR	0.77	27.8	C
	WB	L	0.84	31.9	C	L	0.95	86.4	F	L	0.92	48.8	D
		TR	0.87	27.4	C	TR	0.77	21.3	C	TR	0.61	15.8	B
Overall Intersection	-	-	0.81	28.2	C	-	0.80	32.9	C	-	0.80	26.9	C
UNSIGNALIZED													
5 Exterior Street at E. 150th Street													
Exterior Street	NB	LTR	0.00	8.1	A	LTR	0.00	8.2	A	LTR	0.01	8.2	A
	SB	LTR	0.02	8.2	A	LTR	0.02	8.4	A	LTR	0.02	8.1	A
E. 150th Street	EB	LTR	0.06	14.7	B	LTR	0.01	17.7	C	LTR	0.00	10.2	B
	WB	LTR	0.30	18.3	C	LTR	0.26	14.3	B	LTR	0.21	11.9	B
Overall Intersection	-	-	0.09	9.8	A	-	0.09	9.2	A	-	0.09	8.7	A
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.06	8.3	A	LT	0.06	7.9	A	LT	0.06	7.8	A
E. 150th Street	EB	LR	0.10	15.0	B	LR	0.08	16.7	C	LR	0.09	14.3	B
	WB	LTR	0.28	20.5	C	LTR	0.38	25.7	D	LTR	0.17	15.2	C
Overall Intersection	-	-	0.14	10.8	B	-	0.14	10.8	B	-	0.14	9.6	A
1b Grand Concourse at E. 138th Street													
E. 138th Street	EB	LT	0.23	9.9	A	LT	0.39	13.2	B	LT	0.27	10.6	B
Overall Intersection	-	-	0.23	9.9	A	-	0.39	13.2	B	-	0.27	10.6	B

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

**TABLE A - 6
BRONX TERMINAL MARKET -- GAME DAY
NO BUILD 2014 TRAFFIC LEVELS OF SERVICE**

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse	SB	L	0.35	67.7	E	L	0.38	73.5	E	L	0.37	69.8	E
		R	0.40	79.7	E	R	0.43	84.0	F	R	0.50	75.3	E
E. 138th Street	EB	T	0.40	12.3	B	T	0.40	12.2	B	T	0.52	13.9	B
	WB	T	0.45	13.0	B	T	0.41	12.5	B	T	0.53	14.3	B
Overall Intersection	-		0.43	25.4	C	-	0.42	27.1	C	-	0.52	25.3	C
2 Grand Concourse at E. 149th Street													
Grand Concourse	NB	TR	1.06	60.6	E	TR	1.02	51.6	D	TR	1.03	52.3	D
	SB	TR	1.00	46.8	D	TR	1.04	61.2	E	TR	1.03	52.9	D
E. 149th Street	EB	TR	1.00	75.2	E	TR	0.80	47.9	D	TR	0.78	46.7	D
	WB	TR	1.03	82.3	F	TR	0.78	47.3	D	TR	0.80	47.3	D
Overall Intersection	-		1.05	64.9	E	-	0.98	52.5	D	-	0.97	50.4	D
11 Grand Concourse at E. 161st Street													
Grand Concourse	NB	LT	1.08	75.3	E	LT	0.69	21.6	C	LT	0.92	108.2	F
	R		0.12	10.7	B	R	0.18	13.3	B	R	0.17	79.3	E
Grand Concourse Main Road	SB	L	0.84	67.6	E	L	0.05	42.8	D	L	0.18	114.2	F
	T		0.58	61.3	E	T	0.42	39.9	D	T	0.43	55.2	E
Grand Concourse Service Road	SB	T	0.36	19.8	B	T	0.23	40.1	D	T	0.27	37.9	D
	R		0.89	62.9	E	R	0.84	50.7	D	R	0.21	35.4	D
E. 161st Street	EB	DefL	0.87	69.2	E	DefL	0.76	53.2	D	DefL	0.82	73.0	E
	TR		1.00	84.6	F	TR	0.55	37.5	D	TR	0.89	78.9	E
	WB	LTR	0.86	54.9	D	LTR	0.59	35.0	C	LTR	0.91	66.8	E
Overall Intersection	-		1.04	65.4	E	-	0.76	34.1	C	-	0.94	80.2	F
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp	NB	LTR	1.10	120.0+	F*	LTR	1.10	120.0+	F*	LTR	0.80	57.5	E
River Avenue	SB	LTR	0.50	43.1	D	LTR	0.80	70.4	E	LTR	1.09	120.0+	F*
Exterior Street	NB	LTR	0.80	64.0	E	LTR	0.89	79.9	E	LTR	0.83	58.0	E
	SB	DefL	0.88	86.2	F	DefL	0.92	92.1	F	DefL	0.55	47.8	D
	TR		0.35	39.9	D	TR	0.95	89.9	F	TR	0.74	52.8	D
E149th Street	EB	DefL	1.09	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.01	102.3	F
	TR		1.10	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.00	68.8	E
	WB	LTR	0.98	65.1	E	LTR	0.65	30.9	C	LTR	1.10	120.0+	F*
Overall Intersection	-		1.03	120.0+	F*	-	1.10	120.0+	F*	-	1.01	112.0	F
16 River Avenue at E. 151st Street													
River Avenue	NB	TR	0.36	11.3	B	TR	0.40	8.5	A	TR	0.33	120.0+	F*
	SB	LT	0.43	13.3	B	LT	0.28	8.3	A	LT	0.75	120.0+	F*
E. 151st Street	WB	LR	0.17	27.6	C	LR	0.17	19.2	B	LR	0.19	19.4	B
Overall Intersection	-		0.33	13.2	B	-	0.31	9.3	A	-	0.53	120.0+	F*
8 River Avenue at E. 153rd Street													
River Avenue	NB	LTR	0.87	33.2	C	LTR	1.00	52.2	D	LTR	1.04	72.2	E
	SB	LTR	0.74	22.7	C	LTR	0.71	18.4	B	LTR	1.02	71.8	E
E. 153rd Street	EB	LTR	0.52	25.2	C	LTR	0.41	17.2	B	LTR	1.00	71.9	E
	WB	LTR	0.42	24.9	C	LTR	0.46	19.7	B	LTR	0.93	81.4	F
Overall Intersection	-		0.74	27.3	C	-	0.79	33.4	C	-	1.03	72.9	E
9 River Avenue at E. 157th Street													
River Avenue	NB	TR	0.46	13.5	B	TR	0.41	9.6	A	TR	0.74	17.7	B
	SB	LT	0.51	14.3	B	LT	0.54	11.5	B	Closed	-	-	-
E. 157th Street	WB	LR	0.21	21.2	C	LR	0.11	13.8	B	LR	0.22	15.9	B
Overall Intersection	-		0.39	14.5	B	-	0.37	10.9	B	-	0.54	17.5	B
10 River Avenue at E. 161st Street													
River Avenue	NB	LTR	0.59	22.9	C	LTR	0.91	71.5	E	LTR	1.09	120.0+	F*
	SB	LTR	0.58	21.5	C	LTR	0.94	62.4	E	R	1.09	120.0+	F*
E. 161st Street Main Road	EB	T	0.14	13.9	B	T	0.23	44.6	D	T	0.86	120.0+	F*
	WB	T	0.51	18.1	B	T	0.46	22.6	C	T	0.71	120.0+	F*
E. 161st Street Service Road	EB	T	0.41	16.8	B	TR	0.78	34.5	C	Closed	-	-	-
	R		0.87	39.5	D	-	-	-	-	-	-	-	-
	WB	TR	0.47	17.9	B	TR	0.81	37.1	D	TR	0.95	60.9	E
Overall Intersection	-		0.73	21.6	C	-	0.87	41.0	D	-	1.03	120.0+	F*

**TABLE A - 6
BRONX TERMINAL MARKET -- GAME DAY
NO BUILD 2014 TRAFFIC LEVELS OF SERVICE**

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
OTHER													
12 Jerome Ave at E. 161st Street													
Jerome Avenue	NB	L	0.74	52.3	D	L	0.36	21.0	C	L	0.84	51.8	D
		TR	1.01	61.3	E	T	0.56	23.2	C	T	0.49	21.4	C
		-	-	-	-	R	0.97	55.6	E	R	0.58	23.9	C
	SB	L	0.85	64.8	E	L	0.69	45.3	D	L	0.52	25.8	C
		TR	0.84	39.4	D	TR	0.89	52.4	D	TR	0.90	45.7	D
E. 161st Street	WB	L	0.66	20.7	C	LT	0.32	13.4	B	LT	1.03	55.3	E
		LT	0.18	49.3	D	-	-	-	-	-	-	-	-
Overall Intersection	-	-	0.82	46.3	D	-	0.62	35.6	D	-	0.97	43.8	D
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.58	27.4	C	LR	0.88	43.1	D	LR	0.80	38.1	D
Jerome Avenue	EB	T	0.63	16.0	B	T	0.75	19.5	B	T	0.44	39.4	D
	WB	TR	0.44	11.5	B	TR	0.36	10.7	B	TR	0.69	41.2	D
Overall Intersection	-	-	0.61	16.3	B	-	0.80	23.4	C	-	0.73	40.2	D
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.47	26.1	C	T	0.60	28.3	C	NA - (Free flow)		See Note (5)	
Major Deegan Expressway NB Off Ramp	NB	T	0.98	61.1	E	T	0.85	42.8	D				
E. 157th Street	WB	R	0.49	30.5	C	R	0.34	28.3	C				
Overall Intersection	-	-	0.65	42.5	D	-	0.61	33.9	C				
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.92	79.9	E	L	0.70	56.6	E	L	0.97	84.4	F
		T	0.22	22.0	C	T	0.22	24.4	C	T	0.16	22.6	C
	SB	T	0.61	38.8	D	T	0.64	40.5	D	T	1.02	85.5	F
		R	0.68	26.5	C	R	0.69	26.7	C	R	0.93	44.7	D
W. 155th Street	EB	L	1.08	120.0+	F*	L	1.09	113.9	F	L	1.09	120.0+	F*
		R	0.18	15.9	B	R	0.11	15.6	B	R	0.18	15.4	B
Overall Intersection	-	-	0.93	77.0	E	-	0.76	53.1	D	-	0.94	76.0	E
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.60	30.8	C	L	0.74	34.5	C	L	0.56	26.4	C
		LT	0.42	24.2	C	LT	0.50	26.0	C	LT	0.30	21.6	C
		R	0.65	20.6	C	R	0.39	14.6	B	R	0.39	14.8	B
	SB	LTR	0.42	24.2	C	LTR	0.66	30.8	C	LTR	0.42	24.0	C
E. 145th Street	EB	LTR	0.93	38.8	D	LTR	0.68	24.7	C	LTR	0.96	47.7	D
	WB	L	0.64	19.8	B	L	0.57	16.4	B	L	0.66	19.0	B
		TR	0.56	14.4	B	TR	0.69	18.2	B	TR	0.89	27.5	C
Overall Intersection	-	-	0.81	26.8	C	-	0.75	23.4	C	-	0.80	30.2	C
UNSIGNALIZED													
5 Exterior Street at E. 150th Street													
Exterior Street	NB	LTR	0.01	8.0	A	LTR	0.02	8.2	A	LTR	0.00	8.0	A
	SB	LTR	0.04	8.3	A	LTR	0.10	8.6	A	LTR	0.07	8.4	A
E. 150th Street	EB	LTR	0.00	21.7	C	LTR	0.04	26.6	D	LTR	0.20	16.7	C
	WB	LTR	0.25	14.7	B	LTR	0.44	19.5	C	LTR	0.47	22.0	C
Overall Intersection	-	-	9.1	A	-	-	10.3	B	-	-	11.1	B	
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.05	7.6	A	LT	0.07	7.6	A	LT	0.06	9.5	A
E. 150th Street	EB	LR	0.20	23.8	C	LR	0.41	25.2	D	LR	0.38	27.5	D
	WB	LTR	0.45	27.7	D	LTR	0.46	26.6	D	LTR	0.49	27.9	D
Overall Intersection	-	-	11.2	B	-	-	12.2	B	-	-	18.2	C	
1b Grand Concourse at E. 138th Street													
E. 138th Street	EB	LT	0.46	15.2	C	LT	0.39	13.2	B	LT	0.65	21.8	C
Overall Intersection	-	-	15.2	C	-	-	13.2	B	-	-	21.8	C	

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 7
BRONX TERMINAL MARKET - NON-GAME DAY
BUILD 2009 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse	SB	L	0.39	72.0	E	L	0.36	71.9	E	L	0.52	80.0	F
	R		0.39	72.2	E	R	0.40	74.8	E	R	0.58	80.5	F
E. 138th Street	EB	T	0.37	52.7	D	T	0.49	54.3	D	T	0.48	33.6	C
	WB	T	0.31	53.1	D	T	0.53	55.5	E	T	0.46	33.1	C
Overall Intersection	-		0.37	57.6	E	-	0.49	58.4	E	-	0.51	45.3	D
2 Grand Concourse at E. 149th Street													
Grand Concourse	NB	TR	1.01	51.8	D	TR	0.97	34.1	C	TR	1.05	63.1	E
	SB	TR	1.06	66.6	E	TR	1.03	55.5	E	TR	1.17	105.8	F
E. 149th Street	EB	TR	0.99	75.9	E	TR	0.98	69.5	E	TR	1.03	84.8	F
	WB	TR	0.99	73.1	E	TR	1.06	89.0	F	TR	1.04	85.6	F
Overall Intersection	-		1.04	65.8	E	-	1.04	59.2	E	-	1.13	86.0	F
11 Grand Concourse at E. 161st Street													
Grand Concourse	NB	LT	1.00	79.8	E	LT	1.09	74.4	E	LT	0.53	17.5	B
	R		0.68	36.4	D	R	0.21	12.2	B	R	0.09	12.1	B
Grand Concourse Main Road	SB	L	0.55	90.1	F	L	0.90	93.3	F	L	0.71	52.4	D
	T		1.03	77.0	E	T	1.04	75.2	E	T	0.67	57.3	E
Grand Concourse Service Road	SB	T	0.77	44.6	D	T	0.35	19.5	B	T	0.42	55.4	E
	R		0.89	57.6	E	R	0.78	45.3	D	R	0.37	52.3	D
E. 161st Street	EB	DefL	0.89	68.6	E	DefL	1.11	120.0+	F*	DefL	0.85	60.8	E
	TR		0.84	50.4	D	TR	0.93	68.5	E	TR	0.82	48.2	D
	WB	DefL	0.63	44.6	D	DefL	0.95	90.4	F	DefL	0.92	79.6	E
	TR		0.81	49.9	D	TR	1.07	109.7	F	TR	0.89	63.5	E
Overall Intersection	-		1.02	64.4	E	-	1.16	76.4	E	-	0.73	46.9	D
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
River Avenue	SB	LTR	1.20+	120.0+	F*	LTR	1.16	120.0+	F*	LTR	1.20+	120.0+	F*
Exterior Street	NB	LTR	0.89	83.8	F	LTR	0.78	56.6	E	LTR	0.54	52.6	D
	SB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.13	120.0+	F*
	TR		0.95	80.5	F	TR	0.66	49.4	D	TR	1.14	120.0+	F*
E. 149th Street	EB	DefL	1.10	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
	TR		0.99	68.0	E	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	WB	LTR	1.08	94.5	F	LTR	0.99	64.2	E	LTR	1.20+	120.0+	F*
Overall Intersection	-		1.20+	120.0+	F*	-	1.20+	120.0+	F*	-	1.20+	120.0+	F*
17 River Avenue at Garage 2 Exit Only													
River Avenue	NB	T	0.27	10.4	B	T	0.43	10.9	B	T	0.32	7.9	A
	SB	T	0.22	10.0	A	T	0.13	8.4	A	T	0.13	6.7	A
Garage 2 Exit Only	EB	L	0.24	20.8	C	L	0.56	27.9	C	L	0.62	21.3	C
	R		0.07	18.8	B	R	0.17	21.3	C	R	0.19	14.4	B
Overall Intersection	-		0.26	12.0	B	-	0.48	15.0	B	-	0.44	12.2	B
16 River Avenue at E. 151st Street / Garage 2 Entrance Only													
River Avenue	NB	LTR	0.54	14.0	B	LTR	0.98	54.0	D	LTR	0.81	26.1	C
	SB	LTR	0.33	11.0	B	LTR	0.31	19.7	B	LTR	0.29	13.6	B
E. 151st Street / Garage 2 Entrance Only	WB	LTR	0.10	26.5	C	LTR	0.18	27.6	C	LTR	0.16	19.0	B
Overall Intersection	-		0.37	13.3	B	-	0.66	44.2	D	-	0.56	22.2	C
8 River Avenue at E. 153rd Street													
River Avenue	NB	LTR	0.74	22.3	C	LTR	1.20+	120.0+	F*	LTR	0.81	20.1	C
	SB	LTR	0.58	15.7	B	LTR	0.43	13.0	B	LTR	0.37	9.0	A
E. 153rd Street	EB	LTR	0.33	21.4	C	LTR	0.38	22.2	C	LTR	0.40	16.0	B
	WB	LTR	0.31	22.2	C	LTR	0.37	23.1	C	LTR	0.19	14.6	B
Overall Intersection	-		0.58	19.9	B	-	0.91	83.8	F	-	0.65	16.3	B
9 River Avenue at E. 157th Street													
River Avenue	NB	TR	0.57	15.6	B	TR	0.68	18.3	B	TR	0.48	10.3	B
	SB	LT	0.59	16.1	B	LT	0.44	13.1	B	LT	0.37	9.0	A
E. 157th Street	WB	LR	0.05	18.7	B	LR	0.07	18.9	B	LR	0.08	13.4	B
Overall Intersection	-		0.38	15.9	B	-	0.44	16.4	B	-	0.32	9.9	A
10 River Avenue at E. 161st Street													
River Avenue	NB	LTR	1.13	113.4	F	LTR	1.20+	120.0+	F*	LTR	1.17	119.9	F
	SB	LTR	1.01	65.8	E	LTR	0.97	57.2	E	LTR	0.79	31.1	C
E. 161st Street Main Road	EB	T	0.18	13.7	B	T	0.22	14.1	B	T	0.36	11.1	B
	WB	T	0.58	20.6	C	T	0.47	17.1	B	T	0.57	13.7	B
E. 161st Street Service Road	EB	TR	0.63	20.6	C	TR	0.63	20.8	C	TR	0.72	17.6	B
	WB	TR	0.55	20.4	C	TR	0.61	21.1	C	TR	0.66	16.9	B
Overall Intersection	-		0.88	41.4	D	-	0.98	56.1	E	-	0.92	34.3	C
OTHER													
12 Jerome Ave at E. 161st Street													
Jerome Avenue	NB	L	0.30	19.8	B	L	0.69	44.3	D	L	0.35	20.7	C
	TR		0.51	20.9	C	TR	1.14	109.4	F	TR	1.14	110.7	F
	SB	L	0.40	23.2	C	L	0.53	33.0	C	L	0.23	40.4	D
	TR		0.60	25.2	C	TR	0.94	55.8	E	TR	0.58	53.0	D
E. 161st Street	WB	L	0.50	17.1	B	L	0.69	22.2	C	L	0.49	39.5	D
	T		0.23	13.5	B	T	0.50	21.2	C	LT	0.13	11.8	B
Overall Intersection	-		0.55	20.6	C	-	0.89	60.9	E	-	0.78	68.2	E

TABLE A - 7
BRONX TERMINAL MARKET - NON-GAME DAY
BUILD 2009 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)						
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
14 Jerome Avenue at Ogden Avenue															
Ogden Avenue	SB	LR	0.49	24.8	C	LR	0.80	42.6	D	LR	0.50	24.8	C		
Jerome Avenue	EB	T	0.49	13.8	B	T	0.59	15.7	B	T	0.54	14.5	B		
	WB	TR	0.30	10.7	B	TR	0.49	12.8	B	TR	0.33	10.9	B		
Overall Intersection	-	-	0.49	15.2	B	-	-	0.67	19.2	B	-	-	0.53	15.4	B
13 E. 157th Street at Major Deegan Expressway NB Ramp															
Major Deegan Expressway NB Service Road	NB	T	0.58	28.1	C	T	1.00	57.1	E	T	0.92	43.2	D		
Major Deegan Expressway NB Off Ramp	NB	T	1.06	119.9	F	T	1.03	92.3	F	T	0.98	63.2	E		
E. 157th Street	WB	R	0.53	31.5	C	R	0.83	41.7	D	R	0.42	29.4	C		
Overall Intersection	-	-	0.73	64.7	E	-	-	0.96	62.9	E	-	-	0.79	47.1	D
15 Macombs Place at W. 155th Street															
Macombs Place	NB	L	0.48	44.9	D	L	0.79	58.0	E	L	0.39	42.9	D		
	T		0.09	10.2	B	T	0.18	10.9	B	T	0.26	11.6	B		
	SB	T	0.39	30.8	C	T	0.68	38.6	D	T	0.78	42.5	D		
W. 155th Street	R		1.06	81.3	F	R	0.93	39.9	D	R	0.59	19.9	B		
	EB	L	0.80	43.8	D	L	1.08	97.4	F	L	1.02	78.8	E		
	R		0.12	11.0	B	R	0.12	11.1	B	R	0.14	11.2	B		
Overall Intersection	-	-	0.57	49.6	D	-	-	0.86	50.9	D	-	-	0.78	36.1	D
4 Lenox Avenue at E. 145th Street															
Lenox Avenue	NB	L	0.70	35.5	D	L	0.60	30.9	C	L	0.72	36.7	D		
	LT		0.42	24.1	C	LT	0.39	23.6	C	LT	0.29	21.7	C		
	R		0.30	13.3	B	R	0.57	18.3	B	R	0.42	15.2	B		
E. 145th Street	SB	LTR	0.54	27.9	C	LTR	0.43	24.6	C	LTR	0.38	23.5	C		
	EB	LTR	0.87	33.4	C	LTR	0.85	31.6	C	LTR	0.88	34.2	C		
	WB	L	0.82	31.0	C	L	1.06	73.1	E	L	1.01	63.0	E		
	TR		0.91	31.8	C	TR	0.89	29.3	C	TR	0.75	19.9	B		
Overall Intersection	-	-	0.83	30.6	C	-	-	0.92	33.8	C	-	-	0.91	31.1	C
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit															
Exterior Street	NB	L	0.12	18.3	B	L	0.35	23.9	C	L	0.47	29.4	C		
	T		0.28	19.5	B	T	0.49	22.6	C	T	0.44	21.9	C		
	SB	TR	0.35	20.5	C	TR	0.48	22.5	C	TR	0.56	24.0	C		
East Garage (G2) Exit Only	WB	L	0.06	17.2	B	L	0.14	18.1	B	L	0.15	18.3	B		
	T		0.00	16.5	B	T	0.00	16.5	B	T	0.00	16.5	B		
	R		0.27	20.1	C	R	0.59	26.9	C	R	0.67	29.8	C		
Overall Intersection	-	-	0.31	19.9	B	-	-	0.54	23.2	C	-	-	0.62	24.4	C
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance															
Exterior Street	NB	TR	0.30	17.1	B	TR	0.55	21.0	C	TR	0.51	20.3	C		
	SB	L	0.26	10.1	B	L	0.82	31.2	C	L	0.84	32.1	C		
	T		0.23	16.2	B	T	0.24	16.3	B	T	0.30	17.0	B		
West Garage Exit Only	EB	LTR	0.17	31.1	C	LTR	0.38	34.8	C	LTR	0.43	36.0	D		
Overall Intersection	-	-	0.32	16.9	B	-	-	0.60	23.1	C	-	-	0.65	23.2	C
UN SIGNALIZED															
<u>EXTERIOR STREET</u>															
22 Exterior Street at South Pocket Lot															
Exterior Street	SB	LT	0.00	8.6	A	LT	0.01	9.8	A	LT	0.00	9.5	A		
South Pocket Lot	WB	LR	0.02	13.5	B	LR	0.03	17.5	C	LR	0.03	17.2	C		
Overall Intersection	-	-	-	11.9	B	-	-	14.9	B	-	-	14.6	B		
5 Exterior Street at E. 150th Street		(Free flow)				(Free flow)				(Free flow)					
20 Exterior Street at South Truck Access															
Exterior Street	SB	LT	0.01	8.6	A	LT	0.01	9.8	A	LT	0.00	9.5	A		
South Truck Access	WB	LR	0.03	12.8	B	LR	0.03	16.7	C	LR	0.01	18.5	C		
Overall Intersection	-	-	-	11.0	B	-	-	13.9	B	-	-	16.3	C		
21 Exterior Street at North Truck Access															
Exterior Street	NB	LT	0.00	8.5	A	LT	0.00	9.1	A	LT	0.00	9.6	A		
	SB	LT	0.01	8.8	A	LT	0.01	11.0	B	LT	0.00	10.8	B		
North Truck Access	EB	LR	0.04	29.8	D	LR	0.03	29.0	D	LR	0.01	29.0	D		
	WB	LR	0.03	14.7	B	LR	0.06	29.8	D	LR	0.01	29.3	D		
Overall Intersection	-	-	-	15.5	C	-	-	23.0	C	-	-	22.8	C		
OTHER															
6 River Avenue at E. 150th Street															
River Avenue	NB	LT	0.00	8.5	A	LT	0.00	8.5	A	LT	0.00	8.2	A		
Pocket Lot Entry/Exit	EB	LR	0.02	13.1	B	LR	0.02	15.4	C	LR	0.02	11.9	B		
E. 150th Street	WB	LTR	0.22	17.1	C	LTR	0.41	28.5	D	LTR	0.21	18.3	C		
Overall Intersection	-	-	-	16.5	C	-	-	27.1	D	-	-	17.3	C		
1b Grand Concourse at E. 138th Street															
E. 138th Street	EB	LT	0.22	9.8	A	LT	0.38	12.8	B	LT	0.26	10.4	B		
Overall Intersection	-	-	-	9.8	A	-	-	12.8	B	-	-	10.4	B		

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual - TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual - TRB.
- (4): Overall intersection V/C ratio is the critical lane group's V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 8
BRONX TERMINAL MARKET - GAME DAY
BUILD 2009 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street	SB	L	0.34	65.3	E	L	0.37	70.8	E	L	0.36	67.4	E
Grand Concourse	R		0.39	76.4	E	R	0.42	80.6	F	R	0.49	72.3	E
E. 138th Street	EB	T	0.39	12.2	B	T	0.39	12.1	B	T	0.51	13.7	B
	WB	T	0.44	12.9	B	T	0.40	12.4	B	T	0.52	14.1	B
Overall Intersection	-		0.42	24.6	C	-	0.41	26.4	C	-	0.51	24.6	C
2 Grand Concourse at E. 149th Street	NB	TR	1.03	51.8	D	TR	1.00	44.4	D	TR	1.01	45.6	D
Grand Concourse	SB	TR	1.05	62.3	E	TR	1.11	85.9	F	TR	1.14	90.2	F
E. 149th Street	EB	TR	1.05	89.2	F	TR	0.84	50.6	D	TR	0.81	48.1	D
	WB	TR	1.07	94.6	F	TR	0.81	49.2	D	TR	0.82	48.2	D
Overall Intersection	-		1.06	71.4	E	-	1.04	57.9	E	-	1.05	61.1	E
11 Grand Concourse at E. 161st Street	NB	LT	1.09	78.1	E	LT	0.71	22.2	C	LT	0.93	107.1	F
Grand Concourse	R		0.22	12.0	B	R	0.30	15.0	B	R	0.24	82.6	F
Grand Concourse Main Road	SB	L	0.81	62.8	E	L	0.05	45.0	D	L	0.18	117.8	F
	T		0.56	58.0	E	T	0.41	38.7	D	T	0.42	52.5	D
Grand Concourse Service Road	SB	T	0.46	21.8	C	T	0.33	43.5	D	T	0.33	39.4	D
	R		0.87	59.1	E	R	0.82	48.1	D	R	0.21	34.2	C
E. 161st Street	EB	DefL	0.91	77.5	E	DefL	0.74	51.4	D	DefL	0.83	75.6	E
	TR		0.97	77.4	E	TR	0.53	36.9	D	TR	0.87	74.3	E
	WB	DefL	1.09	120.0+	F*	LTR	0.76	42.3	D	DefL	1.20+	120.0+	F*
	TR		0.89	63.8	E	-	-	-	-	TR	1.20+	120.0+	F*
Overall Intersection	-		1.09	67.7	E	-	0.76	34.7	C	-	1.17	111.4	F
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Major Deegan Expressway NB Off Ramp	SB	LTR	0.89	69.5	E	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
River Avenue	NB	LTR	1.06	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	0.84	58.9	E
Exterior Street	SB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
	TR		0.56	45.2	D	TR	1.20+	120.0+	F*	TR	0.78	55.9	E
E. 149th Street	EB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
	TR		1.07	113.2	F	TR	1.20+	120.0+	F*	TR	0.98	62.1	E
	WB	LTR	1.08	92.3	F	LTR	0.72	33.2	C	LTR	1.15	120.0+	F*
Overall Intersection	-		1.20+	120.0+	F*	-	1.20+	120.0+	F*	-	1.20+	120.0+	F*
17 River Avenue at Garage 2 Exit Only	NB	T	0.54	13.4	B	T	0.62	10.3	B	T	0.24	5.2	A
River Avenue	SB	T	0.11	9.2	A	T	0.08	6.0	A	T	0.61	30.6	C
Garage 2 Exit Only	EB	L	0.30	21.6	C	L	0.31	16.4	B	L	0.72	45.0	D
	R		0.14	19.6	B	R	0.15	14.7	B	R	0.68	44.0	D
Overall Intersection	-		0.45	14.3	B	-	0.50	10.9	B	-	0.36	26.8	C
16 River Avenue at E. 151st Street / Garage 2 Entrance Only	NB	LTR	0.94	32.4	C	LTR	1.03	48.6	D	LTR	0.72	120.0+	F*
River Avenue	SB	LTR	0.27	10.6	B	LTR	0.17	7.0	A	LTR	0.40	24.7	C
E. 151st Street / Garage 2 Entrance 2 Only	WB	LTR	0.32	30.1	C	LTR	0.33	21.5	C	LTR	0.29	20.8	C
Overall Intersection	-		0.69	28.3	C	-	0.76	41.4	D	-	0.55	120.0+	F*
8 River Avenue at E. 153rd Street	NB	LTR	1.05	71.6	E	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
River Avenue	SB	LTR	0.74	22.6	C	LTR	0.71	18.3	B	LTR	1.00	65.9	E
E. 153rd Street	EB	LTR	0.51	25.0	C	LTR	0.40	17.1	B	LTR	1.02	75.1	E
	WB	LTR	0.42	24.8	C	LTR	0.45	19.6	B	LTR	0.92	79.9	E
Overall Intersection	-		0.84	42.9	D	-	0.92	72.9	E	-	1.20+	120.0+	F*
9 River Avenue at E. 157th Street	NB	TR	0.52	14.6	B	TR	0.51	11.1	B	TR	0.72	17.0	B
River Avenue	SB	LT	0.52	14.5	B	LT	0.55	11.8	B	Closed	-	-	-
E. 157th Street	WB	LR	0.21	21.2	C	LR	0.10	13.7	B	LR	0.22	15.9	B
Overall Intersection	-		0.40	15.0	B	-	0.37	11.6	B	-	0.53	16.8	B
10 River Avenue at E. 161st Street	NB	LTR	0.71	27.7	C	LTR	1.20+	120.0+	F*	LTR	1.05	120.0+	F*
River Avenue	SB	LTR	0.59	21.9	C	LTR	0.96	68.1	E	R	1.07	120.0+	F*
E. 161st Street Main Road	EB	T	0.15	14.0	B	T	0.23	43.6	D	T	0.84	120.0+	F*
	WB	T	0.49	17.9	B	T	0.45	22.4	C	T	0.70	112.6	F*
E. 161st Street Service Road	EB	T	0.40	16.6	B	TR	0.76	33.3	C	Closed	-	-	-
	R		0.85	36.9	D	-	-	-	-	-	-	-	
	WB	TR	0.46	17.7	B	TR	0.79	35.9	D	TR	1.00	72.8	E
Overall Intersection	-		0.78	21.7	C	-	1.03	54.7	D	-	1.04	120.0+	F*
OTHER													
12 Jerome Avenue at E. 161st Street	NB	L	0.72	49.6	D	L	0.35	20.6	C	L	0.82	49.0	D
Jerome Avenue	TR		1.14	105.9	F	T	0.71	28.0	C	T	0.60	23.9	C
	-		-	-	-	R	0.96	54.1	D	R	0.56	23.5	C
	SB	L	1.10	120.0+	F*	L	0.67	43.9	D	L	0.62	31.8	C
	TR		0.83	37.8	D	TR	0.87	49.2	D	TR	0.88	42.4	D
E. 161st Street	WB	L	0.64	20.2	C	LT	0.31	13.4	B	LT	1.00	48.6	D
	LT		0.18	47.4	D	-	-	-	-	-	-	-	
Overall Intersection	-		0.87	70.0	E	-	0.61	35.2	D	-	0.95	40.1	D

TABLE A - 8
BRONX TERMINAL MARKET -- GAME DAY
BUILD 2009 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.56	27.0	C	LR	0.85	40.8	D	LR	0.78	36.7	D
Jerome Avenue	EB	T	0.74	19.3	B	T	0.85	25.7	C	T	0.51	42.6	D
	WB	TR	0.43	11.4	B	TR	0.35	10.6	B	TR	0.67	38.5	D
Overall Intersection	-	0.67	17.5	B	-	0.85	25.0	C	-	0.71	39.1	D	
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.90	40.6	D	T	1.00	59.0	E	NA - (Free flow)	See Note (5)		
Major Deegan Expressway NB Off Ramp	NB	T	0.96	55.9	E	T	0.83	41.0	D				
E. 157th Street	WB	R	0.55	31.8	C	R	0.41	29.4	C				
Overall Intersection	-	0.82	43.9	D	-	0.77	49.5	D					
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.90	76.3	E	L	0.68	55.8	E	L	0.94	79.8	E
	T	0.21	21.6	C	T	0.22	23.9	C	T	0.16	22.2	C	
	SB	T	0.59	38.3	D	T	0.62	40.0	D	T	1.00	78.6	E
	R	0.70	27.0	C	R	0.70	27.3	C	R	0.94	46.1	D	
W. 155th Street	EB	L	1.11	120.0+	F*	L	1.13	120.0+	F*	L	1.10	120.0+	F*
	R	0.17	15.9	B	R	0.10	15.6	B	R	0.17	15.4	B	
Overall Intersection	-	0.80	79.5	E	-	0.65	57.8	E	-	0.94	75.9	E	
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.58	30.0	C	L	0.72	33.5	C	L	0.55	26.1	C
	LT	0.42	24.1	C	LT	0.49	25.7	C	LT	0.29	21.5	C	
	R	0.64	20.1	C	R	0.38	14.5	B	R	0.38	14.6	B	
	SB	LTR	0.40	23.7	C	LTR	0.64	30.1	C	LTR	0.41	23.9	C
E. 145th Street	EB	LTR	1.01	55.6	E	LTR	0.77	27.4	C	LTR	1.03	65.5	E
	WB	L	0.63	20.5	C	L	0.55	16.8	B	L	0.60	17.2	B
	TR	0.66	16.5	B	TR	0.79	22.1	C	TR	0.95	35.3	D	
Overall Intersection	-	0.83	33.2	C	-	0.76	24.8	C	-	0.83	37.7	D	
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit													
Exterior Street	NB	L	0.39	26.3	C	L	0.55	38.2	D	L	0.14	18.7	B
	T	0.29	19.6	B	T	0.36	20.6	C	T	0.41	21.4	C	
	SB	TR	0.56	24.0	C	TR	0.67	26.7	C	TR	0.32	20.0	B
East Garage (G2) Exit Only	WB	L	0.12	17.9	B	L	0.12	17.8	B	L	0.52	24.6	C
	T	0.00	16.5	B	T	0.00	16.5	B	T	0.00	16.5	B	
	R	0.69	30.6	C	R	0.66	29.2	C	R	0.47	23.7	C	
Overall Intersection	-	0.63	24.4	C	-	0.67	25.7	C	-	0.47	22.0	C	
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance													
Exterior Street	NB	TR	0.53	21.2	C	TR	0.61	23.4	C	TR	0.44	19.0	B
	SB	L	0.92	42.4	D	L	0.90	43.0	D	L	0.60	16.6	B
	T	0.27	17.3	B	T	0.38	19.1	B	T	0.31	17.2	B	
West Garage Exit Only	EB	LTR	0.34	34.0	C	LTR	0.36	37.5	D	LTR	0.28	32.9	C
Overall Intersection	-	0.70	25.9	C	-	0.67	26.9	C	-	0.46	19.1	B	
UN SIGNALIZED													
<u>EXTERIOR STREET</u>													
22 Exterior Street at South Pocket Lot													
Exterior Street	SB	LT	0.00	9.4	A	LT	0.01	10.0	A	LT	0.00	9.2	A
South Pocket Lot	WB	LR	0.03	16.6	C	LR	0.03	20.4	C	LR	0.02	16.3	C
Overall Intersection	-	-	14.2	B	-	-	16.9	C	-	-	13.9	B	
5 Exterior Street at E. 150th Street		(Free flow)			(Free flow)				(Free flow)				
20 Exterior Street at South Truck Access													
Exterior Street	SB	LT	0.01	9.4	A	LT	0.00	9.9	A	LT	0.00	9.1	A
South Truck Access	WB	LR	0.03	15.8	C	LR	0.01	20.6	C	LR	0.01	17.1	C
Overall Intersection	-	-	13.2	B	-	-	17.9	C	-	-	15.1	C	
21 Exterior Street at North Truck Access													
Exterior Street	NB	LT	0.00	9.5	A	LT	0.00	10.3	B	LT	0.00	8.3	A
	SB	LT	0.01	9.8	A	LT	0.00	10.2	B	LT	0.00	10.0	A
North Truck Access	EB	LR	0.02	25.8	D	LR	0.01	26.3	D	LR	0.01	24.8	C
	WB	LR	0.04	21.4	C	LR	0.01	23.7	C	LR	0.01	29.8	D
Overall Intersection	-	-	18.2	C	-	-	20.1	C	-	-	21.2	C	
<u>OTHER</u>													
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.00	7.9	A	LT	0.00	7.6	A	LT	0.00	9.7	A
Pocket Lot Entry/Exit	EB	LR	0.02	13.7	B	LR	0.02	13.6	B	LR	0.03	20.6	C
E. 150th Street	WB	LTR	0.84	91.2	F	LTR	0.81	73.7	F	LTR	0.58	36.7	E
Overall Intersection	-	-	85.2	F	-	-	69.6	F	-	-	35.4	E	
1b Grand Concourse at E. 138th Street													
E. 138th Street	EB	LT	0.44	14.6	B	LT	0.37	12.8	B	LT	0.62	20.2	C
Overall Intersection	-	-	14.6	B	-	-	12.8	B	-	-	20.2	C	

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (4): Overall intersection V/C ratio is the critical lane group's V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 9
BRONX TERMINAL MARKET - NON-GAME DAY
BUILD 2014 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse	SB	L	0.40	74.6	E	L	0.37	74.7	E	L	0.54	83.9	F
	R		0.40	74.7	E	R	0.41	77.9	E	R	0.59	84.8	F
E. 138th Street	EB	T	0.37	55.4	E	T	0.50	57.4	E	T	0.49	35.2	D
	WB	T	0.32	55.7	E	T	0.55	58.9	E	T	0.47	34.7	C
Overall Intersection	-		0.38	60.3	E	-	0.50	61.6	E	-	0.53	47.5	D
2 Grand Concourse at E. 149th Street													
Grand Concourse	NB	TR	1.04	59.5	E	TR	0.99	39.6	D	TR	1.07	71.5	E
	SB	TR	1.09	77.2	E	TR	1.06	64.7	E	TR	1.20	119.6	F
E. 149th Street	EB	TR	1.02	83.5	F	TR	1.01	75.8	E	TR	1.05	92.3	F
	WB	TR	1.01	80.4	F	TR	1.09	98.8	F	TR	1.06	94.0	F
Overall Intersection	-		1.07	74.2	E	-	1.07	66.8	E	-	1.16	95.9	F
11 Grand Concourse at E. 161st Street													
Grand Concourse	NB	LT	1.03	87.2	F	LT	1.11	85.5	F	LT	0.55	17.9	B
	R		0.70	37.8	D	R	0.22	12.3	B	R	0.09	12.2	B
Grand Concourse Main Road	SB	L	0.58	105.2	F	L	0.92	98.2	F	L	0.73	54.7	D
	T		1.05	84.6	F	T	1.07	83.0	F	T	0.68	60.6	E
Grand Concourse Service Road	SB	T	0.81	48.3	D	T	0.36	19.7	B	T	0.44	58.1	E
	R		0.92	64.5	E	R	0.81	49.5	D	R	0.39	54.8	D
E. 161st Street	EB	DefL	0.93	77.2	E	DefL	1.14	120.0+	F*	DefL	0.89	67.8	E
	TR		0.86	52.7	D	TR	0.95	73.3	E	TR	0.84	49.9	D
	WB	DefL	0.66	46.8	D	DefL	1.00	102.1	F	DefL	0.95	88.1	F
	TR		0.83	51.7	D	TR	1.10	119.1	F	TR	0.91	67.3	E
Overall Intersection	-		1.06	70.1	E	-	1.20	84.9	F	-	0.76	49.8	D
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
River Avenue	SB	LTR	1.20+	120.0+	F*	LTR	1.18	120.0+	F*	LTR	1.20+	120.0+	F*
Exterior Street	NB	LTR	0.91	88.8	F	LTR	0.79	58.0	E	LTR	0.55	53.0	D
	SB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.19	120.0+	F*
	TR		0.98	87.2	F	TR	0.68	50.6	D	TR	1.18	120.0+	F*
E. 149th Street	EB	DefL	1.17	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
	TR		1.01	75.3	E	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	WB	LTR	1.11	107.7	F	LTR	1.02	72.1	E	LTR	1.20+	120.0+	F*
Overall Intersection	-		1.20+	120.0+	F*	-	1.20+	120.0+	F*	-	1.20+	120.0+	F*
17 River Avenue at Garage 2 Exit Only													
River Avenue	NB	T	0.28	10.5	B	T	0.43	10.5	B	T	0.33	7.9	A
	SB	T	0.22	10.0	B	T	0.13	8.0	A	T	0.13	6.7	A
Garage 2 Exit Only	EB	L	0.24	20.8	C	L	0.57	29.1	C	L	0.62	21.3	C
	R		0.07	18.8	B	R	0.17	22.0	C	R	0.19	14.4	B
Overall Intersection	-		0.26	12.1	B	-	0.48	14.9	B	-	0.44	12.2	B
16 River Avenue at E. 151st Street / Garage 2 Entrance Only													
River Avenue	NB	LTR	0.56	14.2	B	LTR	0.99	57.0	E	LTR	0.82	26.8	C
	SB	LTR	0.33	11.0	B	LTR	0.31	19.8	B	LTR	0.29	13.6	B
E. 151st Street / Garage 2 Entrance Only	WB	LTR	0.11	26.6	C	LTR	0.18	27.6	C	LTR	0.17	19.1	B
Overall Intersection	-		0.38	13.4	B	-	0.67	46.3	D	-	0.57	22.7	C
8 River Avenue at E. 153rd Street													
River Avenue	NB	LTR	0.77	24.0	C	LTR	1.20+	120.0+	F*	LTR	0.83	21.9	C
	SB	LTR	0.59	16.0	B	LTR	0.44	13.2	B	LTR	0.38	9.1	A
E. 153rd Street	EB	LTR	0.34	21.5	C	LTR	0.39	22.3	C	LTR	0.41	16.1	B
	WB	LTR	0.32	22.3	C	LTR	0.37	23.3	C	LTR	0.20	14.7	B
Overall Intersection	-		0.60	20.6	C	-	0.94	91.5	F	-	0.67	17.2	B
9 River Avenue at E. 157th Street													
River Avenue	NB	TR	0.58	15.9	B	TR	0.69	18.8	B	TR	0.49	10.4	B
	SB	LT	0.60	16.3	B	LT	0.45	13.3	B	LT	0.37	9.1	A
E. 157th Street	WB	LR	0.06	18.7	B	LR	0.08	18.9	B	LR	0.08	13.4	B
Overall Intersection	-		0.39	16.2	B	-	0.45	16.8	B	-	0.33	10.0	A
10 River Avenue at E. 161st Street													
River Avenue	NB	LTR	1.16	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.19	120.0+	F*
	SB	LTR	1.04	72.5	E	LTR	0.99	62.6	E	LTR	0.81	32.5	C
E. 161st Street Main Road	EB	T	0.19	13.8	B	T	0.23	14.2	B	T	0.37	11.3	B
	WB	T	0.60	21.0	C	T	0.49	17.3	B	T	0.59	14.0	B
E. 161st Street Service Road	EB	TR	0.65	21.1	C	TR	0.65	21.3	C	TR	0.74	18.3	B
	WB	TR	0.57	20.9	C	TR	0.63	21.8	C	TR	0.68	17.7	B
Overall Intersection	-		0.90	44.5	D	-	1.00	60.1	E	-	0.86	36.1	D
OTHER													
12 Jerome Avenue at E. 161st Street													
Jerome Avenue	NB	L	0.31	20.1	C	L	0.71	46.4	D	L	0.36	21.1	C
	TR		0.53	21.1	C	TR	1.17	120.0+	F*	TR	1.18	120.0+	F*
	SB	L	0.42	23.9	C	L	0.54	33.5	C	L	0.24	41.7	D
	TR		0.61	25.6	C	TR	0.96	60.9	E	TR	0.60	55.9	E
E. 161st Street	WB	L	0.54	19.1	B	L	0.70	22.8	C	L	0.50	41.3	D
	T		0.23	13.6	B	T	0.52	21.7	C	LT	0.13	11.9	B
Overall Intersection	-		0.57	21.3	C	-	0.91	66.6	E	-	0.81	75.9	E

TABLE A - 9
BRONX TERMINAL MARKET - NON-GAME DAY
BUILD 2014 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday Midday (1PM - 2PM)				Weekday PM Peak Hour (5PM-6PM)				Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.50	25.1	C	LR	0.82	44.9	D	LR	0.51	25.1	C
Ogden Avenue	EB	T	0.51	14.1	B	T	0.61	16.2	B	T	0.56	14.9	B
Jerome Avenue	WB	TR	0.31	10.7	B	TR	0.50	13.0	B	TR	0.34	11.0	B
Overall Intersection	-	-	0.51	15.4	B	-	0.70	19.8	B	-	0.54	15.6	B
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.60	28.6	C	T	1.04	70.3	E	T	0.96	49.8	D
Major Deegan Expressway NB Off Ramp	NB	T	1.09	120.0+	F*	T	1.06	100.5	F	T	1.01	70.0	E
E. 157th Street	WB	R	0.54	31.7	C	R	0.85	43.4	D	R	0.43	29.6	C
Overall Intersection	-	-	0.75	68.3	E	-	0.99	71.8	E	-	0.82	52.7	D
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.49	45.1	D	L	0.81	59.8	E	L	0.40	43.0	D
Macombs Place	T	0.09	10.3	B	T	0.19	11.0	B	T	0.26	11.7	B	
Macombs Place	SB	T	0.40	31.0	C	T	0.69	39.3	D	T	0.80	43.7	D
Macombs Place	R	1.09	90.7	F	R	0.96	44.1	D	R	0.61	20.3	C	
W. 155th Street	EB	L	0.82	45.1	D	L	1.11	107.5	F	L	1.05	86.7	F
W. 155th Street	R	0.12	11.1	B	R	0.13	11.1	B	R	0.15	11.3	B	
Overall Intersection	-	-	0.58	53.2	D	-	0.88	55.2	E	-	0.80	38.2	D
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.72	36.7	D	L	0.62	31.9	C	L	0.75	38.4	D
Lenox Avenue	LT	0.43	24.3	C	LT	0.40	23.8	C	LT	0.29	21.8	C	
Lenox Avenue	R	0.30	13.4	B	R	0.59	18.7	B	R	0.43	15.3	B	
Lenox Avenue	SB	LTR	0.57	28.8	C	LTR	0.45	24.9	C	LTR	0.39	23.6	C
E. 145th Street	EB	LTR	0.91	37.6	D	LTR	0.87	33.1	C	LTR	0.90	36.1	D
E. 145th Street	WB	L	0.84	32.4	C	L	1.12	93.9	F	L	1.04	71.7	E
E. 145th Street	TR	0.93	35.2	D	TR	0.91	31.7	C	TR	0.77	20.7	C	
Overall Intersection	-	-	0.85	33.2	C	-	1.00	37.6	D	-	0.98	33.1	C
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit													
Exterior Street	NB	L	0.12	18.4	B	L	0.36	24.3	C	L	0.48	30.5	C
Exterior Street	T	0.30	19.8	B	T	0.51	23.1	C	T	0.47	22.3	C	
Exterior Street	SB	TR	0.36	20.6	C	TR	0.49	22.7	C	TR	0.57	24.3	C
East Garage (G2) Exit Only	WB	L	0.06	17.2	B	L	0.14	18.1	B	L	0.15	18.3	B
East Garage (G2) Exit Only	T	0.00	16.5	B	T	0.00	16.5	B	T	0.00	16.5	B	
East Garage (G2) Exit Only	R	0.27	20.1	C	R	0.59	26.9	C	R	0.67	29.8	C	
Overall Intersection	-	-	0.32	20.1	C	-	0.55	23.5	C	-	0.62	24.7	C
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance													
Exterior Street	NB	TR	0.32	17.4	B	TR	0.58	21.4	C	TR	0.54	20.7	C
Exterior Street	SB	L	0.27	10.3	B	L	0.85	35.3	D	L	0.87	36.4	D
Exterior Street	T	0.24	16.3	B	T	0.25	16.5	B	T	0.31	17.2	B	
West Garage Exit Only	EB	LTR	0.17	31.1	C	LTR	0.38	34.8	C	LTR	0.43	36.0	D
Overall Intersection	-	-	0.33	17.1	B	-	0.63	23.9	C	-	0.68	24.1	C
UNIGNALIZED													
EXTERIOR STREET													
22 Exterior Street at South Pocket Lot													
Exterior Street	SB	LT	0.00	8.6	A	LT	0.01	9.9	A	LT	0.01	9.7	A
South Pocket Lot	WB	LR	0.02	13.7	B	LR	0.03	18.4	C	LR	0.03	18.2	C
Overall Intersection	-	-	-	12.0	B	-	-	15.6	C	-	-	15.4	C
5 Exterior Street at E. 150th Street (Free flow)													
20 Exterior Street at South Truck Access													
Exterior Street	SB	LT	0.01	8.6	A	LT	0.01	10.0	B	LT	0.00	9.6	A
South Truck Access	WB	LR	0.03	13.0	B	LR	0.03	17.4	C	LR	0.01	19.3	C
Overall Intersection	-	-	-	11.1	B	-	-	15.4	C	-	-	18.9	C
21 Exterior Street at North Truck Access													
Exterior Street	NB	LT	0.00	8.6	A	LT	0.00	9.3	A	LT	0.00	9.8	A
Exterior Street	SB	LT	0.01	8.9	A	LT	0.01	11.2	B	LT	0.00	11.0	B
North Truck Access	EB	LR	0.04	30.0	D	LR	0.03	29.8	D	LR	0.01	29.7	D
North Truck Access	WB	LR	0.04	15.0	B	LR	0.06	28.4	D	LR	0.01	29.7	D
Overall Intersection	-	-	-	15.5	C	-	-	22.6	C	-	-	25.3	C
OTHER													
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.00	8.5	A	LT	0.00	8.5	A	LT	0.00	8.2	A
Pocket Lot Entry/Exit	EB	LR	0.02	13.5	B	LR	0.02	15.7	C	LR	0.02	12.0	B
E. 150th Street	WB	LTR	0.23	17.7	C	LTR	0.44	30.4	D	LTR	0.22	18.7	C
Overall Intersection	-	-	-	17.0	C	-	-	28.9	D	-	-	17.7	C
1b Grand Concourse at E. 138th Street													
E. 138th Street	EB	LT	0.23	9.9	A	LT	0.39	13.2	B	LT	0.27	10.6	B
Overall Intersection	-	-	-	9.9	A	-	-	13.2	B	-	-	10.6	B

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual - TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual - TRB.
- (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 10
BRONX TERMINAL MARKET - GAME DAY
BUILD 2014 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)						
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
SIGNALIZED															
GRAND CONCOURSE															
1a Grand Concourse at E. 138th Street															
Grand Concourse	SB	L	0.35	67.7	E	L	0.38	73.5	E	L	0.37	69.8	E		
	R		0.40	79.7	E	R	0.43	84.0	F	R	0.50	75.3	E		
E. 138th Street	EB	T	0.40	12.3	B	T	0.40	12.2	B	T	0.52	13.9	B		
	WB	T	0.45	13.0	B	T	0.41	12.5	B	T	0.53	14.3	B		
Overall Intersection	-	-	0.43	25.4	C	-	-	0.42	27.1	C	-	-	0.52	25.3	C
2 Grand Concourse at E. 149th Street															
Grand Concourse	NB	TR	1.06	60.6	E	TR	1.02	51.6	D	TR	1.03	52.3	D		
	SB	TR	1.09	73.9	E	TR	1.15	99.6	F	TR	1.17	103.0	F		
E. 149th Street	EB	TR	1.08	98.1	F	TR	0.87	52.3	D	TR	0.83	49.3	D		
	WB	TR	1.10	104.8	F	TR	0.84	50.6	D	TR	0.84	49.5	D		
Overall Intersection	-	-	1.09	81.2	F	-	-	1.07	64.6	E	-	-	1.08	67.7	E
11 Grand Concourse at E. 161st Street															
Grand Concourse	NB	LT	1.13	92.7	F	LT	0.74	21.3	C	LT	0.96	120.0+	F*		
	R		0.23	12.0	B	R	0.31	15.1	B	R	0.24	87.0	F		
Grand Concourse Main Road	SB	L	0.84	67.6	E	L	0.06	48.6	D	L	0.21	120.0+	F*		
	T		0.58	61.3	E	T	0.42	39.9	D	T	0.43	55.2	E		
Grand Concourse Service Road	SB	T	0.48	22.2	C	T	0.35	45.3	D	T	0.34	41.3	D		
	R		0.89	62.9	E	R	0.84	50.7	D	R	0.21	35.4	D		
E. 161st Street	EB	DefL	0.92	80.8	F	DefL	0.77	54.9	D	DefL	0.85	78.5	E		
	TR		1.00	84.6	F	TR	0.55	37.5	D	TR	0.89	78.9	E		
	WB	DefL	1.13	120.0+	F*	LTR	0.77	43.2	D	DefL	1.20+	120.0+	F*		
	TR		0.91	67.8	E	-	-	-	-	TR	1.20+	120.0+	F*		
Overall Intersection	-	-	1.10	75.5	E	-	-	0.81	36.0	D	-	-	1.19	120.0+	F*
RIVER AVENUE															
3 River Avenue and Exterior Street at E. 149th Street															
Major Deegan Expressway NB Off Ramp	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*		
River Avenue	SB	LTR	0.91	71.7	E	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*		
Exterior Street	NB	LTR	1.10	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	0.86	61.4	E		
	SB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*		
	TR		0.58	-5.9	D	TR	1.20+	120.0+	F*	TR	0.81	58.5	E		
E. 149th Street	EB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*		
	TR		1.10	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.00	68.8	E		
	WB	LTR	1.12	106.0	F	LTR	0.75	34.5	C	LTR	1.19	120.0+	F*		
Overall Intersection	-	-	1.20+	120.0+	F*	-	-	1.20+	120.0+	F*	-	-	1.20+	120.0+	F*
17 River Avenue at Garage 2 Exit Only															
River Avenue	NB	T	0.56	13.7	B	T	0.62	9.8	A	T	0.25	0.55	A		
	SB	T	0.11	9.2	A	T	0.08	5.6	A	T	0.63	31.6	C		
Garage 2 Exit Only	EB	L	0.30	21.6	C	L	0.33	17.3	B	L	0.71	43.9	D		
	R		0.14	19.6	B	R	0.16	15.5	B	R	0.68	43.4	D		
Overall Intersection	-	-	0.46	14.4	B	-	-	0.52	10.4	B	-	-	0.37	26.7	C
16 River Avenue at E. 151st Street / Garage 2 Entrance Only															
River Avenue	NB	LTR	0.96	36.6	D	LTR	1.06	57.7	E	LTR	0.75	120.0+	F*		
	SB	LTR	0.28	10.7	B	LTR	0.17	7.1	A	LTR	0.41	25.9	C		
E. 151st Street / Garage 2 Entrance Only	WB	LTR	0.32	30.2	C	LTR	0.33	21.5	C	LTR	0.30	21.0	C		
Overall Intersection	-	-	0.71	31.4	C	-	-	0.78	48.6	D	-	-	0.57	120.0+	F*
8 River Avenue at E. 153rd Street															
River Avenue	NB	LTR	1.08	80.3	F	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*		
	SB	LTR	0.76	23.8	C	LTR	0.73	19.3	B	LTR	1.02	71.8	E		
E. 153rd Street	EB	LTR	0.52	25.2	C	LTR	0.41	17.2	B	LTR	1.04	81.1	F		
	WB	LTR	0.42	24.9	C	LTR	0.46	19.7	B	LTR	0.93	81.4	F		
Overall Intersection	-	-	0.86	46.9	D	-	-	0.94	79.8	E	-	-	1.20+	120.0+	F*
9 River Avenue at E. 157th Street															
River Avenue	NB	TR	0.53	14.9	B	TR	0.52	11.3	B	TR	0.74	17.8	B		
	SB	LT	0.53	14.7	B	LT	0.56	12.1	B	Closed	-	-	-		
E. 157th Street	WB	LR	0.21	21.2	C	LR	0.11	13.8	B	LR	0.22	15.9	B		
Overall Intersection	-	-	0.41	15.2	B	-	-	0.39	11.8	B	-	-	0.54	17.6	B
10 River Avenue at E. 161st Street															
River Avenue	NB	LTR	0.73	28.8	C	LTR	1.20+	120.0+	F*	LTR	1.09	120.0+	F*		
	SB	LTR	0.61	22.5	C	LTR	0.99	73.9	E	R	1.09	120.0+	F*		
E. 161st Street Main Road	EB	T	0.15	14.0	B	T	0.24	45.1	D	T	0.86	120.0+	F*		
	WB	T	0.51	18.1	B	T	0.46	22.6	C	T	0.71	120.0+	F*		
E. 161st Street Service Road	EB	T	0.41	16.8	B	TR	0.78	34.5	C	Closed	-	-	-		
	R		0.37	39.5	D	-	-	-	-	-	-	-	-		
	WB	TR	0.47	17.9	B	TR	0.81	37.1	D	TR	1.02	78.1	E		
Overall Intersection	-	-	0.80	22.4	C	-	-	1.04	57.0	E	-	-	1.06	120.0+	F*
OTHER															
12 Jerome Avenue at E. 161st Street															
Jerome Avenue	NB	L	0.74	52.3	D	L	0.36	21.0	C	L	0.84	51.8	D		
	TR		1.17	117.3	F	T	0.73	28.7	C	T	0.61	24.2	C		
	-	-	-	-	-	R	0.99	60.3	E	R	0.58	23.9	C		
	SB	L	1.13	120.0+	F*	L	0.69	45.3	D	L	0.65	33.8	C		
	TR		0.84	39.4	D	TR	0.89	52.4	D	TR	0.90	45.7	D		
E. 161st Street	WB	L	0.66	20.7	C	LT	0.32	13.4	B	LT	1.03	55.3	E		
	LT		0.18	49.3	D	-	-	-	-	-	-	-	-		
Overall Intersection	-	-	0.89	75.9	E	-	-	0.62	37.7	D	-	-	0.97	44.0	D

TABLE A - 10
BRONX TERMINAL MARKET - GAME DAY
BUILD 2014 TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	Weekday PM (5:15PM - 6:15PM)				Saturday Midday (12PM - 1PM)				Saturday PM (4PM - 5PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
14 Jerome Avenue at Ogden Avenue													
Ogden Avenue	SB	LR	0.58	27.4	C	LR	0.88	43.1	D	LR	0.80	38.1	D
Jerome Avenue	EB	T	0.76	20.1	C	T	0.88	27.8	C	T	0.52	44.9	D
	WB	TR	0.44	11.5	B	TR	0.36	10.7	B	TR	0.69	41.2	D
Overall Intersection	-	-	0.69	17.9	B	-	0.88	26.5	C	-	0.73	41.4	D
13 E. 157th Street at Major Deegan Expressway NB Ramp													
Major Deegan Expressway NB Service Road	NB	T	0.94	45.4	D	T	1.05	72.6	E				
Major Deegan Expressway NB Off Ramp	NB	T	0.98	61.1	E	T	0.85	42.8	D	NA - (Free flow)	See Note (5)		
E. 157th Street	WB	R	0.57	32.1	C	R	0.43	29.6	C				
Overall Intersection	-	-	0.84	47.9	D	-	0.80	57.9	E				
15 Macombs Place at W. 155th Street													
Macombs Place	NB	L	0.92	79.9	E	L	0.70	56.6	E	L	0.97	84.4	F
	T		0.22	22.0	C	T	0.22	24.4	C	T	0.16	22.6	C
	SB	T	0.61	38.8	D	T	0.64	40.5	D	T	1.02	85.5	F
	R		0.72	27.6	C	R	0.72	28.0	C	R	0.97	51.1	D
W. 155th Street	EB	L	1.14	120.0+	F*	L	1.16	120.0+	F*	L	1.13	120.0+	F*
	R		0.18	15.9	B	R	0.11	15.6	B	R	0.18	15.4	B
Overall Intersection	-	-	0.82	84.0	F	-	0.78	61.3	E	-	0.97	82.0	F
4 Lenox Avenue at E. 145th Street													
Lenox Avenue	NB	L	0.60	30.8	C	L	0.74	34.5	C	L	0.56	26.4	C
	LT		0.42	24.2	C	LT	0.50	26.0	C	LT	0.30	21.6	C
	R		0.65	20.6	C	R	0.39	14.6	B	R	0.39	14.8	B
	SB	LTR	0.42	24.2	C	LTR	0.66	30.8	C	LTR	0.42	24.0	C
E. 145th Street	EB	LTR	1.04	62.6	E	LTR	0.78	28.0	C	LTR	1.06	74.3	E
	WB	L	0.64	21.2	C	L	0.57	17.2	B	L	0.75	23.8	C
	TR		0.67	16.9	B	TR	0.81	23.2	C	TR	0.98	40.2	D
Overall Intersection	-	-	0.85	36.1	D	-	0.78	25.5	C	-	0.85	42.7	D
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit													
Exterior Street	NB	L	0.40	27.2	C	L	0.59	42.4	D	L	0.15	18.9	B
	T		0.31	20.0	B	T	0.39	21.1	C	T	0.44	21.9	C
	SB	TR	0.58	24.4	C	TR	0.69	27.3	C	TR	0.34	20.4	C
East Garage (G2) Exit Only	WB	L	0.12	17.9	B	L	0.12	17.8	B	L	0.50	24.1	C
	T		0.00	16.5	B	T	0.00	16.5	B	T	0.00	16.5	B
	R		0.69	30.6	C	R	0.66	29.2	C	R	0.47	23.7	C
Overall Intersection	-	-	0.63	24.5	C	-	0.68	26.1	C	-	0.47	22.1	C
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance													
Exterior Street	NB	TR	0.55	20.9	C	TR	0.61	22.3	C	TR	0.46	19.4	B
	SB	L	0.91	40.4	D	L	0.90	44.2	D	L	0.62	17.8	B
	T		0.28	16.8	B	T	0.38	18.1	B	T	0.33	17.4	B
West Garage Exit Only	EB	LTR	0.36	35.9	D	LTR	0.39	39.5	D	LTR	0.28	32.9	C
Overall Intersection	-	-	0.70	25.2	C	-	0.69	26.3	C	-	0.48	19.5	B
UNSIGNALIZED													
EXTERIOR STREET													
22 Exterior Street at South Pocket Lot													
Exterior Street	SB	LT	0.01	9.6	A	LT	0.01	10.2	B	LT	0.00	9.4	A
South Pocket Lot	WB	LR	0.03	17.5	C	LR	0.04	21.7	C	LR	0.03	17.2	C
Overall Intersection	-	-	0.02	14.9	B	-	-	17.9	C	-	-	14.6	B
5 Exterior Street at E. 150th Street													
			(Free flow)				(Free flow)				(Free flow)		
20 Exterior Street at South Truck Access													
Exterior Street	SB	LT	0.01	9.6	A	LT	0.00	10.0	B	LT	0.00	9.3	A
South Truck Access	WB	LR	0.03	16.4	C	LR	0.01	21.4	C	LR	0.01	17.8	C
Overall Intersection	-	-	0.02	13.7	B	-	-	18.6	C	-	-	15.7	C
21 Exterior Street at North Truck Access													
Exterior Street	NB	LT	0.00	9.7	A	LT	0.00	10.5	B	LT	0.00	8.4	A
	SB	LT	0.01	10.0	A	LT	0.00	10.4	B	LT	0.00	10.2	B
North Truck Access	EB	LR	0.02	26.4	D	LR	0.01	26.6	D	LR	0.01	27.4	D
	WB	LR	0.04	21.7	C	LR	0.01	24.0	C	LR	0.01	30.0	D
Overall Intersection	-	-	0.01	18.5	C	-	-	20.4	C	-	-	22.2	C
OTHER													
6 River Avenue at E. 150th Street													
River Avenue	NB	LT	0.00	7.9	A	LT	0.00	7.6	A	LT	0.00	9.8	A
Pocket Lot Entry/Exit	EB	LR	0.02	13.9	B	LR	0.02	13.9	B	LR	0.03	21.3	C
E. 150th Street	WB	LTR	0.91	108.5	F	LTR	0.87	88.1	F	LTR	0.62	41.4	E
Overall Intersection	-	-	0.01	101.4	F	-	-	83.1	F	-	-	39.8	E
1b Grand Concourse at E. 138th Street													
E. 138th Street	EB	LT	0.46	15.2	C	LT	0.39	13.2	B	LT	0.65	21.8	C
Overall Intersection	-	-	0.42	15.2	C	-	-	13.2	B	-	-	21.8	C

Notes

- (1): Control delay is measured in seconds per vehicle.
- (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual - TRB.
- (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual - TRB.
- (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A-11
BRONX TERMINAL MARKET NON-GAME DAY 2009
WEEKDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures
	Mt.	Wkday	Control	LOS	Mt.	Wkday	Control	LOS	Mt.	Wkday	Control	LOS	
			Delay				Delay				Delay		
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse													
E. 138th Street													
	SB	L	0.39	72.0	E	L	0.39	72.0	E				
	R	R	0.39	72.2	E	R	0.39	72.2	E				
	EB	T	0.37	52.7	D	T	0.37	52.7	D				
	WB	T	0.31	53.1	D	T	0.31	53.1	D				
	Overall Intersection		0.37	57.6	E		0.37	57.6	E				
- Mitigation not required.													
2 Grand Concourse at E. 149th Street													
Grand Concourse													
E. 149th Street													
	NB	TR	1.01	51.8	D	TR	1.01	51.8	D				
	SB	TR	1.02	53.2	D	TR	1.06	56.6	E				
	EB	TR	0.95	66.7	E	TR	0.99	75.9	E				
	WB	TR	0.95	65.7	E	TR	0.99	73.1	E				
	Overall Intersection		1.00	58.3	E		1.04	65.8	E				
- Restripe both north and southbound approach to provide two 10 ft. wide through lanes and one 10 ft. wide shared through-right lane.													
- Modify signal timing (shift 2 s of green time from the NB/SB phase to the EB/WB phase).													
11 Grand Concourse at E. 161st Street													
Grand Concourse													
Grand Concourse Main Road													
Grand Concourse Service Road													
E. 161st Street													
	NB	LT	0.99	70.5	E	LT	1.00	79.8	E				
	R	R	0.68	35.9	D	R	0.68	36.4	D				
	SB	L	0.54	83.7	F	L	0.53	90.1	F				
	T	T	1.00	69.9	E	T	1.03	77.9	E				
	SB	R	0.75	42.7	D	T	0.77	44.6	D				
	R	R	0.89	57.6	E	R	0.89	57.6	E				
	EB	DeL	1.03	109.3	F	DeL	0.89	68.6	E				
	TR	TR	0.84	50.3	D	TR	0.84	50.4	D				
	WB	LTR	0.75	42.2	D	DeL	0.63	44.6	D				
	Overall Intersection		1.05	62.5	E		1.02	64.4	E				
Design modifications needed as follows -													
- Relocate the bus stop from near side to far side on the NB Grand Concourse approach.													
- Restripe NB approach to provide one 11 ft. wide exclusive left-turn lane, two 10 ft. wide through lanes and one 11 ft. wide exclusive right-turn lane.													
- Install a guide sign regarding the lane usage (exclusive left-turn only, through to main road, through to service road and exclusive right-turn only).													
- Modify signal timing (eliminate the 14 s NB protected phase, add 2 s of green time to the EB/WB phase, add 10 s of green time to the NB/SB phase, and add 2 s of all red time to the NB/SB phase).													
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp													
River Avenue													
Exterior Street													
E. 149th Street													
	NB	LTR	1.06	106.8	F	LTR	1.20+	120.0+	F*				
	SB	LTR	0.95	78.1	E	LTR	1.20+	120.0+	F*				
	NB	LTR	0.86	78.4	E	LTR	0.89	83.8	F				
	SB	DeL	0.78	66.9	E	DeL	1.20+	120.0+	F*				
	TR	TR	0.83	62.1	E	TR	0.95	80.5	F				
	EB	LTR	1.03	74.7	E	DeL	1.10	120.0+	F*				
	WB	LTR	0.97	64.6	E	TR	0.99	68.0	E				
	Overall Intersection		1.03	76.8	E		1.20+	120.0+	F*				
Option 1.													
- Widen the NB Deegan ramp to obtain two 12 ft. wide travel lanes.													
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).													

Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are needed as follows -

- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left-turn lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes, EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Rename the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

TABLE A-11
 BRONX TERMINAL MARKET NON-GAME DAY 2009
 WEEKDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009					CURRENT BUILD MITIGATED					Mitigation Measures	
	Weekday Midday (1PM - 2PM)		Weekday Midday (1PM - 2PM)		LOS	Weekday Midday (1PM - 2PM)		Weekday Midday (1PM - 2PM)		LOS		
	Mvt.	V/C	Control	Delay		Mvt.	V/C	Control	Delay			
17 River Avenue at Garage 2 Exit Only River Avenue Garage 2 Exit Only	NB	NA				NB	LTR	0.49	24.6	C	Option 2. - Apply the same mitigation measures as in Option 1. - Prohibit the left-turn movement on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street. (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). Option 3. (CONSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 4. (CONSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.	
	SB					SB	LTR	0.85	47.5	D		
	EB					NB	PeL	0.17	29.7	C		
						TR	L	0.20	29.9	C		
						SB	L	0.60	38.5	C		
						T		0.29	22.6	C		
						EB	L	0.75	41.3	D		
						WB	L	0.77	37.2	D		
						L		0.40	35.2	D		
						TR		0.94	59.7	E		
							0.81	40.0	D			
16 River Avenue at E. 151st Street River Avenue E. 151st Street	NB	NA				NB	LTR		37.3	D	Option 3. (CONSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Option 4. (CONSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.	
	SB					SB	LTR		38.3	D		
	WB					NB	R*		3.4	A		
						C			28.1	C		
						T			29.0	C		
						EB	L		36.9	D		
						TR			30.1	C		
						L			31.1	C		
						TR			40.4	D		
									38.3	D		
8 River Avenue at E. 153rd Street River Avenue E. 153rd Street	NB	NA				NB	LTR		38.3	D	Option 3. (CONSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Option 4. (CONSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.	
	SB					SB	LTR		38.5	D		
	WB					NB	R*		2.3	A		
						C			27.3	C		
						T			29.0	C		
						EB	L		37.4	D		
						TR			30.1	C		
						L			30.3	C		
						TR			40.7	D		
									38.3	D		
9 River Avenue at E. 157th Street River Avenue E. 157th Street	NB	NA				NB	LTR		10.4	B	Option 3. (CONSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Option 4. (CONSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.	
	SB					SB	LTR		10.0	A		
	WB					L			20.8	C		
						R			18.8	B		
									0.26	12.0		B
									0.54	14.0		B
						LTR			0.33	11.0		B
						LTR			0.10	26.5		C
									0.37	13.3		B
									0.74	22.3		C

TABLE A-11
BRONX TERMINAL MARKET NON-GAME DAY 2009
WEEKDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures		
	Weekday Midday (1PM - 2PM)		Control		Weekday Midday (1PM - 2PM)		Control		Weekday Midday (1PM - 2PM)		Control				
	Mt.	V/C	Delay	LOS	Mt.	V/C	Delay	LOS	Mt.	V/C	Delay	LOS			
10 River Avenue at E. 161st Street River Avenue	NB	L/TR	0.92	53.2	D	L/TR	1.13	113.4	F	L/TR	0.94	49.2	D	- Modify signal timing (shift 8 s of green time from EB/WB phase to NB/SB phase).	
	SB	L/TR	0.97	54.8	D	L/TR	1.01	65.8	F	L/TR	0.84	29.0	C		
	EB	T	0.18	13.7	B	T	0.18	13.7	B	T	0.22	18.9	B		
	WB	T	0.58	20.6	C	T	0.58	20.6	C	T	0.72	31.0	C		
	WB	TR	0.63	20.6	C	TR	0.63	20.6	C	TR	0.78	31.3	C		
Overall Intersection			0.55	20.4	C		0.55	20.4	C		0.68	30.3	C		
			0.80	32.0	C		0.88	41.4	D		0.87	32.3	C		
OTHER															
12 Jerome Ave at E. 161st Street Jerome Avenue	NB	L	0.30	19.8	B	L	0.30	19.8	B	L/T	0.49	20.9	C	Design modifications needed as follows: - Restripe NB line configuration from exclusive left, through, and through-right to left-through, through, and exclusive right, 11ft. wide each. - Shift SB centerline 5 ft. to the west by reducing the SB parking lane width from 13ft. to 8ft. to gain good transition for the NB traffic. [Measures reflect geometric improvements needed for other peak periods, otherwise mitigation not needed.]	
	SB	L	0.47	20.2	C	L	0.51	20.9	C	R	0.36	19.7	B		
	EB	L	0.37	21.9	C	L	0.40	23.2	C	L	0.34	20.7	C		
	WB	L	0.60	25.2	C	TR	0.60	25.2	C	TR	0.60	25.2	C		
	WB	L	0.50	17.1	B	L	0.50	17.1	B	L	0.50	17.1	B		
Overall Intersection			0.23	13.5	B		0.23	13.5	B		0.23	13.5	B		
			0.55	20.2	C		0.55	20.6	C		0.55	20.3	C		
14 Jerome Avenue at Ogden Avenue Ogden Avenue Jerome Avenue	SB	L/R	0.49	24.8	C	L/R	0.49	24.8	C					- Mitigation not required.	
	EB	T	0.43	12.9	B	T	0.49	13.8	B						
	WB	TR	0.30	10.7	B	TR	0.30	10.7	B						
	Overall Intersection			0.46	15.0	B		0.49	15.2	B					
				0.46	15.0	B		0.49	15.2	B					
13 E. 157th Street at Major Deegan Expressway NB Ramp Major Deegan Expressway NB Service Road Major Deegan Expressway NB Off Ramp E. 157th Street	NB	T	0.35	24.6	C	T	0.58	28.1	C	T	0.84	19.7	B	- Provide revised phasing plan with 60 s cycle (combine NB Major Deegan Expressway Service Road and NB Major Deegan Expressway Off Ramp into one phase). - Install a lane reduction transition marking/signage for NB receiving lanes. [Measures reflect geometric and operational improvements needed for other peak periods, otherwise mitigation not needed.]	
	SB	T	1.06	119.9	F	T	1.06	119.9	F						
	EB	R	0.48	30.6	C	R	0.53	31.5	C	R	0.34	13.5	B		
	WB	R	0.48	30.6	C	R	0.53	31.5	C	R	0.34	13.5	B		
	Overall Intersection			0.64	70.9	E		0.73	64.7	E		0.62	18.3		B
15 Macombs Place at W. 155th Street Macombs Place	NB	L	0.48	44.9	D	L	0.48	44.9	D	L	0.41	30.2	C	- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 90 s, and reduce the number of signal phases from 4 to 3).	
	SB	T	0.69	10.2	B	T	0.69	10.2	B	T	0.10	9.5	A		
	EB	R	1.05	70.4	E	R	1.06	81.3	F	TR	0.53	32.9	C		
	WB	L	0.77	42.0	D	L	0.80	43.8	D	L	0.74	30.1	C		
	Overall Intersection			0.12	11.0	B		0.12	11.0	B		0.19	19.4		B
Overall Intersection			0.55	45.2	D		0.57	49.6	D		0.73	24.9	C		
			0.55	45.2	D		0.57	49.6	D		0.73	24.9	C		
4 Lenox Avenue at E. 145th Street Lenox Avenue	NB	L	0.70	35.5	D	L	0.70	35.5	D					- Mitigation not required.	
	SB	L/T	0.42	24.1	C	L/T	0.42	24.1	C						
	EB	R	0.30	13.3	B	R	0.30	13.3	B						
	WB	L/TR	0.54	27.9	C	L/TR	0.54	27.9	C						
	Overall Intersection			0.82	29.7	C		0.82	31.0	C					
Overall Intersection			0.84	25.5	C		0.91	31.8	C						
			0.79	27.0	C		0.83	30.6	C						
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street	NB	L	0.12	18.3	B	L	0.12	18.3	B					- Mitigation not required.	
	SB	T	0.28	19.5	B	T	0.28	19.5	B						
	EB	TR	0.35	20.5	C	TR	0.35	20.5	C						
	WB	L	0.06	17.2	B	L	0.06	17.2	B						
	Overall Intersection			0.00	16.5	B		0.00	16.5	B					
Overall Intersection			0.27	20.1	C		0.27	20.1	C						
			0.31	19.9	B		0.31	19.9	B						

TABLE A-11
BRONX TERMINAL MARKET NON-GAME DAY 2009
WEEKDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street	NA				TR	0.30	17.1	B					- Mitigation not required.
	SB				L	0.26	10.1	B					
	EB				T	0.23	16.2	B					
	Overall Intersection				LTR	0.17	31.1	C					
UN SIGNALIZED EXTERIOR STREET													
	SB				LT	0.00	8.6	A					- Mitigation not required.
	WB				LR	0.02	13.5	B					
	Overall Intersection						11.9	B					
22 Exterior Street at South Pocket Lot Exterior Street South Pocket Lot	NA												- Mitigation not required.
	SB												
	WB												
	Overall Intersection												
6 Exterior Street at E150th Street Exterior Street E. 150th Street	NA												- Mitigation not required.
	SB												
	WB												
	Overall Intersection												
20 Exterior Street at South Truck Access Exterior Street South Truck Access	NA												- Mitigation not required.
	SB												
	WB												
	Overall Intersection												
21 Exterior Street at North Truck Access Exterior Street North Truck Access	NA												- Mitigation not required.
	SB												
	WB												
	Overall Intersection												
OTHER 6 River Avenue at E. 150th Street River Avenue Pocket Lot Entry/Exit E. 150th Street	NA												- Prohibit marking on the north side of the WB 150th Street approach 120 ft. from intersection. - Re-strip WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane. [Measures reflect geometric improvements needed for Cameday peak periods, otherwise mitigation not needed.]
	SB												
	WB												
	Overall Intersection												
1b Grand Concourse at E. 138th Street E. 138th Street	NA												- Mitigation not required.
	SB												
	WB												
	Overall Intersection												

Notes
 (1): Control delay is measured in seconds per vehicle.
 (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/vsh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB
 (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/vsh) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB
 (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
 (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A-12
BRONX TERMINAL MARKET NON-GAME DAY 2009
WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures	
	Weekday PM Peak Hour (SPM-6PM)		Control		Weekday PM Peak Hour (SPM-6PM)		Control		Weekday PM Peak Hour (SPM-6PM)		Control			
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
SIGNALIZED														
GRAND CONCOURSE														
1a Grand Concourse at E. 138th Street														
Grand Concourse	SB	L	0.36	71.9	E	L	0.36	71.9	E	TR	0.97	34.1	C	B
	R	0.40	74.8	E	R	0.40	74.8	E	TR	1.03	55.5	E	B	
	EB	T	0.49	54.3	D	T	0.49	54.3	D	TR	0.98	69.5	E	E
	WB	T	0.53	55.5	E	T	0.53	55.5	E	TR	1.06	89.0	F	E
Overall Intersection			0.49	58.4	E		0.49	58.4	E		0.80	35.8	D	
2 Grand Concourse at E. 149th Street														
Grand Concourse	NB	TR	0.97	34.1	C	TR	0.97	34.1	C	TR	0.67	13.7	B	
	SB	TR	0.95	35.3	D	TR	1.03	55.5	E	TR	0.72	15.6	B	
	EB	TR	0.91	57.3	E	TR	0.98	69.5	E	TR	0.93	57.2	E	
	WB	TR	0.99	70.3	E	TR	1.06	89.0	F	TR	1.00	69.3	E	
Overall Intersection			0.97	47.2	D		1.04	59.2	E		0.80	35.8	D	
11 Grand Concourse at E. 161st Street														
Grand Concourse	NB	LT	1.07	68.7	E	LT	1.09	74.4	E	L	0.40	19.1	B	
	R	0.21	12.1	B	R	0.21	12.2	B	R	1.05	63.0	E		
	SB	L	0.90	93.3	F	L	0.90	93.3	F	T	0.23	14.4	B	
	SR	T	0.99	61.6	E	T	1.04	75.2	E	L	0.80	63.2	E	
	R	0.33	19.2	B	R	0.33	19.5	B	T	0.92	40.6	D		
	R	0.78	45.3	D	R	0.78	45.3	D	R	0.31	14.6	B		
	EB	De/L	1.00	96.4	F	De/L	1.11	120.0+	F*	R	0.69	31.2	C	
	WB	TR	0.93	68.5	E	TR	0.93	68.5	E	De/L	1.01	93.6	F	
	WB	LTR	1.00	81.4	F	De/L	0.95	90.4	F	TR	0.84	51.7	D	
						De/L	1.07	109.7	F	TR	0.83	62.7	E	
										TR	0.97	75.2	E	
Overall Intersection			1.09	66.4	E		1.16	76.4	E		1.03	55.0	D	
RIVER AVENUE														
3 River Avenue and Exterior Street at E. 149th Street														
Major Deegan Expressway, NB Off Ramp	NB	LTR	1.02	92.7	F	LTR	1.20+	120.0+	F*	LTR	0.84	42.5	D	
River Avenue	SB	LTR	0.72	53.0	D	LTR	1.16	120.0+	F*	LTR	0.80	46.3	D	
Exterior Street	NR	LTR	0.75	54.2	D	LTR	0.78	56.6	E	De/L	0.68	42.8	D	
	SR	De/L	0.67	58.9	E	De/L	1.20+	120.0+	F*	TR	0.30	33.8	C	
	EB	TR	0.40	41.3	D	TR	0.66	49.4	D	L	0.73	41.0	D	
	WB	LTR	1.06	100.7	F	De/L	1.20+	120.0+	F*	T	0.15	26.6	C	
						TR	1.20+	120.0+	F*	L	0.86	39.2	D	
						TR	1.20+	120.0+	F*	TR	0.73	27.2	C	
						LTR	0.99	64.2	E	L	0.30	29.0	D	
Overall Intersection			0.97	74.1	E		1.20+	120.0+	F*		0.84	41.1	D	

Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are needed as follows:

- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left-turn lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes, EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Closewise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

Options 1:

- Widen the NB Deegan ramp to obtain two 12 ft. wide travel lanes.
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).

TABLE A-12
 BRONX TERMINAL MARKET NON-GAME DAY 2009
 WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures			
	Weekday PM Peak Hour (SPM-4PM)		Control		Weekday PM Peak Hour (SPM-4PM)		Control		Weekday PM Peak Hour (SPM-4PM)		Control					
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS				
17 River Avenue at Garage 2 Exit Only River Avenue Change 2 Exit Only	NB	NA											Option 2. - Apply the same mitigation measures as in Option 1. - Prohibit the left-turn movement on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street. (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). Option 3. - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 4. - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.			
	SB															
	EB															
	Overall Intersection															
	16 River Avenue at E. 151st Street River Avenue	NB	0.33	20.1	C	LTR	0.98	54.0	D	LTR	0.94	44.0		D	- Modify signal timing (shift 2 s of green time from WB phase to NB/SB phase). - Mitigation not required.	
	SB	0.30	20.1	C	LTR	0.31	19.7	B	LTR	0.29	18.5	B				
	WB	0.12	26.7	C	LTR	0.18	27.6	C	LTR	0.19	28.9	C				
	Overall Intersection	0.25	20.5	C		0.66	44.2	D		0.66	36.9	D				
	8 River Avenue at E. 153rd Street River Avenue	NB	0.73	20.7	C	LTR	1.20+	120.0+	F	LTR	0.99	42.3		D		- Modify signal timing (shift 11 s of green time from EB/WB phase to NB/SB phase). - Mitigation not required.
	SB	0.34	11.7	B	LTR	0.43	13.0	B	LTR	0.35	6.9	A				
WB	0.25	20.5	C	LTR	0.38	22.2	C	LTR	0.59	34.2	C					
Overall Intersection	0.35	22.9	C	LTR	0.37	23.1	C	LTR	0.45	36.8	D					
9 River Avenue at E. 157th Street River Avenue	NB	0.58	19.1	B		0.91	83.8	F		0.89	33.6	C				
SB	0.48	13.7	B	TR	0.68	18.3	B									
WB	0.35	11.9	B	LT	0.44	13.1	B									
Overall Intersection	0.07	18.9	B	LR	0.07	18.9	B									
Overall Intersection	0.32	13.2	B		0.44	16.4	B									

TABLE A-12
 BRONX TERMINAL MARKET NON-GAME DAY 2009
 WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009					BUILD 2009					CURRENT BUILD MITIGATED				
	Weekday PM Peak Hour (SPM-6PM)		Control		LOS	Weekday PM Peak Hour (SPM-6PM)		Control		LOS	Weekday PM Peak Hour (SPM-6PM)		Control		LOS
	Mvt.	V/C	Delay	Mvt.		V/C	Delay	Mvt.	V/C		Delay	Mvt.	V/C	Delay	
10 River Avenue at E. 161st Street River Avenue	NB	LTR	0.92	53.5	D	LTR	1.20	120.0	P	LTR	0.96	49.3	D		
	SB	LTR	0.85	38.8	D	LTR	0.97	57.2	E	LTR	0.80	27.6	C		
	EB	T	0.22	14.1	B	T	0.22	14.1	B	T	0.27	19.4	B		
	WB	T	0.47	17.1	B	T	0.58	17.1	B	T	0.58	24.1	C		
	WB	TR	0.62	20.6	C	TR	0.63	20.8	C	TR	0.77	31.7	C		
OTHER	Overall Intersection		0.77	36.3	C		0.98	56.1	E		0.88	31.3	C		
12 Jerome Ave at E. 161st Street Jerome Avenue	NB	L	0.69	44.3	D	L	0.69	44.3	D	L	0.90	40.6	D		
	SB	TR	0.95	53.2	D	TR	1.14	109.4	F	R	0.35	13.6	B		
	EB	L	0.53	33.0	C	L	0.53	33.0	C	L	0.42	19.8	B		
	WB	TR	0.94	55.8	E	TR	0.94	55.8	E	TR	0.74	25.4	C		
	WB	L	0.69	22.2	C	L	0.69	22.2	C	L	0.88	49.2	D		
14 Jerome Avenue at Ogden Avenue Ogden Avenue Jerome Avenue	Overall Intersection		0.50	21.2	C		0.50	21.2	C		0.64	36.1	D		
13 E. 157th Street at Major Deegan Expressway NB Ramp Major Deegan Expressway NB Service Road Major Deegan Expressway NB Off Ramp E. 157th Street	Overall Intersection		0.80	41.1	D		0.89	60.9	E		0.89	33.2	C		
15 Macombs Place at W. 155th Street Macombs Place	Overall Intersection		0.77	53.6	D		0.96	62.9	E		0.73	18.9	B		
4 Lenox Avenue at E. 145th Street Lenox Avenue	Overall Intersection		0.83	43.8	D		0.86	50.9	D		0.88	33.1	C		
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street	Overall Intersection		0.75	25.7	C		0.92	33.8	C		0.82	28.3	C		

- Prohibit parking on the east side of the NB River Avenue approach 120 ft. from the intersection.
 - Modify signal timing (shift 8 s of green time from EB/WB phase to NB/SB phase).

- Design modifications needed as follows:
 - Restripe NB lane configuration from exclusive left through and through-right to left-through through and exclusive right, 11 ft. wide each.
 - Shift SB centerline 5 ft. to the west by reducing the SB parking lane width from 13 ft. to 8 ft. to gain good transition for the NB traffic.
 - Modify signal timing (shift 10 s of green time from WB phase to NB/SB phase).

- Mitigation not required.

- Provide revised phasing plan with 60 s cycle (combine NB Major Deegan Expressway Service Road and NB Major Deegan Expressway Off Ramp into one phase).
 - Install a lane reduction transition marking/signage for NB receiving lanes.

- Provide revised signal timing and phasing plan. (Reduce the cycle length from 120 s to 90 s, and reduce the number of signal phases from 4 to 3).

- Modify signal timing (shift 4 s of green time from NB/SB phase to WB lead phase).

- Mitigation not required.

TABLE A-12
BRONX TERMINAL MARKET NON-GAME DAY 2009
WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009					BUILD 2009					CURRENT BUILD MITIGATED					
	Weekday PM Peak Hour (5PM-6PM)					Weekday PM Peak Hour (5PM-6PM)					Weekday PM Peak Hour (5PM-6PM)					
	Mvt.	V/C	Delay	LOS	Control	Mvt.	V/C	Delay	LOS	Control	Mvt.	V/C	Delay	LOS	Control	
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street West Garage Exit Only Overall Intersection	TR	0.55	21.0	C		TR	0.55	21.0	C		TR	0.55	21.0	C		
	L	0.82	31.2	C		L	0.82	31.2	C		L	0.82	31.2	C		
	T	0.24	16.3	B		T	0.24	16.3	B		T	0.24	16.3	B		
	LTR	0.38	34.8	C		LTR	0.38	34.8	C		LTR	0.38	34.8	C		
		0.6	23.1	C			0.6	23.1	C			0.6	23.1	C		
UN SIGNALIZED																
22 Exterior Street at South Pocket Lot Exterior Street South Pocket Lot Overall Intersection	LT	0.01	9.8	A		LT	0.01	9.8	A		LT	0.01	9.8	A		
	LR	0.03	17.5	C		LR	0.03	17.5	C		LR	0.03	17.5	C		
(Free flow)																
5 Exterior Street at E. 150th Street Exterior Street E. 150th Street Overall Intersection	LT	0.00	8.2	A		LT	0.00	8.2	A		LT	0.00	8.2	A		
	LR	0.02	8.3	A		LR	0.02	8.3	A		LR	0.02	8.3	A		
	LTR	0.01	17.2	C		LTR	0.01	17.2	C		LTR	0.01	17.2	C		
	LTR	0.25	13.9	B		LTR	0.25	13.9	B		LTR	0.25	13.9	B		
			9.1	A				9.1	A				9.1	A		
Overall Intersection																
20 Exterior Street at South Truck Access Exterior Street South Truck Access Overall Intersection	LT	0.01	9.8	A		LT	0.01	9.8	A		LT	0.01	9.8	A		
	LR	0.03	16.7	C		LR	0.03	16.7	C		LR	0.03	16.7	C		
				13.9	B				13.9	B				13.9	B	
Overall Intersection																
21 Exterior Street at North Truck Access Exterior Street North Truck Access Overall Intersection	LT	0.00	9.1	A		LT	0.00	9.1	A		LT	0.00	9.1	A		
	LR	0.01	11.0	B		LR	0.01	11.0	B		LR	0.01	11.0	B		
	LTR	0.03	29.0	D		LTR	0.03	29.0	D		LTR	0.03	29.0	D		
	LTR	0.06	29.8	D		LTR	0.06	29.8	D		LTR	0.06	29.8	D		
			23.0	C				23.0	C				23.0	C		
Overall Intersection																
OTHER																
6 River Avenue at E. 150th Street River Avenue Pocket Lot Entry/Exit E. 150th Street Overall Intersection	LT	0.06	7.9	A		LT	0.06	7.9	A		LT	0.00	8.5	A		
	LR	0.07	16.1	C		LR	0.07	16.1	C		LR	0.02	15.4	C		
	LTR	0.36	24.2	C		LTR	0.36	24.2	C		LTR	0.41	25.5	D		
			10.5	B				10.5	B				27.1	D		
Overall Intersection																
1b Grand Concourse at E. 138th Street E. 138th Street Overall Intersection	LT	0.38	12.8	B		LT	0.38	12.8	B		LT	0.38	12.8	B		
				12.8	B				12.8	B				12.8	B	
Overall Intersection																

Notes:
 (1) Control delay is measured in seconds per vehicle.
 (2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each line group as listed in the 2000 Highway Capacity Manual -- TRB.
 (3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB.
 (4) Overall intersection V/C ratio is the critical line groups' V/C ratio, not the weighted average of all the movements.
 (5) During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

Mitigation Measures

- Mitigation not required.

TABLE A - 13
BRONX TERMINAL MARKET NON-GAME DAY 2009
SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009			BUILD 2009			CURRENT BUILD MITIGATED			Mitigation Measures
	Mt.	V/C	Control	Mt.	V/C	Control	Mt.	V/C	Control	
	Delay	LOS	Control	Delay	LOS	Control	Delay	LOS	Control	
SIGNALIZED										
GRAND CONCOURSE										
1a Grand Concourse at E. 138th Street	SB	L	0.52	80.0	F	L	0.52	80.0	F	
Grand Concourse	EB	R	0.58	80.5	F	R	0.58	80.5	F	
E. 138th Street	WB	T	0.48	33.6	C	T	0.48	33.6	C	
Overall Intersection			0.51	45.3	D		0.51	45.3	D	
2 Grand Concourse at E. 149th Street	NB	TR	1.05	65.1	E	TR	1.05	65.1	E	
Grand Concourse	EB	TR	0.93	62.4	E	TR	0.93	62.4	E	
E. 149th Street	WB	TR	0.95	64.9	E	TR	0.95	64.9	E	
Overall Intersection			1.02	63.3	E		1.02	63.3	E	
11 Grand Concourse at E. 161st Street	NB	LJ	0.51	17.1	B	LJ	0.53	17.5	B	
Grand Concourse	SB	L	0.71	52.4	D	L	0.71	52.4	D	
Grand Concourse Main Road	SB	T	0.62	52.9	D	T	0.67	57.3	E	
Grand Concourse Service Road	EB	R	0.37	52.3	D	R	0.42	55.4	E	
E. 161st Street	WB	LTR	0.82	44.2	D	De/L	0.85	60.8	E	
						TR	0.82	48.2	D	
						De/L	0.92	79.6	E	
						TR	0.89	63.5	E	
Overall Intersection			0.73	43.0	D		0.73	46.9	D	
MITIGATION MEASURES										
<ul style="list-style-type: none"> - Mitigation not required. - Restripe both north and southbound approach to provide two 10 ft. wide through lanes and one 10 ft. wide shared through-right lane. - Modify signal timing (shift 3 s of green time from the NB/SB phase to the EB/WB phase). - Restripe the bus stop from near side to far side on the NB Grand Concourse. - Restripe NB approach to provide one 11 ft. wide exclusive left-turn lane, two 10 ft. wide through lanes and one 11 ft. wide exclusive right-turn lane. - Install a guide sign regarding the lane usage (exclusive left-turn only, through to main road, through to service road and exclusive right-turn only). - Modify signal timing (eliminate the 14 s NB protected phase, add 9 s of green time to the EB/WB phase, add 3 s of green time to the NB/SB phase, and add 2 s of all red time to the NB/SB phase). - Design modifications needed as follows: <ul style="list-style-type: none"> - Restripe the bus stop from near side to far side on the NB Grand Concourse. - Restripe NB approach to provide one 11 ft. wide exclusive left-turn lane, two 10 ft. wide through lanes and one 11 ft. wide exclusive right-turn lane. - Install a guide sign regarding the lane usage (exclusive left-turn only, through to main road, through to service road and exclusive right-turn only). - Modify signal timing (eliminate the 14 s NB protected phase, add 9 s of green time to the EB/WB phase, add 3 s of green time to the NB/SB phase, and add 2 s of all red time to the NB/SB phase). 										
<p>Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are needed as follows:</p> <ul style="list-style-type: none"> - Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left-turn lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes. - Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides. - Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes. EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane. - Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes. - Route the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic. 										
OPINION 1:										
<ul style="list-style-type: none"> - Widened the NB Deegan ramp to obtain two 12 ft. wide travel lanes. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s). 										
3 River Avenue and Exterior Street at E. 149th Street	NB	LTR	1.01	91.6	F	LTR	1.20+	120.0+	F*	
Major Deegan Expressway NB Off Ramp	SB	LTR	0.66	51.5	D	LTR	1.20+	120.0+	F*	
River Avenue	NB	LTR	0.53	51.2	D	LTR	0.54	52.6	D	
Exterior Street	SB	De/L	0.67	56.6	E	De/L	1.13	120.0+	F*	
	EB	TR	0.73	57.0	E	TR	1.14	120.0+	F*	
E. 149th Street	WB	LTR	1.04	76.7	E	De/L	1.20+	120.0+	F*	
						TR	1.20+	120.0+	F*	
Overall Intersection			0.93	73.9	E		1.20+	120.0+	F*	

TABLE A-13
BRONX TERMINAL MARKET NON-GAME DAY 2009
SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures	
	Saturday Midday (PM - 2PM)		Control		Saturday Midday (PM - 2PM)		Control		Saturday Midday (PM - 2PM)		Control			
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
17 River Avenue at Garage 2 Exit Only River Avenue Garage 2 Exit Only	NB	NA			T	0.32	7.9	A	NB	LTR	0.58	26.0	D	Option 2. - Apply the same mitigation measures as in Option 1. - Prohibit the left-turn movement on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street. (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). Option 3. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 4. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.
	SB				T	0.13	6.7	A	SB	LTR	0.82	49.7	D	
	EB				L	0.62	21.3	C	NB	DefL	0.13	33.8	C	
	Overall Intersection				R	0.19	14.4	B	NB	TR	0.07	33.4	C	
						0.44	12.2	B	SB	L	0.70	32.7	C	
									EB	L	0.19	21.5	C	
									EB	L	0.88	48.5	D	
									WB	L	0.63	28.3	C	
									WB	L	0.40	33.7	C	
									WB	TR	0.95	38.9	E	
										0.86	39.2	D		
16 River Avenue at E. 151st Street River Avenue E. 151st Street	NB	0.16	12.3	B	LTR	0.81	26.1	C	NB	LTR	0.58	26.0	D	Option 3. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Option 4. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.
	SB	0.24	13.5	B	LTR	0.29	13.6	B	SB	L	0.82	49.7	D	
	WB	0.09	18.2	B	LTR	0.16	19.0	B	NB	DefL	0.13	33.8	C	
	Overall Intersection					0.56	22.2	C	NB	TR	0.07	33.4	C	
									SB	L	0.70	32.7	C	
									EB	L	0.19	21.5	C	
									EB	L	0.88	48.5	D	
									WB	L	0.63	28.3	C	
									WB	L	0.40	33.7	C	
									WB	TR	0.95	38.9	E	
										0.86	39.2	D		
8 River Avenue at E. 153rd Street River Avenue E. 153rd Street	NB	0.29	8.1	A	LTR	0.81	20.1	C	NB	LTR	0.58	26.0	D	Option 3. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Option 4. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.
	SB	0.26	7.9	A	LTR	0.37	9.0	A	SB	LTR	0.82	49.7	D	
	WB	0.23	14.5	B	LTR	0.40	16.0	B	NB	DefL	0.13	33.8	C	
	Overall Intersection					0.65	16.3	B	NB	TR	0.07	33.4	C	
									SB	L	0.70	32.7	C	
									EB	L	0.19	21.5	C	
									EB	L	0.88	48.5	D	
									WB	L	0.63	28.3	C	
									WB	L	0.40	33.7	C	
									WB	TR	0.95	38.9	E	
										0.86	39.2	D		
9 River Avenue at E. 157th Street River Avenue E. 157th Street	NB	0.26	7.9	A	TR	0.48	10.3	B	NB	LTR	0.58	26.0	D	Option 3. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Option 4. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.
	SB	0.27	8.0	A	LT	0.37	9.0	A	SB	LTR	0.82	49.7	D	
	WB	0.08	13.4	B	LR	0.08	13.4	B	NB	DefL	0.13	33.8	C	
	Overall Intersection					0.32	9.9	A	NB	TR	0.07	33.4	C	
									SB	L	0.70	32.7	C	
									EB	L	0.19	21.5	C	
									EB	L	0.88	48.5	D	
									WB	L	0.63	28.3	C	
									WB	L	0.40	33.7	C	
									WB	TR	0.95	38.9	E	
										0.86	39.2	D		

TABLE A-13
 BRONX TERMINAL MARKET NON-GAME DAY 2009
 SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009					BUILD 2009					CURRENT BUILD MITIGATED						
	Saturday Midday (1PM - 2PM)		Control		LOS	Saturday Midday (1PM - 2PM)		Control		LOS	Saturday Midday (1PM - 2PM)		Control		LOS		
	Mvt.	V/C	Delay	Mvt.		V/C	Delay	Mvt.	V/C		Delay	Mvt.	V/C	Delay		Mvt.	V/C
10 River Avenue at E. 161st Street River Avenue	NB	LTR	0.62	21.8	C	LTR	1.17	119.9	F	LTR	0.87	35.6	D				
	SB	LTR	0.61	21.4	C	LTR	0.79	31.1	C	LTR	0.79	31.1	C				
	EB	T	0.36	11.1	B	T	0.36	11.1	B	T	0.36	11.1	B				
	WB	T	0.57	13.7	B	T	0.57	13.7	B	T	0.57	13.7	B				
	WB	TR	0.70	17.2	B	TR	0.72	17.6	B	TR	0.72	17.6	B				
Overall Intersection			0.66	16.5	B		0.92	34.3	C		0.79	20.5	C			- Prohibit parking on the east side of NB River Avenue approach 120 ft. from intersection.	
OTHER																	
12 Jerome Ave at E. 161st Street Jerome Avenue	NB	L	0.35	20.7	C	L	0.35	20.7	C	LT	0.50	21.0	C				
	SB	TR	0.94	51.1	D	TR	1.14	110.7	F	R	0.57	24.3	C				
	EB	L	0.23	40.4	D	L	0.23	40.4	D	L	0.23	40.4	D				
	WB	TR	0.58	53.0	D	TR	0.58	53.0	D	TR	0.58	53.0	D				
	WB	L	0.49	39.5	D	L	0.49	39.5	D	L	0.49	39.5	D				
Overall Intersection			0.69	43.2	D		0.78	68.2	F		0.53	32.1	C			- Restripe NB lane configuration from exclusive left, through, and through-right to left-through, through, and exclusive right, 11ft. wide each. - Shift SB exclusive left lane to the west by reducing the SB parking lane width from 13ft. to 8ft. to gain good transition for the NB traffic.	
14 Jerome Avenue at Ordan Avenue Jerome Avenue	SB	LR	0.50	24.8	C	LR	0.50	24.8	C								
	EB	T	0.42	12.5	B	T	0.54	14.5	B								
	WB	TR	0.33	10.9	B	TR	0.33	10.9	B								
	Overall Intersection			0.45	14.9	B		0.53	15.4	B							- Mitigation not required.
	Overall Intersection			0.59	42.9	D		0.79	47.1	D							- Provide revised phasing plan with 60 s cycle (combine NB Major Deegan Expressway Service Road and NB Major Deegan Expressway Off Ramp into one phase). - Install a lane reduction transition marking/signage for NB receiving lanes. [Measures reflect geometric and operational improvements needed for other peak periods, otherwise mitigation not needed.]
15 Macombs Place at W. 155th Street Macombs Place	NB	L	0.39	42.9	D	L	0.39	42.9	D	L	0.4	33.4	C				
	SB	T	0.26	11.6	B	T	0.26	11.6	B	T	0.27	10.3	B				
	EB	R	0.78	42.5	D	T	0.78	42.5	D	T	0.87	43.3	D				
	WB	R	0.57	19.4	B	R	0.59	19.9	B	R	0.45	5.7	A				
	Overall Intersection			0.75	31.7	C		0.78	36.1	D		0.80	25.9	C			- Provide revised signal timing and phasing plan. (Reduce the cycle length from 120 s to 90 s, and reduce the number of signal phases from 4 to 3.)
4 Lenox Avenue at E. 145th Street Lenox Avenue	NB	L	0.72	36.7	D	L	0.72	36.7	D	L	0.8	43.1	D				
	SB	LT	0.29	21.7	C	LT	0.29	21.7	C	LT	0.3	23.4	C				
	EB	R	0.42	15.2	B	R	0.42	15.2	B	R	0.4	13.8	B				
	WB	LTR	0.38	23.5	C	LTR	0.38	23.5	C	LTR	0.4	25.5	C				
	Overall Intersection			0.69	40.8	D		0.88	34.2	C		0.9	41.4	D			- Modify signal timing (shift 2 s of green time from the EB/WB phase to the WB lead phase and 2 s of green time from the NB/SSB phase to the WB lead phase).
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street	NB	L	0.60	15.4	B	TR	0.75	19.9	B	TR	0.7	17.6	B				
	SB	L	0.69	15.4	B	L	1.01	63.0	E	L	0.8	37.9	D				
	WB	TR	0.60	15.4	B	TR	0.75	19.9	B	TR	0.7	17.6	B				
	Overall Intersection			0.78	25.4	C		0.91	31.1	C		0.9	31.0	C			- Mitigation not required.
	Overall Intersection			0.62	24.4	C		0.62	24.4	C							

TABLE A - 13
BRONX TERMINAL MARKET NON-GAME DAY 2009
SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures	
	Saturday Midday (1PM - 2PM)		Control		Saturday Midday (1PM - 2PM)		Control		Saturday Midday (1PM - 2PM)		Control			
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street West Garage Exit Only Overall Intersection	NB	NA			TR	0.51	20.3	C					- Mitigation not required.	
	SB				L	0.84	32.1	C						
	EB				T	0.30	17.0	B						
	Overall Intersection				LTR	0.43	36.0	D						
UNIGNALIZED														
22 Exterior Street at South Pocket Lot Exterior Street South Pocket Lot Overall Intersection	NB	NA			LT	0.00	9.5	A					- Mitigation not required.	
	SB				LR	0.03	17.2	C						
	EB													
	Overall Intersection						14.6	B						
(Free flow)														
5 Exterior Street at E. 150th Street Exterior Street E. 150th Street Overall Intersection	NB	LTR	0.01	8.2	A								- Mitigation not required.	
	SB	LTR	0.02	8.0	A									
	EB	LTR	0.00	10.1	B									
	Overall Intersection											8.7		A
(Free flow)														
20 Exterior Street at South Truck Access Exterior Street South Truck Access Overall Intersection	NB	NA			LT	0.00	9.5	A					- Mitigation not required.	
	SB				LR	0.01	18.5	C						
	EB													
	Overall Intersection											16.3		C
(Free flow)														
21 Exterior Street at North Truck Access Exterior Street North Truck Access Overall Intersection	NB	NA			LT	0.00	9.6	A					- Mitigation not required.	
	SB				LT	0.00	10.8	B						
	EB				LR	0.01	29.0	D						
	Overall Intersection				LR	0.01	29.3	D						
(Free flow)														
6 River Avenue at E. 150th Street River Avenue Pocket Lot Entry/Exit E. 150th Street Overall Intersection	NB	LT	0.06	7.8	A	LT	0.00	8.2	A	LT	0.00	8.2	A	- Prohibit parking on the north side of the WB 150th Street approach (20 ft. from the intersection). - Restripe WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane. [Measures reflect geometric improvements needed for Gameday peak periods, otherwise mitigation not needed.]
	SB	LR	0.09	14.2	B	LR	0.02	11.9	B	LR	0.02	11.9	B	
	EB	LTR	0.16	14.9	B	LTR	0.21	18.3	C	L	0.19	18.8	C	
	Overall Intersection									TR	0.02	11.8	B	
(Free flow)														
1b Grand Concourse at E. 138th Street E. 138th Street Overall Intersection	NB	LT	0.26	10.4	B	LT	0.26	10.4	B				- Mitigation not required.	
	SB													
	EB													
	Overall Intersection											10.4		B

Notes
(1): Control delay is measured in seconds per vehicle.
(2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual - TRB
(3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor approach as listed in the 2000 Highway Capacity Manual - TRB
(4): Overall intersection V/C ratio is the critical lane group's V/C ratio, not the weighted average of all the movements.
(5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 14
BRONX TERMINAL MARKET GAME DAY 2009
WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures
	Weekday PM (5:15PM - 6:15PM)		Control Delay		Weekday PM (5:15PM - 6:15PM)		Control Delay		Weekday PM (5:15PM - 6:15PM)		Control Delay		
	Mvt.	V/C	LOS	Mvt.	V/C	Mvt.	V/C	LOS	Mvt.	V/C	LOS		
17 River Avenue at Carriage 2 Exit Only River Avenue Carriage 2 Exit Only	NB	NA		T	0.54	13.4	B	NB	LTR	0.84	69.1	E	<p>Option 2:</p> <ul style="list-style-type: none"> Apply the same mitigation measures as in Option 1. Prohibit the left-turn movement on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street. (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). <p>(CORSDM Results)</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Widen the NB Diagonal ramp to obtain two full 12 ft. wide travel lanes. <p>Option 3:</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Widen the NB Diagonal ramp to obtain two full 12 ft. wide travel lanes. <p>Option 4:</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue).
	SB			T	0.11	9.2	A	SB	LTR	0.69	41.3	D	
	EB			L	0.30	21.6	C	EB	DoLL	0.29	34.5	C	
				R	0.14	19.6	B	SR	TR	0.27	34.3	D	
	Overall Intersection				0.45	14.3	B	L		0.82	48.0	D	
								T		0.11	24.8	C	
								L		0.93	97.0	F	
								TR		0.75	29.8	C	
								L		0.22	30.1	C	
								WB		0.96	59.0	E	
									0.90	55.1	E		
16 River Avenue at E. 151st Street River Avenue E. 151st Street	NB			LTR	0.94	32.4	C	NB	LTR	47.9	47.9	D	<p>(CORSDM Results)</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Widen the NB Diagonal ramp to obtain two full 12 ft. wide travel lanes. <p>Option 3:</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). <p>Option 4:</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue).
	SB			LTR	0.27	10.6	B	SB	L	27.4	A		
	WB			LTR	0.32	30.1	C	T		27.1	C		
	Overall Intersection				0.69	28.3	C	EB		46.1	D		
								L		25.8	C		
								TR		43.5	D		
								L		36.8	D		
								TR		55.7	E		
								SB		49.1	D		
								NB					
8 River Avenue at E. 153rd Street River Avenue E. 153rd Street	NB			LTR	0.85	31.1	C	NB	LTR	0.81	24.9	C	<p>(CORSDM Results)</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). <p>Option 3:</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). <p>Option 4:</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue).
	SB			LTR	0.72	21.8	C	SB	LTR	0.59	16.1	B	
	WB			LTR	0.51	25.0	C	TR		25.0	C		
	Overall Intersection				0.72	26.2	C	LTR		0.42	24.8	C	
								LTR		0.42	24.8	C	
								LTR		0.51	25.0	C	
								LTR		0.42	24.8	C	
								LTR		0.84	42.9	D	
								LTR		0.05	71.6	E	
								LTR		0.51	25.0	C	
9 River Avenue at E. 157th Street River Avenue E. 157th Street	NB			TR	0.44	13.3	B	NB	LTR	0.81	24.9	C	<p>(CORSDM Results)</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). <p>Option 3:</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). <p>Option 4:</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Grand Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Diagonal off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue).
	SB			LTR	0.50	14.1	B	SB	LTR	0.59	16.1	B	
	WB			LTR	0.21	21.2	C	TR		25.0	C		
	Overall Intersection				0.38	14.3	B	LTR		0.42	24.8	C	
								LTR		0.42	24.8	C	
								LTR		0.51	25.0	C	
								LTR		0.42	24.8	C	
								LTR		0.84	42.9	D	
								LTR		0.05	71.6	E	
								LTR		0.51	25.0	C	

TABLE A-14
 BRONX TERMINAL MARKET, GAME DAY 2009
 WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009 Weekday PM (5:15PM - 6:15PM)					BUILD 2009 Weekday PM (5:15PM - 6:15PM)					CURRENT BUILD MITIGATED Weekday PM (5:15PM - 6:15PM)					Mitigation Measures			
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay		LOS		
																		Control	Control
10 River Avenue at E. 161st Street River Avenue E. 161st Street Main Road E. 161st Street Service Road	NB	LTR	0.57	22.3	C	LTR	0.71	27.7	C								Mitigation not required.		
	SB	LTR	0.56	21.0	C	LTR	0.59	21.9	C										
	EB	T	0.14	13.9	B	T	0.15	14.0	B										
	WB	T	0.49	17.9	B	T	0.49	17.9	B										
	EB	T	0.40	16.6	B	T	0.40	16.6	B										
	WB	R	0.85	36.9	D	R	0.85	36.9	D										
Overall Intersection			0.71	21.0	C		0.78	21.7	C										
OTHER																			
	12 Jerome Avenue at E. 161st Street Jerome Avenue	NB	L	0.72	49.6	D	L	0.72	49.6	D								Design modifications needed as follows: - Retain NB lane configurations from exclusive left, through, and through-right to left-through, through, and exclusive right, 11 ft. wide each. - Shift SB centerline 5 ft. to the west by reducing the SB parking lane width from 13 ft. to 8 ft. in gain good transition for the NB traffic.	
		SB	TR	0.99	54.7	D	TR	1.14	105.9	F									
		EB	L	0.84	63.7	E	L	1.00	120.0	F									
		WB	TR	0.83	37.8	D	TR	0.83	37.8	D									
		EB	L	0.64	20.2	C	L	0.64	20.2	C									
WB		LT	0.18	47.4	D	LT	0.18	47.4	D										
Overall Intersection			0.80	43.0	D		0.87	70.0	E										
14 Jerome Avenue at Ogden Avenue Ogden Avenue Jerome Avenue	SB	LR	0.56	27.0	C	LR	0.56	27.0	C								Mitigation not required.		
	EB	T	0.62	15.6	B	T	0.74	19.3	B										
	WB	TR	0.43	11.4	B	TR	0.43	11.4	B										
	Overall Intersection			0.60	16.1	B		0.67	17.5	B									
	13 E. 157th Street at Major Deegan Expressway NB Ramp Major Deegan Expressway NB Service Road Major Deegan Expressway NB Off Ramp E. 157th Street	NB	T	0.46	26.0	C	T	0.90	40.6	D									Provide revised phasing plan with 60 s cycle (combine NB Major Deegan Expressway Service Road and NB Major Deegan Expressway Off Ramp into one phase). - Install a lane reduction transition marking/signage for NB receiving lanes. [Measures reflect geometric and operational improvements needed for other peak periods, otherwise mitigation not needed.]
		SB	T	0.96	55.9	E	T	0.96	55.9	E									
EB		R	0.47	30.3	C	R	0.55	31.8	C										
WB		R	0.64	40.1	D	R	0.82	43.9	D										
Overall Intersection				0.64	40.1	D		0.82	43.9	D									
15 Macombs Place at W. 155th Street Macombs Place	NB	L	0.90	76.3	E	L	0.90	76.3	E								Provide revised signal timing and phasing plan. (Reduce the cycle length from 120 s to 90 s, and reduce the number of signal phases from 4 to 3.)		
	SB	T	0.21	21.6	C	T	0.21	21.6	C										
	EB	R	0.59	38.3	D	R	0.59	38.3	D										
	WB	R	0.67	26.0	C	R	0.70	27.0	C										
	EB	L	1.06	120.0	F	L	1.11	120.0	F										
	WB	R	0.17	15.9	B	R	0.17	15.9	B										
Overall Intersection			0.78	73.0	E		0.80	79.5	E										
4 Lenox Avenue at E. 146th Street Lenox Avenue	NB	L	0.58	30.0	C	L	0.58	30.0	C								Modify signal timing (shift 4 s of green time from the WB lead phase to the EB/WB phase).		
	SB	LT	0.42	24.1	C	LT	0.42	24.1	C										
	EB	R	0.64	20.1	C	R	0.69	24.9	C										
	WB	LTR	0.40	23.7	C	LTR	0.40	23.7	C										
	EB	LTR	0.91	36.2	D	LTR	1.01	55.6	B										
	WB	L	0.63	19.2	B	L	0.63	20.5	C										
Overall Intersection			0.79	25.5	C		0.83	33.2	C										
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street East Garage (G2) Exit Only	NB		NA														Mitigation not required.		
	SB	L	0.39	26.3	C	L	0.39	26.3	C										
	WB	TR	0.56	24.0	C	TR	0.56	24.0	C										
	WB	L	0.12	17.9	B	L	0.12	17.9	B										
	WB	T	0.00	16.5	B	T	0.00	16.5	B										
	WB	R	0.69	30.6	C	R	0.69	30.6	C										
Overall Intersection			0.63	24.4	C		0.63	24.4	C										

TABLE A-14
 BRONX TERMINAL MARKET GAME DAY 2009
 WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2009				BUILD 2009				CURRENT BUILD MITIGATED				Mitigation Measures
	Weekday PM (5:15PM - 6:45PM)		Control		Weekday PM (5:15PM - 6:45PM)		Control		Weekday PM (5:15PM - 6:15PM)		Control		
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street	TR	0.53	21.2	C	TR	0.53	21.2	C	TR	0.53	21.2	C	Mitigation not required.
	L	0.92	42.4	D	L	0.92	42.4	D	L	0.92	42.4	D	
	T	0.27	17.3	B	T	0.27	17.3	B	T	0.27	17.3	B	
	LTR	0.34	34.0	C	LTR	0.34	34.0	C	LTR	0.34	34.0	C	
West Garage Exit Only	EB								EB				
Overall Intersection		0.70	25.9	C									
UNSIGNALIZED													
EXTERIOR STREET													
22 Exterior Street at South Pocket Lot Exterior Street	SB	NA		A	LT	0.00	9.4	A	LT	0.00	9.4	A	Mitigation not required.
	WB	NA		C	LR	0.03	16.6	C	LR	0.03	16.6	C	
South Pocket Lot				B									
Overall Intersection				B			14.2	B					
(Free flow)													
5 Exterior Street at E. 150th Street Exterior Street	NB	0.01	8.0	A	NB	0.01	8.0	A	NB	0.01	8.0	A	Mitigation not required.
	SB	0.03	8.3	A	SB	0.03	8.3	A	SB	0.03	8.3	A	
	EB	0.00	20.9	C	EB	0.00	20.9	C	EB	0.00	20.9	C	
	WB	0.24	14.3	B	WB	0.24	14.3	B	WB	0.24	14.3	B	
E. 150th Street													
Overall Intersection				A			9.0	A					
Mitigation not required.													
20 Exterior Street at South Truck Access Exterior Street	SB	NA		A	LT	0.01	9.4	A	LT	0.01	9.4	A	Mitigation not required.
	WB	NA		C	LR	0.03	15.8	C	LR	0.03	15.8	C	
South Truck Access				B									
Overall Intersection				B			13.2	B					
Mitigation not required.													
21 Exterior Street at North Truck Access Exterior Street	NB	NA		A	LT	0.00	9.5	A	LT	0.00	9.5	A	Mitigation not required.
	SB	NA		A	LT	0.01	9.8	A	LT	0.01	9.8	A	
	EB	0.02	25.8	D	LR	0.02	25.8	D	LR	0.02	25.8	D	
	WB	0.04	21.4	C	LR	0.04	21.4	C	LR	0.04	21.4	C	
North Truck Access													
Overall Intersection				C			18.2	C					
Mitigation not required.													
OTHER													
6 River Avenue at E. 150th Street River Avenue	NB	0.05	7.6	A	LT	0.00	7.9	A	LT	0.00	7.9	A	Prohibit parking on the north side of the WB 150th Street approach 120 ft. from the intersection. Reshape WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane.
	EB	0.19	23.0	C	LR	0.02	13.7	B	LR	0.02	13.7	B	
	WB	0.42	26.1	D	LTR	0.84	91.2	F	L	0.32	25.4	D	
	E. 150th Street								TR	0.11	13.5	B	
Overall Intersection				B			85.2	F				20.1	C
Mitigation not required.													
1b Grand Concourse at E. 138th Street E. 138th Street	EB	0.44	14.6	B	LT	0.44	14.6	B	LT	0.44	14.6	B	Mitigation not required.
	WB			B									
Overall Intersection				B			14.6	B					

Notes
 (1): Control delay is measured in seconds per vehicle.
 (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual - TRB.
 (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor approach as listed in the 2000 Highway Capacity Manual - TRB.
 (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
 (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A-15
BRONX TERMINAL MARKET GAME DAY 2009
SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD						BUILD						CURRENT BUILD MITIGATED								
	Saturday Midday (12PM - 1PM)			Control			Saturday Midday (12PM - 1PM)			Control			Saturday Midday (12PM - 1PM)			Control					
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
SIGNALIZED																					
GRAND CONCOURSE																					
1a Grand Concourse at E. 138th Street	SB	L	0.37	70.8	E	L	0.37	70.8	E	TR	1.00	44.4	D	TR	0.68	13.4	B	TR	0.76	16.6	B
Grand Concourse	R	R	0.42	80.6	F	R	0.42	80.6	F	TR	1.11	85.9	F	TR	0.76	16.6	B	TR	0.84	50.6	D
E. 138th Street	EB	T	0.39	12.1	B	T	0.39	12.1	B	TR	0.84	50.6	D	TR	0.81	49.2	D	TR	0.81	49.2	D
	WB	T	0.40	12.4	B	T	0.40	12.4	B	TR	0.81	49.2	D	TR	0.81	49.2	D	TR	0.81	49.2	D
Overall Intersection			0.41	26.4	C		0.41	26.4	C		1.04	57.9	E		0.78	29.2	C				
2 Grand Concourse at E. 149th Street	NB	TR	1.00	44.4	D	TR	1.00	44.4	D	TR	1.00	44.4	D	TR	0.68	13.4	B	TR	0.76	16.6	B
Grand Concourse	SB	TR	1.02	53.9	D	TR	1.11	85.9	F	TR	0.76	16.6	B	TR	0.84	50.6	D	TR	0.84	50.6	D
E. 149th Street	EB	TR	0.78	47.0	D	TR	0.84	50.6	D	TR	0.81	49.2	D	TR	0.81	49.2	D	TR	0.81	49.2	D
	WB	TR	0.76	46.5	D	TR	0.81	49.2	D	TR	0.81	49.2	D	TR	0.81	49.2	D	TR	0.81	49.2	D
Overall Intersection			0.95	47.8	D		1.04	57.9	E		0.78	29.2	C								
11 Grand Concourse at E. 161st Street	NB	LT	0.67	20.9	C	LT	0.71	22.2	C	LT	0.71	22.2	C	L	0.56	27.3	C	L	0.56	27.3	C
Grand Concourse	R	R	0.18	13.2	B	R	0.30	15.0	B	R	0.35	19.0	B	R	0.35	19.0	B	R	0.35	19.0	B
Grand Concourse Main Road	SB	L	0.05	40.3	D	L	0.05	45.0	D	L	0.04	29.4	C	L	0.07	31.1	C	L	0.07	31.1	C
Grand Concourse Service Road	SB	T	0.41	38.7	D	T	0.41	38.7	D	T	0.30	35.1	D	T	0.30	35.1	D	T	0.30	35.1	D
E. 161st Street	R	R	0.22	38.9	D	R	0.33	43.5	D	R	0.82	48.1	D	R	0.74	35.7	D	R	0.74	35.7	D
	De/L	De/L	0.74	52.0	D	De/L	0.74	51.4	D	De/L	0.65	39.5	D	De/L	0.65	39.5	D	De/L	0.65	39.5	D
	EB	TR	0.53	36.9	D	TR	0.53	36.9	D	TR	0.46	30.1	C	TR	0.46	30.1	C	TR	0.46	30.1	C
	WB	LTR	0.58	34.6	C	LTR	0.76	42.3	D	LTR	0.66	33.5	C	LTR	0.66	33.5	C	LTR	0.66	33.5	C
Overall Intersection			0.76	33.1	C		0.76	34.7	C		0.71	29.1	C								
RIVER AVENUE																					
3 River Avenue and Exterior Street at E. 149th Street	NB	LTR	1.07	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	0.89	38.1	D	LTR	0.89	38.1	D	LTR	0.89	38.1	D
Major Deegan Expressway NB Off Ramp	SB	LTR	0.78	67.9	E	LTR	1.20+	120.0+	F*	LTR	0.86	38.5	E	LTR	0.86	38.5	E	LTR	0.86	38.5	E
River Avenue	NB	LTR	0.87	75.6	E	LTR	1.20+	120.0+	F*	De/L	0.35	41.5	D	De/L	0.35	41.5	D	De/L	0.35	41.5	D
Exterior Street	NB	LTR	0.87	75.6	E	LTR	1.20+	120.0+	F*	TR	0.36	38.3	D	TR	0.36	38.3	D	TR	0.36	38.3	D
E. 149th Street	SB	De/L	0.90	87.8	F	De/L	1.20+	120.0+	F*	L	0.90	52.8	D	L	0.90	52.8	D	L	0.90	52.8	D
	EB	TR	0.93	85.6	F*	TR	1.20+	120.0+	F*	T	0.18	20.8	C	T	0.18	20.8	C	T	0.18	20.8	C
	WB	De/L	1.19	120.0+	F*	De/L	1.20+	120.0+	F*	L	0.98	58.0	E	L	0.98	58.0	E	L	0.98	58.0	E
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	0.76	30.9	C	TR	0.76	30.9	C	TR	0.76	30.9	C
		LTR	0.63	30.2	C	LTR	1.20+	120.0+	F*	L	0.31	32.1	C	L	0.31	32.1	C	L	0.31	32.1	C
Overall Intersection			1.09	120.0+	F*		1.20+	120.0+	F*		0.92	42.3	D								

Option 1:

- Widen the NB Deegan ramp to obtain two 12 ft. wide travel lanes.
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).

Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transitions of traffic. Dotted design modifications are needed as follows:

- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left-turn lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes, EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Rotate the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

Design modifications needed as follows:

- Relocate the bus stop from near side to far side on the NB Grand Concourse approach.
- Restripe NB approach to provide one 11 ft. wide exclusive left-turn lane, two 10 ft. wide through lanes and one 11 ft. wide exclusive right-turn lane.
- Install a guide sign regarding the lane usage (exclusive left-turn only, through to main road, through to service road and exclusive right-turn only).
- Modify signal timing (eliminate the 14 s NB protected phase, add 6 s of green time to the EB/WB phase, and add 6 s of green time and 2 s of all red time to the NB/SB phase).
- [Measures reflect geometric and operational improvements needed for other peak periods, otherwise mitigation not needed.]

Mitigation Measures

- Mitigation not required.
- Restripe both north and southbound approach to provide two 10 ft. wide through lanes and one 10 ft. wide shared through-right lane.

TABLE A - 15
BRONX TERMINAL MARKET GAME DAY 2009
SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD			BUILD			CURRENT BUILD MITIGATED			Mitigation Measure
	Saturday Midday (LPM - 1PM)	Control Delay	LOS	Saturday Midday (LPM - 1PM)	Control Delay	LOS	Saturday Midday (LPM - 1PM)	Control Delay	LOS	
	Mvt.	V/C		Mvt.	V/C		Mvt.	V/C		
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street	NA			TR	0.61	23.4				- Mitigation not required.
	SB			L	0.90	43.0	C			
	SB			T	0.38	19.1	B			
	EB			LTR	0.36	37.5	D			
Overall Intersection					0.67	26.9	C			
UN SIGNALIZED										
EXTERIOR STREET										
22 Exterior Street at South Pocket Lot Exterior Street South Pocket Lot	NA			LT	0.01	10.0	A			- Mitigation not required.
	WB			LR	0.03	20.4	C			
Overall Intersection						16.9	C			
(Free flow)										
5 Exterior Street at E. 150th Street Exterior Street	NB	LTR	0.02	8.1	A					- Mitigation not required.
	SB	LTR	0.10	8.6	A					
	EB	LTR	0.04	25.2	D					
	WB	LTR	0.42	18.8	C					
Overall Intersection						10.1	B			
20 Exterior Street at South Truck Access Exterior Street South Truck Access										
Overall Intersection	LT		0.00	9.9	A					- Mitigation not required.
	LR		0.01	20.6	C					
21 Exterior Street at North Truck Access Exterior Street North Truck Access										
Overall Intersection	LT		0.00	10.3	B					- Mitigation not required.
	LR		0.00	10.2	B					
OTHER										
6 River Avenue at E. 150th Street River Avenue Pocket Lot Entry/Exit E. 150th Street	NB	LT	0.06	7.6	A					- Prohibit parking on the northside of the WB 150th Street approach 120 ft. from the intersection. - Restripe WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane.
	EB	LR	0.38	23.7	C					
	WB	LTR	0.44	25.3	D					
	Overall Intersection									
1b Grand Concourse at E. 138th Street E. 138th Street	LT		0.00	7.6	A					- Mitigation not required.
	LR		0.02	13.6	B					
	L		0.37	24.6	C					
	TR		0.10	13.8	B					
Overall Intersection										

Notes
(1): Control delay is measured in seconds per vehicle.
(2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4): Overall intersection V/C ratio is the critical lane group V/C ratio, not the weighted average of all the movements.
(5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 16
BRONX TERMINAL MARKET GAME DAY 2009
SATURDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD Saturday PM (4PM - 8PM) Controlled				BUILD Saturday PM (4PM - 8PM) Controlled				CURRENT BUILD MITIGATED Saturday PM (4PM - 8PM) Controlled				Mitigation Measures
	M/V	V/C	LOS	Delay	M/V	V/C	LOS	Delay	M/V	V/C	LOS	Delay	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse	SB	L	0.36	67.4	E	L	0.36	67.4	E	TR	0.68	13.2	B
	EB	R	0.49	72.3	E	R	0.49	72.3	E	TR	0.77	15.7	B
	WB	T	0.51	13.7	B	T	0.51	13.7	B	TR	0.81	48.1	D
	WB	T	0.52	14.1	B	T	0.52	14.1	B	TR	0.82	48.2	D
Overall Intersection			0.51	24.6	C		0.51	24.6	C		0.78	27.5	C
2 Grand Concourse at E. 149th Street													
Grand Concourse	SB	TR	1.01	45.6	D	TR	1.01	45.6	D	TR	0.68	13.2	B
	EB	TR	1.01	45.9	D	TR	1.14	96.2	F	TR	0.77	15.7	B
	WB	TR	0.78	46.4	D	TR	0.81	48.1	D	TR	0.81	48.1	D
Overall Intersection			0.94	45.9	D		1.05	61.1	E		0.78	27.5	C
31 Grand Concourse at E. 161st Street													
Grand Concourse	NB	LT	0.89	89.3	F	LT	0.95	107.1	F	L	0.58	23.4	C
	SB	R	0.16	75.6	E	R	0.24	32.6	E	T	0.73	42.5	D
	SB	L	0.17	96.7	F	L	0.18	117.8	F	L	0.26	51.2	D
	SB	T	0.42	52.5	D	T	0.42	52.5	D	L	0.16	91.0	F
	EB	R	0.21	34.2	C	R	0.21	34.2	C	T	0.41	46.9	D
	EB	R	0.21	34.2	C	R	0.21	34.2	C	T	0.31	35.4	D
	EB	De/L	0.80	71.4	E	De/L	0.85	75.6	E	R	0.19	30.2	C
	WB	TR	0.87	74.3	E	TR	0.87	74.3	E	De/L	0.65	46.6	D
	WB	LTR	0.88	62.8	E	De/L	1.20+	120.0+	F*	TR	0.55	37.0	D
						TR	1.20+	120.0+	F*	TR	0.85	60.9	E
						TR	1.20+	120.0+	F*	TR	0.74	44.2	D
Overall Intersection			0.91	70.6	E		1.17	111.4	F		0.77	43.5	D
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp	NB	LTR	0.79	56.5	E	LTR	1.20+	120.0+	F*	De/L	0.50	27.4	C
River Avenue	SB	LTR	1.07	120.0+	F*	LTR	1.20+	120.0+	F*	TR	0.52	27.3	C
Exterior Street	NB	LTR	0.81	56.1	E	LTR	0.84	58.9	E	De/L	1.08	120.0+	F*
	SB	De/L	0.54	47.2	D	De/L	1.20+	120.0+	F*	TR	0.62	33.5	C
	EB	TR	0.72	52.0	E	TR	0.78	55.9	E	TR	0.28	27.7	C
	EB	De/L	0.98	95.0	F	De/L	1.20+	120.0+	F*	L	0.84	46.5	D
	WB	TR	0.98	62.1	E	TR	0.98	62.1	E	T	0.23	23.9	C
	WB	LTR	1.07	120.0+	F*	LTR	1.15	120.0+	F*	L	0.65	35.1	D
						LTR	1.15	120.0+	F*	TR	0.83	41.1	D
										L	0.60	43.7	D
Overall Intersection			0.99	105.2	F		1.20+	120.0+	F*		1.03	75.9	E

- Mitigation not required.

- Restripe both north and southbound approach to provide two 10 ft. wide through lanes and one 10 ft. wide shared through-right lane.

- Design modifications needed as follows -

- Relocate the bus stop from near side to far side on the NB Grand Concourse approach.
- Restripe NB approach to provide one 11 ft. wide exclusive left-turn lane, two 10 ft. wide through lanes and one 11 ft. wide exclusive right-turn lane.
- Install a guide sign regarding the lane usage (exclusive left-turn only, through to main road, through to service road and exclusive right-turn only).
- Prohibit parking on the north side of WB 161st Street 120 ft. away from the intersection for this period.
- Modify signal timing (eliminate the 12 s NB protected phase, add 9 s of green time to the EB/WB phase, and add 3 s of green time to the NB/SB phase).

Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are needed as follows -

- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left turn-lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes, EB exclusive left-turn lane and WB exclusive left-turn lane use now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Rotate the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

Option 1.

- Widen the NB Deegan ramp to obtain two 12 ft. wide travel lanes.
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).

TABLE A-16
BRONX TERMINAL MARKET GAME DAY 2009
SATURDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD Control Delay			BUILD Control Delay			CURRENT BUILD MITIGATED Control Delay			Mitigation Measures				
	Mt.	VC	LOS	Mt.	VC	LOS	Mt.	VC	LOS					
17 River Avenue at Garage 2 Exit Only River Avenue Garage 2 Exit Only	NE	TR	120.0+	TR	0.59	D	TR	0.59	77.4	C	<p>Option 2</p> <ul style="list-style-type: none"> Apply the same mitigation measures as in Option 1. Prohibit the left-turn movement on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street; (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). <p>Option 3</p> <p>(CORSIM Results)</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). Widen the NB Deegan ramp to obtain a two full 12 ft. wide travel lanes. 			
	SB	LTR	120.0+	LTR	0.52	C	LTR	0.52	27.3	C				
	EB	TR	120.0+	TR	1.08	F*	TR	1.08	29.0	F*				
	Overall Intersection													
	16 River Avenue at E. 151st Street River Avenue E. 151st Street	NE	TR	120.0+	TR	0.72	F*	TR	0.72	120.0+		F*	<p>Option 3</p> <p>(CORSIM Results)</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). 	
		SB	LTR	120.0+	LTR	0.40	C	LTR	0.40	44.9		C		
		EB	TR	120.0+	TR	0.29	C	TR	0.29	44.9		C		
		Overall Intersection												
8 River Avenue at E. 153rd Street River Avenue E. 153rd Street		NE	LTR	66.2	LTR	1.03	E	LTR	1.03	62.8	E	<p>Option 3</p> <p>(CORSIM Results)</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). 		
		SB	LTR	65.9	LTR	1.00	E	LTR	1.00	29.7	C			
		EB	LTR	64.5	LTR	1.02	E	LTR	1.02	60.9	E			
		WB	LTR	79.9	LTR	0.92	E	LTR	0.88	68.9	E			
		Overall Intersection												
	9 River Avenue at E. 157th Street River Avenue E. 157th Street	NE	TR	17.0	TR	0.72	B	TR	0.72	17.0	B		<p>Option 3</p> <p>(CORSIM Results)</p> <ul style="list-style-type: none"> Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). Install * STOP Control for the NB Exterior Street approach right-turn volume. Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). 	
		SB	Closed	-	Closed	-	-	Closed	-	-	-			
		WB	LR	0.22	LR	0.22	B	LR	0.22	15.9	B			
		Overall Intersection												

- Mitigation not required.

- Mitigation not required.

- Mitigation not required.

TABLE A-16
 BRONX TERMINAL MARKET GAZE DAY 2009
 SATURDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD				BUILD				CURRENT BUILD MITIGATED				Mitigation Measures	
	Control		SPM		Control		SPM		Control		SPM			
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
10 River Avenue at E. 161st Street River Avenue E. 161st Street Main Road E. 161st Street Service Road	NB	LTR	1.06	1200+	F*	LTR	1.05	1200+	F*	LTR	1.05	1200+	F*	- Prohibit parking on the north side of WB 161st Street 120 ft. from intersection.
	SB	R	1.07	1200+	F*	R	1.07	1200+	F*	R	1.07	1200+	F*	
	EB	T	0.84	1200+	F*	T	0.84	1200+	F*	T	0.84	1200+	F*	
	WB	T	0.70	112.6	F	T	0.70	112.6	F	T	0.70	112.6	F	
	WB	Chased	-	-	-	Chased	-	-	-	Chased	-	-	-	
WB	TR	0.93	56.8	E	TR	1.09	72.8	E	TR	0.88	46.2	D		
Overall Intersection			1.01	1200+	F*		1.04	1200+	F*		1.38	1200+	F*	
OTHER														
12 Jerome Avenue at E. 161st Street Jerome Avenue	NB	L	0.82	49.0	D	L	0.82	49.0	D	De/L	0.79	45.1	D	Design modifications needed as follows: - Restripe NB lane configuration from exclusive left, through, and through-right to left-through, through, and exclusive right, 11ft. wide each. - Shift SB centerline 5 ft. to the west by reducing the SB parking lane width from 13ft. to 8ft. to gain good transition for the NB traffic. [Measures reflect geometric improvements needed for other peak periods, otherwise mitigation not needed.]
	SB	R	0.47	21.1	C	T	0.60	23.9	C	T	0.60	23.9	C	
	EB	L	0.56	23.5	C	R	0.56	23.5	C	R	0.58	24.2	C	
	WB	L	0.50	23.0	C	L	0.62	31.8	C	L	0.46	23.6	C	
	WB	TR	0.88	42.4	D	TR	0.88	42.4	D	TR	0.88	42.4	D	
Overall Intersection			0.95	39.9	D		0.95	40.1	D		0.95	39.4	D	
14 Jerome Avenue at Ogden Avenue Ogden Avenue Jerome Avenue	SE	LR	0.78	36.7	D	LR	0.78	36.7	D					- Mitigation not required.
	ER	T	0.43	37.5	D	T	0.51	42.6	D					
	WB	TR	0.67	38.5	D	TR	0.67	38.5	D					
	Overall Intersection			0.71	37.9	D		0.71	39.1	D				
13 E. 157th Street at Major Deegan Expressway NB Ramp Major Deegan Expressway NB Service Road Major Deegan Expressway NB Off Ramp E. 157th Street	NB	L	0.94	79.8	E	L	0.94	79.8	E	L	0.77	42.7	D	- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 90 s. Reduce the number of signal phases from 4 to 3). - Modify signal timing (shift 4 s of green time from the WB lead phase to the EB/WB phase).
	SB	T	0.16	22.2	C	T	0.16	22.2	C	T	0.15	15.1	B	
	EB	R	1.00	78.6	E	R	1.00	78.6	E	R	1.02	76.7	E	
	WB	R	0.91	41.5	D	R	0.94	46.1	D	R	0.67	10.6	B	
	WB	R	1.06	1200+	F*	R	1.10	1200+	F*	R	1.01	97.9	F	
WB	R	0.17	15.4	B	R	0.17	15.4	B	R	0.26	21.7	C		
Overall Intersection			0.93	70.8	E		0.94	75.9	E		0.95	48.5	D	
4 Lenox Avenue at E. 145th Street Lenox Avenue	NB	L	0.55	26.1	C	L	0.55	26.1	C	L	0.55	26.1	C	- Mitigation not required.
	SB	LT	0.29	21.5	C	LT	0.29	21.5	C	LT	0.29	21.5	C	
	EB	R	0.38	14.6	B	R	0.38	14.6	B	R	0.41	17.6	B	
	WB	LTR	0.41	23.9	C	LTR	0.41	23.9	C	LTR	0.41	23.9	C	
	WB	L	0.94	43.4	D	L	1.03	65.5	E	L	0.93	39.1	D	
WB	L	0.60	16.6	B	L	0.60	17.2	B	L	0.64	21.9	C		
WB	TR	0.87	25.5	C	TR	0.95	35.3	D	TR	0.95	35.3	D		
Overall Intersection			0.79	28.0	C		0.83	37.7	D		0.79	31.2	C	
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street	NB		NA											- Mitigation not required.
	SB	L	0.14	18.7	B	L	0.14	18.7	B	L	0.14	18.7	B	
	WB	TR	0.41	21.4	C	TR	0.32	20.0	B	TR	0.41	21.4	C	
East Garage (G2) Exit Only	SB	L	0.52	24.6	C	L	0.52	24.6	C	L	0.52	24.6	C	- Mitigation not required.
	WB	T	0.90	16.5	B	T	0.90	16.5	B	T	0.90	16.5	B	
	WB	R	0.47	23.7	C	R	0.47	23.7	C	R	0.47	23.7	C	
Overall Intersection			0.47	22.0	C		0.47	22.0	C		0.47	22.0	C	

NA - (Free flow) See Note (5)

TABLE A-16
 BRONX TERMINAL MARKET GAME DAY 2009
 SATURDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD				BUILD				CURRENT BUILD MITIGATED				Mitigation Measures	
	Saturday PM (EPTL-SPM)		Control		Saturday PM (EPTL-SPM)		Control		Saturday PM (EPTL-SPM)		Control			
	Mvt.	V/C	LOS	Delay	Mvt.	V/C	LOS	Delay	Mvt.	V/C	LOS	Delay		
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street West Garage Exit Only	NA				TR	0.44	B	19.0					- Mitigation not required.	
					L	0.60	B	16.6						
					T	0.31	B	17.2						
Overall Intersection					LTR	0.28	C	32.9						
						0.46	B	19.1						
UN SIGNALIZED														
EXTERIOR STREET														
22 Exterior Street at South Pocket Lot Exterior Street South Pocket Lot	NA				LT	0.00	A	9.2					- Mitigation not required.	
					LR	0.02	C	16.3						
Overall Intersection							B	13.9						
(Free flow)														
5 Exterior Street at E. 150th Street Exterior Street E. 150th Street	NB	LTR	0.00	8.0	A								- Mitigation not required.	
	SB	LTR	0.07	8.3	A									
	EB	LTR	0.19	16.1	C									
Overall Intersection	WB	LTR	0.45	20.9	C									
20 Exterior Street at South Truck Access Exterior Street South Truck Access	NA				LT	0.00	A	9.1					- Mitigation not required.	
					LR	0.01	C	17.1						
Overall Intersection														
21 Exterior Street at North Truck Access Exterior Street North Truck Access	NA				LT	0.00	A	8.3					- Mitigation not required.	
					LT	0.00	A	10.0						
					LR	0.01	C	24.8						
Overall Intersection					LR	0.01	D	49.8						
6 River Avenue at E. 156th Street River Avenue Pocket Lot Entry/Exit E. 150th Street	NB	LT	0.06	9.4	A								- Prohibit parking on the north side of the WB 150th Street approach 120 ft. from intersection. - Restripe WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane.	
	EB	LR	0.35	25.5	D									
	WB	LTR	0.46	26.1	D									
Overall Intersection					LT	0.00	A	9.7						
					LR	0.03	C	20.6						
					LTR	0.58	E	36.2						
Overall Intersection														
19 Grand Concourse at E. 138th Street E. 138th Street	EB	LT	0.62	20.2	C								- Mitigation not required.	
Overall Intersection														

Notes
 (1): Control delay is measured in seconds per vehicle.
 (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
 (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB.
 (4): Overall intersection V/C ratio is the critical lane group's V/C ratio, not the weighted average of all the movements.
 (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A-17
 BRONX TERMINAL MARKET NON-GAME DAY 2014
 WEEKDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014										CURRENT BUILD MITIGATED										
	Weekday Midday (1PM - 2PM)					Control					Weekday Midday (1PM - 2PM)					Control					
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	
SIGNALIZED																					
GRAND CONCOURSE																					
1a Grand Concourse at E. 138th Street	SB	L	0.40	74.6	E	L	0.40	74.6	E	TR	1.04	59.5	E	TR	0.72	16.2	B	TR	0.76	17.5	B
	EB	R	0.40	74.7	E	R	0.40	74.7	E	TR	1.09	77.2	E	TR	0.76	17.5	B	TR	0.96	66.2	E
	WB	T	0.37	55.4	E	T	0.37	55.4	E	TR	1.02	83.5	F	TR	0.95	63.4	E	TR	0.95	63.4	E
	Overall Intersection		0.38	60.3	E		0.38	60.3	E		1.07	74.2	E		0.82	37.3	D				
2 Grand Concourse at E. 149th Street	NB	TR	1.04	59.5	E	TR	1.04	59.5	E	TR	1.04	59.5	E	TR	0.72	16.2	B	TR	0.76	17.5	B
	SB	TR	1.04	60.8	E	TR	1.09	77.2	E	TR	1.09	77.2	E	TR	0.76	17.5	B	TR	0.96	66.2	E
	EB	TR	0.98	72.0	E	TR	1.02	83.5	F	TR	1.02	83.5	F	TR	0.95	63.4	E	TR	0.95	63.4	E
	WB	TR	0.98	71.0	E	TR	1.01	80.4	F	TR	1.01	80.4	F	TR	0.95	63.4	E	TR	0.95	63.4	E
	Overall Intersection		1.03	64.9	E		1.07	74.2	E		0.82	37.3	D								
11 Grand Concourse at E. 161st Street	NB	LT	1.01	83.0	F	LT	1.03	87.2	F	LT	1.03	87.2	F	LT	0.20	15.1	B	LT	0.84	33.3	C
	R	R	0.69	37.3	D	R	0.70	37.8	D	R	0.70	37.8	D	R	0.75	44.8	D	R	0.75	44.8	D
	SB	L	0.57	99.3	F	L	0.58	105.2	F	L	0.58	105.2	F	L	0.44	52.8	D	L	0.44	52.8	D
	SB	T	1.03	76.6	E	T	1.05	84.6	F	T	1.05	84.6	F	T	0.89	40.1	D	T	0.89	40.1	D
	SB	R	0.77	44.3	D	R	0.81	48.3	D	R	0.81	48.3	D	R	0.68	30.1	C	R	0.68	30.1	C
	EB	R	0.91	62.7	E	R	0.92	64.5	E	R	0.92	64.5	E	R	0.78	36.4	D	R	0.78	36.4	D
	EB	DeLL	1.08	120.0+	F*	DeLL	0.93	77.2	E	DeLL	0.88	65.0	E	DeLL	0.88	65.0	E	DeLL	0.88	65.0	E
	WB	TR	0.86	52.7	D	TR	0.86	52.7	D	TR	0.86	52.7	D	TR	0.82	46.9	D	TR	0.82	46.9	D
	WB	LTR	0.78	43.8	D	LTR	0.83	51.7	D	LTR	0.83	51.7	D	LTR	0.62	42.0	D	LTR	0.62	42.0	D
	Overall Intersection		1.10	69.5	E		1.06	70.1	E		0.89	41.1	D								
RIVER AVENUE																					
3 River Avenue and Exterior Street at E. 149th Street	NB	LTR	1.09	116.0	F	LTR	1.20+	120.0+	F*	LTR	0.77	32.3	C	LTR	0.77	32.3	C	LTR	0.88	49.8	D
	SB	LTR	0.98	84.1	F	LTR	1.20+	120.0+	F*	LTR	0.40	32.2	C	LTR	0.40	32.2	C	LTR	0.40	32.2	C
	SB	LTR	0.89	82.7	F	LTR	0.91	88.8	F	LTR	0.21	30.1	C	LTR	0.21	30.1	C	LTR	0.21	30.1	C
	SB	DeLL	0.80	72.2	E	DeLL	1.20+	120.0+	F*	DeLL	0.63	29.4	C	DeLL	0.63	29.4	C	DeLL	0.63	29.4	C
	EB	TR	0.85	64.9	E	TR	0.98	87.2	F	TR	0.30	22.7	C	TR	0.30	22.7	C	TR	0.30	22.7	C
	EB	LTR	1.07	86.7	F	LTR	1.17	107.7	F	LTR	0.77	43.1	D	LTR	0.77	43.1	D	LTR	0.77	43.1	D
	WB	LTR	1.00	72.5	E	LTR	1.11	107.7	F	LTR	0.79	38.3	D	LTR	0.79	38.3	D	LTR	0.79	38.3	D
	Overall Intersection		1.04	84.8	F		1.20+	120.0+	F*		0.89	51.3	D		0.84	40.1	D				

Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are needed as follows -

- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left-turn lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes. EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Raise the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

Option 1.

- Widen the NB Deegan ramp to obtain two 12 ft. wide travel lanes.
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).

TABLE A-17
BRONX TERMINAL MARKET NON-GAME DAY 2014
WEEKDAY MIDDAY COMPARISON AND MITIGATION; TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014				BUILD 2014				CURRENT BUILD MITIGATED				Mitigation Measures		
	Weekday (1PM - 2PM)		Control		Weekday (1PM - 2PM)		Control		Weekday (1PM - 2PM)		Control				
	Mt.	V/C	Delay	LOS	Mt.	V/C	Delay	LOS	Mt.	V/C	Delay	LOS			
10 River Avenue at E. 161st Street River Avenue E. 161st Street/Main Road E. 161st Street/Service Road	NB	LTR	0.95	59.8	E	LTR	1.16	120.0+	F*	LTR	0.94	53.1	D	<ul style="list-style-type: none"> - Prohibit parking on the east side of the NB approach 120 ft. from the intersection. - Modify signal timing (shift 2 s of green time from the EB/WB phase to the NB/SB phase). 	
	SB	LTR	1.00	61.1	E	LTR	1.04	72.5	E	LTR	0.99	57.0	E		
	EB	T	0.19	13.8	B	T	0.19	13.8	B	T	0.19	15.0	B		
	WB	T	0.60	21.0	C	T	0.60	21.0	C	T	0.63	23.2	C		
	Overall Intersection			20.7	C		0.57	20.9	C		0.60	23.0	C		
OTHER			0.82	34.6	C		0.90	44.5	D		0.84	34.8	C		
	12 Jerome Ave at E. 161st Street Jerome Avenue E. 161st Street	NB	L	0.31	20.1	C	L	0.31	20.1	C	LT	0.51	21.2	C	<ul style="list-style-type: none"> - Design modifications needed as follows: - Restripe NB line configuration from exclusive left, through, and through-right to left-through, through, and exclusive right, 11 ft. wide each. - Shift SB centerline 5 ft. to the west by reducing the SB parking lane width from 13 ft. to 8 ft. to gain good transition for the NB traffic. [Measures reflect geometric improvements needed for other peak periods, otherwise mitigation not needed.]
		SB	L	0.48	20.4	C	TR	0.53	21.1	C	R	0.37	19.8	B	
		EB	TR	0.39	22.5	C	L	0.42	23.9	C	L	0.35	21.2	C	
		WB	L	0.61	25.6	C	TR	0.61	25.6	C	TR	0.61	25.6	C	
Overall Intersection				17.4	B		0.54	19.1	B		0.54	19.1	B		
14 Jerome Avenue at Ogden Avenue Ogden Avenue Jerome Avenue	SB	LR	0.50	25.1	C	LR	0.50	25.1	C	T	0.86	20.5	C	<ul style="list-style-type: none"> - Mitigation not required. 	
	EB	T	0.44	13.0	B	T	0.51	14.1	B						
	WB	TR	0.31	10.7	B	TR	0.31	10.7	B	R	0.35	13.5	B		
	Overall Intersection			15.2	B		0.51	15.4	B		0.63	19.0	B		
			0.47				0.57	21.3	C		0.57	21.0	C		
15 E. 157th Street at Major Deegan Expressway NB Ramp Major Deegan Expressway NB Service Road Major Deegan Expressway NB Off Ramp E. 157th Street	NB	T	0.36	24.7	C	T	0.60	28.6	C	T	0.86	20.5	C	<ul style="list-style-type: none"> - Provide revised phasing plan with 60 s cycle (combine NB Major Deegan Expressway Service Road and NB Major Deegan Expressway Off Ramp into one phase). - Install a lane reduction transition marking/signage for NB receiving lanes. [Measures reflect geometric and operational improvements needed for other peak periods, otherwise mitigation not needed.] 	
	SB	T	1.09	120.0+	F*	T	1.09	120.0+	F*						
	EB	R	0.49	30.8	C	R	0.54	31.7	C	R					
	WB	R	0.65	75.5	E		0.75	68.3	E						
	Overall Intersection			45.1	D		0.49	45.1	D		0.42	30.4	C		
15 Macombs Place at W. 158th Street Macombs Place W. 158th Street	NB	L	0.49	45.1	D	L	0.49	45.1	D	L	0.42	30.4	C	<ul style="list-style-type: none"> - Provide revised signal timing and phasing plan. (reduce the cycle length from 120 s to 90 s, and reduce the number of signal phases from 4 to 3). 	
	SB	T	0.40	31.0	C	T	0.40	31.0	C	T	0.10	9.5	A		
	EB	R	1.05	78.3	E	R	1.09	90.7	F	R	0.54	33.3	C		
	WB	R	0.78	43.1	D	L	0.82	45.1	D	L	0.87	23.9	C		
	Overall Intersection			11.1	B		0.12	11.1	B		0.76	30.9	C		
4 Lenox Avenue at E. 146th Street Lenox Avenue E. 146th Street	NB	L	0.72	36.7	D	L	0.72	36.7	D	L	0.42	30.4	C	<ul style="list-style-type: none"> - Mitigation not required. 	
	SB	LT	0.43	24.3	C	LT	0.43	24.3	C	T	0.10	9.5	A		
	EB	R	0.30	13.4	B	R	0.30	13.4	B	R	0.54	33.3	C		
	WB	LTR	0.57	28.8	C	LTR	0.57	28.8	C	L	0.87	23.9	C		
	Overall Intersection			21.9	C		0.84	32.4	C		0.76	30.9	C		
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street East Garage (G2) Exit Only	NB	L	0.87	27.4	C	TR	0.93	35.2	D					<ul style="list-style-type: none"> - Mitigation not required. 	
	SB														
	WB														
	Overall Intersection			28.2	C		0.85	33.2	C		0.75	25.9	C		
			NA				0.12	18.4	B						

TABLE A-17
 BRONX TERMINAL MARKET NON-GAME DAY 2014
 WEEKDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014				BUILD 2014				CURRENT BUILD MITIGATED				Mitigation Measures	
	Weekday Midday (1PM - 2PM)		Control		Weekday Midday (1PM - 2PM)		Control		Weekday Midday (1PM - 2PM)		Control			
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street	NB	NA			TR	0.32	17.4	B					- Mitigation not required.	
	SB				L	0.27	10.3	B						
					T	0.24	16.3	B						
	EB				LTR	0.17	31.1	C						
Overall Intersection					0.33	17.1	B							
UNSIGNALIZED														
<u>EXTERIOR STREET</u>														
22 Exterior Street at South Pocket Lot Exterior Street South Pocket Lot	SB	NA			LT	0.00	8.6	A					- Mitigation not required.	
	WB				LR	0.02	13.7	B						
	Overall Intersection						12.0	B						
5 Exterior Street at E. 150th Street Exterior Street	NB	LTR	0.00	8.1									- Mitigation not required.	
	SB	LTR	0.02	8.2										
	EB	LTR	0.06	14.7										
	WB	LTR	0.30	18.3										
Overall Intersection				9.8										
(Free flow)														
20 Exterior Street at South Truck Access Exterior Street South Truck Access	SB	NA			LT	0.01	8.6	A					- Mitigation not required.	
	WB				LR	0.03	13.0	B						
	Overall Intersection						11.1	B						
21 Exterior Street at North Truck Access Exterior Street	NB	NA			LT	0.00	8.6	A					- Mitigation not required.	
	SB				LT	0.01	8.9	A						
	EB				LR	0.04	30.0	D						
	WB				LR	0.04	15.0	B						
Overall Intersection							15.5	C						
OTHER														
6 River Avenue at E. 150th Street River Avenue Pocket Lot Entry/Exit E. 150th Street	NB	LT	0.06	8.3	LT	0.00	8.5	A	LT	0.00	8.5	A	- Prohibit parking on the north side of the WB 150th Street approach 120 ft. from the intersection. - Restripe WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane. [Measures reflect geometric improvements needed for other peak periods, otherwise mitigation not needed.]	
	EB	LR	0.10	15.0	LR	0.02	13.5	B	LR	0.02	13.5	B		
	WB	LTR	0.28	20.5	LTR	0.23	17.7	C	L	0.18	19.4	C		
	Overall Intersection			10.8				B		TR	0.04	11.1		B
1b Grand Concourse at E. 138th Street E. 138th Street	EB	LT	0.23	9.9	LT	0.23	9.9	A					- Mitigation not required.	
	Overall Intersection			9.9				A						

Notes
 (1) Control delay is measured in seconds per vehicle.
 (2) Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
 (3) Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB.
 (4) Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
 (5) During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A-18
BRONX TERMINAL MARKET MON-GAME DAY 2014
WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014				BUILD 2014				CURRENT BUILD MITIGATED				Mitigation Measures				
	Mt.	V/C	Control	LOS	Mt.	V/C	Control	LOS	Mt.	V/C	Control	LOS					
SIGNALIZED																	
GRAND CONCOURSE																	
1 Grand Concourse at E. 138th Street																	
Grand Concourse	SB	L	0.37	E	L	0.37	74.7	E	TR	0.99	39.6	D	TR	0.69	14.1	B	
	R	0.41	77.9	E	R	0.41	77.9	E	TR	0.98	40.5	D	TR	0.74	16.3	B	
	T	0.30	57.4	E	T	0.30	57.4	E	TR	1.01	75.8	E	TR	0.95	60.7	E	
	WB	T	0.35	58.9	E	T	0.35	58.9	E	TR	1.02	77.4	E	TR	1.02	76.5	E
Overall Intersection			0.50	61.6	E		0.50	61.6	E		1.00	52.5	D		0.82	36.5	D
2 Grand Concourse at E. 149th Street																	
Grand Concourse	NB	TR	0.99	39.6	D	TR	0.99	39.6	D	TR	0.99	39.6	D	TR	0.69	14.1	B
	SB	TR	0.98	40.5	D	TR	1.06	64.7	E	TR	0.98	40.5	D	TR	0.74	16.3	B
	EB	TR	0.94	60.3	E	TR	1.01	75.8	E	TR	1.01	75.8	E	TR	0.95	60.7	E
	WB	TR	1.02	77.4	E	TR	1.09	98.8	F	TR	1.02	77.4	E	TR	1.02	76.5	E
Overall Intersection			1.00	52.5	D		1.07	66.8	E		1.00	52.5	D		0.82	36.5	D
11 Grand Concourse at E. 161st Street																	
Grand Concourse	NB	LT	1.10	78.6	E	LT	1.11	85.5	F	LT	1.11	85.5	F	L	0.46	23.9	C
	R	0.21	12.2	B	R	0.22	12.3	B	R	0.22	12.3	B	R	1.02	57.5	E	
	L	0.92	98.2	F	L	0.92	98.2	F	L	0.92	98.2	F	L	0.24	16.5	B	
	T	1.02	68.2	E	T	1.07	83.0	F	T	1.00	60.9	E	T	0.86	79.4	E	
	SB	T	0.34	19.3	B	T	0.36	19.7	B	T	0.36	19.7	B	T	1.00	60.9	E
	R	0.80	47.6	E	R	0.81	49.5	D	R	0.76	40.7	D	R	0.34	17.2	B	
	EB	DeLL	1.03	104.5	F	DeLL	1.14	120.0+	F	DeLL	1.03	104.5	F	DeLL	0.16	4.6	D
	TR	0.95	73.3	E	TR	0.95	73.3	E	TR	0.95	73.3	E	TR	0.77	42.4	D	
	WB	DeLL	0.67	51.0	D	DeLL	1.00	102.1	F	DeLL	1.00	102.1	F	DeLL	0.77	42.4	D
	TR	1.10	118.7	F	TR	1.10	119.1	F	TR	1.10	118.7	F	TR	0.91	59.4	E	
Overall Intersection			1.16	75.1	E		1.20	84.9	F		1.16	75.1	E		1.02	53.3	D
RIVER AVENUE																	
3 River Avenue and Exterior Street at E. 149th Street																	
Major Deegan Expressway NB Off Ramp	NB	LTR	1.05	100.8	F	LTR	1.20+	120.0+	F	LTR	1.02	96.3	F	LTR	1.02	96.3	F
River Avenue	SB	LTR	0.74	54.5	D	LTR	1.18	120.0+	F	LTR	0.86	53.2	D	LTR	0.86	53.2	D
Exterior Street	NB	LTR	0.77	55.6	E	LTR	0.79	58.0	E	DeLL	0.73	46.9	D	DeLL	0.73	46.9	D
	SB	DeLL	0.68	60.2	E	DeLL	1.20+	120.0+	F	L	0.65	32.5	C	L	0.32	34.8	C
	EB	TR	0.41	41.5	D	TR	0.88	50.6	D	T	0.14	23.0	C	T	0.14	23.0	C
	WB	LTR	1.08	110.1	F	DeLL	1.20+	120.0+	F	L	1.01	71.7	C	L	1.01	71.7	C
	TR	0.88	44.9	D	LTR	1.02	72.1	E	TR	0.83	34.4	C	TR	0.83	34.4	C	
	WB	LTR	0.88	44.9	D	LTR	1.02	72.1	E	L	0.42	31.8	C	L	0.42	31.8	C
	TR	0.87	43.2	D	TR	0.87	43.2	D	TR	0.87	43.2	D	TR	0.87	43.2	D	
Overall Intersection			0.98	79.5	E		1.20+	120.0+	F		0.98	55.1	E		0.98	55.1	E

- Mitigation not required.

- Restripe both north and southbound approaches to provide two 10 ft. wide through lanes and one 10 ft. wide shared through-right lane.
- Modify signal timing (shift 2 s of green time from the NB/SB phase to the EB/WB phase).

- Design modifications needed as follows:
 - Relocate the bus stop from near side to far side on the NB Grand Concourse approach.
 - Restripe NB approach to provide one 11 ft. wide exclusive left-turn lane, two 10 ft. wide through lanes and one 11 ft. wide exclusive right-turn lane.
 - Install a guide sign regarding the lane usage (exclusive left-turn only, through to main road, through to service road and exclusive right-turn only).
 - Modify signal timing (eliminate the 14 s NB protected phase, add 8 s of green time to the EB/WB phase, add 4 s of green time to the NB/SB phase, and add 2 s of all red time to the NB/SB).

Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are noted as follows:

- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left-turn lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes; EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Rotate the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

Caption 1.

- Widen the NB Deegan ramp to obtain two 12 ft. wide travel lanes.
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).

TABLE A-18
 BRONX TERMINAL MARKET NON-GAME DAY, 2014
 WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014			BUILD 2014			CURRENT BUILD MITIGATED			Mitigation Measures			
	Weekday PM Peak Hour (SPM-6PM)			Weekday PM Peak Hour (SPM-6PM)			Weekday PM Peak Hour (SPM-6PM)						
	Mvt.	V/C	LOS	Mvt.	V/C	LOS	Mvt.	V/C	LOS				
17 River Avenue at Garage 2 Exit Only River Avenue Garage 2 Exit Only	NB	TR	0.43	10.5	B		NB	LTR	1.02	96.3	F	Option 2. - Apply the same mitigation measures as in Option 1. - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 3. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 4. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.	
	SB	TR	0.13	8.0	A		SB	LTR	0.86	53.2	D		
	EB	TR	0.57	29.1	C		EB	TR	0.46	36.5	D		
			0.17	22.0	C			TR	0.32	34.8	C		
			0.48	14.9	B			SH	L	0.65	32.5		C
								T	0.14	23.0	C		
								TR	1.01	70.7	E		
								TR	0.83	34.4	C		
								WB	L	0.42	31.8		C
								TR	0.95	54.2	D		
16 River Avenue at E. 151st Street River Avenue E. 151st Street	NB	TR	0.99	57.0	E		NB	LTR	0.98	57.0	E	Option 2. - Apply the same mitigation measures as in Option 1. - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 3. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 4. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.	
	SB	TR	0.31	20.2	C		SB	LTR	0.86	53.2	D		
	WB	TR	0.12	26.7	C		WB	TR	0.46	36.5	D		
			0.26	20.6	C			TR	0.32	34.8	C		
								SH	L	0.65	32.5		C
								T	0.14	23.0	C		
								TR	1.01	70.7	E		
								TR	0.83	34.4	C		
								WB	L	0.42	31.8		C
								TR	0.95	54.2	D		
8 River Avenue at E. 153rd Street River Avenue E. 153rd Street	NB	TR	0.44	13.2	B		NB	LTR	1.00	44.4	D	Option 2. - Apply the same mitigation measures as in Option 1. - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 3. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 4. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.	
	SB	TR	0.35	11.8	B		SB	LTR	0.86	53.2	D		
	EB	TR	0.25	20.5	C		EB	TR	0.46	36.5	D		
	WB	TR	0.36	23.0	C		WB	TR	0.46	36.5	D		
			0.60	19.6	B			TR	0.32	34.8	C		
								SH	L	0.65	32.5		C
								T	0.14	23.0	C		
								TR	1.01	70.7	E		
								TR	0.83	34.4	C		
								WB	L	0.42	31.8		C
9 River Avenue at E. 157th Street River Avenue E. 157th Street	NB	TR	0.69	18.8	B		NB	LTR	0.91	35.2	D	Option 2. - Apply the same mitigation measures as in Option 1. - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 3. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. Option 4. (CORSIM Results) - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Gerard Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Mitigation not required.	
	SB	TR	0.36	12.0	B		SB	LTR	0.86	53.2	D		
	WB	TR	0.08	18.9	B		WB	TR	0.46	36.5	D		
			0.33	13.4	B			TR	0.32	34.8	C		
								SH	L	0.65	32.5		C
								T	0.14	23.0	C		
								TR	1.01	70.7	E		
								TR	0.83	34.4	C		
								WB	L	0.42	31.8		C
								TR	0.95	54.2	D		

TABLE A-18
BRONX TERMINAL MARKET NON-GAME DAY 2014
WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILT 2014						BUILD 2014						CURRENT BUILT MITIGATED						Mitigation Measures	
	Weekday PM Peak Hour (SPM-4PM)			Control			Weekday PM Peak Hour (SPM-4PM)			Control			Weekday PM Peak Hour (SPM-4PM)			Control				
	MvL	V/C	LOS	Delay	V/C	LOS	MvL	V/C	LOS	Delay	V/C	LOS	MvL	V/C	LOS	Delay	V/C	LOS		
10 River Avenue at E. 161st Street River Avenue E. 161st Street Main Road E. 161st Street Service Road	NB	LTR	0.96	60.4	E		LTR	1.20*	120.0*	F*		LTR	0.98	55.0	D					
	SB	LTR	0.87	41.4	D		LTR	0.99	67.6	F		LTR	0.82	29.0	C					
	EB	T	0.23	14.2	B		T	0.23	14.2	B		T	0.23	19.5	B					
	WB	T	0.49	17.3	B		T	0.49	17.3	B		T	0.60	24.4	C					
	WB	TR	0.64	21.0	C		TR	0.65	21.3	C		TR	0.79	33.0	C					
WB	TR	0.62	21.6	C		TR	0.63	21.8	C		TR	0.77	33.7	C						
Overall Intersection			0.79	27.9	C			1.00	60.1	F			0.90	33.1	C					
OTHER																				
12 Jerome Ave at E. 161st Street Jerome Avenue	NB	L	0.71	46.4	D		L	0.71	46.4	D		L	0.97	53.5	D					
	SB	L	0.97	58.0	E		TR	1.17	120.0*	F*		R	0.37	14.4	B					
	WB	L	0.54	33.5	C		L	0.54	33.5	C		L	0.44	21.1	C					
	WB	L	0.96	60.9	E		L	0.96	60.9	E		TR	0.78	28.4	C					
	WB	L	0.70	22.8	C		L	0.70	22.8	C		L	0.87	41.6	D					
WB	T	0.52	21.7	C		T	0.52	21.7	C		T	0.64	35.2	D						
Overall Intersection			0.82	44.1	D			0.93	66.6	F			0.92	36.9	D					
14 Jerome Avenue at Ogden Avenue Ogden Avenue Jerome Avenue	SB	LR	0.82	44.9	D		LR	0.82	44.9	D		LR	0.82	44.9	D					
	EB	T	0.49	13.6	B		T	0.61	16.2	B		T	0.61	16.2	B					
	WB	TR	0.50	13.0	B		TR	0.50	13.0	B		TR	0.50	13.0	B					
	WB	T	0.63	19.3	B		T	0.70	19.8	B		T	0.70	19.8	B					
	Overall Intersection			0.63	19.3	B			0.70	19.8	B			0.70	19.8	B				
13 E. 157th Street at Major Deegan Expressway NB Ramp Major Deegan Expressway NB Service Road Major Deegan Expressway NB Off Ramp E. 157th Street	NB	T	0.57	27.8	C		T	1.04	70.3	F		T	0.91	21.5	C					
	NB	T	1.06	100.3	F		T	1.06	100.3	F		T	0.91	21.5	C					
	WB	R	0.75	37.6	D		R	0.85	43.4	D		R	0.55	15.9	B					
	WB	T	0.79	56.9	E		T	0.99	71.8	F		T	0.75	20.1	C					
	Overall Intersection			0.79	56.9	E			0.99	71.8	F			0.75	20.1	C				
15 Macombs Place at W. 155th Street Macombs Place	NB	L	0.81	59.8	E		L	0.81	59.8	E		L	0.76	42.8	D					
	SB	T	0.19	11.0	B		T	0.19	11.0	B		T	0.20	9.7	A					
	EB	R	0.69	39.3	D		R	0.69	39.3	D		R	0.83	43.8	D					
	WB	R	0.92	37.6	D		R	0.96	44.1	D		R	0.74	11.7	B					
	WB	R	1.04	84.2	F		R	1.11	107.3	F		R	1.06	78.8	E					
WB	R	0.13	11.1	B		R	0.13	11.1	B		R	0.20	20.3	C						
Overall Intersection			0.85	46.7	D			0.88	54.2	F			0.90	35.7	D					
4 Lenox Avenue at E. 145th Street Lenox Avenue	NB	L	0.62	31.9	C		L	0.62	31.9	C		L	0.65	34.0	C					
	SB	LT	0.40	23.8	C		LT	0.40	23.8	C		LT	0.41	24.8	C					
	WB	R	0.59	18.7	B		R	0.59	18.7	B		R	0.59	18.7	B					
	WB	LTR	0.45	24.9	C		LTR	0.45	24.9	C		LTR	0.46	26.0	C					
	WB	L	0.77	27.7	C		L	0.87	33.1	C		L	0.87	33.1	C					
WB	L	0.95	86.4	F		L	1.12	93.9	F		L	1.06	73.8	E						
WB	TR	0.77	21.3	C		TR	0.91	31.7	C		TR	0.89	28.9	C						
Overall Intersection			0.80	32.9	C			1.00	37.6	D			0.95	34.6	C					
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street East Garage (G2) Exit Only	NB		NA				L	0.36	24.3	C		L	0.65	34.0	C					
	SB	TR	0.49	22.7	C		T	0.51	23.1	C		LT	0.41	24.8	C					
	WB	L	0.14	18.1	B		L	0.14	18.1	B		L	0.14	18.1	B					
	WB	T	0.00	16.5	B		T	0.00	16.5	B		T	0.00	16.5	B					
	WB	R	0.59	26.9	C		R	0.59	26.9	C		R	0.59	26.9	C					
Overall Intersection			0.55	23.5	C			0.55	23.5	C			0.55	23.5	C					

* Prohibit parking on the east side of the NB approach, 120 ft. from the intersection and exclusive right, 1 ft. wide each.
* Modify signal timing (shift 8 s of green time from the EB/WB phase to the NB/SB phase).

* Reconfigure NB lane configuration from exclusive left, through, and through-right to left-through, through, and exclusive right, 1 ft. wide each.
* Modify signal timing (shift 9 s of green time from EB/WB phase to NB/SB phase).

- Mitigation not required.

- Provide revised phasing plan with 60 s cycle (combine NB Major Deegan Expressway Service Road and NB Major Deegan Expressway Off Ramp into one phase).
- Install a lane reduction transition marking/signage for NB receiving lanes.

- Provide revised signal timing and phasing plan. (reduce the cycle length from 120 s to 90 s, and reduce the number of signal phases from 4 to 3).

- Modify signal timing (shift 1 s of green time from NB/SB phase to WB lead phase).

- Mitigation not required.

TABLE A-18
BRONX TERMINAL MARKET NON-GAME DAY 2014
WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014			BUILD 2014			CURRENT BUILD MITIGATED			Mitigation Measures
	Weekday PM Peak Hour (5PM-6PM)	Control	LOS	Weekday PM Peak Hour (5PM-6PM)	Control	LOS	Weekday PM Peak Hour (5PM-6PM)	Control	LOS	
	Mt.	V/C	Delay	Mt.	V/C	Delay	Mt.	V/C	Delay	
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street	NA			TR	0.58	21.4				
	SB			L	0.45	35.3	D			
	EB			T	0.25	16.5	B			
West Garage Exit Only				LTR	0.38	34.8	C			
Overall Intersection					0.63	23.9	C			Mitigation not required.
UN SIGNALIZED										
EXTERIOR STREET										
22 Exterior Street at South Pocket Lot Exterior Street	NA			LT	0.01	9.9	A			
	WB			LR	0.03	18.4	C			
	South Pocket Lot									
Overall Intersection						15.6	C			Mitigation not required.
(Free flow)										
5 Exterior Street at E. 150th Street Exterior Street	0.00		8.2							
	SB		0.02							
	EB		0.01							
E. 150th Street			0.26							
Overall Intersection							9.2			Mitigation not required.
20 Exterior Street at South Truck Access										
Exterior Street	NA			LT	0.01	10.0	B			
South Truck Access				LR	0.03	17.4	C			
Overall Intersection							15.4			Mitigation not required.
21 Exterior Street at North Truck Access										
Exterior Street	NA			LT	0.00	9.3	A			
SB				LT	0.01	11.2	B			
EB				LR	0.03	29.8	D			
North Truck Access				LR	0.06	28.4	D			
Overall Intersection							22.6			Mitigation not required.
OTHER										
6 River Avenue at E. 150th Street River Avenue	0.06		7.9	LT	0.00	8.5	A			
	EB		0.08	LR	0.02	15.7	C			
	WB		0.38	LTR	0.44	30.4	D			
E. 150th Street										
Overall Intersection								10.8		Prohibit parking on the north side of the WB 150th Street approach 120 ft. from the intersection. Reshape WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane. [Measures reflect geometric improvements needed for other peak periods, otherwise mitigation not needed.]
1b Grand Concourse at E. 138th Street										
E. 138th Street				LT	0.39	13.2	B			
Overall Intersection										Mitigation not required.

Notes
 (1): Control delay is measured in seconds per vehicle.
 (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
 (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB.
 (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
 (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A-19
BRONX TERMINAL MARKET NON-GAME DAY 2014
SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014										CURRENT BUILD MITIGATED										
	Saturday Midday (1PM - 2PM)					Control					Saturday Midday (1PM - 2PM)					Control					
	Mvt.	V/C	Delay	LOS	Mit.	V/C	Delay	LOS	Mit.	V/C	Delay	LOS	Mit.	V/C	Delay	LOS	Mit.	V/C	Delay	LOS	
SIGNALIZED																					
GRAND CONCOURSE																					
1a Grand Concourse at E. 138th Street																					
Grand Concourse	SB	L	0.54	83.9	F	L	0.54	83.9	F	TR	0.78	19.1	B								
	R	R	0.59	84.8	F	R	0.59	84.8	F	TR	0.87	24.1	C								
	EB	T	0.49	35.2	D	T	0.49	35.2	D	TR	0.96	64.7	E								
	WB	T	0.47	34.7	C	T	0.47	34.7	C	TR	0.97	64.6	E								
	Overall Intersection		0.53	47.5	D		0.53	47.5	D		0.90	40.6	D								
2 Grand Concourse at E. 149th Street																					
Grand Concourse	NB	TR	1.07	71.5	E	TR	1.07	71.5	E	TR	0.78	19.1	B								
	SB	TR	1.08	72.4	E	TR	1.20	119.6	F	TR	0.87	24.1	C								
	EB	TR	0.95	66.5	E	TR	1.05	92.3	F	TR	0.96	64.7	E								
	WB	TR	0.98	69.7	E	TR	1.06	94.0	F	TR	0.97	64.6	E								
	Overall Intersection		1.05	70.4	E		1.16	95.9	F		0.90	40.6	D								
11 Grand Concourse at E. 161st Street																					
Grand Concourse	NB	LT	0.53	17.4	B	LT	0.55	17.9	B	L	0.23	17.7	B								
	R	R	0.09	12.1	B	R	0.09	12.2	B	T	0.52	20.6	C								
	SB	L	0.73	34.7	D	L	0.73	34.7	D	R	0.11	15.2	B								
	SB	T	0.64	55.7	E	T	0.68	60.6	E	L	0.66	41.4	D								
	SB	T	0.40	55.3	E	T	0.44	58.1	E	T	0.62	45.2	D								
	EB	R	0.38	54.5	D	R	0.39	54.8	D	R	0.35	43.6	D								
	EB	LTR	0.84	46.1	D	LTR	0.89	57.8	E	R	0.39	43.6	D								
		De/L	0.89	88.2	F	De/L	0.84	49.9	D	De/L	0.73	37.7	D								
	WB	TR	0.91	67.3	E	TR	0.91	67.3	E	De/L	0.80	53.4	D								
	Overall Intersection		0.74	45.2	D		0.76	49.8	D		0.72	37.9	D								
RIVER AVENUE																					
3 River Avenue and Exterior Street at E. 149th Street																					
Major Deegan Expressway, NB Off Ramp	NB	LTR	1.03	98.5	F	LTR	1.20+	120.0+	F*	LTR	0.89	41.7	D								
River Avenue	SB	LTR	0.67	52.1	D	LTR	1.20+	120.0+	F*	LTR	0.83	50.8	D								
Exterior Street	NB	LTR	0.53	51.5	D	LTR	0.55	51.0	D	De/L	0.22	34.7	C								
	SB	De/L	0.68	57.6	E	De/L	1.19	120.0+	F*	L	0.71	34.1	C								
	EB	TR	0.74	58.4	E	TR	1.18	120.0+	F*	T	0.19	22.2	C								
	WB	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	L	0.88	46.5	D								
	Overall Intersection		1.05	85.4	F		1.20+	120.0+	F*		0.63	27.7	C								
		LTR	1.05	85.4	F	LTR	1.20+	120.0+	F*	L	0.41	33.0	C								
	Overall Intersection		1.18	120.0+	F*		1.20+	120.0+	F*		0.91	51.5	D								

- Mitigation not required.

- Restripe both north and southbound approach to provide two 10 ft. wide through lanes and one 10 ft. wide shared through-right lane.
- Modify signal timing (split 3 s of green time from the NB/SB phase to the EB/WB phase).

- Design modifications needed as follows:
- Relocate the bus stop from near side to far side on the NB Grand Concourse approach.
- Restripe NB approach to provide one 11 ft. wide exclusive left-turn lane, two 10 ft. wide through lanes and one 11 ft. wide exclusive right-turn lane.
- Install a guide sign regarding the lane usage (exclusive left-turn only, through to main road, through to service road and exclusive right-turn only).
- Modify signal timing (eliminate the 14 s NB proceed phase, add 6 s of green time to the EB/WB phase, add 6 s of green time to the NB/SB phase, and add 2 s of all red time in the NB/SB).

Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are needed as follows -
- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left-turn lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes, EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Rezone the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

Option 1.
- Within the NB Deegan ramp to obtain two 12 ft. wide travel lanes.
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).

TABLE A-19
BRONX TERMINAL MARKET NON-GAME DAY 2014
SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014						CURRENT BUILD MITIGATED						Mitigation Measures	
	Saturday Midday (1PM - 2PM)			Saturday Midday (1PM - 2PM)			Saturday Midday (1PM - 2PM)			Saturday Midday (1PM - 2PM)				
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
10 River Avenue at E. 161st Street River Avenue	NB	LTR	0.63	22.4	C	LTR	1.19	120.04	F	LTR	0.89	37.5	D	
	SB	LTR	0.63	22.2	C	LTR	0.81	32.5	C	LTR	0.81	32.5	C	
	EB	T	0.37	11.2	B	T	0.37	11.3	B	T	0.37	11.3	B	
	WB	T	0.59	14.0	B	T	0.59	14.0	B	T	0.59	14.0	B	
	WB	TR	0.72	17.7	B	TR	0.74	18.3	B	TR	0.74	18.3	B	
Overall Intersection			0.68	17.0	B		0.86	36.1	D		0.81	21.4	C	
OTHER														
12 Jerome Avenue at E. 161st Street Jerome Avenue	NB	L	0.36	21.1	C	L	0.36	21.1	C	L	0.32	21.4	C	
	SB	TR	0.97	56.2	E	TR	1.18	120.04	F	TR	0.59	25.0	C	
	WB	TR	0.24	41.7	D	TR	0.24	41.7	D	TR	0.24	41.7	D	
	WB	L	0.50	55.9	E	L	0.50	55.9	E	L	0.50	55.9	E	
	WB	LT	0.13	11.9	B	LT	0.13	11.9	B	LT	0.13	11.9	B	
Overall Intersection			0.71	46.1	D		0.81	75.9	F		0.54	33.3	C	
14 Jerome Avenue at Ogden Avenue Ogden Avenue	SB	LR	0.51	25.1	C	LR	0.51	25.1	C	LR	0.51	25.1	C	
	EB	T	0.43	12.7	B	T	0.56	14.9	B	T	0.56	14.9	B	
	WB	TR	0.34	11.0	B	TR	0.34	11.0	B	TR	0.34	11.0	B	
	WB			0.46	15.0	B		0.54	15.6	B		0.54	15.6	B
	Overall Intersection			0.46	15.0	B		0.54	15.6	B		0.54	15.6	B
13 E. 157th Street at Major Deegan Expressway NB Ramp Major Deegan Expressway NB Service Road	NB	T	0.44	25.7	C	T	0.96	49.8	D	T	0.79	15.8	B	
	NB	T	1.01	70.0	E	T	1.01	70.0	E	T	0.28	12.8	B	
	WB	R	0.32	28.0	C	R	0.43	29.6	C	R	0.28	12.8	B	
	WB			0.60	46.1	D		0.82	52.7	D		0.56	15.3	B
	Overall Intersection			0.60	46.1	D		0.82	52.7	D		0.56	15.3	B
15 Macombs Place at W. 155th Street Macombs Place	NB	L	0.40	43.0	D	L	0.40	43.0	D	L	0.43	34.9	C	
	SB	T	0.26	11.7	B	T	0.26	11.7	B	T	0.28	10.4	B	
	EB	R	0.80	43.7	D	R	0.80	43.7	D	R	0.86	41.6	D	
	WB	R	0.58	19.6	B	R	0.61	20.3	C	R	0.45	5.3	A	
	WB	R	0.97	65.5	E	R	1.05	86.7	F	R	1.00	62.1	E	
Overall Intersection			0.77	33.0	C		0.80	38.2	D		0.82	27.1	C	
4 Lenox Avenue at E. 145th Street Lenox Avenue	NB	L	0.75	38.4	D	L	0.75	38.4	D	L	0.78	41.7	D	
	SB	LT	0.29	21.8	C	LT	0.29	21.8	C	LT	0.30	22.6	C	
	EB	R	0.43	15.3	B	R	0.43	15.3	B	R	0.41	13.9	B	
	WB	LTR	0.39	23.6	C	LTR	0.39	23.6	C	LTR	0.40	24.6	C	
	WB	L	0.92	48.8	D	L	1.04	71.7	E	L	0.96	44.9	D	
Overall Intersection			0.80	26.9	C		0.98	33.1	C		0.89	33.4	C	
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street	NB	L	0.48	30.5	C	L	0.48	30.5	C	L	0.48	30.5	C	
	SB	TR	0.57	24.3	C	TR	0.57	24.3	C	TR	0.57	24.3	C	
	WB	L	0.15	18.3	B	L	0.15	18.3	B	L	0.15	18.3	B	
	WB	T	0.00	16.5	B	T	0.00	16.5	B	T	0.00	16.5	B	
	WB	R	0.67	29.8	C	R	0.67	29.8	C	R	0.67	29.8	C	
Overall Intersection			0.62	24.7	C		0.62	24.7	C		0.62	24.7	C	

TABLE A - 19
 BRONX TERMINAL MARKET NON-GAME DAY 2014
 SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014				BUILD 2014				CURRENT BUILD MITIGATED					
	Saturday Midday (1PM - 2PM)		Control		Saturday Midday (1PM - 2PM)		Control		Saturday Midday (1PM - 2PM)		Control			
	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS		
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street	NB	NA			TR	0.54	20.7	C						
	SB				L	0.87	36.4	D						
	EB				T	0.31	17.2	B						
					LTR	0.43	36.0	D						
Overall Intersection					0.68	24.1	C					- Mitigation not required.		
UNSIGNALIZED														
<u>EXTERIOR STREET</u>														
22 Exterior Street at South Pocket Lot Exterior Street South Pocket Lot	SB	NA			LT	0.01	9.7	A						
	WB				LR	0.03	18.2	C						
Overall Intersection							15.4	C					- Mitigation not required.	
(Free flow)														
5 Exterior Street at E. 150th Street Exterior Street	NB	LTR	0.01	8.2	A									
	SB	LTR	0.02	8.1	A									
	EB	LTR	0.00	10.2	B									
	WB	LTR	0.21	11.9	B									
Overall Intersection							8.7	A					- Mitigation not required.	
20 Exterior Street at South Truck Access Exterior Street South Truck Access														
SB	NA			LT	0.00	9.6	A							
WB				LR	0.01	19.3	C							
Overall Intersection							18.9	C					- Mitigation not required.	
21 Exterior Street at North Truck Access Exterior Street North Truck Access														
NB	NA			LT	0.00	9.8	A							
SB				LT	0.00	11.0	B							
EB				LR	0.01	29.7	D							
WB				LR	0.01	29.7	D							
Overall Intersection							23.3	C					- Mitigation not required.	
<u>OTHER</u>														
6 River Avenue at E. 150th Street River Avenue Pocket Lot Entry/Exit E. 150th Street	NB	LT	0.06	7.8	A				LT	0.00	8.2	A		
	EB	LR	0.09	14.3	B				LR	0.02	12.0	B		
	WB	LTR	0.17	15.2	C				L	0.19	19.3	C		
									TR	0.02	11.9	B		
Overall Intersection							9.6	A				17.2	C	- Prohibit parking on the north side of the WB 150th Street approach 120 ft. from intersection. - Restripe WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane. [Measures reflect geometric improvements needed for other peak periods, otherwise mitigation not needed.]
1b Grand Concourse at E. 138th Street E. 138th Street														
EB	LT	0.27	10.6	B	LT	0.27	10.6	B						
Overall Intersection							10.6	B					- Mitigation not required.	

Notes
 (1): Control delay is measured in seconds per vehicle.
 (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (see/vsh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
 (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (see/vsh) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB.
 (4): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
 (5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A-20
BRONX TERMINAL MARKET GAME DAY 2014
WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014				BUILD 2014				CURRENT BUILD MITIGATED				Mitigation Measure
	MvL	V/C	Control Delay	LOS	MvL	V/C	Control Delay	LOS	MvL	V/C	Control Delay	LOS	
SIGNALIZED													
GRAND CONCOURSE													
1a Grand Concourse at E. 138th Street													
Grand Concourse													
E. 138th Street													
	SB	L	0.35	E	L	0.35	67.7	E	TR	0.77	18.1	B	
		R	0.40	E	R	0.40	79.7	E	TR	0.79	20.0	C	
	EB	T	0.40	B	T	0.40	12.3	B	TR	0.93	56.5	E	
	WB	T	0.45	B	T	0.45	13.0	B	TR	0.95	58.5	E	
Overall Intersection			0.43	C		0.43	25.4	C	TR	0.84	35.2	D	
2 Grand Concourse at E. 149th Street													
Grand Concourse													
E. 149th Street													
	NB	TR	1.06	E	TR	1.06	60.6	E	TR	0.86	61.8	E	
	SB	TR	1.00	D	TR	1.09	73.9	E	TR	0.96	44.3	D	
	EB	TR	1.00	E	TR	1.05	98.1	F	TR	0.79	19.1	B	
	WB	TR	1.03	F	TR	1.10	104.3	F	TR	0.84	67.6	E	
Overall Intersection			1.05	E		1.09	81.2	F	TR	0.88	35.8	D	
11 Grand Concourse at E. 161st Street													
Grand Concourse													
Grand Concourse Main Road													
Grand Concourse Service Road													
E. 161st Street													
	NB	LT	1.08	E	LT	1.13	92.7	F	L	0.86	61.8	E	
		R	0.12	B	R	0.23	12.0	B	T	0.96	44.3	D	
	SB	L	0.84	E	L	0.84	67.6	E	R	0.29	19.1	B	
		T	0.58	E	T	0.58	61.3	E	L	0.84	67.6	E	
	SB	T	0.36	B	T	0.48	22.2	C	T	0.58	61.3	E	
		R	0.89	E	R	0.89	62.9	E	T	0.48	22.2	C	
	EB	D+L	0.87	F	D+L	0.92	80.8	F	R	0.89	62.9	E	
		TR	1.00	F	TR	1.00	84.6	F	D+L	0.70	40.5	D	
	WB	LTR	0.86	D	TR	1.13	120.0+	F*	TR	0.75	38.0	D	
					TR	0.91	61.3	E	D+L	0.78	34.2	D	
									TR	0.69	35.9	D	
Overall Intersection			1.04	E		1.10	75.5	E		0.88	35.8	D	
RIVER AVENUE													
3 River Avenue and Exterior Street at E. 149th Street													
Major Deegan Expressway NB Off Ramp													
River Avenue													
Exterior Street													
E. 149th Street													
	NB	LTR	1.10	F*	LTR	1.20+	120.0+	F*	LTR	1.15	120.0+	F*	
	SB	LTR	0.50	D	LTR	0.91	71.7	E	LTR	0.70	41.8	D	
	NB	LTR	0.80	E	LTR	1.10	120.0+	F*	D+L	0.41	35.8	D	
									TR	0.28	34.4	C	
	SB	D+L	0.88	F	D+L	1.20+	120.0+	F*	L	0.87	55.6	C	
		TR	0.35	D	TR	0.58	43.9	D	T	0.12	24.8	C	
	EB	D+L	1.09	F*	D+L	1.20+	120.0+	F*	L	0.95	111.9	F	
		TR	1.10	F*	TR	1.10	120.0+	F*	TR	0.77	30.6	C	
	WB	LTR	0.98	E	LTR	1.12	106.0	F	L	0.24	30.4	C	
									TR	0.95	57.4	E	
Overall Intersection			1.03	F*		1.20+	120.0+	F*		0.88	67.7	F	

Geometry of this intersection has been modified by shifting each approach until receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are needed as follows:

- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left-turn lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes, EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Rotate the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

Option 1.

- Widen the NB Deegan ramp to obtain two 12 ft. wide travel lanes.
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).

TABLE A - 20
BRONX TERMINAL MARKET GAME DAY 2014
WEEKDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014						BUILD 2014						CURRENT BUILD MITIGATED						Mitigation Measures
	Weekday PM (5:15PM - 6:15PM)			Control			Weekday PM (5:15PM - 6:15PM)			Control			Weekday PM (5:15PM - 6:15PM)			Control			
	Mvt.	V/C	LOS	Mvt.	V/C	LOS	Mvt.	V/C	LOS	Mvt.	V/C	LOS	Mvt.	V/C	LOS	Mvt.	V/C	LOS	
10 River Avenue at E. 161st Street River Avenue E. 161st Street Main Road E. 161st Street Service Road	NB	LTR	0.59	23.9	C	LTR	0.73	38.8	C	LTR	0.73	38.8	C	LTR	0.73	38.8	C	- Mitigation not required.	
	SB	LTR	0.58	21.5	C	LTR	0.61	22.5	C	LTR	0.61	22.5	C	LTR	0.61	22.5	C		
	EB	T	0.14	13.9	B	T	0.15	14.0	B	T	0.15	14.0	B	T	0.15	14.0	B		
	WB	T	0.51	18.1	B	T	0.51	18.1	B	T	0.51	18.1	B	T	0.51	18.1	B		
	EB	T	0.41	16.8	B	T	0.41	16.8	B	T	0.41	16.8	B	T	0.41	16.8	B		
	WB	TR	0.87	39.5	D	TR	0.87	39.5	D	TR	0.87	39.5	D	TR	0.87	39.5	D		
Overall Intersection			0.73	21.6	C		0.80	22.4	C		0.80	22.4	C		0.80	22.4	C		
OTHER																			
12 Jerome Avenue at E. 161st Street Jerome Avenue	NB	L	0.74	52.3	D	L	0.74	52.3	D	L	0.74	52.3	D	L	0.74	52.3	D	Design modifications needed as follows:- - Re-type NB lane configuration from exclusive left, through, and through-right to left-through, through, and exclusive right, 11 ft. wide each. - Shift SB centerline 5 ft. to the west by reducing the SB parking lane width from 13 ft. to 8 ft. to gain good transition for the NB traffic.	
	SB	TR	1.01	61.3	E	TR	1.07	117.3	F	TR	1.07	117.3	F	TR	1.07	117.3	F		
	EB	L	0.85	64.8	E	L	1.13	120.0+	F	L	1.13	120.0+	F	L	1.13	120.0+	F		
	WB	L	0.84	39.4	D	L	0.84	39.4	D	L	0.84	39.4	D	L	0.84	39.4	D		
	EB	L	0.66	20.7	C	L	0.66	20.7	C	L	0.66	20.7	C	L	0.66	20.7	C		
	WB	LT	0.18	49.3	D	LT	0.18	49.3	D	LT	0.18	49.3	D	LT	0.18	49.3	D		
Overall Intersection			0.82	46.3	D		0.89	75.9	E		0.89	75.9	E		0.79	38.5	D		
14 Jerome Avenue at Ogden Avenue Jerome Avenue	SB	LR	0.58	27.4	C	LR	0.58	27.4	C	LR	0.58	27.4	C	LR	0.58	27.4	C	- Mitigation not required.	
	EB	T	0.63	16.0	B	T	0.76	20.1	C	T	0.76	20.1	C	T	0.76	20.1	C		
	WB	TR	0.44	11.5	B	TR	0.44	11.5	B	TR	0.44	11.5	B	TR	0.44	11.5	B		
	Overall Intersection			0.61	16.3	B		0.69	17.9	B		0.69	17.9	B		0.69	17.9	B	
	NB	T	0.47	26.1	C	T	0.94	45.4	D	T	0.94	45.4	D	T	0.94	45.4	D	Provide revised phasing plan with 60 s cycle (combine NB Major Deegan Expressway Service Road and Major Deegan Expressway NB Service Road into one phase). - Install a lane reduction transition marking/signage for NB receiving lanes.	
	WB	R	0.49	30.5	C	R	0.57	32.1	C	R	0.57	32.1	C	R	0.57	32.1	C		
Overall Intersection			0.65	42.5	D		0.84	47.9	D		0.84	47.9	D		0.63	37.0	B		
15 Macombs Place at W. 155th Street Macombs Place W. 155th Street	NB	L	0.92	79.9	E	L	0.92	79.9	E	L	0.92	79.9	E	L	0.92	79.9	E	- Provide revised signal timing and phasing plan. (reduce the cycle length from 120 s to 90 s, and reduce the number of signal phases from 4 to 3).	
	SB	T	0.61	38.8	D	T	0.22	22.0	C	T	0.22	22.0	C	T	0.22	22.0	C		
	EB	R	0.68	26.5	C	R	0.61	38.8	D	R	0.61	38.8	D	R	0.61	38.8	D		
	WB	L	1.08	120.0+	F	L	1.14	120.0+	F	L	1.14	120.0+	F	L	1.14	120.0+	F		
	Overall Intersection			0.93	77.0	E		0.92	84.0	F		0.92	84.0	F		0.83	42.8	D	
	Overall Intersection			0.93	77.0	E		0.92	84.0	F		0.92	84.0	F		0.83	42.8	D	
4 Lenox Avenue at E. 145th Street Lenox Avenue E. 145th Street	NB	L	0.60	30.8	C	L	0.60	30.8	C	L	0.60	30.8	C	L	0.60	30.8	C	- Modify signal timing (shift 2 s of green time from the WB exclusive phase to the EB/WB phase. Shift 2 s of green time from the NB/SB phase to the EB/WB phase).	
	SB	TR	0.65	20.6	C	TR	0.42	24.2	C	TR	0.42	24.2	C	TR	0.42	24.2	C		
	EB	LTR	0.42	24.2	C	LTR	0.42	24.2	C	LTR	0.42	24.2	C	LTR	0.42	24.2	C		
	WB	L	0.93	38.8	D	L	1.04	62.6	E	L	1.04	62.6	E	L	1.04	62.6	E		
	Overall Intersection			0.81	26.8	C		0.81	26.8	C		0.81	26.8	C		0.81	26.8	C	
	Overall Intersection			0.81	26.8	C		0.81	26.8	C		0.81	26.8	C		0.81	26.8	C	
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street East Garage (G2) Exit Only	NB	L	0.40	27.2	C	L	0.40	27.2	C	L	0.40	27.2	C	L	0.40	27.2	C	- Mitigation not required.	
	SB	TR	0.58	24.4	C	TR	0.31	20.0	B	TR	0.31	20.0	B	TR	0.31	20.0	B		
	WB	L	0.12	17.9	B	L	0.12	17.9	B	L	0.12	17.9	B	L	0.12	17.9	B		
	Overall Intersection			0.63	24.5	C		0.63	24.5	C		0.63	24.5	C		0.63	24.5	C	
	Overall Intersection			0.63	24.5	C		0.63	24.5	C		0.63	24.5	C		0.63	24.5	C	
	Overall Intersection			0.63	24.5	C		0.63	24.5	C		0.63	24.5	C		0.63	24.5	C	

TABLE A - 21
BRONX TERMINAL MARKET GAME DAY 2014
SATURDAY MIDDAY COMPANION AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014 Saturation Midday (12PM - 1PM)				BUILD 2014 Saturation Midday (12PM - 1PM)				CURRENT BUILD MITIGATED Saturation Midday (12PM - 1PM)				Mitigation Measures
	Control		LOS		Control		LOS		Control		LOS		
	M/M	V/C	Deby	LOS	M/M	V/C	Deby	LOS	M/M	V/C	Deby	LOS	
17 River Avenue at Garage 2 Exit Only River Avenue Garage 2 Exit Only	NB	LTR	1.20+	120.0+	NB	LTR	1.20+	120.0+	NB	LTR	1.20+	120.0+	<p>Option 3</p> <ul style="list-style-type: none"> - Apply the same mitigation measures as in Option 1. - Prohibit the left-turn movement on the NB Exterior Street and redirect them to NB Canal Avenue and then to WB 149th Street. (this traffic volume will be added to the WB 149th Street through movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. <p>(CORSIM Results)</p> <ul style="list-style-type: none"> - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Canal Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue). - Widen the NB Deegan ramp to obtain two full 12 ft. wide travel lanes. <p>Option 4</p> <p>(CORSIM Results)</p> <ul style="list-style-type: none"> - Prohibit the through and left-turn movements on the NB Exterior Street and redirect them to NB Canal Avenue and then to WB 149th Street (this traffic volume will be added to the WB 149th Street appropriate movement volume at this intersection). - Install * STOP Control for the NB Exterior Street approach right-turn volume. - Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s and allow NB Major Deegan off-ramp to move through two phases: first with SB Exterior Street and second with SB River Avenue).
	SB	LTR	0.88	61.5	SB	LTR	0.88	61.5	SB	LTR	0.88	61.5	
	EB	DoL	0.43	39.2	EB	DoL	0.43	39.2	EB	DoL	0.43	39.2	
	WB	TR	0.37	38.4	WB	TR	0.37	38.4	WB	TR	0.37	38.4	
	SB	L	0.98	71.5	SB	L	0.98	71.5	SB	L	0.98	71.5	
	EB	T	0.19	21.5	EB	T	0.19	21.5	EB	T	0.19	21.5	
	WB	L	1.06	89.1	WB	L	1.06	89.1	WB	L	1.06	89.1	
	WB	TR	0.76	30.3	WB	TR	0.76	30.3	WB	TR	0.76	30.3	
	WB	L	0.30	26.6	WB	L	0.30	26.6	WB	L	0.30	26.6	
	WB	TR	0.69	31.2	WB	TR	0.69	31.2	WB	TR	0.69	31.2	
16 River Avenue at E. 151st Street / Garage 2 Entrance Only River Avenue E. 151st Street / Garage 2 Entrance Only	NB	LTR	0.62	9.8	NB	LTR	0.62	9.8	NB	LTR	0.62	9.8	<p>Mitigation not required.</p>
	SB	T	0.08	5.6	SB	T	0.08	5.6	SB	T	0.08	5.6	
	EB	L	0.33	17.3	EB	L	0.33	17.3	EB	L	0.33	17.3	
	WB	R	0.16	15.5	WB	R	0.16	15.5	WB	R	0.16	15.5	
	Overall Intersection			10.4	Overall Intersection			10.4	Overall Intersection			10.4	
	NB	LTR	1.06	57.7	NB	LTR	1.06	57.7	NB	LTR	1.06	57.7	
	SB	L	0.17	7.1	SB	L	0.17	7.1	SB	L	0.17	7.1	
	WB	L	0.33	21.5	WB	L	0.33	21.5	WB	L	0.33	21.5	
	Overall Intersection			48.6	Overall Intersection			48.6	Overall Intersection			48.6	
	NB	LTR	1.20+	120.0+	NB	LTR	1.20+	120.0+	NB	LTR	1.20+	120.0+	
SB	LTR	0.73	19.3	SB	LTR	0.73	19.3	SB	LTR	0.73	19.3		
EB	L	0.41	17.2	EB	L	0.41	17.2	EB	L	0.41	17.2		
WB	L	0.46	19.7	WB	L	0.46	19.7	WB	L	0.46	19.7		
Overall Intersection			79.8	Overall Intersection			79.8	Overall Intersection			79.8		
8 River Avenue at E. 153rd Street River Avenue E. 153rd Street	NB	LTR	0.79	33.4	NB	LTR	0.79	33.4	NB	LTR	0.79	33.4	<p>Mitigation not required.</p>
	SB	LTR	0.71	18.4	SB	LTR	0.71	18.4	SB	LTR	0.71	18.4	
	EB	LTR	0.41	17.2	EB	LTR	0.41	17.2	EB	LTR	0.41	17.2	
	WB	LTR	0.46	19.7	WB	LTR	0.46	19.7	WB	LTR	0.46	19.7	
	Overall Intersection			33.4	Overall Intersection			33.4	Overall Intersection			33.4	
	NB	LTR	1.00	52.2	NB	LTR	1.00	52.2	NB	LTR	1.00	52.2	
	SB	LTR	0.71	18.4	SB	LTR	0.71	18.4	SB	LTR	0.71	18.4	
	EB	LTR	0.41	17.2	EB	LTR	0.41	17.2	EB	LTR	0.41	17.2	
	WB	LTR	0.46	19.7	WB	LTR	0.46	19.7	WB	LTR	0.46	19.7	
	Overall Intersection			33.4	Overall Intersection			33.4	Overall Intersection			33.4	
9 River Avenue at E. 157th Street River Avenue E. 157th Street	NB	TR	0.41	9.6	NB	TR	0.41	9.6	NB	TR	0.41	9.6	<p>Mitigation not required.</p>
	SB	LT	0.54	11.5	SB	LT	0.54	11.5	SB	LT	0.54	11.5	
	WB	LR	0.11	13.8	WB	LR	0.11	13.8	WB	LR	0.11	13.8	
	Overall Intersection			10.9	Overall Intersection			10.9	Overall Intersection			10.9	
	NB	TR	0.52	11.3	NB	TR	0.52	11.3	NB	TR	0.52	11.3	
	SB	LT	0.56	12.1	SB	LT	0.56	12.1	SB	LT	0.56	12.1	
	WB	LR	0.11	13.8	WB	LR	0.11	13.8	WB	LR	0.11	13.8	
	Overall Intersection			11.8	Overall Intersection			11.8	Overall Intersection			11.8	
	NB	TR	0.39	11.8	NB	TR	0.39	11.8	NB	TR	0.39	11.8	
	Overall Intersection			11.8	Overall Intersection			11.8	Overall Intersection			11.8	

TABLE A-21
 BRONX TERMINAL MARKET GAME DAY 2014
 SATURDAY MIDDAY COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014					BUILD 2014					CURRENT BUILD MITIGATED					Mitigation Measures
	Saturday-Midday (12PM - 1PM)		Control		LOS	Saturday-Midday (12PM - 1PM)		Control		LOS	Saturday-Midday (12PM - 1PM)		Control		LOS	
	Mvt.	V/C	Delay	LOS		Mvt.	V/C	Delay	LOS		Mvt.	V/C	Delay	LOS		
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street	NA					TR	0.61	22.3	C							
	NB					L	0.90	44.2	D							
	SB					T	0.38	18.1	B							
	EB					LTR	0.39	39.5	D							
West Garage Exit Only																
Overall Intersection							0.69	26.3	C							
UNSIGNALIZED																
EXTERIOR STREET																
22 Exterior Street at South Pocket Lot Exterior Street	NA					LT	0.01	10.2	B							
	SB					LR	0.04	21.7	C							
	WB															
	South Pocket Lot															
Overall Intersection								17.9	C							
(Free flow)																
5 Exterior Street at E. 150th Street Exterior Street	NA															
	NB					LTR	0.02	8.2	A							
	SB					LTR	0.10	8.6	A							
	EB					LTR	0.04	26.6	D							
E. 150th Street					WB	0.44	19.5	C								
Overall Intersection								10.3	B							
(Free flow)																
20 Exterior Street at South Truck Access Exterior Street	NA					LT	0.00	10.0	B							
	SB					LR	0.01	21.4	C							
	WB															
	South Truck Access															
Overall Intersection								18.6	C							
(Free flow)																
21 Exterior Street at North Truck Access Exterior Street	NA					LT	0.00	10.5	B							
	NB					LT	0.00	10.4	B							
	SB					LR	0.01	26.6	D							
	EB					LR	0.01	24.0	C							
North Truck Access																
Overall Intersection								20.4	C							
OTHER																
6 River Avenue at E. 150th Street River Avenue	NA					LT	0.00	7.6	A							
	NB					LT	0.07	7.6	A							
	SB					LR	0.41	25.2	D							
	EB					LTR	0.46	26.6	D							
Pocket and Entry/Exit																
E. 150th Street																
Overall Intersection								83.1	F							
- Prohibit parking on the north side of the WB 150th Street approach 120 ft. from the intersection. - Restripe WB 150th Street to provide one exclusive left-turn lane and one shared through-right lane each 11 ft. wide.																
1b Grand Concourse at E. 150th Street E. 150th Street	NA					LT	0.00	13.9	B							
	NB					LT	0.00	7.6	A							
	SB					LR	0.02	13.9	B							
	EB					L	0.39	25.9	D							
Overall Intersection								14.1	B							
- Mitigation not required.																

Notes
 (1): Control delay is measured in seconds per vehicle.
 (2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
 (3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB.
 (4): Overall intersection V/C ratio is the critical lane groups V/C ratio, not the weighted average of all the movements.
 (5): During the post-game peak hour the NB Service Road and the NB Major Dogan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

TABLE A - 22
BRONX TERMINAL MARKET GAME DAY 2014
SATURDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014				BUILD 2014				CURRENT BUILD MITIGATION				Mitigation Measures			
	Mvt.	V/C	LOS	Control	Mvt.	V/C	LOS	Control	Mvt.	V/C	LOS	Control		Delay		
SIGNALIZED																
GRAND CONCOURSE																
1a Grand Concourse at E. 138th Street																
Grand Concourse	L	0.37	69.8	E	L	0.37	69.8	E	TR	1.03	52.3	D	TR	0.70	13.6	B
E. 138th Street	R	0.50	75.3	E	R	0.50	75.3	E	TR	0.79	16.5	B	TR	0.83	49.3	D
	T	0.52	13.9	B	T	0.52	13.9	B	TR	0.84	49.5	D	TR	0.84	49.5	D
	T	0.53	14.3	B	T	0.53	14.3	B	TR	0.84	49.5	D	TR	0.84	49.5	D
Overall Intersection		0.52	25.3	C		0.52	25.3	C		0.80	28.4	C				
2 Grand Concourse at E. 149th Street																
Grand Concourse	TR	1.03	52.3	D	TR	1.03	52.3	D	TR	0.70	13.6	B	TR	0.79	16.5	B
E. 149th Street	TR	0.78	46.7	D	TR	0.83	49.3	D	TR	0.83	49.3	D	TR	0.83	49.3	D
	TR	0.80	47.3	D	TR	0.84	49.5	D	TR	0.84	49.5	D	TR	0.84	49.5	D
Overall Intersection		0.97	50.4	D		1.08	67.7	E		0.80	28.4	C				
3 Grand Concourse at E. 161st Street																
Grand Concourse	LT	0.92	108.2	F	LT	0.96	120.0+	F*	L	0.61	24.9	C				
	R	0.17	79.3	E	R	0.24	87.0	F	T	0.75	46.0	D				
Grand Concourse Main Road	L	0.18	114.2	F	L	0.21	120.0+	F*	R	0.27	69.3	E				
Grand Concourse Service Road	T	0.43	55.2	E	T	0.34	41.3	D	T	0.42	49.2	D				
E. 161st Street	T	0.27	37.9	D	T	0.34	41.3	D	T	0.42	49.2	D				
	T	0.21	35.4	D	T	0.21	35.4	D	R	0.20	31.2	C				
	De/L	0.82	73.0	E	De/L	0.85	78.5	E	De/L	0.66	47.3	D				
	TR	0.89	78.9	E	TR	0.89	78.9	E	TR	0.57	37.6	D				
	LTR	0.91	66.8	E	De/L	1.20+	120.0+	F*	De/L	0.87	63.3	E				
Overall Intersection		0.94	80.2	F		1.19	120.0+	F*		0.75	45.3	D				
										0.79	46.6	D				
RIVER AVENUE																
4 River Avenue and Exterior Street at E. 149th Street																
Major Deegan Expressway NB Off Ramp	NB	0.80	57.5	E	LTR	1.20+	120.0+	F*	LTR	0.63	28.0	C				
River Avenue	SB	1.09	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.19	120.0+	F*				
Exterior Street	NB	0.83	58.0	E	LTR	0.86	61.4	E	De/L	0.69	37.6	D				
	SB	0.55	47.8	D	De/L	1.20+	120.0+	F*	TR	0.30	29.4	D				
	TR	0.74	53.8	D	L	0.84	45.1	D	L	0.84	45.1	D				
	De/L	1.01	102.3	F	TR	0.81	58.5	E	T	0.23	32.6	C				
	TR	1.00	68.8	E	De/L	1.20+	120.0+	F*	L	0.66	35.7	D				
	LTR	1.10	120.0+	F*	TR	1.00	68.8	E	TR	0.86	42.7	D				
	LTR	1.10	120.0+	F*	LTR	1.19	120.0+	F*	L	0.67	53.0	D				
Overall Intersection		1.01	112.0	F		1.20+	120.0+	F*		1.01	75.2	E				

Mitigation not required.

Restripe both north and southbound approach to provide two 10 ft. wide through lanes and one 10 ft. wide shared through-right lane.

Design modifications needed as follows -

- Relocate the bus stop from near side to far side on the NB Grand Concourse approach.
- Restripe NB approach to provide one 11 ft. wide exclusive left-turn lane, two 10 ft. wide through lanes and one 11 ft. wide exclusive right-turn lane.
- Install a wide sign regarding the lane usage (exclusive left-turn only, through to main road, through to service road and exclusive right-turn only).
- Prohibit parking on the north side of WB 161st Street 120 ft. away from the intersection for this period.
- Modify signal timing (eliminate the 13 s NB processed phase, add 9 s of green time to the EB/WB phase, and add 3 s of green time to the NB/SB phase).

Geometry of this intersection has been modified by shifting each approach and receiving lanes closer to the intersection to reduce turning movement conflicts and to obtain better transition of traffic. Detailed design modifications are needed as follows -

- Channelize the SB Exterior Street exclusive right-turn lane onto 149th Street, and restripe the SB Exterior Street to obtain one 12 ft. wide exclusive left turn-lane and one 12 ft. wide through lane by prohibiting parking on the west side. This allows good transition between SB Exterior Street approach lanes and its receiving lanes.
- Restripe the EB 149th Street to obtain two 12 ft. wide through lanes, one 11 ft. wide exclusive left-turn lane, two WB 12 ft. wide through receiving lanes, and two 8 ft. wide sidewalks on both sides.
- Shift the WB 149th Street approach concrete divider 12 ft. to the south and restripe the approach to obtain one 12 ft. wide exclusive left-turn lane, two 12 ft. through lanes, EB exclusive left-turn lane and WB exclusive left-turn lane are now aligned each other forming a two way left-turn lane.
- Restripe the NB Exterior Street from one to two 12 ft. wide travel lanes.
- Rotate the concrete triangular sidewalk island between SB Exterior Street and SB River Avenue clockwise to gain good transition for the NB Deegan ramp and SB River Avenue traffic.

Option 1.

- Widen the NB Deegan ramp to obtain two 12 ft. wide travel lanes.
- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 100 s).

TABLE A-22
BRONX TERMINAL MARKET GAME DAY 2014
SATURDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014				BUILD 2014				CURRENT BUILD MITIGATED				Mitigation Measure	
	Saturday PM (PM-SPM)		Control		Saturday PM (PM-SPM)		Control		Saturday PM (PM-SPM)		Control			
	Mt.	V/C	LOS	Mt.	V/C	LOS	Mt.	V/C	Mt.	V/C	LOS	Mt.		V/C
10 River Avenue at E. 161st Street River Avenue E. 161st Street Main Road E. 161st Street Service Road	NB	LTR	1.09	120.0+	F*	LTR	1.09	120.0+	F*	LTR	1.09	120.0+	F*	-
	SB	R	1.09	120.0+	F*	R	1.09	120.0+	F*	R	1.09	120.0+	F*	-
	EB	T	0.86	120.0+	F*	T	0.86	120.0+	F*	T	0.86	120.0+	F*	-
	WB	T	0.71	120.0+	F*	T	0.71	120.0+	F*	T	0.71	120.0+	F*	-
	EB	Closed	-	-	-	Closed	-	-	-	Closed	-	-	-	-
WB	TR	0.95	60.9	E	TR	1.02	78.1	E	TR	0.90	48.8	D	-	
Overall Intersection	-	-	1.03	120.0+	F*	-	1.06	120.0+	F*	-	1.00	120.0+	F*	-
OTHER														
12 Jerome Avenue at E. 161st Street Jerome Avenue	NB	L	0.84	51.8	D	L	0.84	51.8	D	DetL	0.81	47.5	D	-
	SB	T	0.49	21.4	C	T	0.61	24.2	C	T	0.61	24.2	C	-
	EB	R	0.58	23.9	C	R	0.58	23.9	C	R	0.60	24.6	C	-
	WB	L	0.52	25.8	C	L	0.65	33.8	C	L	0.48	24.1	C	-
	WB	TR	0.90	45.7	D	TR	0.90	45.7	D	TR	0.90	45.7	D	-
Overall Intersection	-	-	0.97	43.8	D	-	0.97	44.0	D	-	0.97	43.3	D	-
14 Jerome Avenue at Ogden Avenue Ogden Avenue Jerome Avenue	SB	LR	0.80	38.1	D	LR	0.80	38.1	D	-	-	-	-	-
	EB	T	0.44	39.4	D	T	0.52	44.9	D	-	-	-	-	-
	WB	TR	0.69	41.2	D	TR	0.69	41.2	D	-	-	-	-	-
	Overall Intersection	-	-	0.73	40.2	D	-	0.73	41.4	D	-	-	-	-
	Overall Intersection	-	-	0.94	76.0	E	-	0.97	82.0	F	-	0.97	43.8	D
13 E. 157th Street at Major Diego Expressway NB Ramp Major Diego Expressway NB Service Road Major Diego Expressway NB Off Ramp E. 157th Street														
15 Macombs Place at W. 155th Street Macombs Place W. 155th Street	NB	L	0.97	84.4	F	L	0.97	84.4	F	L	0.91	61.1	E	-
	SB	T	0.16	22.6	C	T	0.16	22.6	C	T	0.16	16.9	B	-
	EB	R	1.02	85.5	F	T	1.02	85.5	F	T	1.01	72.5	E	-
	WB	L	0.93	44.7	D	R	0.97	51.1	D	R	0.66	8.9	A	-
	WB	R	1.09	120.0+	F*	L	1.13	120.0+	F*	L	0.97	74.2	E	-
Overall Intersection	-	-	0.94	76.0	E	-	0.97	82.0	F	-	0.97	43.8	D	-
4 Lenox Avenue at E. 145th Street Lenox Avenue E. 145th Street	NB	L	0.56	26.4	C	L	0.56	26.4	C	L	0.64	31.8	C	-
	SB	LT	0.30	21.6	C	LT	0.30	21.6	C	LT	0.34	25.0	C	-
	EB	R	0.39	14.8	B	R	0.39	14.8	B	R	0.42	17.8	B	-
	WB	LTR	0.42	24.0	C	LTR	0.42	24.0	C	LTR	0.47	28.4	C	-
	WB	L	0.66	47.7	D	L	0.75	53.8	D	L	0.71	48.0	B	-
Overall Intersection	-	-	0.80	30.2	C	-	0.85	42.7	D	-	0.85	29.9	C	-
19 Exterior Street at West Garage Entrance / East Garage (G2) Exit Exterior Street East Garage (G2) Exit Only														
Overall Intersection	-	-	0.47	23.7	C	-	0.47	23.7	C	-	0.47	23.7	C	-

NA - (Free flow) See Note (5)

Design modifications needed as follows:-
- Reshape NB lane configuration from exclusive left, through, and through-right to left-through, through, and exclusive right, 11 ft. wide each.
- Shift SB centerline 5 ft. to the west by reducing the SB parking lane width from 13 ft. to 8 ft. to gain good transition for the NB traffic.
[Measures reduce geometric improvements needed for other peak periods, otherwise mitigation not needed.]

- Mitigation not required.

- Mitigation not required.

- Provide revised signal timing and phasing plan (reduce the cycle length from 120 s to 90 s. Reduce the number of signal phases from 4 to 3).

- Modify signal timing (shift 4 s of green time from the NB/SB phase to the EB/WB phase).

- Mitigation not required.

TABLE A - 22
BRONX TERMINAL MARKET GAME DAY 2014
SATURDAY PM COMPARISON AND MITIGATION: TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH	NO BUILD 2014				BUILD 2014				CURRENT BUILD MITIGATED				Mitigation Measures
	Saturday PM (4PM - 5PM)		Control		Saturday PM (4PM - 5PM)		Control		Saturday PM (4PM - 5PM)		Control		
	Mvt.	V/C	LOS	Delay	Mvt.	V/C	LOS	Delay	Mvt.	V/C	LOS	Delay	
18 Exterior Street at West Garage Exit / East Garage (G2) Entrance Exterior Street West Garage Exit Only	NA				TR	0.46	19.4	B					- Mitigation not required.
					L	0.62	17.8	B					
					T	0.33	17.4	B					
Overall Intersection					LTR	0.28	32.9	C					
						0.48	19.5	B					
UN SIGNALIZED													
EXTERIOR STREET													
22 Exterior Street at South Pocket Lot Exterior Street South Pocket Lot	NA				LT	0.00	9.4	A					- Mitigation not required.
					LR	0.03	17.2	C					
Overall Intersection							14.6	B					
(Free flow)													
5 Exterior Street at E. 150th Street Exterior Street E. 150th Street	0.00		A	8.0	LTR	0.00	8.0	A					- Mitigation not required.
	0.07		A	8.4	SB	0.07	8.4	A					
	0.20		C	16.7	EB	0.20	16.7	C					
Overall Intersection	0.47		C	22.0	WB	0.47	22.0	C					
				11.1				B					
20 Exterior Street at South Truck Access Exterior Street South Truck Access	NA				LT	0.00	9.3	A					- Mitigation not required.
					LR	0.01	17.8	C					
Overall Intersection							15.7	C					
21 Exterior Street at North Truck Access Exterior Street North Truck Access	NA				LT	0.00	8.4	A					- Mitigation not required.
					LT	0.00	10.2	B					
					LR	0.01	27.4	D					
Overall Intersection					LK	0.01	30.0	D					
OTHER													
6 River Avenue at E. 150th Street River Avenue Pocket Lot Entry/Exit E. 150th Street	0.06		A	9.5	LT	0.00	9.8	A					- Prohibit parking on the north side of the WB 150th Street approach 120 ft. from the intersection. - Restripe WB 150th Street to provide one 11 ft. wide exclusive left-turn lane and one 11 ft. wide shared through-right lane.
	0.38		D	21.3	LR	0.03	21.3	C					
	0.49		D	27.9	LTR	0.62	41.4	E					
Overall Intersection				18.2			39.8	E					
19 Grand Concourse at E. 138th Street E. 138th Street	0.65		C	21.8	LT	0.65	21.8	C					- Mitigation not required.
Overall Intersection				21.8			21.8	C					

Notes
(1): Control delay is measured in seconds per vehicle.
(2): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/vb) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
(3): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/vb) for each minor approach as listed in the 2000 Highway Capacity Manual -- TRB.
(4): Overall Intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
(5): During the post-game peak hour the NB Service Road and the NB Major Deegan Expressway off-ramp are closed. WB 157th Street is allowed to turn right as a "free flow" movement.

APPENDIX B

Transit and Pedestrians

A. NYCT SUBWAY STATION

STAIRWAY ANALYSIS

- B-1 Subway Analysis: 2004 Existing Conditions Stairways
 - B-1a Game Day Peak Periods
 - B-1b Non-Game Day Peak Periods
- B-2 Subway Analysis: 2009 No Build Conditions Stairways
 - B-2a Game Day Peak Periods
 - B-2b Non-Game Day Peak Periods
- B-3 Subway Analysis: 2014 No Build Conditions Stairways
 - B-3a Game Day Peak Periods
 - B-3b Non-Game Day Peak Periods
- B-3 Subway Analysis: 2014 No Build Conditions Stairways
 - B-3a Game Day Peak Periods
 - B-3b Non-Game Day Peak Periods
- B-4 Subway Analysis: 2009 Build Conditions Stairways
 - B-4a Game Day Peak Periods
 - B-4b Non-Game Day Peak Periods
- B-5 Subway Analysis: 2014 Build Conditions Stairways
 - B-5a Game Day Peak Periods
 - B-5b Non-Game Day Peak Periods

REQUIRED STAIRWAY WIDENING

- B-6 Subway Analysis: 2009 Build Conditions Stairways Widening
- B-7 Subway Analysis: 2014 Build Conditions Stairways Widening

B. PEDESTRIAN

2004 EXISTING CONDITIONS

B-8 Pedestrian Analysis: 2004 Existing Conditions Sidewalks

B-8a Saturday Midday and PM Game Day Peak Periods

B-8b Game Day Weekday PM and Non-Game Day Saturday Midday Peak Periods

B-8c Non-Game Day Weekday PM Peak Periods

B-9 Pedestrian Analysis: 2004 Existing Conditions Corner Reservoirs

B-9a Game Day Peak Periods

B-9b Non-Game Day Peak Periods

B-10 Pedestrian Analysis: 2004 Existing Conditions Crosswalks

B-10a Game Day Saturday Midday Peak Period

B-10b Game Day Saturday PM Peak Period

B-10c Game Day Weekday PM Peak Period

B-10d Non-Game Day Saturday Midday Peak Period

B-10e Non-Game Day Weekday PM Peak Period

2009 NO BUILD CONDITIONS

B-11 Pedestrian Analysis: 2009 No Build Conditions Sidewalks

B-11a Saturday Midday and PM Game Day Peak Periods

B-11b Game Day Weekday PM and Non-Game Day Saturday Midday Peak Periods

B-11c Non-Game Day Weekday PM Peak Periods

B-12 Pedestrian Analysis: 2009 No Build Conditions Corner Reservoirs

B-12a Game Day Peak Periods

B-12b Non-Game Day Peak Periods

B-13 Pedestrian Analysis: 2009 No Build Conditions Crosswalks

B-13a Game Day Saturday Midday Peak Period

B-13b Game Day Saturday PM Peak Period

B-13c Game Day Weekday PM Peak Period

B-13d Non-Game Day Saturday Midday Peak Period

B-13e Non-Game Day Weekday PM Peak Period

2014 NO BUILD CONDITIONS

B-14 Pedestrian Analysis: 2014 No Build Conditions Sidewalks

B-14a Saturday Midday and PM Game Day Peak Periods

B-14b Game Day Weekday PM and Non-Game Day Saturday Midday Peak Periods

B-14c Non-Game Day Weekday PM Peak Periods

B-15 Pedestrian Analysis: 2014 No Build Conditions Corner Reservoirs

B-15a Game Day Peak Periods

B-15b Non-Game Day Peak Periods

B-16 Pedestrian Analysis: 2014 No Build Conditions Crosswalks

B-16a Game Day Saturday Midday Peak Period

B-16b Game Day Saturday PM Peak Period

B-16c Game Day Weekday PM Peak Period

B-16d Non-Game Day Saturday Midday Peak Period

B-16e Non-Game Day Weekday PM Peak Period

2009 BUILD CONDITIONS

B-17 Pedestrian Analysis: 2009 Build Conditions Sidewalks

B-17a Saturday Midday and PM Game Day Peak Periods

B-17b Game Day Weekday PM and Non-Game Day Saturday Midday Peak Periods

B-17c Non-Game Day Weekday PM Peak Periods

B-18 Pedestrian Analysis: 2009 Build Conditions Corner Reservoirs

B-18a Game Day Peak Periods

B-18b Non-Game Day Peak Periods

B-19 Pedestrian Analysis: 2009 Build Conditions Crosswalks

B-19a Game Day Saturday Midday Peak Period

B-19b Game Day Saturday PM Peak Period

B-19c Game Day Weekday PM Peak Period

B-19d Non-Game Day Saturday Midday Peak Period

B-19e Non-Game Day Weekday PM Peak Period

2014 BUILD CONDITIONS

B-20 Pedestrian Analysis: 2014 Build Conditions Sidewalks

B-20a Saturday Midday and PM Game Day Peak Periods

B-20b Game Day Weekday PM and Non-Game Day Saturday Midday Peak Periods

B-20c Non-Game Day Weekday PM Peak Periods

B-21 Pedestrian Analysis: 2014 Build Conditions Corner Reservoirs

B-21a Game Day Peak Periods

B-21b Non-Game Day Peak Periods

B-22 Pedestrian Analysis: 2014 Build Conditions Crosswalks

B-22a Game Day Saturday Midday Peak Period

B-22b Game Day Saturday PM Peak Period

B-22c Game Day Weekday PM Peak Period

B-22d Non-Game Day Saturday Midday Peak Period

B-22e Non-Game Day Weekday PM Peak Period

NYCT SUBWAY STATION
STAIRWAY ANALYSIS

Table B-1a
2004 Existing Conditions: Subway Station Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	17	22	0.90	527	0.07	A
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	77	15	0.80	408	0.23	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	6	305	0.80	432	0.72	D
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	386	10	0.80	588	0.67	D
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	354	8	0.80	588	0.62	D
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	29	86	0.80	432	0.27	B
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	470	16	0.80	576	0.84	E
Game Day Saturday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	22	19	0.90	527	0.08	A
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	67	14	0.80	408	0.20	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	31	13	0.80	432	0.10	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	9	936	0.80	588	1.61	F
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	3	914	0.80	588	1.56	F
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	243	13	0.80	432	0.59	C
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	23	835	0.80	576	1.49	F
Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	54	53	0.90	527	0.20	B
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	102	33	0.80	468	0.29	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	5	242	0.80	432	0.57	C
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	152	2	0.80	588	0.26	B
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	266	3	0.80	588	0.46	C
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	26	163	0.80	432	0.44	C
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	636	20	0.80	576	1.14	F
Note Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i>									

Table B-1b
2004 Existing Conditions: Subway Station Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Non-Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	8	85	0.80	468	0.20	B
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	48	13	0.80	408	0.15	A
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	22	2	0.80	432	0.06	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	1	9	0.80	588	0.02	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	6	1	0.80	588	0.01	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	13	28	0.80	432	0.09	A
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	13	38	0.80	576	0.09	A
Non-Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	41	147	0.80	468	0.40	C
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	86	44	0.90	459	0.28	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	5	13	0.80	432	0.04	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	10	8	0.90	662	0.03	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	1	1	0.90	662	0.00	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	97	75	0.90	486	0.35	B
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	38	27	0.90	648	0.10	A
<p>Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i></p>									

Table B-2a
2009 No Build Condition: Subway Station Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	17	23	0.90	527	0.08	A
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	79	15	0.80	408	0.23	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	6	313	0.80	432	0.74	D
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	396	10	0.80	588	0.69	D
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	363	8	0.80	588	0.63	D
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	30	88	0.80	432	0.27	B
S5	E. 161st Street/River Avenue (SE corner)	5.80	4.80	482	16	0.80	576	0.87	E
Game Day Saturday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	23	19	0.90	527	0.08	A
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	69	14	0.80	408	0.20	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	32	13	0.80	432	0.10	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	9	960	0.80	588	1.65	F
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	3	937	0.80	588	1.60	F
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	249	13	0.80	432	0.61	D
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	24	856	0.80	576	1.53	F
Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	55	54	0.90	527	0.21	B
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	105	34	0.80	468	0.30	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	5	248	0.80	432	0.59	C
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	156	2	0.80	588	0.27	B
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	273	3	0.80	588	0.47	C
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	27	167	0.80	432	0.45	C
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	652	21	0.80	576	1.17	F
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i>									

**Table B-2b
2009 No Build Conditions: Subway Station Analysis**

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Non-Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	8	87	0 80	468	0 20	B
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	49	13	0 80	408	0 15	A
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	23	2	0 80	432	0 06	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	1	9	0 80	588	0 02	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	6	1	0 80	588	0 01	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	13	29	0 80	432	0 10	A
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	13	39	0 80	576	0 09	A
Non-Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	42	151	0 80	468	0 41	C
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	88	45	0 90	459	0 29	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	5	13	0 80	432	0 04	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	10	8	0 90	662	0 03	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	1	1	0 90	662	0 00	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	99	77	0 90	486	0 36	A
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	39	28	0 90	648	0 10	A
<p>Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i></p>									

Table B-3a
2014 No Build Conditions: Subway Station Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	18	23	0.90	527	0.08	A
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	81	16	0.80	408	0.24	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	6	321	0.80	432	0.76	D
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	406	11	0.80	588	0.71	D
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	372	8	0.80	588	0.65	D
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	30	90	0.80	432	0.28	B
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	494	17	0.80	576	0.89	E
Game Day Saturday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	23	20	0.90	527	0.08	A
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	70	15	0.80	408	0.21	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	33	14	0.80	432	0.11	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	9	984	0.80	588	1.69	F
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	3	961	0.80	588	1.64	F
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	255	14	0.80	432	0.62	D
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	24	878	0.80	576	1.57	F
Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	57	56	0.90	527	0.21	B
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	107	35	0.80	468	0.30	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	5	254	0.80	432	0.60	D
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	160	2	0.80	588	0.28	B
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	280	3	0.80	588	0.48	C
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	27	171	0.80	432	0.46	C
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	669	21	0.80	576	1.20	F
<p>Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i></p>									

Appendix B: Transit and Pedestrian Supplemental Analysis

**Table B-3b
2014 No Build Conditions: Subway Station Analysis**

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Non-Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	8	89	0 80	468	0 21	B
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	50	14	0.80	408	0 16	A
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	23	2	0 80	432	0 06	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	1	9	0 80	588	0 02	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	6	1	0 80	588	0 01	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	14	29	0 80	432	0 10	A
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	14	40	0 80	576	0 09	A
Non-Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	43	155	0 80	468	0 42	C
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	90	46	0 90	459	0 30	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	5	14	0 80	432	0 04	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	11	8	0 90	662	0 03	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	1	1	0 90	662	0 00	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	102	79	0 90	486	0 37	B
S5	E. 161st Street/River Avenue (SE corner)	5 80	4 80	40	28	0 90	648	0 11	A
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i>									

Table B-4a
2009 Build Conditions: Subway Station Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	61	72	0 90	527	0 25	B
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	79	15	0 80	408	0 23	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	10	317	0 80	432	0 76	D
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	400	14	0 80	588	0 70	D
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	381	28	0 80	588	0 70	D
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	34	92	0 80	432	0 29	B
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	482	16	0 80	576	0 87	E
Game Day Saturday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	84	75	0 90	527	0 30	B
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	69	14	0 80	408	0 20	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	37	18	0 80	486	0 11	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	24	974	0 80	588	1 70	F
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	13	946	0 80	588	1 63	F
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	254	18	0 80	432	0 63	D
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	29	861	0 80	576	1 54	F
Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	124	114	0 90	527	0 45	C
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	105	34	0 80	468	0 30	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	10	254	0 80	432	0 61	D
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	173	17	0 80	588	0 32	B
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	290	18	0 80	588	0 52	C
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	32	173	0 80	432	0 47	C
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	652	21	0 80	576	1 17	F
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .									

**Table B-4b
2009 Build Conditions: Subway Station Analysis**

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Non-Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	75	150	0 90	527	0 43	C
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	49	13	0 80	408	0 15	A
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	28	8	0 80	432	0 08	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	18	25	0 90	662	0 07	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	23	17	0 90	662	0 06	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	18	35	0 90	486	0 11	A
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	13	39	0 80	576	0 09	A
Non-Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	115	222	0 90	527	0 64	D
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	88	45	0 90	459	0 29	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	11	19	0 90	486	0 06	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	28	26	0 90	662	0 08	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	19	19	0 90	662	0 06	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	105	83	0 90	486	0 39	B
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	39	28	0 92	648	0 10	A
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i>									

Table B-5a
2014 Build Condition: Subway Station Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute SVCD Capacity	V/SVCD Ratio	LOS	
			Up	Down					
Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	63	72	0.90	527	0.26	B
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	81	16	0.80	408	0.24	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	10	325	0.80	432	0.78	D
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	417	23	0.80	588	0.75	D
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	383	20	0.80	588	0.69	D
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	34	94	0.80	432	0.30	B
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	494	17	0.80	576	0.89	E
Game Day Saturday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	84	77	0.90	527	0.31	B
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	70	15	0.80	408	0.21	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	38	19	0.90	486	0.12	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	24	998	0.80	588	1.74	F
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	13	971	0.80	588	1.67	F
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	260	19	0.80	432	0.65	D
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	29	883	0.80	576	1.58	F
Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4.90	3.90	127	117	0.90	527	0.46	C
S2	E 149th Street/Grand Concourse (SE corner)	4.90	3.90	107	35	0.80	468	0.30	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4.60	3.60	10	260	0.80	432	0.63	D
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	178	17	0.80	588	0.33	B
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	298	18	0.80	588	0.54	C
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4.60	3.60	32	177	0.80	432	0.49	C
S5	E 161st Street/River Avenue (SE corner)	5.80	4.80	669	21	0.80	576	1.20	F
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i> .									

Table B-5b
2014 Build Conditions: Subway Station Analysis

Stairways	Width (feet)	Effective Width (feet)	15-Minute Pedestrian Volumes		Friction Factor	15-Minute		LOS	
			Up	Down		SVCD Capacity	V/SVCD Ratio		
Non-Game Day Saturday Midday Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	76	153	0 90	527	0 44	C
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	50	14	0 80	408	0 16	A
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	28	8	0 80	432	0 08	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	18	25	0 90	662	0 07	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	23	17	0 90	662	0 06	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	19	35	0 90	486	0 11	A
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	14	40	0 80	576	0 09	A
Non-Game Day Weekday PM Peak Period									
E. 149th Street at Grand Concourse (2/4/5)									
S1	E 149th Street/Grand Concourse (SW corner)	4 90	3 90	117	226	0 90	527	0 65	D
S2	E 149th Street/Grand Concourse (SE corner)	4 90	3 90	90	46	0 90	459	0 30	B
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
S1	E 161st Street/River Avenue (SW corner, elevated entrance on median, 4 only)	4 60	3 60	11	20	0 90	486	0 06	A
S2	E 161st Street/River Avenue (SW corner, closest to intersection)	5 90	4 90	29	26	0 90	662	0 08	A
S3	E 161st Street/River Avenue (SW corner, furthest from intersection)	5 90	4 90	19	19	0 90	662	0 06	A
S4	E 161st Street/River Avenue (SE corner, elevated entrance on median, 4 only)	4 60	3 60	108	65	0 90	486	0 40	C
S5	E 161st Street/River Avenue (SE corner)	5 80	4 80	40	28	0 90	648	0 11	A
Note: Capacities were calculated based on rates presented in the New York City Transit, <i>Station Planning and Design Guidelines</i> (January 2001), in accordance with the <i>CEQR Technical Manual</i>									

NYCT SUBWAY STATION
REQUIRED STAIRWAY WIDENING

Appendix B: Transit and Pedestrian Supplemental Analysis

Appendix B-6

2009 Build Condition: Subway Station Stairway Impact Analysis

Stairways	Width (feet)	Effective Width (feet)	SVCD Capacity	NB V/SVCD Ratio	NB LOS	BD V/SVCD Ratio	BD LOS	Required Widening (inches)	
								Back to NB	Back to LOS C/D
Game Day Saturday Midday Peak Period									
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
E. 161st Street/River Avenue (SE corner)	5.80	4.80	576	0.87	E	0.87	E	0	N/A
Game Day Saturday PM Peak Period									
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
E. 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	588	1.65	F	1.67	F	0.97	N/A
E. 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	588	1.60	F	1.62	F	0.63	N/A
E. 161st Street/River Avenue (SE corner)	5.80	4.80	576	1.53	F	1.54	F	0.65	N/A
Game Day Weekday PM Peak Period									
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
E. 161st Street/River Avenue (SE corner)	5.80	4.80	576	1.17	F	1.17	F	0	N/A

Appendix B-7

2014 Build Condition: Subway Station Stairway Impact Analysis

Stairways	Width (feet)	Effective Width (feet)	SVCD Capacity	NB V/SVCD Ratio	NB LOS	BD V/SVCD Ratio	BD LOS	Required Widening (inches)	
								Back to NB	Back to LOS C/D
Game Day Saturday Midday Peak Period									
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
E. 161st Street/River Avenue (SE corner)	5.80	4.80	576	0.89	E	0.89	E	0	N/A
Game Day Saturday PM Peak Period									
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
E. 161st Street/River Avenue (SW corner, closest to intersection)	5.90	4.90	588	1.65	F	1.67	F	0.95	N/A
E. 161st Street/River Avenue (SW corner, furthest from intersection)	5.90	4.90	588	1.60	F	1.62	F	0.98	N/A
E. 161st Street/River Avenue (SE corner)	5.80	4.80	576	1.53	F	1.54	F	0.64	N/A
Game Day Weekday PM Peak Period									
E. 161st Street at River Avenue, Yankee Stadium (4/B/D)									
E. 161st Street/River Avenue (SE corner)	5.80	4.80	576	1.20	F	1.20	F	0	N/A

PEDESTRIAN
2004 EXISTING CONDITIONS

Table B-8a

2004 Existing Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Saturday Midday Peak Period							
River Avenue between 157th St and 153rd St	West	12	365	2	A	6	B
	East	10	123	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	9	0	A	4	A
	East	12	9	0	A	4	A
River Avenue between 151st St and 150th St	West	12	6	0	A	4	A
	East	12.5	13	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	111	1	A	5-	A
	South	13	36	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	158	1	A	5-	A
	East	10	113	1	A	5-	A
150th St between Walton Ave and Grand Concourse	North	8	28	0	A	4	A
	South	8	28	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	59	1	A	5-	A
	East	9	103	1	A	5-	A
Exterior St between 150th St and 149th St	West	14.5	3	0	A	4	A
	East	7	2	0	A	4	A
River Avenue between 150th St and 149th St	West	8	34	0	A	4	A
	East	17.5	13	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	46	0	A	4	A
	South	10	37	0	A	4	A
Game Day Saturday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	626	3	A	7+	C
	East	10	125	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	12	0	A	4	A
	East	12	12	0	A	4	A
River Avenue between 151st St and 150th St	West	12	9	0	A	4	A
	East	12.5	17	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	152	1	A	5+	B
	South	13	50	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	216	1	A	5+	B
	East	10	155	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	38	0	A	4	A
	South	8	38	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	61	1	A	5-	A
	East	9	92	1	A	5-	A
Exterior St between 150th St and 149th St	West	14.5	4	0	A	4	A
	East	7	3	0	A	4	A
River Avenue between 150th St and 149th St	West	8	47	0	A	4	A
	East	17.5	17	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	55	0	A	4	A
	South	10	21	0	A	4	A

Note: PFM = pedestrians per foot per minute

Table B-8b

2004 Existing Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	445	2	A	6	B
	East	10	114	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	11	0	A	4	A
	East	12	4	0	A	4	A
River Avenue between 151st St and 150th St	West	12	4	0	A	4	A
	East	12.5	6	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	105	1	A	5-	A
	South	13	64	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	215	1	A	5+	B
	East	10	164	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	13	0	A	4	A
	South	8	7	0	A	4	A
Grand Concourse between 150th St and 149h St	West	7	143	1	A	5+	B
	East	9	95	1	A	5-	A
Exterior St between 150th St and 149h St	West	14.5	2	0	A	4	A
	East	7	1	0	A	4	A
River Avenue between 150th St and 149h St	West	8	11	0	A	4	A
	East	17.5	19	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	56	0	A	4	A
	South	10	97	1	A	5-	A
Non-Game Day Saturday Midday Peak Period							
River Avenue between 157th St and 153rd St	West	12	8	0	A	4	A
	East	10	30	0	A	4	A
River Avenue between 153rd St and 151st St	West	11.5	4	0	A	4	A
	East	12	4	0	A	4	A
River Avenue between 151st St and 150th St	West	12	3	0	A	4	A
	East	12.5	6	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	52	0	A	4	A
	South	13	17	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	74	0	A	4	A
	East	10	53	0	A	4	A
150th St between Walton Ave and Grand Concourse	North	8	13	0	A	4	A
	South	8	13	0	A	4	A
Grand Concourse between 150th St and 149h St	West	7	78	1	A	5-	A
	East	9	94	1	A	5-	A
Exterior St between 150th St and 149h St	West	14.5	2	0	A	4	A
	East	7	2	0	A	4	A
River Avenue between 150th St and 149h St	West	8	16	0	A	4	A
	East	17.5	6	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	75	1	A	5-	A
	South	10	31	0	A	4	A

Note: PFM = pedestrians per foot per minute

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-8c
2004 Existing Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Non-Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	5	0	A	4	A
	East	10	21	0	A	4	A
River Avenue between 153rd St and 151st St	West	11.5	6	0	A	4	A
	East	12	2	0	A	4	A
River Avenue between 151st St and 150th St	West	12	2	0	A	4	A
	East	12.5	3	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	56	0	A	4	A
	South	13	34	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	115	1	A	5-	A
	East	10	88	1	A	5-	A
150th St between Walton Ave and Grand Concourse	North	8	7	0	A	4	A
	South	8	4	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	155	1	A	5+	B
	East	9	64	0	A	4	A
Exterior St between 150th St and 149th St	West	14.5	1	0	A	4	A
	East	7	1	0	A	4	A
River Avenue between 150th St and 149th St	West	8	6	0	A	4	A
	East	17.5	10	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	62	1	A	5-	A
	South	10	103	1	A	5-	A

Note: PFM = pedestrians per foot per minute

Table B-9a
2004 Existing Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Game Day Saturday Midday Peak Period		Game Day Saturday PM Peak Period		Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	210	A	116	A	221	A
	Southeast	267	A	146	A	332	A
	Southwest	79	A	33	C	74	A
	Northwest	94	A	32	C	93	A
River Avenue and 151st St	Northeast	2259	A	1589	A	4294	A
	Southeast	3626	A	2618	A	3927	A
	Southwest	2684	A	1986	A	3256	A
	Northwest	2397	A	1749	A	3256	A
Grand Concourse and 151st St	Southwest	282	A	207	A	140	A
	Northwest	468	A	341	A	114	A
Grand Concourse and 150th St	Northeast	182	A	131	A	201	A
	Southeast	105	A	75	A	152	A
	Southwest	93	A	66	A	143	A
	Northwest	133	A	95	A	248	A
Exterior St and 149th St	Southwest	189	A	152	A	114	A
	Northwest	1487	A	1289	A	1756	A
River Avenue and 149th St	Northeast	1005	A	930	A	817	A
	Southeast	855	A	854	A	658	A
Grand Concourse and 149th St	Northeast	166	A	352	A	173	A
	Southeast	505	A	811	A	359	A
	Southwest	241	A	296	A	145	A
	Northwest	235	A	376	A	193	A

Note: SFP = square feet per pedestrian

Table B-9b

2004 Existing Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Non-Game Day Saturday Midday Peak Period		Non-Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	1224	A	1083	A
	Southeast	2246	A	4268	A
	Southwest	3024	A	3020	A
	Northwest	2083	A	2397	A
River Avenue and 151st St	Northeast	4773	A	8593	A
	Southeast	7857	A	7856	A
	Southwest	5710	A	6519	A
	Northwest	5068	A	6519	A
Grand Concourse and 151st St	Southwest	603	A	269	A
	Northwest	1014	A	223	A
Grand Concourse and 150th St	Northeast	400	A	381	A
	Southeast	235	A	286	A
	Southwest	212	A	269	A
	Northwest	295	A	477	A
Exterior St. and 149th St	Southwest	141	A	186	A
	Northwest	1609	A	2762	A
River Avenue and 149th St	Northeast	767	A	1395	A
	Southeast	677	A	734	A
Grand Concourse and 149th St	Northeast	309	A	187	A
	Southeast	676	A	365	A
	Southwest	224	A	131	A
	Northwest	272	A	170	A

Note: SFP = square feet per pedestrian

Table B-10a

2004 Existing Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	583	A	557	A	474	A
	East	15	241	A	237	A	114	A
	South	16	892	A	823	A	562	A
	West	12	85	A	73	A	52	B
River Avenue and 151st St	North	13	8336	A	8163	A	6045	A
	East	12	2283	A	2154	A	1259	A
	South	11.5	1034	A	973	A	556	A
	West	14	1723	A	1723	A	1207	A
Grand Concourse and 151st St	North	12.5	804	A	785	A	460	A
	South	16	1137	A	1109	A	620	A
	West	12	621	A	613	A	184	A
Grand Concourse and 150th St	North	12	270	A	263	A	147	A
	East	11.5	209	A	209	A	43	B
	South	11	150	A	146	A	82	A
	West	14	259	A	254	A	52	B
Exterior St. and 149th St	North	12	1654	A	1549	A	965	A
	South	12.5	1034	A	973	A	556	A
River Avenue and 149th St	North	11	551	A	529	A	150	A
	East	9.5	1778	A	1674	A	943	A
	South	12.5	1034	A	973	A	556	A
Grand Concourse and 149th St	North	16	172	A	158	A	114	A
	East	14	201	A	196	A	75	A
	South	18	196	A	187	A	129	A
	West	10	659	A	635	A	277	A

Note: SFP = square feet per pedestrian

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-10b
2004 Existing Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday PM Peak Period								
River Avenue and 153rd St	North	10	210	A	191	A	171	A
	East	15	148	A	141	A	70	A
	South	16	285	A	267	A	180	A
	West	12	35	C	34	C	22	D
River Avenue and 151st St	North	13	5558	A	5452	A	4030	A
	East	12	1674	A	1564	A	923	A
	South	11.5	827	A	801	A	445	A
	West	14	1274	A	1274	A	892	A
Grand Concourse and 151st St	North	12.5	582	A	568	A	333	A
	South	16	831	A	810	A	453	A
	West	12	458	A	453	A	135	A
Grand Concourse and 150th St	North	12	198	A	193	A	108	A
	East	11.5	153	A	153	A	32	C
	South	11	111	A	108	A	60	A
	West	14	190	A	186	A	38	C
Exterior St. and 149th St	North	12	1418	A	1361	A	828	A
	South	12.5	827	A	801	A	445	A
River Avenue and 149th St	North	11	404	A	392	A	110	A
	East	9.5	3912	A	3744	A	2075	A
	South	12.5	827	A	801	A	445	A
Grand Concourse and 149th St	North	16	438	A	396	A	289	A
	East	14	374	A	362	A	140	A
	South	18	250	A	239	A	165	A
	West	10	675	A	640	A	283	A

Note: SFP = square feet per pedestrian

Table B-10c
2004 Existing Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1073	A	1013	A	605	A
	East	15	312	A	307	A	106	A
	South	16	1860	A	1697	A	797	A
	West	12	85	A	73	A	39	C
River Avenue and 151st St	North	13	9067	A	8882	A	4518	A
	East	12	4410	A	4150	A	1781	A
	South	11.5	8021	A	7920	A	4523	A
	West	14	2573	A	2573	A	1353	A
Grand Concourse and 151st St	North	12.5	122	A	119	A	75	A
	South	16	304	A	295	A	177	A
	West	12	178	A	176	A	53	B
Grand Concourse and 150th St	North	12	540	A	525	A	314	A
	East	11.5	193	A	193	A	41	B
	South	11	786	A	765	A	458	A
	West	14	473	A	464	A	96	A
Exterior St. and 149th St	North	12	2205	A	2075	A	1287	A
	South	12.5	766	A	717	A	412	A
River Avenue and 149th St	North	11	568	A	533	A	1287	A
	East	9.5	1504	A	1429	A	798	A
	South	12.5	766	A	717	A	412	A
Grand Concourse and 149th St	North	16	213	A	185	A	141	A
	East	14	167	A	163	A	63	A
	South	18	112	A	107	A	74	A
	West	10	318	A	305	A	133	A

Note: SFP = square feet per pedestrian

Table B-10d
2004 Existing Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	1425	A	1367	A	1159	A
	East	15	2242	A	2193	A	1057	A
	South	16	4104	A	3955	A	2586	A
	West	12	6277	A	6001	A	3870	A
River Avenue and 151st St	North	13	16673	A	16464	A	12091	A
	East	12	5022	A	4926	A	2770	A
	South	11.5	766	A	718	A	412	A
	West	14	3662	A	3662	A	2565	A
Grand Concourse and 151st St	North	12.5	1687	A	1648	A	967	A
	South	16	2400	A	2341	A	1309	A
	West	12	1331	A	1314	A	393	A
Grand Concourse and 150th St	North	12	579	A	564	A	316	A
	East	11.5	446	A	446	A	92	A
	South	11	323	A	315	A	176	A
	West	14	553	A	542	A	111	A
Exterior St and 149th St	North	12	1804	A	1700	A	1053	A
	South	12.5	766	A	718	A	412	A
River Avenue and 149th St	North	11	433	A	421	A	118	A
	East	9.5	2445	A	2321	A	1297	A
	South	12.5	766	A	718	A	412	A
Grand Concourse and 149th St	North	16	352	A	322	A	232	A
	East	14	394	A	382	A	148	A
	South	18	186	A	178	A	123	A
	West	10	386	A	370	A	162	A

Note: SFP = square feet per pedestrian

Table B-10e
2004 Existing Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1744	A	1658	A	983	A
	East	15	6615	A	6490	A	2252	A
	South	16	5580	A	5366	A	2392	A
	West	12	5292	A	4824	A	2415	A
River Avenue and 151st St	North	13	18135	A	17861	A	9035	A
	East	12	8820	A	8651	A	3562	A
	South	11.5	16042	A	15898	A	9046	A
	West	14	5145	A	5145	A	2705	A
Grand Concourse and 151st St	North	12.5	230	A	224	A	141	A
	South	16	572	A	556	A	333	A
	West	12	332	A	328	A	99	A
Grand Concourse and 150th St	North	12	1041	A	1013	A	606	A
	East	11.5	359	A	359	A	75	A
	South	11	1485	A	1444	A	865	A
	West	14	884	A	868	A	181	A
Exterior St and 149th St	North	12	3308	A	3121	A	1931	A
	South	12.5	984	A	917	A	530	A
River Avenue and 149th St	North	11	866	A	830	A	236	A
	East	9.5	1956	A	1863	A	1037	A
	South	12.5	984	A	917	A	530	A
Grand Concourse and 149th St	North	16	261	A	220	A	172	A
	East	14	177	A	172	A	67	A
	South	18	125	A	120	A	82	A
	West	10	205	A	195	A	86	A

Note: SFP = square feet per pedestrian

PEDESTRIAN
2009 NO BUILD CONDITIONS

Table B-11a

2009 No Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon		
				PFM	LOS	PFM	LOS	
Game Day Saturday Midday Peak Period								
River Avenue between 157th St and 153rd St	West	12	374	2	A	5-	A	
	East	10	126	1	A	6	B	
River Avenue between 153rd St and 151st St.	West	11.5	9	0	A	4	A	
	East	12	9	0	A	4	A	
River Avenue between 151st St. and 150th St	West	12	6	0	A	4	A	
	East	12.5	13	0	A	4	A	
151st St between Walton Ave and Grand Concourse	North	8	114	1	A	5-	A	
	South	13	37	0	A	4	A	
Grand Concourse between 151st St and 150th St.	West	12	162	1	A	5-	A	
	East	10	116	1	A	5-	A	
150th St between Walton Ave and Grand Concourse	North	8	29	0	A	4	A	
	South	8	29	0	A	4	A	
Grand Concourse between 150th St and 149th St	West	7	60	1	A	5-	A	
	East	9	106	1	A	5-	A	
Extenor St between 150th St. and 149th St.	West	14.5	3	0	A	4	A	
	East	7	2	0	A	4	A	
River Avenue between 150th St and 149th St	West	8	35	0	A	4	A	
	East	17.5	13	0	A	4	A	
149th St between Walton Ave and Grand Concourse	North	8	47	0	A	4	A	
	South	10	38	0	A	4	A	
Game Day Saturday PM Peak Period								
River Avenue between 157th St and 153rd St	West	12	642	4	A	8	C	
	East	10	128	1	A	5-	A	
River Avenue between 153rd St. and 151st St.	West	11.5	12	0	A	4	A	
	East	12	12	0	A	4	A	
River Avenue between 151st St and 150th St	West	12	9	0	A	4	A	
	East	12.5	17	0	A	4	A	
151st St between Walton Ave and Grand Concourse	North	8	156	1	A	5+	B	
	South	13	51	0	A	4	A	
Grand Concourse between 151st St. and 150th St	West	12	221	1	A	5+	B	
	East	10	159	1	A	5+	B	
150th St between Walton Ave and Grand Concourse	North	8	39	0	A	4	A	
	South	8	39	0	A	4	A	
Grand Concourse between 150th St. and 149th St	West	7	63	1	A	5-	A	
	East	9	94	1	A	5-	A	
Extenor St between 150th St and 149th St	West	14.5	4	0	A	4	A	
	East	7	3	0	A	4	A	
River Avenue between 150th St and 149th St	West	8	48	0	A	4	A	
	East	17.5	17	0	A	4	A	
149th St between Walton Ave and Grand Concourse	North	8	56	0	A	4	A	
	South	10	22	0	A	4	A	
Note: PFM = pedestrians per foot per minute								

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-11b
2009 No Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	456	3	A	7-	B
	East	10	117	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	11	0	A	4	A
	East	12	4	0	A	4	A
River Avenue between 151st St and 150th St	West	12	4	0	A	4	A
	East	12.5	6	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	108	1	A	5-	A
	South	13	66	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	220	1	A	5+	B
	East	10	168	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	13	0	A	4	A
	South	8	7	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	147	1	A	5+	A
	East	9	97	1	A	5-	B
Exterior St between 150th St and 149th St	West	14.5	2	0	A	4	A
	East	7	1	0	A	4	A
River Avenue between 150th St and 149th St	West	8	11	0	A	4	A
	East	17.5	19	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	57	0	A	4	A
	South	10	99	1	A	5-	A
Non-Game Day Saturday Midday Peak Period							
River Avenue between 157th St and 153rd St	West	12	8	0	A	4	A
	East	10	31	0	A	4	A
River Avenue between 153rd St and 151st St	West	11.5	4	0	A	4	A
	East	12	4	0	A	4	A
River Avenue between 151st St and 150th St	West	12	3	0	A	4	A
	East	12.5	6	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	53	0	A	4	A
	South	13	17	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	76	0	A	4	A
	East	10	54	0	A	4	A
150th St between Walton Ave and Grand Concourse	North	8	13	0	A	4	A
	South	8	13	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	80	1	A	5-	A
	East	9	96	1	A	5-	A
Exterior St between 150th St and 149th St	West	14.5	2	0	A	4	A
	East	7	2	0	A	4	A
River Avenue between 150th St and 149th St	West	8	16	0	A	4	A
	East	17.5	6	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	77	1	A	5-	A
	South	10	32	0	A	4	A

Note: PFM = pedestrians per foot per minute

Table B-11c

2009 No Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	5	0	A	4	A
	East	10	22	0	A	4	A
River Avenue between 153rd St and 151st St.	West	11.5	6	0	A	4	A
	East	12	2	0	A	4	A
River Avenue between 151st St and 150th St	West	12	2	0	A	4	A
	East	12.5	3	0	A	4	A
151st St. between Walton Ave and Grand Concourse	North	8	57	0	A	4	A
	South	13	35	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	118	1	A	5-	A
	East	10	90	1	A	5-	A
150th St between Walton Ave and Grand Concourse	North	8	7	0	A	4	A
	South	8	4	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	159	2	A	6	A
	East	9	66	0	A	4	A
Exterior St between 150th St and 149th St.	West	14.5	1	0	A	4	A
	East	7	1	0	A	4	A
River Avenue between 150th St and 149th St	West	8	6	0	A	4	A
	East	17.5	10	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	64	1	A	5-	A
	South	10	106	1	A	5-	A

Note: PFM = pedestrians per foot per minute

Table B-12a

2009 No Build Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Game Day Saturday Midday Peak Period		Game Day Saturday PM Peak Period		Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	206	A	114	A	216	A
	Southeast	262	A	143	A	324	A
	Southwest	77	A	32	C	72	A
	Northwest	92	A	31	C	90	A
River Avenue and 151st St	Northeast	2259	A	1589	A	4294	A
	Southeast	3626	A	2618	A	3927	A
	Southwest	2684	A	1903	A	3256	A
	Northwest	2397	A	1684	A	3256	A
Grand Concourse and 151st St	Southwest	276	A	202	A	137	A
	Northwest	462	A	334	A	111	A
Grand Concourse and 150th St	Northeast	178	A	128	A	195	A
	Southeast	103	A	73	A	148	A
	Southwest	91	A	64	A	139	A
	Northwest	130	A	93	A	240	A
Exterior St and 149th St	Southwest	189	A	152	A	114	A
	Northwest	1487	A	1289	A	1756	A
River Avenue and 149th St	Northeast	985	A	913	A	804	A
	Southeast	855	A	854	A	658	A
Grand Concourse and 149th St	Northeast	162	A	346	A	168	A
	Southeast	493	A	793	A	350	A
	Southwest	233	A	287	A	141	A
	Northwest	230	A	372	A	189	A

Note: SFP = square feet per pedestrian

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-12b
2009 No Build Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Non-Game Day Saturday Midday Peak Period		Non-Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	1224	A	1052	A
	Southeast	2246	A	4268	A
	Southwest	3024	A	3020	A
	Northwest	2083	A	2397	A
River Avenue and 151st St	Northeast	4773	A	8593	A
	Southeast	7857	A	7856	A
	Southwest	5710	A	6519	A
	Northwest	5068	A	6519	A
Grand Concourse and 151st St	Southwest	594	A	265	A
	Northwest	1014	A	218	A
Grand Concourse and 150th St	Northeast	392	A	373	A
	Southeast	227	A	280	A
	Southwest	204	A	263	A
	Northwest	288	A	469	A
Exterior St and 149th St	Southwest	141	A	186	A
	Northwest	1609	A	2762	A
River Avenue and 149th St	Northeast	755	A	1395	A
	Southeast	677	A	734	A
Grand Concourse and 149th St	Northeast	303	A	182	A
	Southeast	657	A	355	A
	Southwest	218	A	127	A
	Northwest	266	A	167	A

Note: SFP = square feet per pedestrian

Table B-13a
2009 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	583	A	556	A	474	A
	East	15	236	A	231	A	111	A
	South	16	892	A	821	A	562	A
	West	12	83	A	71	A	51	B
River Avenue and 151st St	North	13	8336	A	8156	A	6045	A
	East	12	2283	A	2151	A	1259	A
	South	11.5	1034	A	972	A	556	A
	West	14	1723	A	1723	A	1207	A
Grand Concourse and 151st St	North	12.5	804	A	784	A	460	A
	South	16	1137	A	1108	A	620	A
	West	12	608	A	600	A	180	A
Grand Concourse and 150th St	North	12	261	A	255	A	143	A
	East	11.5	204	A	204	A	42	B
	South	11	147	A	143	A	80	A
	West	14	253	A	248	A	51	B
Exterior St and 149th St	North	12	1654	A	1546	A	965	A
	South	12.5	1034	A	972	A	556	A
River Avenue and 149th St	North	11	535	A	512	A	146	A
	East	9.5	1778	A	1671	A	943	A
	South	12.5	1034	A	972	A	556	A
Grand Concourse and 149th St	North	16	169	A	154	A	111	A
	East	14	197	A	192	A	74	A
	South	18	190	A	181	A	125	A
	West	10	643	A	619	A	270	A

Note: SFP = square feet per pedestrian

Table B-13b
2009 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday PM Peak Period								
River Avenue and 153rd St	North	10	207	A	187	A	168	A
	East	15	145	A	137	A	68	A
	South	16	277	A	259	A	175	A
	West	12	34	C	33	C	21	D
River Avenue and 151st St	North	13	5558	A	5448	A	4030	A
	East	12	1674	A	1561	A	923	A
	South	11.5	827	A	800	A	445	A
	West	14	1221	A	1221	A	855	A
Grand Concourse and 151st St	North	12.5	562	A	549	A	322	A
	South	16	800	A	780	A	436	A
	West	12	451	A	445	A	133	A
Grand Concourse and 150th St	North	12	193	A	188	A	105	A
	East	11.5	149	A	149	A	31	C
	South	11	108	A	106	A	59	B
	West	14	185	A	182	A	37	C
External St and 149th St	North	12	1418	A	1359	A	828	A
	South	12.5	827	A	800	A	445	A
River Avenue and 149th St	North	11	395	A	383	A	108	A
	East	9.5	3912	A	3739	A	2075	A
	South	12.5	827	A	800	A	445	A
Grand Concourse and 149th St	North	16	438	A	395	A	289	A
	East	14	367	A	355	A	138	A
	South	18	243	A	232	A	160	C
	West	10	659	A	623	A	277	A

Note. SFP = square feet per pedestrian

Table B-13c
2009 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1073	A	1011	A	605	A
	East	15	303	A	299	A	103	A
	South	16	1860	A	1692	A	797	A
	West	12	82	A	70	A	38	C
River Avenue and 151st St	North	13	9067	A	8878	A	4518	A
	East	12	4410	A	4143	A	1781	A
	South	11.5	8021	A	7917	A	4523	A
	West	14	2573	A	2573	A	1353	A
Grand Concourse and 151st St	North	12.5	119	A	115	A	73	A
	South	16	295	A	286	A	171	A
	West	12	174	A	172	A	52	B
Grand Concourse and 150th St	North	12	521	A	506	A	303	A
	East	11.5	188	A	188	A	39	C
	South	11	786	A	764	A	458	A
	West	14	460	A	451	A	94	A
External St and 149th St	North	12	2205	A	2071	A	1287	A
	South	12.5	766	A	715	A	412	A
River Avenue and 149th St	North	11	551	A	516	A	150	A
	East	9.5	1504	A	1427	A	798	A
	South	12.5	766	A	715	A	412	A
Grand Concourse and 149th St	North	16	208	A	180	A	137	A
	East	14	163	A	159	A	61	A
	South	18	109	A	105	A	72	A
	West	10	310	A	298	A	130	A

Note: SFP = square feet per pedestrian

Table B-13d
2009 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	1425	A	1366	A	1159	A
	East	15	2242	A	2192	A	1057	A
	South	16	4104	A	3952	A	2586	A
	West	12	6277	A	5995	A	3870	A
River Avenue and 151st St	North	13	16673	A	16451	A	12091	A
	East	12	5022	A	4921	A	2770	A
	South	11.5	766	A	717	A	412	A
	West	14	3662	A	3662	A	2565	A
Grand Concourse and 151st St	North	12.5	1687	A	1647	A	967	A
	South	16	2400	A	2339	A	1309	A
	West	12	1331	A	1314	A	393	A
Grand Concourse and 150th St	North	12	579	A	564	A	316	A
	East	11.5	432	A	432	A	89	A
	South	11	309	A	301	A	169	A
	West	14	534	A	524	A	107	A
External St and 149th St	North	12	1804	A	1698	A	1053	A
	South	12.5	766	A	717	A	412	A
River Avenue and 149th St	North	11	423	A	410	A	115	A
	East	9.5	2445	A	2317	A	1297	A
	South	12.5	766	A	717	A	412	A
Grand Concourse and 149th St	North	16	345	A	315	A	227	A
	East	14	386	A	374	A	145	A
	South	18	180	A	172	A	119	A
	West	10	375	A	360	A	158	A

Note: SFP = square feet per pedestrian

Table B-13e
2009 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1744	A	1656	A	983	A
	East	15	6615	A	6488	A	2253	A
	South	16	5580	A	5356	A	2392	A
	West	12	5292	A	4812	A	2415	A
River Avenue and 151st St	North	13	18135	A	17849	A	9035	A
	East	12	8820	A	8645	A	3562	A
	South	11.5	16042	A	15898	A	9046	A
	West	14	5145	A	5145	A	2705	A
Grand Concourse and 151st St	North	12.5	223	A	217	A	137	A
	South	16	572	A	555	A	333	A
	West	12	325	A	321	A	97	A
Grand Concourse and 150th St	North	12	1041	A	1012	A	606	A
	East	11.5	350	A	350	A	74	A
	South	11	1485	A	1443	A	865	A
	West	14	862	A	846	A	176	A
External St and 149th St	North	12	3308	A	3117	A	1931	A
	South	12.5	984	A	916	A	530	A
River Avenue and 149th St	North	11	866	A	829	A	236	A
	East	9.5	1956	A	1861	A	1037	A
	South	12.5	984	A	916	A	530	A
Grand Concourse and 149th St	North	16	257	A	215	A	170	A
	East	14	173	A	168	A	65	A
	South	18	121	A	117	A	80	A
	West	10	200	A	191	A	84	A

Note: SFP = square feet per pedestrian

PEDESTRIAN
2014 NO BUILD CONDITIONS

Table B-14a
2014 No Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Saturday Midday Peak Period							
River Avenue between 157th St and 153rd St	West	12	383	2	A	6	B
	East	10	129	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	9	0	A	4	A
	East	12	9	0	A	4	A
River Avenue between 151st St and 150th St	West	12	6	0	A	4	A
	East	12.5	14	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	117	1	A	5-	A
	South	13	38	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	166	1	A	5-	A
	East	10	119	1	A	5-	A
150th St between Walton Ave and Grand Concourse	North	8	29	0	A	4	A
	South	8	29	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	62	1	A	5-	A
	East	9	108	1	A	5-	A
Exterior St between 150th St and 149th St	West	14.5	3	0	A	4	A
	East	7	2	0	A	4	A
River Avenue between 150th St and 149th St	West	8	36	0	A	4	A
	East	17.5	14	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	48	0	A	4	A
	South	10	39	0	A	4	A
Game Day Saturday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	657	4	A	8	C
	East	10	131	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	13	0	A	4	A
	East	12	13	0	A	4	A
River Avenue between 151st St and 150th St	West	12	9	0	A	4	A
	East	12.5	18	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	160	1	A	5+	B
	South	13	53	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	227	1	A	5+	B
	East	10	163	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	40	0	A	4	A
	South	8	40	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	64	1	A	5-	A
	East	9	97	1	A	5-	A
Exterior St between 150th St and 149th St	West	14.5	4	0	A	4	A
	East	7	3	0	A	4	A
River Avenue between 150th St and 149th St	West	8	49	0	A	4	A
	East	17.5	18	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	58	0	A	4	A
	South	10	22	0	A	4	A
Note: PFM = pedestrians per foot per minute							

TableB-14b

2014 No Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St.	West	12	467	3	A	7-	B
	East	10	120	1	A	5-	A
River Avenue between 153rd St. and 151st St.	West	11.5	12	0	A	4	A
	East	12	4	0	A	4	A
River Avenue between 151st St and 150th St.	West	12	4	0	A	4	A
	East	12.5	6	0	A	4	A
151st St. between Walton Ave and Grand Concourse	North	8	110	1	A	5-	A
	South	13	67	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	226	1	A	5+	B
	East	10	172	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	14	0	A	4	A
	South	8	7	0	A	4	A
Grand Concourse between 150th St and 149th St.	West	7	150	1	A	5+	B
	East	9	100	1	A	5-	A
Exterior St between 150th St and 149th St.	West	14.5	2	0	A	4	A
	East	7	1	0	A	4	A
River Avenue between 150th St and 149th St	West	8	12	0	A	4	A
	East	17.5	20	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	59	0	A	4	A
	South	10	102	1	A	5-	A
Non-Game Day Saturday Midday Peak Period							
River Avenue between 157th St. and 153rd St	West	12	8	0	A	4	A
	East	10	32	0	A	4	A
River Avenue between 153rd St and 151st St.	West	11.5	4	0	A	4	A
	East	12	4	0	A	4	A
River Avenue between 151st St and 150th St	West	12	3	0	A	4	A
	East	12.5	6	0	A	4	A
151st St. between Walton Ave and Grand Concourse	North	8	55	0	A	4	A
	South	13	18	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	78	0	A	4	A
	East	10	56	0	A	4	A
150th St between Walton Ave. and Grand Concourse	North	8	14	0	A	4	A
	South	8	14	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	82	1	A	5-	A
	East	9	99	1	A	5-	A
Exterior St between 150th St. and 149th St	West	14.5	2	0	A	4	A
	East	7	2	0	A	4	A
River Avenue between 150th St and 149th St	West	8	17	0	A	4	A
	East	17.5	6	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	79	1	A	5-	A
	South	10	33	0	A	4	A

Note: PFM = pedestrians per foot per minute

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-14c
2014 No Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	5	0	A	4	A
	East	10	22	0	A	4	A
River Avenue between 153rd St. and 151st St.	West	11.5	6	0	A	4	A
	East	12	2	0	A	4	A
River Avenue between 151st St and 150th St	West	12	2	0	A	4	A
	East	12.5	3	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	59	0	A	4	A
	South	13	36	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	121	1	A	5-	A
	East	10	92	1	A	5-	A
150th St between Walton Ave and Grand Concourse	North	8	7	0	A	4	A
	South	8	4	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	163	2	A	6	B
	East	9	67	0	A	4	A
Exterior St between 150th St and 149th St	West	14.5	1	0	A	4	A
	East	7	1	0	A	4	A
River Avenue between 150th St and 149th St	West	8	6	0	A	4	A
	East	17.5	11	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	65	1	A	5-	A
	South	10	108	1	A	5-	A

Note: PFM = pedestrians per foot per minute

Table B-15a
2014 No Build Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Game Day Saturday Midday Peak Period		Game Day Saturday PM Peak Period		Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	201	A	111	A	212	A
	Southeast	255	A	140	A	319	A
	Southwest	74	A	31	C	70	A
	Northwest	89	A	30	C	88	A
River Avenue and 151st St	Northeast	2259	A	1532	A	4294	A
	Southeast	3626	A	2480	A	3927	A
	Southwest	2538	A	1903	A	3256	A
	Northwest	2276	A	1684	A	3256	A
Grand Concourse and 151st St	Southwest	268	A	197	A	133	A
	Northwest	439	A	325	A	109	A
Grand Concourse and 150th St	Northeast	173	A	124	A	192	A
	Southeast	100	A	71	A	145	A
	Southwest	88	A	62	A	135	A
	Northwest	127	A	90	A	236	A
Exterior St and 149th St	Southwest	179	A	140	A	107	A
	Northwest	1381	A	1208	A	1756	A
River Avenue and 149th St	Northeast	966	A	896	A	779	A
	Southeast	828	A	801	A	626	A
Grand Concourse and 149th St	Northeast	158	A	334	A	164	A
	Southeast	481	A	772	A	342	A
	Southwest	229	A	281	A	136	A
	Northwest	222	A	357	A	184	A

Note: SFP = square feet per pedestrian

Table B-15b
2014 No Build Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Non-Game Day Saturday Midday Peak Period		Non-Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	1184	A	1052	A
	Southeast	2134	A	4268	A
	Southwest	3024	A	3020	A
	Northwest	2083	A	2397	A
River Avenue and 151st St	Northeast	4773	A	8593	A
	Southeast	7857	A	7856	A
	Southwest	5710	A	6519	A
	Northwest	5068	A	6519	A
Grand Concourse and 151st St	Southwest	575	A	256	A
	Northwest	987	A	212	A
Grand Concourse and 150th St	Northeast	379	A	362	A
	Southeast	225	A	274	A
	Southwest	203	A	258	A
	Northwest	279	A	452	A
Extensor St and 149th St	Southwest	131	A	178	A
	Northwest	1609	A	2762	A
River Avenue and 149th St	Northeast	733	A	1358	A
	Southeast	643	A	713	A
Grand Concourse and 149th St	Northeast	292	A	177	A
	Southeast	642	A	347	A
	Southwest	212	A	124	A
	Northwest	256	A	162	A

Note: SFP = square feet per pedestrian

Table B-16a
2014 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	558	A	532	A	454	A
	East	15	231	A	226	A	109	A
	South	16	855	A	785	A	539	A
	West	12	80	A	69	A	50	B
River Avenue and 151st St	North	13	8336	A	8153	A	6045	A
	East	12	2283	A	2147	A	1259	A
	South	11.5	984	A	924	A	530	A
	West	14	1628	A	1628	A	1140	A
Grand Concourse and 151st St	North	12.5	767	A	748	A	440	A
	South	16	1080	A	1052	A	589	A
	West	12	582	A	575	A	172	A
Grand Concourse and 150th St	North	12	257	A	250	A	140	A
	East	11.5	198	A	198	A	41	B
	South	11	143	A	139	A	78	A
	West	14	247	A	242	A	50	B
Extensor St and 149th St	North	12	1527	A	1425	A	891	A
	South	12.5	984	A	924	A	530	A
River Avenue and 149th St	North	11	520	A	497	A	142	A
	East	9.5	1778	A	1669	A	943	A
	South	12.5	984	A	924	A	530	A
Grand Concourse and 149th St	North	16	164	A	149	A	108	A
	East	14	192	A	187	A	72	A
	South	18	186	A	177	A	123	A
	West	10	628	A	604	A	264	A

Note: SFP = square feet per pedestrian

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-16b
2014 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday PM Peak Period								
River Avenue and 153rd St	North	10	200	A	181	A	163	A
	East	15	141	A	134	A	67	A
	South	16	274	A	255	A	172	A
	West	12	33	C	33	C	21	D
River Avenue and 151st St	North	13	5558	A	5446	A	4030	A
	East	12	1569	A	1461	A	865	A
	South	11 5	766	A	740	A	412	A
	West	14	1221	A	1221	A	855	A
Grand Concourse and 151st St	North	12 5	562	A	549	A	322	A
	South	16	800	A	779	A	436	A
	West	12	437	A	431	A	129	A
Grand Concourse and 150th St	North	12	188	A	183	A	103	A
	East	11 5	146	A	146	A	30	C
	South	11	105	A	103	A	57	B
	West	14	180	A	176	A	36	C
Exterior St and 149th St	North	12	1323	A	1267	A	772	A
	South	12 5	766	A	740	A	412	A
River Avenue and 149th St	North	11	387	A	375	A	105	A
	East	9 5	3912	A	3735	A	2075	A
	South	12 5	766	A	740	A	412	A
Grand Concourse and 149th St	North	16	415	A	374	A	274	A
	East	14	357	A	344	A	134	A
	South	18	237	A	226	A	156	A
	West	10	643	A	608	A	270	A

Note: SFP = square feet per pedestrian

Table B-16c
2014 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1073	A	1010	A	605	A
	East	15	298	A	293	A	101	A
	South	16	1860	A	1690	A	797	A
	West	12	80	A	68	A	37	C
River Avenue and 151st St	North	13	9067	A	8872	A	4518	A
	East	12	4410	A	4136	A	1781	A
	South	11 5	8021	A	7917	A	4523	A
	West	14	2573	A	2573	A	1353	A
Grand Concourse and 151st St	North	12 5	117	A	114	A	71	A
	South	16	290	A	282	A	169	A
	West	12	170	A	168	A	51	B
Grand Concourse and 150th St	North	12	521	A	506	A	303	A
	East	11 5	184	A	184	A	39	C
	South	11	742	A	721	A	432	A
	West	14	448	A	439	A	91	A
Exterior St and 149th St	North	12	2205	A	2068	A	1287	A
	South	12 5	713	A	665	A	384	A
River Avenue and 149th St	North	11	535	A	499	A	146	A
	East	9 5	1504	A	1425	A	798	A
	South	12 5	713	A	665	A	384	A
Grand Concourse and 149th St	North	16	205	A	177	A	135	A
	East	14	159	A	154	A	60	A
	South	18	107	A	102	A	70	A
	West	10	300	A	287	A	126	A

Note: SFP = square feet per pedestrian

Table B-16d

2014 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	1425	A	1364	A	1159	A
	East	15	2093	A	2043	A	986	A
	South	16	4104	A	3946	A	2586	A
	West	12	6277	A	5986	A	3870	A
River Avenue and 151st St	North	13	16673	A	16451	A	12091	A
	East	12	5022	A	4921	A	2770	A
	South	11.5	713	A	666	A	384	A
	West	14	3662	A	3662	A	2565	A
Grand Concourse and 151st St	North	12.5	1687	A	1646	A	967	A
	South	16	2400	A	2338	A	1309	A
	West	12	1270	A	1254	A	376	A
Grand Concourse and 150th St	North	12	540	A	526	A	295	A
	East	11.5	425	A	425	A	88	A
	South	11	309	A	301	A	169	A
	West	14	526	A	515	A	106	A
Exterior St and 149th St	North	12	1804	A	1695	A	1053	A
	South	12.5	713	A	666	A	384	A
River Avenue and 149th St	North	11	413	A	401	A	113	A
	East	9.5	2445	A	2314	A	1297	A
	South	12.5	713	A	666	A	384	A
Grand Concourse and 149th St	North	16	331	A	301	A	218	A
	East	14	374	A	363	A	140	A
	South	18	177	A	169	A	117	A
	West	10	365	A	349	A	153	A

Note: SFP = square feet per pedestrian

Table B-16e

2014 No Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1744	A	1654	A	983	A
	East	15	6615	A	6484	A	2253	A
	South	16	5580	A	5358	A	2392	A
	West	12	5292	A	4801	A	2415	A
River Avenue and 151st St	North	13	18135	A	17849	A	9035	A
	East	12	8820	A	8645	A	3562	A
	South	11.5	16042	A	15889	A	9046	A
	West	14	5145	A	5145	A	2705	A
Grand Concourse and 151st St	North	12.5	217	A	211	A	133	A
	South	16	540	A	524	A	314	A
	West	12	318	A	314	A	95	A
Grand Concourse and 150th St	North	12	972	A	944	A	566	A
	East	11.5	341	A	341	A	72	A
	South	11	1485	A	1442	A	865	A
	West	14	841	A	825	A	172	A
Exterior St and 149th St	North	12	3308	A	3112	A	1931	A
	South	12.5	940	A	872	A	506	A
River Avenue and 149th St	North	11	827	A	791	A	225	A
	East	9.5	1956	A	1859	A	1037	A
	South	12.5	940	A	872	A	506	A
Grand Concourse and 149th St	North	16	249	A	207	A	164	A
	East	14	169	A	163	A	63	A
	South	18	119	A	115	A	79	A
	West	10	194	A	185	A	82	A

Note: SFP = square feet per pedestrian

PEDESTRIAN
2009 BUILD CONDITIONS

Table B-17a
2009 Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Saturday Midday Peak Period							
River Avenue between 157th St and 153rd St	West	12	508	3	A	7	B
	East	10	177	1	A	6	B
River Avenue between 153rd St and 151st St	West	11.5	143	1	A	5-	A
	East	12	60	0	A	4	A
River Avenue between 151st St and 150th St	West	12	70	0	A	4	A
	East	12.5	13	0	A	4	A
151st St between Walton Ave. and Grand Concourse	North	8	152	1	A	5+	B
	South	13	75	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	200	1	A	5+	B
	East	10	122	1	A	5-	A
150th St between Walton Ave. and Grand Concourse	North	8	33	0	A	4	A
	South	8	33	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	98	1	A	5-	A
	East	9	123	1	A	5-	A
Exterior St between 150th St. and 149th St	West	14.5	96	0	A	4	A
	East	7	78	1	A	5-	A
River Avenue between 150th St. and 149th St	West	8	131	1	A	5+	B
	East	17.5	133	1	A	5-	A
149th St between Walton Ave and Grand Concourse	North	8	120	1	A	5	A/B
	South	10	81	1	A	5-	A
Game Day Saturday PM Peak Period							
River Avenue between 157th St. and 153rd St	West	12	736	4	A	8	C
	East	10	164	1	A	5+	B
River Avenue between 153rd St and 151st St	West	11.5	106	1	A	5-	A
	East	12	48	0	A	4	A
River Avenue between 151st St and 150th St	West	12	55	0	A	4	A
	East	12.5	17	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	183	2	A	6	B
	South	13	78	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	248	1	A	5+	B
	East	10	159	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	42	0	A	4	A
	South	8	42	0	A	4	A
Grand Concourse between 150th St and 149th St.	West	7	90	1	A	5-	A
	East	9	106	1	A	5-	A
Exterior St between 150th St. and 149th St	West	14.5	70	0	A	4	A
	East	7	56	1	A	5-	A
River Avenue between 150th St and 149th St.	West	8	116	1	A	5	A/B
	East	17.5	104	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	152	1	A	5+	B
	South	10	97	1	A	5-	A

Note: PFM = pedestrians per foot per minute

Appendix B: Transit and Pedestrian Supplemental Analysis

TableB-17b
2009 Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	567	3	A	7+	C
	East	10	158	1	A	5+	B
River Avenue between 153rd St and 151st St	West	11.5	122	1	A	5-	A
	East	12	45	0	A	4	A
River Avenue between 151st St and 150th St	West	12	59	0	A	4	A
	East	12.5	6	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	137	1	A	5+	B
	South	13	95	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	249	1	A	5+	B
	East	10	168	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	17	0	A	4	A
	South	8	11	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	175	1	A	5+	A
	East	9	110	2	A	6	B
Exterior St between 150th St and 149th St	West	14.5	72	0	A	4	A
	East	7	65	1	A	5-	A
River Avenue between 150th St and 149th St	West	8	89	1	A	5-	A
	East	17.5	117	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	172	1	A	5+	B
	South	10	190	1	A	5+	B
Non-Game Day Saturday Midday Peak Period							
River Avenue between 157th St and 153rd St.	West	12	156	1	A	5-	A
	East	10	88	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	152	1	A	5-	A
	East	12	61	0	A	4	A
River Avenue between 151st St and 150th St	West	12	74	0	A	4	A
	East	12.5	6	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	96	1	A	5-	A
	South	13	60	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	119	1	A	5-	A
	East	10	64	0	A	4	A
150th St. between Walton Ave and Grand Concourse	North	8	17	0	A	4	A
	South	8	17	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	123	1	A	5+	B
	East	9	136	1	A	5	A/B
Exterior St between 150th St and 149th St	West	14.5	103	0	A	4	A
	East	7	89	1	A	5-	A
River Avenue between 150th St and 149th St	West	8	120	1	A	5	A/B
	East	17.5	137	1	A	5-	A
149th St between Walton Ave and Grand Concourse	North	8	229	2	A	6	B
	South	10	150	1	A	5	A/B
Note: PFM = pedestrians per foot per minute							

Table B-17c
2009 Build Conditions: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon		
				PFM	LOS	PFM	LOS	
Game Day Weekday PM Peak Period								
River Avenue between 157th St and 153rd St.	West	12	128	1	A	5-	A	
	East	10	70	0	A	4	A	
River Avenue between 153rd St and 151st St.	West	11.5	132	1	A	5-	A	
	East	12	50	0	A	4	A	
River Avenue between 151st St. and 150th St.	West	12	63	0	A	4	A	
	East	12.5	3	0	A	4	A	
151st St between Walton Ave and Grand Concourse	North	8	94	1	A	5-	A	
	South	13	72	0	A	4	A	
Grand Concourse between 151st St and 150th St.	West	12	155	1	A	5-	A	
	East	10	101	1	A	5-	A	
150th St between Walton Ave and Grand Concourse	North	8	11	0	A	4	A	
	South	8	8	0	A	4	A	
Grand Concourse between 150th St and 149th St	West	7	196	2	A	6	A	
	East	9	80	1	A	5-	A	
Exterior St between 150th St and 149th St	West	14.5	79	0	A	4	A	
	East	7	73	1	A	5-	A	
River Avenue between 150th St and 149th St	West	8	90	1	A	5-	A	
	East	17.5	118	0	A	4	A	
149th St between Walton Ave and Grand Concourse	North	8	193	2	A	6	B	
	South	10	212	1	A	5-	A	

Note: PFM = pedestrians per foot per minute

Table B-18a
2009 Build Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Game Day Saturday Midday Peak Period		Game Day Saturday PM Peak Period		Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	159	A	108	A	173	A
	Southeast	197	A	127	A	244	A
	Southwest	53	B	29	C	53	B
	Northwest	65	A	28	C	67	A
River Avenue and 151st St	Northeast	375	A	452	A	498	A
	Southeast	362	A	462	A	441	A
	Southwest	234	A	407	A	555	A
	Northwest	196	A	329	A	418	A
Grand Concourse and 151st St	Southwest	163	A	195	A	134	A
	Northwest	95	A	257	A	101	A
Grand Concourse and 150th St	Northeast	163	A	122	A	181	A
	Southeast	95	A	70	A	137	A
	Southwest	74	A	58	B	116	A
	Northwest	102	A	82	A	182	A
Exterior St and 149th St	Southwest	189	A	152	A	114	A
	Northwest	173	A	217	A	228	A
River Avenue and 149th St	Northeast	89	A	122	A	106	A
	Southeast	178	A	231	A	197	A
Grand Concourse and 149th St	Northeast	124	A	253	A	135	A
	Southeast	379	A	594	A	300	A
	Southwest	123	A	118	A	74	A
	Northwest	129	A	159	A	102	A

Note: SFP = square feet per pedestrian

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-18b
2009 Build Conditions: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Non-Game Day Saturday Midday Peak Period		Non-Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	420	A	441	A
	Southeast	559	A	732	A
	Southwest	170	A	204	A
	Northwest	188	A	228	A
River Avenue and 151st St	Northeast	381	A	464	A
	Southeast	362	A	432	A
	Southwest	226	A	268	A
	Northwest	187	A	228	A
Grand Concourse and 151st St	Southwest	594	A	221	A
	Northwest	463	A	178	A
Grand Concourse and 150th St	Northeast	328	A	324	A
	Southeast	191	A	240	A
	Southwest	141	A	180	A
	Northwest	187	A	268	A
Exterior St and 149th St	Southwest	141	A	186	A
	Northwest	181	A	217	A
River Avenue and 149th St	Northeast	78	A	111	A
	Southeast	157	A	188	A
Grand Concourse and 149th St	Northeast	201	A	144	A
	Southeast	457	A	294	A
	Southwest	78	A	67	A
	Northwest	104	A	89	A

Note: SFP = square feet per pedestrian

Table B-19a
2009 Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	583	A	554	A	474	A
	East	15	171	A	165	A	80	A
	South	16	892	A	819	A	562	A
	West	12	57	A	48	B	35	C
River Avenue and 151st St	North	13	278	A	267	A	202	A
	East	12	534	A	482	A	295	A
	South	11.5	187	A	181	A	152	A
	West	14	279	A	274	A	195	A
Grand Concourse and 151st St	North	12.5	384	A	370	A	220	A
	South	16	939	A	904	A	512	A
	West	12	559	A	545	A	165	A
Grand Concourse and 150th St	North	12	245	A	236	A	134	A
	East	11.5	185	A	185	A	38	C
	South	11	141	A	136	A	77	A
	West	14	186	A	179	A	37	C
Exterior St. and 149th St	North	12	189	A	175	A	110	A
	South	12.5	1034	A	972	A	596	A
River Avenue and 149th St	North	11	64	A	54	B	17	D
	East	9.5	159	A	147	A	556	A
	South	12.5	1034	A	972	A	596	A
Grand Concourse and 149th St	North	16	113	A	103	A	75	A
	East	14	164	A	160	A	62	A
	South	18	127	A	121	A	84	A
	West	10	255	A	241	A	107	A

Note: SFP = square feet per pedestrian

Table B-19b
2009 Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday PM Peak Period								
River Avenue and 153rd St	North	10	207	A	187	A	168	A
	East	15	124	A	117	A	58	B
	South	16	277	A	257	A	175	A
	West	12	30	C	29	C	19	D
River Avenue and 151st St	North	13	379	A	365	A	275	A
	East	12	612	A	552	A	338	A
	South	11.5	259	A	250	A	210	A
	West	14	610	A	587	A	427	A
Grand Concourse and 151st St	North	12.5	359	A	346	A	206	A
	South	16	720	A	693	A	393	A
	West	12	430	A	419	A	127	A
Grand Concourse and 150th St	North	12	186	A	179	A	102	A
	East	11.5	142	A	139	A	29	C
	South	11	106	A	102	A	58	B
	West	14	161	A	154	A	32	C
Exterior St and 149th St	North	12	239	A	213	A	140	A
	South	12.5	827	A	797	A	445	A
River Avenue and 149th St	North	11	80	A	67	A	22	D
	East	9.5	227	A	214	A	121	A
	South	12.5	827	A	797	A	445	A
Grand Concourse and 149th St	North	16	231	A	209	A	153	A
	East	14	291	A	281	A	109	A
	South	18	169	A	160	A	111	A
	West	10	205	A	191	A	86	A

Note: SFP = square feet per pedestrian

Table B-19c
2009 Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1073	A	1009	A	605	A
	East	15	221	A	216	A	75	A
	South	16	1860	A	1653	A	797	A
	West	12	61	A	52	B	28	C
River Avenue and 151st St	North	13	386	A	377	A	192	A
	East	12	735	A	686	A	297	A
	South	11.5	247	A	242	A	139	A
	West	14	2573	A	2480	A	1353	A
Grand Concourse and 151st St	North	12.5	104	A	100	A	64	A
	South	16	278	A	266	A	162	A
	West	12	174	A	170	A	52	B
Grand Concourse and 150th St	North	12	456	A	437	A	265	A
	East	11.5	176	A	173	A	37	C
	South	11	636	A	610	A	371	A
	West	14	332	A	320	A	68	A
Exterior St and 149th St	North	12	251	A	223	A	147	A
	South	12.5	766	A	715	A	412	A
River Avenue and 149th St	North	11	76	A	59	B	21	D
	East	9.5	190	A	177	A	101	A
	South	12.5	766	A	715	A	412	A
Grand Concourse and 149th St	North	16	142	A	122	A	94	A
	East	14	145	A	141	A	54	B
	South	18	90	A	86	A	59	B
	West	10	138	A	130	A	58	B

Note: SFP = square feet per pedestrian

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-19d
2009 Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	1425	A	1365	A	1159	A
	East	15	442	A	429	A	208	A
	South	16	4104	A	3583	A	2586	A
	West	12	165	A	148	A	102	A
River Avenue and 151st St	North	13	261	A	251	A	189	A
	East	12	571	A	557	A	315	A
	South	11.5	178	A	172	A	145	A
	West	14	279	A	248	A	195	A
Grand Concourse and 151st St	North	12.5	469	A	452	A	269	A
	South	16	2400	A	2311	A	1309	A
	West	12	1331	A	1298	A	393	A
Grand Concourse and 150th St	North	12	506	A	487	A	276	A
	East	11.5	352	A	346	A	73	A
	South	11	275	A	265	A	150	A
	West	14	313	A	301	A	63	A
External St. and 149th St	North	12	198	A	173	A	116	A
	South	12.5	766	A	714	A	412	A
River Avenue and 149th St	North	11	56	B	44	B	15	D
	East	9.5	149	A	139	A	79	A
	South	12.5	766	A	714	A	412	A
Grand Concourse and 149th St	North	16	165	A	150	A	109	A
	East	14	268	A	259	A	101	A
	South	18	120	A	114	A	79	A
	West	10	126	A	118	A	53	B

Note: SFP = square feet per pedestrian

Table B-19e
2009 Build Conditions: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1744	A	1639	A	983	A
	East	15	624	A	606	A	213	A
	South	16	5580	A	5270	A	2392	A
	West	12	210	A	191	A	96	A
River Avenue and 151st St	North	13	336	A	328	A	167	A
	East	12	735	A	718	A	297	A
	South	11.5	232	A	228	A	131	A
	West	14	332	A	310	A	175	A
Grand Concourse and 151st St	North	12.5	171	A	164	A	104	A
	South	16	572	A	548	A	333	A
	West	12	325	A	317	A	97	A
Grand Concourse and 150th St	North	12	810	A	777	A	472	A
	East	11.5	308	A	303	A	65	A
	South	11	1028	A	986	A	599	A
	West	14	448	A	432	A	91	A
External St. and 149th St	North	12	236	A	210	A	138	A
	South	12.5	984	A	916	A	530	A
River Avenue and 149th St	North	11	83	A	62	A	23	D
	East	9.5	178	A	167	A	94	A
	South	12.5	984	A	916	A	530	A
Grand Concourse and 149th St	North	16	153	A	128	A	101	A
	East	14	148	A	143	A	56	B
	South	18	94	A	91	A	62	A
	West	10	105	A	98	A	44	B

Note: SFP = square feet per pedestrian

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2014 BUILD CONDITIONS

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-20a
2014 Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Saturday Midday Peak Period							
River Avenue between 157th St and 153rd St	West	12	511	3	A	7	B
	East	10	180	1	A	5+	B
River Avenue between 153rd St and 151st St	West	11.5	146	0	A	4	A
	East	12	63	1	A	4	A
River Avenue between 151st St and 150th St	West	12	73	0	A	4	A
	East	12.5	16	0	A	4	A
151st St between Walton Ave. and Grand Concourse	North	8	152	1	A	5+	B
	South	13	75	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	200	1	A	5+	B
	East	10	122	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	33	0	A	4	A
	South	8	33	0	A	4	A
Grand Concourse between 150th St and 149th St	West	7	98	1	A	5-	A
	East	9	123	1	A	5-	A
Exterior St between 150th St and 149th St	West	14.5	103	0	A	4	A
	East	7	89	1	A	5-	A
River Avenue between 150th St and 149th St	West	8	135	1	A	5+	B
	East	17.5	136	1	A	5-	A
149th St. between Walton Ave and Grand Concourse	North	8	120	1	A	5	A/B
	South	10	81	1	A	5-	A
Game Day Saturday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	759	4	A	8	C
	East	10	175	1	A	5+	B
River Avenue between 153rd St and 151st St	West	11.5	115	1	A	5-	A
	East	12	57	0	A	4	A
River Avenue between 151st St. and 150th St	West	12	61	0	A	4	A
	East	12.5	18	0	A	4	A
151st St. between Walton Ave and Grand Concourse	North	8	187	2	A	6	B
	South	13	80	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	254	1	A	5+	B
	East	10	169	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	43	0	A	4	A
	South	8	43	0	A	4	A
Grand Concourse between 150th St and 149h St	West	7	91	1	A	5-	A
	East	9	109	1	A	5-	A
Exterior St between 150th St and 149h St	West	14.5	73	0	A	4	A
	East	7	59	1	A	5-	A
River Avenue between 150th St and 149h St	West	8	124	1	A	5	A/B
	East	17.5	110	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	157	1	A	5+	B
	South	10	103	1	A	5-	A
Note: PFM = pedestrians per foot per minute							

TableB-20b

2014 Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	586	3	A	7	B
	East	10	169	1	A	5+	B
River Avenue between 153rd St and 151st St.	West	11.5	131	1	A	5-	A
	East	12	53	0	A	4	A
River Avenue between 151st St and 150th St	West	12	62	0	A	4	A
	East	12.5	6	0	A	4	A
151st St between Walton Ave. and Grand Concourse	North	8	139	1	A	5+	B
	South	13	96	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	255	1	A	5+	B
	East	10	168	1	A	5+	B
150th St between Walton Ave and Grand Concourse	North	8	18	0	A	4	A
	South	8	11	0	A	4	A
Grand Concourse between 150th St. and 149h St.	West	7	179	2	A	6	B
	East	9	115	1	A	5-	A
Exterior St. between 150th St. and 149h St	West	14.5	80	0	A	4	A
	East	7	71	1	A	5-	A
River Avenue between 150th St and 149h St	West	8	98	1	A	5-	A
	East	17.5	126	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	174	1	A	5+	B
	South	10	193	1	A	5+	B
Non-Game Day Saturday Midday Peak Period							
River Avenue between 157th St and 153rd St	West	12	162	1	A	5-	A
	East	10	95	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	158	1	A	5-	A
	East	12	67	0	A	4	A
River Avenue between 151st St and 150th St.	West	12	78	0	A	4	A
	East	12.5	6	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	98	1	A	5-	A
	South	13	61	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	121	1	A	5-	A
	East	10	65	0	A	4	A
150th St between Walton Ave and Grand Concourse	North	8	18	0	A	4	A
	South	8	18	0	A	4	A
Grand Concourse between 150th St and 149h St	West	7	125	1	A	5+	A
	East	9	136	1	A	5	A/B
Exterior St between 150th St and 149h St	West	14.5	112	1	A	5-	A
	East	7	95	1	A	5-	A
River Avenue between 150th St and 149h St	West	8	135	1	A	5+	B
	East	17.5	143	1	A	5-	A
149th St. between Walton Ave and Grand Concourse	North	8	231	2	A	6	B
	South	10	151	1	A	5	A/B

Note: PFM = pedestrians per foot per minute

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-20c
2014 Build Condition: Pedestrian LOS Analysis for Sidewalks

Location	Sidewalk	Effective Width (feet)	15-Minute Two-Way Volume	Average		Platoon	
				PFM	LOS	PFM	LOS
Non-Game Day Weekday PM Peak Period							
River Avenue between 157th St and 153rd St	West	12	137	1	A	5-	A
	East	10	76	1	A	5-	A
River Avenue between 153rd St and 151st St	West	11.5	138	1	A	5-	A
	East	12	56	0	A	4	A
River Avenue between 151st St and 150th St	West	12	67	0	A	4	A
	East	12.5	3	0	A	4	A
151st St between Walton Ave and Grand Concourse	North	8	98	1	A	5-	A
	South	13	75	0	A	4	A
Grand Concourse between 151st St and 150th St	West	12	160	1	A	5-	A
	East	10	101	1	A	5-	A
150th St between Walton Ave and Grand Concourse	North	8	11	0	A	4	A
	South	8	8	0	A	4	A
Grand Concourse between 150th St and 149h St	West	7	202	2	A	6	B
	East	9	81	1	A	5-	A
Exterior St between 150th St and 149h St	West	14.5	87	0	A	4	A
	East	7	83	1	A	5-	A
River Avenue between 150th St and 149h St	West	8	100	1	A	5-	A
	East	17.5	123	0	A	4	A
149th St between Walton Ave and Grand Concourse	North	8	194	2	A	6	B
	South	10	214	1	A	5+	B

Note: PFM = pedestrians per foot per minute

Table B-21a
2014 Build Condition: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Game Day Saturday Midday Peak Period		Game Day Saturday PM Peak Period		Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	154	A	97	A	164	A
	Southeast	191	A	122	A	230	A
	Southwest	53	B	28	C	51	B
	Northwest	64	A	26	C	65	A
River Avenue and 151st St	Northeast	338	A	372	A	426	A
	Southeast	331	A	388	A	388	A
	Southwest	216	A	349	A	255	A
	Northwest	183	A	283	A	217	A
Grand Concourse and 151st St	Southwest	260	A	182	A	131	A
	Northwest	297	A	255	A	98	A
Grand Concourse and 150th St	Northeast	163	A	119	A	176	A
	Southeast	95	A	68	A	132	A
	Southwest	74	A	56	B	114	A
	Northwest	102	A	81	A	180	A
Exterior St and 149th St	Southwest	189	A	152	A	114	A
	Northwest	160	A	202	A	212	A
River Avenue and 149th St	Northeast	87	A	114	A	100	A
	Southeast	173	A	213	A	182	A
Grand Concourse and 149th St	Northeast	124	A	235	A	133	A
	Southeast	379	A	581	A	294	A
	Southwest	123	A	112	A	72	A
	Northwest	129	A	147	A	101	A

Note: SFP = square feet per pedestrian

Table B-21b
2014 Build Condition: Pedestrian LOS Analysis for Corner Reservoirs

Location	Corner	Non-Game Day Saturday Midday Peak Period		Non-Game Day Weekday PM Peak Period	
		SFP	LOS	SFP	LOS
River Avenue and 153rd St	Northeast	388	A	411	A
	Southeast	511	A	663	A
	Southwest	164	A	188	A
	Northwest	182	A	210	A
River Avenue and 151st St	Northeast	333	A	382	A
	Southeast	326	A	371	A
	Southwest	211	A	243	A
	Northwest	175	A	204	A
Grand Concourse and 151st St	Southwest	549	A	195	A
	Northwest	457	A	173	A
Grand Concourse and 150th St	Northeast	325	A	315	A
	Southeast	190	A	236	A
	Southwest	140	A	175	A
	Northwest	186	A	257	A
Exterior St and 149th St	Southwest	141	A	186	A
	Northwest	160	A	197	A
River Avenue and 149th St	Northeast	75	A	108	A
	Southeast	147	A	178	A
Grand Concourse and 149th St	Northeast	185	A	135	A
	Southeast	449	A	289	A
	Southwest	78	A	65	A
	Northwest	102	A	87	A

Note: SFP = square feet per pedestrian

Table B-22a
2014 Build Condition: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	588	A	532	A	454	A
	East	15	164	A	159	A	77	A
	South	16	855	A	785	A	539	A
	West	12	57	B	47	B	35	C
River Avenue and 151st St	North	13	253	A	243	A	183	A
	East	12	474	A	426	A	261	A
	South	11.5	174	A	168	A	141	A
	West	14	264	A	248	A	185	A
Grand Concourse and 151st St	North	12.5	284	A	370	A	220	A
	South	16	939	A	904	A	512	A
	West	12	559	A	545	A	165	A
Grand Concourse and 150th St	North	12	245	A	236	A	134	A
	East	11.5	185	A	181	A	38	C
	South	11	141	A	136	A	77	A
	West	14	186	A	179	A	37	C
Exterior St and 149th St	North	12	176	A	153	A	103	A
	South	12.5	984	A	924	A	530	A
River Avenue and 149th St	North	11	62	A	47	B	17	D
	East	9.5	154	A	142	A	82	A
	South	12.5	984	A	924	A	530	A
Grand Concourse and 149th St	North	16	113	A	103	A	75	A
	East	14	164	A	160	A	62	A
	South	18	127	A	121	A	84	A
	West	10	255	A	240	A	107	A

Note: SFP = square feet per pedestrian

Appendix B: Transit and Pedestrian Supplemental Analysis

Table B-22b
2014 Build Condition: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Saturday PM Peak Period								
River Avenue and 153rd St	North	10	200	A	181	A	163	A
	East	15	118	A	112	A	56	B
	South	16	274	A	254	A	172	A
	West	12	29	C	28	C	18	D
River Avenue and 151st St	North	13	303	A	292	A	220	A
	East	12	502	A	450	A	277	A
	South	11.5	220	A	215	A	179	A
	West	14	543	A	521	A	380	A
Grand Concourse and 151st St	North	12.5	359	A	346	A	206	A
	South	16	720	A	693	A	393	A
	West	12	430	A	419	A	127	A
Grand Concourse and 150th St	North	12	184	A	177	A	100	A
	East	11.5	139	A	136	A	29	C
	South	11	102	A	99	A	56	B
	West	14	157	A	151	A	32	C
Exterior St and 149th St	North	12	223	A	198	A	130	A
	South	12.5	766	A	740	A	412	A
River Avenue and 149th St	North	11	76	A	63	A	21	D
	East	9.5	206	A	193	A	109	A
	South	12.5	766	A	740	A	412	A
Grand Concourse and 149th St	North	16	225	A	202	A	148	A
	East	14	284	A	275	A	107	A
	South	18	166	A	158	A	109	A
	West	10	185	A	172	A	78	A

Note: SFP = square feet per pedestrian

Table B-22c
2014 Build Condition: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1073	A	1009	A	605	A
	East	15	207	A	203	A	70	A
	South	16	1860	A	1653	A	797	A
	West	12	59	B	50	B	27	C
River Avenue and 151st St	North	13	324	A	316	A	161	A
	East	12	645	A	600	A	261	A
	South	11.5	217	A	212	A	122	A
	West	14	322	A	310	A	169	A
Grand Concourse and 151st St	North	12.5	103	A	99	A	63	A
	South	16	274	A	263	A	159	A
	West	12	170	A	166	A	51	B
Grand Concourse and 150th St	North	12	456	A	437	A	265	A
	East	11.5	170	A	167	A	36	C
	South	11	636	A	610	A	371	A
	West	14	325	A	314	A	66	A
Exterior St and 149th St	North	12	233	A	206	A	136	A
	South	12.5	713	A	665	A	384	A
River Avenue and 149th St	North	11	73	A	55	B	20	D
	East	9.5	176	A	164	A	93	A
	South	12.5	713	A	665	A	384	A
Grand Concourse and 149th St	North	16	141	A	122	A	93	A
	East	14	142	A	137	A	53	B
	South	18	88	A	84	A	58	B
	West	10	136	A	127	A	57	B

Note: SFP = square feet per pedestrian

Table B-22d
2014 Build Condition: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Saturday Midday Peak Period								
River Avenue and 153rd St	North	10	1425	A	1365	A	1159	A
	East	15	402	A	390	A	190	A
	South	16	4104	A	3583	A	2586	A
	West	12	159	A	143	A	98	A
River Avenue and 151st St	North	13	225	A	217	A	163	A
	East	12	502	A	490	A	277	A
	South	11.5	162	A	157	A	132	A
	West	14	264	A	234	A	185	A
Grand Concourse and 151st St	North	12.5	469	A	452	A	269	A
	South	16	2400	A	2311	A	1309	A
	West	12	1270	A	1239	A	376	A
Grand Concourse and 150th St	North	12	506	A	487	A	276	A
	East	11.5	348	A	341	A	72	A
	South	11	275	A	265	A	150	A
	West	14	311	A	299	A	62	A
Extensor St and 149th St	North	12	177	A	153	A	103	A
	South	12.5	713	A	667	A	384	A
River Avenue and 149th St	North	11	55	B	43	B	15	D
	East	9.5	141	A	131	A	75	A
	South	12.5	713	A	667	A	384	A
Grand Concourse and 149th St	North	16	162	A	148	A	107	A
	East	14	263	A	254	A	98	A
	South	18	118	A	112	A	78	A
	West	10	125	A	120	A	53	B

Note: SFP = square feet per pedestrian

Table B-22e
2014 Build Condition: Pedestrian LOS Analysis for Crosswalks

Location	Crosswalk	Width (feet)	Without Vehicles		With Vehicles		Maximum Surge	
			SFP	LOS	SFP	LOS	SFP	LOS
Non-Game Day Weekday PM Peak Period								
River Avenue and 153rd St	North	10	1744	A	1639	A	983	A
	East	15	561	A	550	A	191	A
	South	16	5580	A	5157	A	2392	A
	West	12	193	A	175	A	88	A
River Avenue and 151st St	North	13	279	A	273	A	139	A
	East	12	601	A	587	A	243	A
	South	11.5	206	A	202	A	116	A
	West	14	309	A	288	A	162	A
Grand Concourse and 151st St	North	12.5	167	A	160	A	102	A
	South	16	486	A	466	A	283	A
	West	12	318	A	311	A	95	A
Grand Concourse and 150th St	North	12	767	A	736	A	447	A
	East	11.5	301	A	296	A	63	A
	South	11	1028	A	986	A	599	A
	West	14	431	A	416	A	88	A
Extensor St. and 149th St	North	12	216	A	189	A	126	A
	South	12.5	940	A	872	A	506	A
River Avenue and 149th St	North	11	82	A	61	A	22	D
	East	9.5	169	A	158	A	89	A
	South	12.5	940	A	872	A	506	A
Grand Concourse and 149th St	North	16	147	A	123	A	97	A
	East	14	145	A	140	A	54	B
	South	18	93	A	89	A	61	A
	West	10	103	A	96	A	43	B

Note: SFP = square feet per pedestrian

APPENDIX C

Environmental Justice

A. INTRODUCTION

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This Executive Order mandates that each federal agency "shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." On October 4, 1999, Governor George E. Pataki and New York State Department of Environmental Conservation (NYSDEC) Commissioner John Cahill announced the creation of a New York State program to address environmental justice concerns and community participation in New York State's environmental permitting process. On March 19, 2003, NYSDEC issued its Policy CP-29, "Environmental Justice and Permitting," which provides guidance for incorporating environmental justice concerns into the NYSDEC environmental review process and the NYSDEC application of the State Environmental Quality Review Act. Both the federal order and the state environmental justice policy also require public outreach to low-income and/or minority populations that would be affected by a project.

As described in Chapter 1, "Project Description," the Proposed Project would require several permits and approvals from NYSDEC and may require permits or approvals from one or more federal agencies. Therefore, an analysis of the project's consistency with the state environmental justice policy and federal environmental justice order was conducted.

As set forth in NYSDEC's policy, "Environmental justice means the fair treatment and meaningful involvement of all people regardless of race, color, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, shall bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies." This analysis was conducted to examine the potential for the Gateway Center at Bronx Terminal Market project to result in significant adverse impacts on any low-income or minority populations and whether any such impacts would be disproportionately high and adverse impacts on those populations. It also describes the Proposed Project's public outreach program for the affected population.

B. METHODOLOGY

This analysis was prepared consistent with the methodology set forth in NYSDEC's policy as well as the federal Council on Environmental Quality's (CEQ) "Environmental Justice Guidance Under the National Environmental Policy Act," December 1997, which provides guidance for federal agencies regarding incorporating environmental justice concerns into their environmental

justice analyses. The methodology involves three basic steps: (1) establishing a study area by identifying potential adverse environmental impacts and the area to be affected; (2) determining characteristics of the study area population to identify whether potential adverse environmental impacts may affect a low-income and/or minority population; and (3) identifying whether potential adverse environmental impacts would disproportionately affect low-income and/or minority populations.

C. IDENTIFICATION OF LOW-INCOME AND MINORITY POPULATIONS WITHIN THE STUDY AREA

ESTABLISH STUDY AREA

The Proposed Project is a retail and hotel development with a public parking garage and approximately 2 acres of new, publicly-accessible open space. As described in this EIS, the potential significant adverse environmental impacts that could result from the Proposed Project are associated with historic resources, traffic, transit and pedestrians, and noise. The study area for the environmental justice analysis was defined to include all locations where potential significant impacts could occur and is based on the geographic units used by the U.S. Census Bureau. The U.S. Census Bureau collects information using various geographic units such as census tracts, block groups, and blocks. As shown in Figure C-1, the study area extends approximately ½ mile from the project site in the Bronx and encompasses the intersections studied for traffic as well as the study areas for other EIS issues. The Manhattan portion of the study area, which extends roughly ¼ mile to the west of the project site, encompasses the census block groups that are adjacent to traffic study locations. There are 17 census block groups in the Bronx portion of the study area and 10 census block groups in the Manhattan portion of the study area.

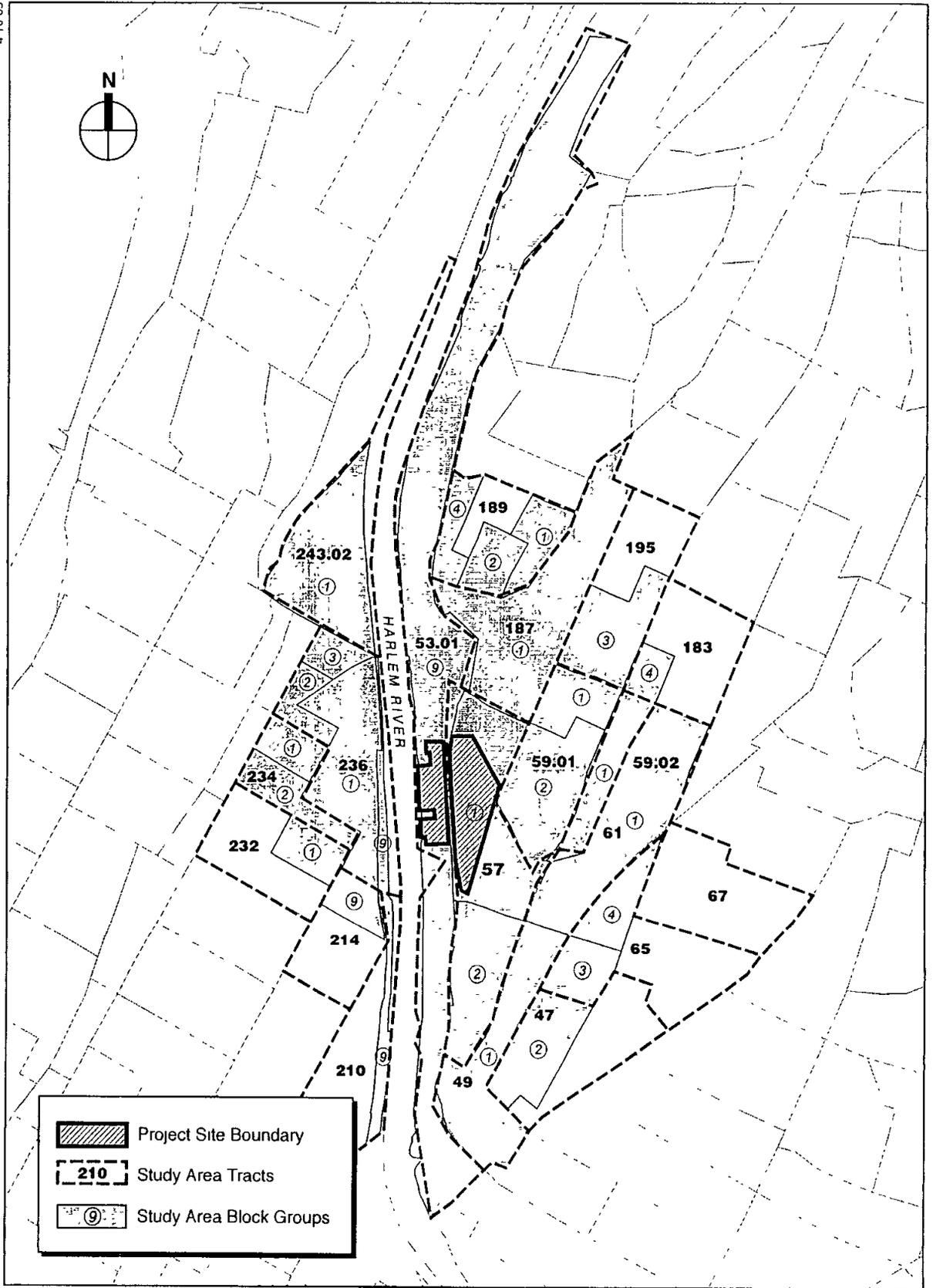
DETERMINE CHARACTERISTICS OF STUDY AREA POPULATION

The next step in the analysis is to determine whether low-income or minority populations are present in the study area. Following NYSDEC's methodology, to identify minority and low-income populations within the study area demographic information was obtained from the U.S. Census Bureau for the year 2000. For the purposes of this analysis, demographic data relating to population, race, median household income, and poverty status were compiled for each of the block groups in the study area. In addition, data were compiled for New York City as a whole to allow for a comparison of study area characteristics to a larger reference area.

IDENTIFICATION OF MINORITY COMMUNITIES

According to NYSDEC's policy and CEQ guidance, minorities include Hispanics, African-Americans, Asian Americans and Pacific Islanders, and American Indian or Alaskan natives. In identifying minority residents within the study area, data from the U.S. Census Bureau were used to determine the population characteristics for the study area. The following information was collected for each census tract:

- *Data on racial and ethnic characteristics:* The population in each census block group in the study area was characterized using the following racial categories provided in the 2000 Census: Non-Hispanic White, Black, Asian, and "Other" (in this analysis, individuals identified by the Census as Hawaiian, Pacific Islander, American Indian, Alaska Native, or members of more than one race are included in the "other" category). The population was



also characterized according to Hispanic ethnicity. In addition to racial characteristics, the 2000 Census also includes information on Hispanic origin, which is considered to be an ethnic rather than racial characteristic. People of this ethnic category can be any race.

- *Total percentage of minority population:* Because Hispanic residents may be of any race, people who characterized themselves as White, Black, Asian, and Other in the 2000 Census may be non-Hispanic or Hispanic. To determine the total number of minority residents in each block group, the number of Black, Asian, Other, and Hispanic Whites were tallied.

According to NYSDEC's policy, a "minority community" is present when 51.1 percent or more of the population is minority. According to the CEQ guidance, a "minority community" is present when the percentage of minorities in the study area is "meaningfully greater" than the minority percentage of the general population or when the percentage of minorities in the community exceeds 50 percent. Therefore, for this analysis, any block group with a minority population of 50 percent or more was considered to be a minority community, as this is the more conservative measure.

IDENTIFICATION OF LOW-INCOME COMMUNITIES

NYSDEC's policy defines a low-income population as a population with an annual income below the poverty threshold as defined by the U.S. Census Bureau. In determining poverty status, the Census Bureau considers income as well as family size and the presence of individuals below the age of 18. The poverty threshold increases as family size increases. In the 2000 Census, the poverty threshold was \$13,290 for a family of three and \$17,029 for a family of four.

Data were compiled on the percentage of persons in each block group in the study area living below the poverty threshold. As another measure of low-income status, the median household income was also gathered for the study area block groups, and an estimate was made of the median income of the study area. NYSDEC's policy defines a low-income community to be any area where the low-income population (i.e., percent living below the poverty threshold) is equal to or greater than 23.59 percent of the total population. The CEQ guidance also recommends use of poverty thresholds established in the Census to identify low-income populations, but does not specifically define what proportion of a population must be living below the poverty level for an area to constitute a low-income community. Therefore, any block group with 23.59 percent or more of its population living below the poverty level was considered to be a low-income community in this analysis.

POPULATION CHARACTERISTICS OF THE STUDY AREA

Using the methodology described above, the study area is a low-income and minority population for the purpose of analyzing environmental justice. The characteristics of the study area are summarized in Table C-1 and described below. The Census recorded no residential population for three of the block groups: Tract 57, Block Group 9 in the Bronx, which is comprised of industrial and community facility uses; and Tract 236, Block Group 9 and Tract 210, Block Group 9 in Manhattan, which make up a narrow strip of land along the Harlem River waterfront where no residences are located.

Table C-1
Ethnicity and Income Characteristics of the Study Area Population

Area	Total Population	Race and Ethnicity (Percent)						Percent Below Poverty Level**
		Non-Hispanic White	Black	Asian	Other	Hispanic*	Total Minority	
Bronx Portion of Study Area								
CT 47, BG 2	43	2.3	11.6	4.7	74.4	72.1	97.7	100.0
CT 49, BG 1	246	0.4	28.0	0.4	50.8	71.5	99.6	28.1
CT 53.01, BG 9	34	5.9	70.6	0.0	8.8	50.0	94.1	N/A
CT 57, BG 1	858	4.0	47.4	1.7	26.5	50.1	96.0	19.7
CT 57, BG 2	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CT 59.01, BG 1	1,895	3.4	30.9	12.2	38.5	56.1	96.6	34.5
CT 59.01, BG 2	3,077	1.6	38.1	1.5	43.6	64.9	98.4	38.1
CT 59.02, BG 1	2,682	3.4	41.6	1.6	32.3	57.5	96.6	25.5
CT 61, BG 1	4,039	2.1	82.4	0.4	9.2	15.5	97.9	15.9
CT 65, BG 3	25	8.0	24.0	0.0	56.0	68.0	92.0	N/A
CT 65, BG 4	2,147	1.1	46.9	1.3	30.8	55.8	98.9	34.1
CT 183, BG 4	1,727	3.0	42.7	2.8	34.7	53.2	97.0	31.7
CT 187, BG 1	33	15.2	48.5	0.0	30.3	45.5	84.8	N/A
CT 189, BG 1	2,489	1.4	48.4	0.9	36.8	51.9	98.6	37.9
CT 189, BG 2	1,932	3.3	32.6	1.3	49.7	65.8	96.7	45.1
CT 189, BG 4	1,134	1.9	50.1	0.3	37.2	48.1	98.1	50.8
CT 195, BG 3	2,590	2.7	31.1	2.2	44.7	67.4	97.3	37.3
<i>Bronx Total</i>	<i>24,951</i>	<i>2.4</i>	<i>46.8</i>	<i>2.2</i>	<i>33.8</i>	<i>51.7</i>	<i>97.6</i>	<i>32.7</i>
Manhattan Portion of Study Area								
CT 210, BG 9	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CT 214, BG 9	20	0.0	95.0	0.0	5.0	5.0	100.0	0.0
CT 232, BG 1	1,087	7.0	73.2	0.6	19.1	30.2	99.6	31.6
CT 234, BG 1	1,519	1.8	89.9	0.3	8.0	7.6	98.9	34.1
CT 234, BG 2	2,011	6.3	78.8	0.7	14.2	20.7	99.0	34.5
CT 236, BG 1	3,873	0.8	95.1	0.2	3.9	5.0	99.5	21.3
CT 236, BG 2	1,730	4.7	84.0	0.4	10.9	17.6	98.3	28.8
CT 236, BG 3	85	0.0	74.1	0.0	25.9	37.6	100.0	44.0
CT 236, BG 9	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CT 243.02, BG 1	7,386	6.8	71.2	1.2	20.9	29.4	99.4	52.2
<i>Manhattan Total</i>	<i>17,711</i>	<i>0.8</i>	<i>80.3</i>	<i>0.7</i>	<i>14.2</i>	<i>20.1</i>	<i>99.2</i>	<i>38.2</i>
Study Area	42,662	12.0	60.7	1.6	25.7	38.6	98.3	35.0
New York City	8,008,278	44.7	26.6	9.8	18.9	27.0	65.0	20.8
Notes: * Hispanic is an ethnic group that can include members of any racial category. Both white and non-white Hispanics are listed in this column. ** Percent of persons with incomes below the established federal poverty level; poverty level varies depending on household size.								
Sources: U.S. Department of Commerce, Bureau of the Census, 2000 Census, Summary Files 1 & 3.								

According to the 2000 Census, the study area had a total population of 42,662 residents, of which African-Americans represented almost 61 percent of the total population, followed by Others (26 percent), White (12 percent), and Asian (2 percent). Of those characterized as White, most are also Hispanic: White Hispanic residents made up about 10 percent of the population in the study area. At the block group level, all of the block groups that make up the study area are

minority. With minorities making up approximately 98 percent of the total population, the study area is a minority community.

As shown in Table C-1, approximately 35 percent of the residents in the study area live below the poverty level (compared to 21 percent in New York City). Therefore, the study area meets NYSDEC's definition of a low-income community. Of the 21 block groups for which poverty data are available, 17 are below NYSDEC's low-income threshold. Therefore, overall the study area can be considered low-income.

D. SUMMARY OF SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS

The significant adverse impacts identified in this EIS are summarized below. As described throughout the EIS, the Proposed Project would result in significant adverse impacts to historic resources, traffic, transit and pedestrians, and noise. All of the impacts identified can be mitigated, with the exception of a noise impact on the open space that would be created as part of the Proposed Project.

HISTORIC RESOURCES

The proposed demolition of the historic buildings on the project site—Buildings B, D, F, G, H, and J, and the Bronx House of Detention—would constitute a significant adverse impact on historic resources. Measures to mitigate this impact are being developed in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The mitigation measures are anticipated to include recording Buildings B, D, F, G, H, and J, and the Bronx House of Detention through a Historic American Buildings Survey (HABS)-level photographic documentation and accompanying narrative; publishing a pamphlet describing the historical development and significance of the Bronx Terminal Market; and creating interpretive displays or markers on the site illustrating the Market's history. With these measures, the adverse impact of the Proposed Project on historic resources would be partially mitigated.

TRAFFIC

Under the Build condition (see Chapter 16, "Traffic and Parking"), 11 locations within the local street network of the Bronx portion of the study area would experience significant traffic impacts during one or more of the analyzed peak periods:

- Grand Concourse and East 149th Street;
- Grand Concourse and East 161st Street;
- Major Deegan Expressway Northbound Exit Ramp, 145th Street Bridge Approach, 149th Street, Exterior Street, and River Avenue;
- River Avenue and 150th Street.
- River Avenue and 151st Street;
- River Avenue and 153rd Street;
- River Avenue and 161st Street;
- Jerome Avenue and 161st Street;
- Major Deegan Expressway Northbound Ramp and Service Road, and 157th Street; and
- Macombs Place and 155th Street.

Additionally, significant impacts are expected at two locations on the Major Deegan Expressway: the northbound Major Deegan Expressway approaching Exit 4 (149th Street) and the southbound Major Deegan Expressway approaching the exit ramp at 161st Street at Exits 5 and 6.

All of these impacts can be mitigated with standard traffic mitigation measures, as described in Chapter 22, "Mitigation."

TRANSIT AND PEDESTRIANS

A significant adverse impact is predicted to bus line haul capacity on the Bx19 route. There would be overcrowding on the Bx19 during the 2009 and 2014 Build conditions' non-game day Saturday midday peak periods. In order to mitigate the impact, New York City Transit would need to schedule one additional eastbound bus per hour during the Saturday midday peak hour. In addition, one significant impact is predicted for pedestrian conditions. The Proposed Project would result in a decrease in the pedestrian level of service of the north crosswalk at 149th Street and River Avenue from LOS A under No Build conditions to LOS D under Build conditions. This impact would be mitigated by widening of the north crosswalk.

NOISE

A significant adverse noise impact is predicted to occur in the new public open space and waterfront esplanade, to be created as part of the Proposed Project, where noise levels would be higher than the 55 dBA $L_{10(1)}$ noise level for outdoor areas requiring serenity and quiet contained in the *CEQR Technical Manual's* Table 3R-3, "Noise Exposure Guidelines for Use in City Environmental Impact Review" because of the proximity of the elevated Major Deegan Expressway. There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open space to below the 55 dBA $L_{10(1)}$ guideline noise level, as a sound barrier on Exterior Street would raise aesthetic and safety issues. Unless the barrier was of excessive height, it would not be effective in reducing noise from the elevated Major Deegan Expressway. Therefore this impact would remain unmitigated. While noise levels in the open space would be above the 55 dBA $L_{10(1)}$ guideline noise level, they would be comparable to noise levels in a number of existing parks in New York City that are also located adjacent to heavily trafficked roadways.

E. OTHER EFFECTS OF THE PROPOSED PROJECT

As described in Chapter 3, "Socioeconomic Conditions," the Proposed Project would displace the 23 businesses currently operating on the project site. Almost all of these businesses are engaged in food wholesaling or the sale of related restaurant or grocery products, such as paper goods and refrigeration equipment, and they cater to a minority population. The customer base for the businesses located in the Bronx Terminal Market largely consists of restaurants and small grocery stores in Harlem, Washington Heights, and the South Bronx, as well as African, Caribbean, and Hispanic residents who live within the ¼-mile study area and the larger metropolitan area. These restaurants and stores cater to the ethnically diverse populations of Harlem, Washington Heights, and the Bronx that purchase African, Caribbean, and Latin American meats, fish, and vegetables offered at the market. All of the ethnic food products sold at the market are currently available from at least two other wholesalers in New York City. In addition, most restaurant and grocery store customers in the South Bronx, Harlem, and Washington Heights purchase a majority of their ethnic food products directly from suppliers

overseas or from importers near Port Newark. For these reasons, and because the businesses on the Bronx Terminal Market site make up a small proportion of food wholesalers in the Bronx and citywide and can be relocated to other sites, their displacement is not considered a significant adverse impact.

Although the businesses on the project site serve a predominantly minority population, their displacement would not result in a significant adverse impact with respect to environmental justice. Most of the businesses are wholesale operations serving other businesses outside of the study area rather than residents of the adjacent neighborhoods. Customers travel from other parts of the Bronx or Manhattan, or even from elsewhere in the metropolitan region, to reach the businesses at the Bronx Terminal Market and could continue to do so if these businesses were relocated. The new locations of the wholesale suppliers currently at the Bronx Terminal Market may not be less accessible to customers than the current location. Additionally, there are other small groceries in the South Bronx that carry African and Caribbean products, some of which are supplied through direct importers or through other large wholesalers in Brooklyn, Queens, and New Jersey.

As noted above, the study area includes a low-income population. As described in Chapter 21, "Public Health," a recent study by investigators at the Mount Sinai School of Medicine found that children living in poor New York City neighborhoods were hospitalized for asthma at a higher rate than children in wealthy neighborhoods. This difference reflects some combination of variations in asthma prevalence, triggers for asthma exacerbations, access to health care, and hospitalization practices.

Given concern that exposure to particulate matter (PM)—in particular, emissions of fine particulate matter with an aerodynamic diameter less than 2.5 micrometers in diameter ($PM_{2.5}$), emissions from activities associated with the Proposed Project—could either aggravate pre-existing asthma or induce asthma in an individual with no prior history of the disease, the potential for emissions of $PM_{2.5}$ to precipitate onset of an exacerbation is examined in Chapter 21. Based on that analysis, the Proposed Project is not expected to result in adverse public health impacts.

F. BENEFITS TO COMMUNITY FROM THE PROPOSED PROJECT

If fully developed, the Proposed Project would support the economic revitalization of the West Haven neighborhood of the Bronx by converting a large underused site into a productive retail and hotel use. The development would represent a dramatic change to the project site, replacing underutilized and dilapidated buildings with a major retail center, new waterfront public open space, and the only hotel in this area of this city.

ECONOMIC DEVELOPMENT

The Proposed Project would create new employment opportunities, convenient shopping and dining opportunities, and create economic and fiscal benefits to the City in the form of economic revitalization and tax revenue. As described in Chapter 3, "Socioeconomic Conditions," the Proposed Project is expected to create more than 2,346 permanent jobs in the buildings on the project site and 599 permanent jobs elsewhere in New York City. Additionally, the Proposed Project is expected to generate \$52.14 million annually (in 2005 dollars) in non-property related tax revenues for New York City, the Metropolitan Transportation Authority, and New York State. As described above, the study area is a low-income community. The retail establishments

included in the Proposed Project would create new employment and shopping opportunities for local residents.

OPEN SPACE

The Proposed Project would provide an important new community amenity—an approximately 2-acre public open space and waterfront esplanade that would serve the surrounding neighborhood and create public recreational access to the Harlem River. The project site currently offers no public access to or views of the waterfront. The Proposed Project would result in the creation of a publicly accessible waterfront esplanade along the Harlem River as well as a public open space on the southern portion of the site between Exterior Street and the waterfront. Therefore, the Proposed Project is expected to have a beneficial effect on the surrounding neighborhood by creating new open space and providing access to the waterfront.

Scenarios in which this open space is provided by the City rather than the Proposed Project, or is provided in conjunction with the Yankee Stadium project, are discussed in Chapter 22, “Future Conditions with a Relocated Yankee Stadium” and Chapter 24, “Alternatives.”

BROWNFIELD REMEDIATION

In conjunction with the Proposed Project, the hazardous materials currently present in the soils, groundwater, and buildings on the project site would be remediated as the two areas accepted into the Brownfield Cleanup Program. This would remove a potential environmental hazard to the community and return the site to productive use.

G. CONCLUSIONS ON DISPROPORTIONATE PROJECT IMPACTS

The study area is a minority and low-income community. As detailed above, the Proposed Project, in the absence of mitigation, would be expected to have significant adverse impacts in the following areas: historic resources, traffic, transit and pedestrians, and noise. These impacts would occur to low-income and minority populations. However, these adverse effects—with the exception of historic resources and a noise impact in one location—would be fully mitigated. Therefore, the impacts would not adversely affect the population of the study area or any other area, and a disproportionate significant adverse impact to an environmental justice community would not occur.

The one unmitigated noise impact would be on users of the new open space that would be created as part of the Proposed Project, where noise levels would be higher than the City’s guidelines because of the proximity of the elevated Major Deegan Expressway. There are no practical and feasible mitigation measures that could be implemented to reduce noise levels within the open space to below the 55 dBA $L_{10(1)}$ guideline noise level. This impact would affect users of the proposed open space, who may be residents of the surrounding area or visitors from elsewhere in the city. The increased noise levels would not be imposed on the general community; rather they would affect only those who choose to visit the project-created open space. Moreover, even though the users of the new open space would largely come from the surrounding community, the noise levels would not be different from those at other well utilized open space facilities in the city. Therefore, accounting for the benefit created by the new open space and the voluntary nature of its use, there would not be a disproportionate significant adverse impact on the minority, low-income residential population of the study area.

One partially unmitigated adverse impact from the project would occur: the impact of demolition of the historic structures on the project site. This impact would occur to the residents of the study area and also to the larger community of New York City, as a loss to the city's built heritage reflecting the history of WPA architecture and food distribution practices. Therefore, the loss of the historic structures would not constitute a disproportionate impact to the minority and low-income community present in the study area.

Furthermore, as described above, the Proposed Project would bring notable benefits to the study area's population. These include economic development, creation of open space, and brownfield remediation. Therefore, the Proposed Project on balance would not result in disproportionate significant adverse impacts to minority or low-income populations.

H. PUBLIC PARTICIPATION

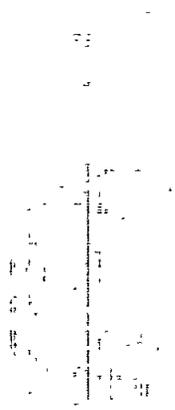
Public participation is an important component of NYSDEC's Environmental Justice policy. The Proposed Project has an extensive public outreach program, including frequent meetings with the local community board and interested community organizations. A public scoping meeting was held for the Proposed Project on September 9, 2004, and a final scope of work, reflecting comments made on the draft scope of analysis for the EIS, was issued on October 8, 2004. In accordance with the final scope of work, this DEIS has been prepared.

Once the lead agency is satisfied that the DEIS is complete, it issues a Notice of Completion and circulates the DEIS for public review. Publication of the Notice of Completion of the DEIS starts public review. During this period, which must extend for a minimum of 30 days, the public may review and comment on the DEIS either in writing or at a public hearing. Because the CEQR process is coordinated with land use review, the hearings are held jointly. All substantive comments become part of the CEQR record and are summarized and responded to in the FEIS.

As the Proposed Project moves through the City's Uniform Land Use Review Procedure (ULURP), the public will have opportunities to comment on the project and the DEIS at public hearings held by Community Board 4, the Bronx Borough President, the City Planning Commission, and the City Council. In addition to these required opportunities for public participation, the project sponsor has met and will continue to meet with local elected officials and any interested community groups to present the project and address issues. Therefore, the Proposed Project would be consistent with NYSDEC's Policy in terms of public outreach to environmental justice communities. *

APPENDIX D

Waterfront Revitalization Program Consistency Assessment Form



For Internal Use Only:

WRP no _____

Date Received: _____

DOS no. _____

**NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM
Consistency Assessment Form**

Proposed action subject to CEQR, ULURP, or other Local, State or Federal Agency Discretionary Actions that are situated within New York City's designated Coastal Zone Boundary must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)*. The WRP was adopted as a 197-a Plan by the Council of the City of New York on October 13, 1999, and approved in coordination with local, state and Federal laws and regulations, including the State's Coastal Management Program (Executive Law, Article 42) and the Federal Coastal Zone Management Act of 1972 (P.L. 92-583). As a result of these approvals, state and federal discretionary actions within the city's coastal zone must be consistent to the maximum extent practicable with the WRP policies and the city must be given the opportunity to comment on all state and federal projects within its coastal zone.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, other State Agency or the New York City Department of City Planning in its review of the applicant's certification of consistency.

A. APPLICANT

1. Name:

BTM Development Partners, LLC, c/o Jesse Masyr, Wachtel & Masyr, LLP

Address:

110 East 59th Street, New York, NY 10022

3. Telephone:

212.909.9513

Fax:

212.909.9429

E-mail Address:

masyr@wmlp.com

4. Project site owner:

New York City Economic Development Corporation

B. PROPOSED ACTIVITY

1. Brief description of activity:

The Gateway Center at Bronx Terminal Market is a proposal to redevelop a portion of the current Bronx Terminal Market site, along with the Bronx House of Detention, with a series of retail establishments, a multi-level parking garage and at-grade parking, a hotel, and a public park and waterfront esplanade (the Proposed Project). On the eastern side of Exterior Street, beginning at 149th Street and moving north, the Proposed Project would include a series of five 1-story retail buildings approximately 19,820 gross square foot (gsf) in size with an adjacent surface parking lot of approximately 22 spaces; a 4-story, approximately 499,630 gsf building with 401,765 gsf of retail and 256 parking spaces at the ground floor; a 6-level, approximately 920,632 gsf parking garage with a capacity of approximately 2,342 spaces and 22,485 gsf of retail on Exterior Street and 8,015 gsf of retail on River Avenue; a 3-story, approximately 436,480 gsf retail building; and a hotel approximately 247,500 gsf in size, with 250 rooms, a 30,000 gsf banquet facility, and approximately 225 parking spaces. At each level of the parking garage would be galleria spaces, totaling 39,930 gsf, leading to either Retail Building A or Retail Building B/F. A fee would be charged for parking in the proposed parking garage. On the western side of Exterior Street, the Proposed Project would include a public open space and waterfront esplanade totaling approximately 2 acres, and a 2-story, approximately 264,170 gsf building with 140,435 gsf of retail and 344 parking spaces at the ground floor as well as 27 spaces in a surface parking lot to the north of the proposed building. In total, the project will comprise approximately 2,427,162 gsf of new development on the site.

The Proposed Project involves the disposition of City-owned property (a long-term lease) by the New York City Department of Citywide Administrative Services (NYCDCAS) and the New York City Department of Small Business Services (NYCDSBS) to a private developer. In addition, a number of discretionary actions will be required, including: a zoning map amendment from M2-1 to C4-4; the declaration of two General Large-Scale Districts; special permits pursuant to ZR Sections 74-743, 74-53, 74-512, 74-744, 62-736; authorization under ZR Section 62-722; and certification under ZR Sections 62-711 and 62-712. The project also will require the elimination of East 150th Street between River Avenue and Exterior Street, East 151st Street between River and Cromwell Avenues; and Cromwell Avenue between Exterior Street and the Metro North Rail Road Tracks. The project site is comprised of a western and an eastern portion divided along Exterior Street. Under the terms of its agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site. The project sponsor would retain the option to renew the leasehold interest in the future.

The project sponsor will seek financing for the Proposed Project from the New York City Industrial Development Agency (NYCIDA). The project has applied for and been accepted into the Brownfield Cleanup Program (BCP) of the New York State Department of Environmental Conservation (NYSDEC). Project site remedial activities under the BCP are subject to review under that program, as well as under the State Environmental Quality Review Act (SEQRA). The project would require a NYSDEC State Pollution Discharge Elimination System (SPDES) permit for stormwater discharges associated with construction activities. One or more additional outfalls for stormwater discharge into the Harlem River may need to be installed if the project site's existing outfalls cannot be used. If these outfalls cannot be used, construction of new outfalls will be necessary. (See Number 4, below, for a description of approvals attendant to using the existing outfalls or constructing new outfalls.) The Proposed Project is within the boundaries of the coastal zone and will require a New York State Department of State (NYSDOS) determination of consistency with New York City's Local Waterfront Revitalization Program. The project may also involve a land transfer from NYSDOT to the City of New York, and a revocable consent for utility lines underneath Exterior Street. The potential widening of the 149th Street exit ramp from the Major Deegan Expressway may require approval from NYSDOT.

2 Purpose of activity:

The proposed actions would allow for the redevelopment of a portion of the current Bronx Terminal Market site, along with the Bronx House of Detention, with a series of retail establishments, a multi-level parking garage and at-grade parking, a hotel, and a public park and waterfront esplanade.

3. Location of activity (street address/borough or site description):

The Proposed Project would be located in the West Haven neighborhood of the Bronx on Block 2356, Lot 20; Block 2357, Lots 1 and 86; and Block 2539, Lots 2 (part), 32, and 60 (part)—an approximately 26-acre parcel that is bordered by Metro North Rail Road tracks to the north, River Avenue to the east, 149th Street to the south, and the Harlem River to the west.

4. If a federal or state permit or license was issued or is required for the proposed activity, identify the permit type(s), the authorizing agency and provide the application or permit number(s), if known:

The project has applied for and been accepted into the Brownfield Cleanup Program (BCP) by the New York State Department of Environmental Conservation (NYSDEC). The project would require a NYSDEC State Pollution Discharge Elimination System (SPDES) permit for stormwater discharges associated with construction activities. One or more additional outfalls for stormwater discharge into the Harlem River may need to be installed if the project site's existing outfalls cannot be used. If the construction of new outfalls is necessary, an amendment of the City's SPDES permit would be required, as well as Tidal Wetlands and Protection of Waters permits from NYSDEC, a U.S. Army Corps of Engineers (USACOE) permit pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Appropriations Act of 1899, an amendment to the City's drainage plan, and possibly a Water Quality Certification (from NYSDEC). If the existing outfalls can be used and no new outfalls are needed, the City's drainage plan and SPDES permit would need to be amended, which would require NYSDEC approval. If use of the existing outfall requires the removal of sedimentation from the mouths of the outfall and placement of related structures, Tidal Wetlands and Protection of Waters permits from NYSDEC, and an USACOE permit, would be needed. The project may also require NYSDEC and USACOE permits pursuant to Sections 10 and 404 for removal of debris from interpier areas, and a USACOE permit under Section 10 for work on platforms above the River. All of the forgoing activities (except possibly work on platforms over the River) are expected to qualify for a Nationwide Permit from USACOE. The Proposed Project is within the boundaries of the coastal zone and will require a New York State Department of State (NYSDOS) determination of consistency with New York City's Local Waterfront Revitalization Program. The project may also involve a land transfer from NYSDOT to the City of New York, and a revocable consent for utility lines underneath Exterior Street. The potential widening of the 149th Street exit ramp from the Major Deegan Expressway may require approval from NYSDOT.

5. Is federal or state funding being used to finance the project? If so, please identify the funding source(s).
The project sponsor will seek financing for the Proposed Project from the New York City Industrial Development Agency (NYCIDA).
-
6. Will the proposed project result in any large physical change to a site within the coastal area that will require the preparation of an environmental impact statement? Yes No
 If yes, identify Lead Agency: ✓
Office of the Deputy Mayor for Economic Development and Rebuilding
-
7. Identify City discretionary actions, such as zoning amendment or adoption of an urban renewal plan, required for the proposed project.
- Disposition of City-owned property (a long-term lease);
 - Zoning map amendment from M2-1 to C4-4;
 - Declaration of two General Large-Scale Districts;
 - Special permits pursuant to ZR Sections 74-743, 74-53, 74-512, 74-744, 62-736;
 - Authorization under ZR Section 62-722;
 - Certification under ZR Sections 62-711 and 62-712; and
 - Elimination of East 150th Street between River Avenue and Exterior Street, East 151st Street between River and Cromwell Avenues; and Cromwell Avenue between Exterior Street and the Metro North Rail Road Tracks.

C. COASTAL ASSESSMENT

The following questions represent, in a broad sense, the policy of the WRP. The number in the parentheses after each question indicated the policy or policies that are the focus of the question. A detailed explanation of the Waterfront Revitalization Program and its policies are contained in the publication the *New York City Waterfront Revitalization Program*.

Check either "Yes" or "No" for each of the following questions. Once the checklist is completed, assess how the proposed project affects the policy or standards indicated in "()" after each question with a Yes response. Explain how the action is consistent with the goals of the policy or standard.

Location Questions:	Yes	No
1. Is the project site on the waterfront or at the water's edge?	✓	<u> </u>
2. Does the proposed project require a waterfront site?	<u> </u>	✓
3. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land underwater, or coastal waters?	✓	<u> </u>

Policy Questions:	Yes	No
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The following questions represent, in a broad sense, the policies of the WRP. Numbers in parentheses after each questions indicate the policy or policies addressed by the question. The new Waterfront Revitalization Program offers detailed explanations of the policies, including criteria for consistency determinations.

Check either "Yes" or "No" for each of the following questions. For all "yes" responses, provide an attachment assessing the effects of the proposed activity on the relevant policies or standards. Explain how the action would be consistent with the goals of those policies and standards.

4. Will the proposed project result in revitalization or redevelopment of a deteriorated or under- used waterfront site? (1) The Proposed Project would result in the redevelopment of a portion of the Harlem River waterfront that is currently underutilized and contains dilapidated buildings.	✓	<u> </u>
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Policy Questions cont'd:

Yes No

5. Is the project site appropriate for residential or commercial redevelopment? (1.1)
The proposed development of a major retail center with parking, a hotel, and public open space and waterfront esplanade would be an appropriate coastal zone development. It would be compatible with the surrounding commercial, industrial, and residential lands uses, and support the economic revitalization of the West Haven neighborhood through new employment opportunities and convenient shopping and dining opportunities for local residents.
6. Will the action result in a change in scale or character of a neighborhood? (1.2)
The Proposed Project will result in a change in the character of the West Haven neighborhood of the Bronx. The project site is currently underutilized, and the Proposed Project would bring a greater intensity of use to the project site. The project would provide substantial access to the waterfront, which currently does not exist on the site or at very many locations within the surrounding area. Views from and through the project site to the waterfront would be improved with the provision of landscaped passageways through the site as well as the public open space and waterfront esplanade. The proposed buildings would be in keeping with the height and bulk of some of the existing structures in the surrounding area. The Proposed Project would displace some existing businesses; however, the businesses on the project site are not dependent upon siting on the Bronx River waterfront. The project's destination retail would not compete with local shopping areas that are neighborhood-oriented and would not jeopardize the viability of any retail strips in the study area. Although there would be significant increases in traffic volumes in the surrounding neighborhood, including along the Major Deegan Expressway, street network and Expressway capacities would be sufficient to accommodate traffic from the Proposed Project with the proposed mitigation measures. The neighborhood's sidewalks, subways, and buses are expected to have sufficient capacity to accommodate these increases in demand with the mitigation measures proposed. Changes in noise levels would be barely perceptible and there would be no resulting noise-related neighborhood character impacts. The Proposed Project would not significantly adversely affect the combined elements contributing to the neighborhood character of the area.
7. Will the proposed activity require provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (1.3)
Community facilities and services in and around the project site are sufficient to meet any increased demand that would result from the Proposed Project. The New York City Police Department and New York City Fire Department will continue to evaluate the need for personnel and equipment and make any necessary adjustments to adequately serve the area. As part of the Proposed Project, new water lines would be installed both within the City's right-of-way and the project site to facilitate new service laterals to the retail development, public open space, and street hydrant system. All new water lines would be designed and built to meet New York City Department of Environmental Protection (NYCDEP) requirements. New sanitary sewer lines would also be constructed within Exterior Street. As part of the Proposed Project, a NYCDEP storm sewer would be constructed within Exterior Street in accordance with the City's amended drainage plan for the area. New storm sewers would be constructed on the site to collect runoff from buildings, parking areas, the public open space, Exterior Street, and the Major Deegan Expressway.
8. Is the action located in one of the designated Significant Maritime and Industrial Areas (SMIA): South Bronx, Newtown Creek, Brooklyn Navy Yard, Red Hook, Sunset Park, or Staten Island? (2)
9. Are there any waterfront structures, such as piers, docks, bulkheads or wharves, located on the project sites? (2)
The project site includes bulkheads and piers. The piers located within the project site, Piers 1 through 4, are not suitable for working waterfront uses. Water depth in the interpier areas and at the pierheads is currently less than six feet deep at mean low water. Bottom sediment would have to be dredged for access by most vessels. Additionally, the Oak Point Link rail connection, which runs parallel to the shoreline, is adjacent to the pierhead line and precludes working waterfront and vessel uses of the project site shoreline.

✓

✓

✓

✓

✓

Policy Questions cont'd:

	Yes	No
10. Would the action involve the siting or construction of a facility essential to the generation or transmission of energy, or a natural gas facility, or would it develop new energy resources? (2.1)		✓
11. Does the action involve the siting of a working waterfront use outside of a SMIA? (2.2)		✓
12. Does the proposed project involve infrastructure improvement, such as construction or repair of piers, docks, or bulkheads? (2.3, 3.2) The Proposed Project would include the removal of timber bulkheads above mean high water in certain areas and replacement with a softer, sloped and more stable rip-rap edge.	✓	
13. Would the action involve mining, dredging, or dredge disposal, or placement of dredged or fill materials in coastal waters? (2.3, 3.1, 4, 5 3, 6.3) It is possible that new outfalls would need to be constructed for the project, in which case some removal and/or placement of fill would occur. If existing outfalls are used, accumulated sediment near the mouths of the outfalls would be removed and a structure to prevent the re-accumulation of sediment would be added. No other in-water activities involving mining, dredging, or placement of dredged or fill materials would occur as a result of the Proposed Project.	✓	
14. Would the action be located in a commercial or recreational boating center, such as City Island, Sheepshead Bay or Great Kills or an area devoted to water-dependent transportation? (3)		✓
15. Would the proposed project have an adverse effect upon the land or water uses within a commercial or recreation boating center or water-dependent transportation center? (3.1)		✓
16. Would the proposed project create any conflicts between commercial and recreational boating? (3.2)		✓
17. Does the proposed project involve any boating activity that would have an impact on the aquatic environment or surrounding land and water uses? (3.3)		✓
18. Is the action located in one of the designated Special Natural Waterfront Areas (SNWA): Long Island Sound-East River, Jamaica Bay, or Northwest Staten Island? (4 and 9.2)		✓
19. Is the project site in or adjacent to a Significant Coastal Fish and Wildlife Habitats? (4.1)		✓
20. Is the site located within or adjacent to a Recognized Ecological Complex: South Shore of Staten Island or Riverdale Natural Area District? (4.1 and 9.2)		✓
21. Would the action involve any activity in or near a tidal or freshwater wetland? (4.2) The project site is bordered on the west by the Harlem River, and the west side of the project site is shaped by three small coves, portions of which are regularly inundated by the Harlem River. The shoreline within the project site is engineered, except for portions of the interpier areas, and no vegetated tidal wetlands are present. USACOE has issued a jurisdictional determination that the extent of the agency's jurisdiction (under Sections 10 and 404) is the high tide line and that no wetlands under federal jurisdiction are present. NYSDEC has verbally confirmed the landward extent of State-regulated tidal wetlands is the Mean High Water elevation (el 1.0 Bronx Highway Datum). NYSDEC has also indicated that tidal wetland adjacent areas will extend onto certain upland areas, but not beyond paved areas that roughly parallel the shoreline (which predate the Tidal Wetlands Act). The Proposed Project would not result in filling of state-regulated tidal wetlands or waters of the U.S. Proposed improvements to the waterfront and waters edge through the removal of timber bulkheads above mean high water in certain areas and replacement with a softer, sloped and more stable rip-rap edge would not adversely impact wetland resources. There are no freshwater wetlands on or adjacent to the project site.	✓	

Policy Questions cont'd:

	Yes	No
<p>22. Does the project site contain a rare ecological community or would the proposed project affect a vulnerable plant, fish, or wildlife species? (4.3) Requests for information on rare, threatened, or endangered species within the immediate vicinity of project site were submitted to USFWS, the NYSDEC Natural Heritage Program (NYNHP), and National Marine Fisheries Service (NMFS). The NYNHP and USFWS have determined that there are no known occurrences of threatened or endangered species and there are no areas within the project area that are considered critical habitats. NMFS has determined that shortnose sturgeon may be present in the project area as possible (likely rare) transients. As transients, the shortnose sturgeon would be unlikely to regularly occur in the project area. Given the responses from NYNHP, USFWS, and NMFS, and the current intensity of development on the project site, no significant adverse impacts to vulnerable plant, fish, or wildlife species would be expected.</p>	_____	_____✓
<p>23. Would the action have any effects on commercial or recreational use of fish resources? (4.4)</p>	_____	_____✓
<p>24. Would the proposed project in any way affect the water quality classification of nearby waters or be unable to be consistent with that classification? (5)</p>	_____	_____✓
<p>25. Would the action result in any direct or indirect discharges, including toxins, hazardous substances, or other pollutants, effluent, or waste, into any waterbody? (5.1) The majority of the stormwater runoff generated within the project site as a result of the Proposed Project (estimated at approximately 142 cfs) would be collected by a NYCDEP storm sewer to be constructed as part of the Proposed Project. Stormwater runoff collected through this system would be discharged to the Harlem River through the existing outfalls and/or new outfalls that would be constructed. The Proposed Project would result in a decrease in surface runoff from the project site due to the small increase in pervious surface cover. A small amount of stormwater runoff (approximately 15 cfs) would be discharged to the municipal combined sewer system within the drainage area for the Ward Island Water Pollution Control Plant (WPCP). This small estimated runoff volume would not be expected to affect the combined sewer system or the ability of the WPCP to meet its SPDES permit conditions.</p>	_____✓	_____
<p>26. Would the action result in the draining of stormwater runoff or sewer overflows into coastal waters? (5.1) See response to Question 25, above.</p>	_____✓	_____
<p>27. Will any activity associated with the project generate nonpoint source pollution? (5.2)</p>	_____	_____✓
<p>28. Would the action cause violations of the National or State air quality standards? (5.2)</p>	_____	_____✓
<p>29. Would the action result in significant amounts of acid rain precursors (nitrates and sulfates)? (5.2C)</p>	_____	_____✓
<p>30. Will the project involve the excavation or placing of fill in or near navigable waters, marshes, estuaries, tidal marshes or other wetlands? (5.3) The proposed replacement of timber bulkheads above mean high water in certain locations with a softer, sloped and more stable rip-rap edge would be done using best management practices for erosion and sediment control to minimize impacts to water quality. If new outfalls need to be constructed, some removal and/or placement of fill would occur; if existing outfalls are used, accumulated sediment near the mouths of the outfalls would be removed and a structure to prevent the re-accumulation of sediment would be added. No other in-water activities involving excavation or placement of fill would occur as a result of the Proposed Project. The SWPPP implemented during construction would minimize adverse impacts to water quality resulting from stormwater runoff generated within the project site.</p>	_____✓	_____

Policy Questions cont'd:

	Yes	No
<p>31. Would the proposed action have any effects on surface or ground water supplies? (5.4) The project site does not contain any potable groundwater, nor does it contain streams or the source of water for wetlands. At the project site, groundwater is typically found at between eight to 10 feet below the ground surface. Groundwater quantity would not be expected to be impacted as a result of the Proposed Project. Implementation of the RWP would minimize potential impacts to groundwater quality during construction of the Proposed Project.</p>	_____	_____✓
<p>32. Would the action result in any activities within a Federally designated flood hazard area or State designated erosion hazards area? (6) Much of the project site west of Cromwell Avenue is identified by the Federal Emergency Management Agency (FEMA) as a Special Flood Hazard Area (SFHA). A SFHA is defined as an area of land that would be inundated by a flood having a one percent chance of occurring in any given year (previously referred to as the base flood or 100-year flood). The portions of the project site outside the SFHA include the location of former Building A, and the area east of Cromwell Avenue occupied by the Bronx House of Detention and Buildings C and D. Construction within such designated areas will comply with City and FEMA restrictions which require that the lowest floor of new or substantially improved buildings be elevated or floodproofed to or above the Base Flood Elevation (BFE). Therefore, the Proposed Project is consistent with New York City Waterfront Revitalization Program policies regarding flooding.</p>	_____✓	_____
<p>33. Would the action result in any construction activities that would lead to erosion? (6)</p>	_____	_____✓
<p>34. Would the action involve construction or reconstruction of flood or erosion control structure? (6.1)</p>	_____	_____✓
<p>35. Would the action involve any new or increased activity on or near any beach, dune, barrier island, or bluff? (6.1)</p>	_____	_____✓
<p>36. Does the proposed project involve use of public funds for flood prevention or erosion control? (6.2)</p>	_____	_____✓
<p>37. Would the proposed project affect a non-renewable source of sand? (6.3)</p>	_____	_____✓
<p>38. Would the action result in shipping, handling, or storing of solid wastes; hazardous materials, or other pollutants? (7) The Proposed Project would result in a small increase in the volume of solid waste generation at the project site (about six truck loads per week). However, the Proposed Project would also be required to comply with the City's recycling regulations (source separation of paper, cardboard, metal, and certain plastics) and state solid waste laws that would reduce the solid waste stream. Solid waste and separated materials resulting from the Proposed Project would be collected and transported from the project site by licensed private carters for disposal at out-of-City locations, as is the practice for managing solid waste currently being generated within the project site. The project site has been found eligible for the NYSDEC Brownfield Cleanup Program (BCP). Preparation and implementation of a RWP (including a Health and Safety Plan) required as part of the BCP will minimize environmental degradation from hazardous substances that may be identified on the project site. Any toxic or hazardous waste encountered during construction or remediation activities associated with the Proposed Project would be handled in accordance with NYCDEP, NYSDEC, Occupational Safety and Health Administration (OSHA), and Environmental Protection Agency (EPA) requirements.</p>	_____✓	_____
<p>39. Would the action affect any sites that have been used as landfills? (7.1)</p>	_____	_____✓

Policy Questions cont'd:

	Yes	No
40. Would the action result in development of a site that may contain contamination or has a history of underground fuel tanks, oil spills, or other form of petroleum product use or storage? (7.2) Petroleum products encountered during construction activities associated with the Proposed Project would be managed and mitigated according to the RWP and pertinent NYCDEP, NYSDEC, OSHA, and EPA requirements, including those under the BCP. Also, any petroleum-contaminated soil found on the project site will be removed pursuant to applicable regulations and the BCP. Storage and handling of petroleum products would follow applicable regulations.	✓	
41. Will the proposed activity result in any transport, storage, treatment, or disposal of solid wastes or hazardous materials, or the siting of a solid or hazardous waste facility? (7.3) See response to Question 38, above.		
42. Would the action result in a reduction of existing or required access to or along coastal waters, public access areas, or public parks or open spaces? (8)		✓
43. Will the proposed project affect or be located in, on, or adjacent to any federal, state, or city park or other land in public ownership protected for open space preservation? (8)		✓
44. Would the action result in the provision of open space without the provision for its maintenance? (8.1) Under the terms of its agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site. In this case, the Proposed Project would not include the development of a public open space, waterfront esplanade, or retail building on this portion of the site. Instead, it is anticipated that the City—with contributions from the project sponsor—would develop a 2-acre public open space, which would be maintained by the New York City Department of Parks and Recreation.		✓
45. Would the action result in any development along the shoreline but NOT include new water enhanced or water dependent recreational space? (8.2)		✓
46. Will the proposed project impede visual access to coastal lands, waters and open space? (8.3)		✓
47. Does the proposed project involve publicly owned or acquired land that could accommodate waterfront open space or recreation? (8.4) The Proposed Project is located on a site owned by the City of New York, and the project will include the creation of 2 acres of public open space and waterfront esplanade. As described in the response to Question 44, under the terms of its agreement with the City, the project sponsor could return its leasehold interest in the western portion of the project site. In this case, the Proposed Project would not include the development of a public open space or waterfront esplanade. Instead, it is anticipated that the City—with contributions from the project sponsor—would develop a 2-acre public open space.	✓	
48. Does the project site involve lands or waters held in public trust by the state or city? (8.5)		✓
49. Would the action affect natural or built resources that contribute to the scenic quality of a coastal area? (9)		✓
50. Does the site currently include elements that degrade the area's scenic quality or block views to the water? (9.1) The visual character of the Harlem River waterfront consists of an urban landscape with manufacturing, industrial, and commercial buildings, and paved surfaces. The Proposed Project would enhance the project site by replacing the existing vacant or underutilized structures that have a neglected quality with buildings that have a more modern character that would complement the character of the surrounding areas. The landscaped passageways would provide clearer sightlines through the project site and some views of the Harlem River, improve pedestrian access to the waterfront, and improve the visual appearance of the project site. The proposed public open space and waterfront esplanade would also provide public access to the waterfront and visual access to the Harlem River.	✓	

Policy Questions cont'd:

Yes

No

51. Would the proposed action have a significant adverse impact on historic, archeological, or cultural resources? (10)
The Bronx House of Detention, and buildings comprising the Bronx Terminal Market (Buildings B, D, F, G., H, and J) have been determined to be eligible for listing on the State and National Registers of Historic Places. These structures would be demolished as a result of the Proposed Project. Measures to mitigate for the loss of these historic resources are being developed in consultation with OPRHP.
52. Will the proposed activity affect or be located in, on, or adjacent to an historic resource listed on the National or State Register of Historic Places, or designated as a landmark by the City of New York? (10)
See response to Question 51, above.

✓

✓

D. CERTIFICATION

The applicant must certify that the proposed activity is consistent with New York City's Waterfront Revitalization Program, pursuant to the New York State Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If the certification can be made, complete this section.

"The proposed activity complies with New York State's Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent Name:

BTM Development Partners, LLC/Jesse Masyr

Address:

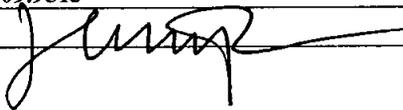
110 East 59th Street

New York, NY 10022

Telephone:

212.909.9513

Applicant/Agent Signature:



Date: 7/6/2005

APPENDIX E

Correspondence

ENVIRONMENTAL REVIEW

DME/04DME017X

10/22/04

PROJECT NUMBER

DATE RECEIVED

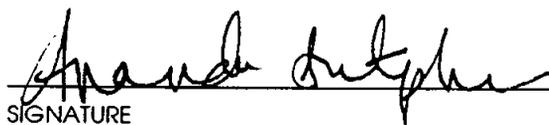
PROJECT

GATEWAY CENTER/BRONX TERM

- No architectural significance
- No archaeological significance
- Designated New York City Landmark or Within Designated Historic District
- Listed on National Register of Historic Places
- Appears to be eligible for National Register Listing and/or New York City Landmark Designation
- May be archaeologically significant; requesting additional materials

COMMENTS

The project was previously reviewed by LPC on 4/27/04 with a finding of no archeological concerns. LPC defers to the SHPO on the archeological resource findings.



SIGNATURE

10/22/04

DATE

cc: SHPO

ENVIRONMENTAL REVIEW

DME /04DME017X

10/22/04

PROJECT NUMBER

DATE RECEIVED

PROJECT

GATEWAY CENTER/BRONX TERM

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- No archaeological significance
- Designated New York City Landmark or Within Designated Historic District
- Listed on National Register of Historic Places
- Appears to be eligible for National Register Listing and/or New York City Landmark Designation
- May be archaeologically significant; requesting additional materials

COMMENTS

The LPC is in receipt of the final scope of work for EIS dated 10/8/04. The site was previously reviewed by LPC on 8/19/04 with a determination of no architectural concern. The LPC defers to the SHPO regarding the architectural determination.

cc: SHPO


SIGNATURE

10/25/04

DATE