THE CITY OF NEW YORK
OFFICE OF THE MAYOR
NEW YORK, NY 10007

NOTICE OF COMPLETION
of the

DRAFT ENVIRONMENTAL IMPACT STATEMENT

for the

CHARLESTON MIXED-USE DEVELOPMENT PROJECT

Lead Agency:	Office of the Deputy Mayor for Economic Development 100 Gold Street, 2nd Floor New York, NY 10038
CEQR Number:	13DME001R
SEQR Classification:	Type I
Date Issued:	August 30, 2013
Location:	Community District 3, Borough of Staten Island

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 State Environmental Conservation Law and its implementing regulations found in Part 617 of 6 NYCRR (SEQRA), a Final Environmental Impact Statement (FEIS) has been prepared for the actions described below and is available for public inspection at the offices listed on the last page of this notice. A draft Scope of Work for the Draft Environmental Impact Statement (DEIS) was issued and distributed on September 28, 2012 that commenced the formal public review process for the project. A public scoping meeting was held on December 10, 2012, at Mount Loretto Church Community Center, 6581 Hylan Boulevard, Staten Island, NY to accept oral comments, and written comments were accepted until 5:00 p.m. December 21, 2012. The Final Scope of Work was issued on May 1, 2013 and reflects analyses determined to be appropriate for inclusion in the FEIS.

A public hearing on the DEIS was held on July 24, 2013 at Spector Hall at the New York City Department of City Planning (NYCDCP) located at 22 Reade Street, New York, NY 10007. The hearing was held in conjunction with the City Planning Commission's (CPC's) public hearing on the projects' land use applications pursuant to the Uniform Land Use Review Procedure (ULURP). The public comment period on the DEIS remained open until 5:00 p.m. on Monday, August 5,2013.

1. PROJECT DESCRIPTION

The New York City Economic Development Corporation (NYCEDC) is sponsoring an initiative to allow for the development of an approximately 66-acre parcel (the "Development Area"), located in Charleston, Staten Island, with parkland, retail, residential, and community facility uses and the mapping and construction of new public streets. In addition, NYCEDC is seeking to map as parkland an existing approximately 20-acre Conservation Area, which is located adjacent to the Development Area, and to map adjacent privately-owned streets. The overall Proposed Project is referred to as the Charleston Mixed-Use Development (the "Proposed Project").

The Development Area, the Conservation Area, the existing private streets to be mapped, and two privately-owned lots (Block 7494, Lots 1 and 88) constitute the "Project Area." The two privately-owned lots are being rezoned at the request of the NYCDCP to provide a regular and rational zoning district boundary, but would not be redeveloped by the Proposed Project. The Project Area encompasses just over 93 acres, including the mapping of streets, utility corridors and the Conservation Area. The Project Area is generally bounded to the north by the future northern limit of Englewood Avenue and Clay Pit Ponds State Park Preserve ("CPPSPP"), to the south and east by Veterans Road West, to the west by Arthur Kill Road, and to the south by the shopping center known as the Bricktown Centre at Charleston Mall ("Bricktown Centre").

The Charleston Mixed-Use Development consists of a number of discrete project elements that would be undertaken by different entities. The Project Area is divided into the following development parcels:

- Parkland: The NYC Department of Parks and Recreation ("NYCDPR") would develop an approximately 23-acre park site (Fairview Park) with areas for both active and passive recreation. Adjacent to this new 23-acre park that would be mapped, the existing approximately 20-acre Conservation Area also would be mapped as parkland, creating approximately 43 acres of contiguous mapped parkland.
- Retail Site "A": A private developer has been selected to develop this approximately 11-acre site. This site would include a branch of the New York Public Library ("NYPL"). This site would be accessed from the existing privately-owned Bricktown Way/Tyrellan Avenue that would be mapped as streets as part of the Proposed Project.
- Retail Site "B": This site consists of approximately 7.3 acres (not including approximately 1.3 acres of a Proposed Utility Access Corridor and existing private easement area which divide the site). If this corridor is not used, development of Retail Site "B' could be increased from 7.3 to approximately 8 acres, with only the area of the existing private utility easement remaining vacant. Retail Site "B" would be privately developed pursuant to a Request for Proposals ("RFP") in the future.
- Housing: This approximately 9.1-acre site would be offered for senior housing pursuant to a future RFP.
- Public School: The NYC School Construction Authority ("NYCSCA") would construct a combined elementary/middle school on the approximately 6-acre site.
- Street Mappings and Constructions: Englewood Avenue would be mapped and constructed across the northern border of the Project Area (approximately 5.9 acres) and would connect Veterans Road West on the east to Arthur Kill Road on the west. In addition, Bricktown Way and Tyrellan Avenue, both privately-owned streets that serve the adjacent Bricktown Centre shopping center, would be mapped (approximately 6.4 acres).
- Proposed Utility Access Corridor: An approximately 50-foot wide Utility Access Corridor, running east-west at a site directly north of the existing private utility easement, would also be created for potential roadway or utility connections to Arthur Kill Road (approximately 1.9 acres).

To facilitate the Proposed Project, a number of discretionary actions would be required. Adoption of proposed ULURP actions would involve public review by a number of entities that include, depending on the action, Staten Island Community Board 3 (CB3), the Staten Island Borough President, the CPC, and the New York City Council. These actions include zoning map changes and zoning text amendments, zoning special permits, authorizations and certifications, City map amendment, the disposition/sale of City-owned property, and an acquisition. Mayoral and Borough Board approval of the business terms with any selected developer(s) would also be required pursuant to Section 384(b)(4) of the New York City Charter. A private developer has been selected pursuant to a Request for Proposals (RFP), to develop Retail Site "A." However, developers have not yet been identified for Retail Site "B" or the senior housing site. Should the discretionary actions subject to ULURP be approved, an RFP process would solicit proposals for development of Retail Site "B" and the senior housing site.

SITE DESCRIPTION

The Project Area is located in the southwestern portion of Staten Island Community District 3, within the area bounded by Veterans Road West to the east and south, Arthur Kill Road to the west and the extension of Englewood Avenue to the north.

The entire Development Area is vacant, undeveloped, and covered with vegetation. The amount of vegetation varies across the Development Area, predominantly trees and other vegetation. The majority of the Development Area is undisturbed. Open-field areas are located within the northern portion of the Development Area, parts of which were previously cleared between 2002 and 2004. The western portion of the Development Area contains some vacant open areas with trees along the east side of Arthur Kill Road. Portions of the Project Area include trails formed by hikers and horse riders; some areas in the northern portion of the Project Area have informal equestrian trails.

The surrounding area contains a mixture of land uses and vacant areas covered with natural features. Vacant and undeveloped areas can generally be found north of the Project Area, with designated open space and conservation areas northeast and east of the Project Area towards the West Shore Expressway. Moving clockwise, commercial and retail stores, including large big-box retail stores, are generally located southeast and south of the Project Area along Veterans Road towards the Outerbridge Crossing. A mixture of industrial, transportation and facility uses, as well as tracts of vacant and undeveloped land, are generally located southwest and west of the Project Area around Arthur Kill Road. A gated residential community of two-story homes (the Tides) is located within the western portion of the study area along the Arthur Kill waterfront, with a mixture of additional detached residences and commercial and industrial storage lots situated northwest of the Project Area along Androvette and Kreischer Streets, part of the neighborhood historically known as Kreischerville.

DISCRETIONARY ACTIONS SUBJECT TO CEQR AND SEQRA

The proposed mixed-use development would require multiple City approvals. Some of these are discretionary actions requiring review under the CEQR process. The Office of the Deputy Mayor for Economic Development (ODMED) is the lead agency for CEQR. The potential discretionary actions that would be required for the proposed development include:

- Zoning Map amendments to rezone the existing M1-1 zone to R3-2 for the housing and school sites and C4-1 for the retail sites including the rezoning of two privately-owned lots (Block 7494, Lots 1 and 88) that would not be redeveloped. These two private properties are being rezoned at the request of the NYCDCP to provide a regular and rational zoning district boundary.
- Authorizations and certifications by the CPC related to the Special South Richmond Development District ("SRD") site plan approval, and reduction in required parking within C4-1 zoning districts.
- Certification by the CPC pursuant to New York City Zoning Resolution (ZR) Section 36-596 to waive the requirement for a cross-connection between retail sites (the proposed Retail Sites "A," "B," and the adjacent Bricktown Centre parcel), reflecting conditions on and near the sites that

would make it difficult for cross-connections to be accommodated and provide cars access connections along Bricktown Way.

- Authorization pursuant to ZR Section 36-023 for site planning and to reduce the parking requirement in a C4-1 district.
- Authorization for City acquisition of an approximately 4,000 square foot privately-owned parcel (Block 7375, Lot 7) located within the area of the site for the proposed school.
- Acquisition by the City of a public access easement for unrestricted public, vehicular, pedestrian and bicycle access over Bricktown Way and Tyrellan Avenue to facilitate access to Retail Site "A," the proposed NYPL branch, and the proposed Fairview Park;
- Mayoral and Borough Board approval of the business terms of the sale of the disposition parcels pursuant to Section 384(b)(4) of the New York City Charter.
- Mapping of approximately 43 acres of contiguous parkland, including the approximately 23 acres of a new recreational area in the proposed Fairview Park and the approximately 20 acres of the existing Conservation Area.
- Mapping of Englewood Avenue, as needed, from Veterans Road West to Arthur Kill Road to a width of 80 feet, including authorization to acquire all or portions of privately owned property within the proposed bed of the mapped street and the negotiated transfer of ownership of a portion of land within the existing mapped bed of the proposed roadway from New York State.
- Mapping as streets the privately-owned Bricktown Way and privately-owned Tyrellan Avenue within the Project Area.
- Extinguishing of Third Street, Pembine Street, Bayne Avenue, Goethals Avenue, Burr Avenue, Claude Street, Alice Street, Baxter Street, Beaver Street, and Cady Avenue in their entirety, as well as Coke Street south of Englewood Avenue. These 11 record streets are currently mapped to a width of 50 feet, but are not built.
- Replacement of impacted trees in public property under the jurisdiction of the New York City Parks Department (NYCDPR) per Local Law 3 (*Local Laws of the City of New York for the Year 2010*).
- Site selection for a new NYPL library branch.
- New York State Department of Environmental Conservation ("NYSDEC") and/or U.S. Army Corps of Engineers ("USACOE") permits: In order to implement the proposed plan, USACOE and/or NYSDEC permits would be required for building within buffer zones surrounding jurisdictional wetlands.

Further Discretionary Public Actions and Approvals

In order to implement some of the development components of the Proposed Project, it is likely that further discretionary approvals may be required that require further public review. These additional actions would be subject to additional environmental review, as appropriate. Further CPC authorizations and certifications may be required for the development of the senior housing parcel, in accordance with SRD requirements, and further discretionary actions, such as CPC approval of a Large Scale Development Plan, may be necessary. Further public review per the NYCSCA's process may also be required for the proposed school. The negotiated transfer of ownership of a portion of land within the existing mapped bed of the proposed roadway from New York State may require further state environmental review.

2. ANALYTICAL FRAMEWORK FOR ENVIRONMENTAL REVIEW

The Charleston Mixed-Use Development Project FEIS was prepared in accordance with the guidelines in the 2012 *CEQR Technical Manual*, which sets forth methodologies for environmental impact assessment consistent with SEQRA.

DEFINING BASELINE AND FUTURE CONDITIONS

Existing Conditions

For each technical area assessed in the EIS, the current conditions must first be described. The assessment of existing conditions establishes a baseline against which future conditions can be projected.

Future No-Action Condition

The FEIS analyzes the effects of a Proposed Project on its environmental setting. Since the development allowed under a Proposed Project would occur by some future "analysis" or "build" year, the FEIS must first establish what changes to the current environment would occur by that future year in the absence of the Proposed Project. The potential impacts of the elements of the Proposed Project were assessed in the FEIS for two analysis years: 2015 and 2020.

The "future without the Proposed Project" or "Future No-Action Condition" describes the projected future conditions without the Proposed Project that are compared against the "Future With–Action Condition" discussed below to identify the incremental changes due to a Proposed Project. The Future No-Action Condition uses existing conditions as a baseline and adds to it changes known or expected to be in place by the analysis year(s). The Future No-Action Condition within the Development Area is anticipated to be a continuation of existing conditions. If the Proposed Project is not approved, the Development Area is expected to remain in its existing vacant condition. No other projected or potential development is planned or considered likely to occur in the Development Area by the years 2015 or 2020.

For many technical areas, the Future No-Action Condition also incorporates known development projects that are likely to be built by the analysis years within the surrounding area. This includes development currently under construction or that can be reasonably anticipated to occur due to the current level of planning and public approvals. The following is a list of known projects that were considered in the FEIS analyses of the future without the Proposed Project:

- 236 Richmond Valley Road: 5,000 square feet of commercial development.
- 245 Richmond Valley Road: 8,000 square feet of commercial development.
- 4830 Arthur Kill Road: 14,674 square feet of retail space.
- Veterans Plaza Food Store: 70,000 square feet of retail space.
- Veterans Road West at Tyrellan Avenue: 58,030 square feet of retail space.
- Gateway Cathedral Residential: 70 residential units and additional recreational amenities.
- Veterans Road Realty Corp: 51,000 square feet of retail space.
- Veterans Road West Commercial Development by Westbridge Properties at 3021 Veterans Road West: 12,738 square feet of commercial retail space.

In addition, a new public school (P.S. 62) is under construction on the northwest quadrant of the Woodrow Road/Bloomingdale Road intersection. This project lies outside the study area for all analyses except for Transportation.

It should also be noted that the New York State Department of Transportation ("NYSDOT") is advancing the design of improvements to the southbound West Shore Expressway ("WSE") ramp system and adjacent surface street intersections north of Englewood Avenue just north of the Project Area. The purpose of these improvements is to improve access to and from the Charleston commercial district, improve traffic safety, and alleviate congestion along the WSE and on the surrounding street system. These improvements will include:

- Construction of a new on-ramp from West Service Road to southbound WSE, just south of Bloomingdale Road.
- Removal of the existing on-ramp from West Service Road to southbound WSE, just south of Sharrotts Road) and construction of a new off-ramp from southbound WSE to Veterans Road West, just north of Englewood Avenue.

A Request for Proposals ("RFP") was issued on June 22, 2012 by the New York State Empire State Development Corporation for the redevelopment of the former Arthur Kill Correctional Facility, a 69-acre waterfront site on Arthur Kill Road approximately one mile north of the Project Area. The RFP expected possible future uses on the site would be new destination retail, maritime and light industrial development, and other options that would maximize the creation of jobs. However, residential uses would not be expected to be permitted. The Empire State Development Corporation did not receive any acceptable responses to the RFP and is currently evaluating possible next steps. As such, the potential redevelopment of the Arthur Kill Correctional Facility is not included among the projects expected to occur in the future without the Proposed Project.

Table 1: Components of the Proposed Project

COMPONENT	SIZE (approx.)	DETAILS
Development Area		
Retail Site "A"	11.01 acres 479,591 Square Feet ("SF")	• Up to 195,000 SF of retail, including medium- to large-format retail. • Up to 15,000 SF for a New York Public Library Branch. • Approximately 633 parking spaces (includes shared parking for the library and Fairview Park).
Retail Site "B"	7.28* acres 317,083 SF	• Up to 90,000 SF of neighborhood retail. • Approximately 300 parking spaces.
Fairview Park	23.53 acres 1,025,161 SF	• Mapping of over 23 acres of a new public park with active and passive recreation amenities. • Potential shared uses with proposed school. • 60 parking spaces located on the park site.
School	5.88 acres 256,194 SF	• Approximately 750 seat capacity. • 60 parking spaces (estimated) • Kindergarten to 8th grades. • Potential shared uses with proposed park.

Senior Housing	9.06 acres
	
	394,819 SF
		• 162 dwelling units:
		  ○ 80 affordable multi-family age-restricted rental units.
		  ○ 82 age-restricted, for-sale detached units.
		  ○ Community center for site residents.
		• 195 parking spaces:
		  ○ 52 spaces for multi-family rental units (65%).
		  ○ 20 spaces for the community center.
		  ○ 123 spaces for for-sale detached units (1.5 per unit).

Street Mapping and Proposed or Potential Construction	5.96 acres 259,702 SF	• Mapping and construction of Englewood Avenue. • Map 80-foot wide corridor for a distance of approximately 1,800 feet. • Full constructed length of Englewood Avenue would be approximately 3,265 feet and would include bicycle and pedestrian facilities.
	1.95 acres 84,770 SF	• Creation of Proposed Utility Access Corridor for potential future roadway or utility connections to Arthur Kill Road.
Sub-Total (without Existing Private Utility Easement)	**64.67 acres** **2,817,320 SF**	

Private Utility Easement in Development Area (no construction)		1.28 acres 55,872 SF	• Private utility easement (existing) for Bricktown Centre from Arthur Kill Road. • No construction planned over easement, which is located within boundaries of Development Area
Sub-Total (with Existing Private Utility Easement)		**65.95 acres** **2,873,192 SF**	
Non-Development Areas (part of Project Area)			
Conservation Area		20.13 acres 876,705 SF	• Mapping of the existing 20-acre Conservation Area as parkland.
Street Mapping (no new construction)		6.39 acres 277,860 SF	• Mapping of privately-owned Bricktown Way and Tyrellan Avenue (existing and fully constructed) as streets.
Rezoning of Private Tax Lots on Block 7494	**Lot 1**	0.30 acres 13,280 SF	• Rezoning of Lot 1 located at the northeast corner of Arthur Kill Road and Veterans Road West (not part of the Development Area).
	Lot 88	0.09 acres 4,000 SF	• Rezoning of Lot 88 located along the east side of Arthur Kill Road (not part of the Development Area).
Sub-Total		**26.91 acres** **1,171,855 SF**	
TOTAL PROJECT AREA		**92.86 acres** **4,045,037 SF**	

Sources: New York City Economic Development Corporation; AECOM Concept Plan

* Does not include approximately 1.3 acres of Proposed Utility Access Corridor and existing easement areas that divide the site.

The analyses for some technical areas, such as traffic, may also use a background growth factor to account for general increases expected in the future. Such growth factors may also be used in the absence of known development projects. The Future No-Action Condition analyses must also consider other future changes that would affect the environmental setting. These could include technology changes (such as advances in vehicle pollution control and roadway improvements), changes to City policies (such as zoning regulations), or changes in public policy.

Future With-Action Condition

The "future with the Proposed Project," or "Future With-Action Condition," is the condition that is evaluated and compared to the Future No-Action Condition in order to identify incremental changes due to the Proposed Project.

In order to assess the Proposed Project under environmental review, a "Reasonable Worst Case Development Scenario" ("RWCDS") was created for development expected within the Development Area by the years 2015 and 2020 with the Proposed Project. As the area is currently vacant, the net increment of change over the Future No-Action Condition is the Proposed Project, as briefly described above and shown in Table 1.

IDENTIFYING SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS

Identification of significant adverse environmental impacts is based on the comparison of future conditions without and with the Proposed Project. In certain technical areas (e.g., traffic, air quality, and noise), this comparison can be quantified. In other technical areas (e.g., neighborhood character), the analysis is qualitative. In either case, the methods for assessing such impacts and the significance of identified potential impacts are determined in accordance with criteria in the CEQR rules and the *CEQR Technical Manual*.

MITIGATION

Mitigation measures for all significant adverse impacts identified in the FEIS are described in a separate mitigation chapter of the FEIS. CEQR requires that any significant adverse impacts identified in the FEIS

be minimized or avoided to the greatest extent practicable. . Where no mitigation is available, the FEIS must disclose the potential for unmitigatible significant adverse impacts.

ALTERNATIVES

The FEIS assesses a range of alternatives to the Proposed Project. CEQR requires that a description and evaluation of the range of reasonable alternatives to the Proposed Project be included in an FEIS at a level of detail sufficient to allow a comparative assessment of these alternatives. Alternatives and the rationale behind their selection are important in the disclosure of environmental effects of a Proposed Project, and provide options to the Proposed Project and a framework for comparison of potential impacts and project objectives.

The alternatives discussion includes:

- A No-Action Alternative, as required by SEQRA, where the Proposed Project does not occur and the area is not mapped or developed by either the years 2015 or 2020. The No-Action Alternative is also the No-Impact Alternative, as no impacts would occur under this alternative.
- An alternative that would build out the western section of Englewood Avenue as currently planned under the Proposed Project but terminate at the western end of the existing mapped portion of Englewood Avenue. A 34-foot wide, highly permeable, road restricted to emergency vehicles only, would be constructed from Kent Street to Veterans Road West. This alternative build-out of Englewood Avenue would not require a transfer of state-owned property to the City, and would also avoid some of the potential impacts to natural resources in the section of Englewood Avenue between the CPPSPP and the Conservation Area.
- An alternative that would build out the western section of Englewood Avenue as currently planned under the Proposed Project, but extend the roadway eastward from its current terminus to Veterans Road West at a width of 40-feet wide (one travel lane in either direction), instead of the currently planned 80-foot wide roadway (with two travel lanes in each direction). The remainder of the Development Area would be constructed as currently planned under the Proposed Project.
- An alternative to the Proposed Utility Access Corridor for an access road constructed between Bricktown Way on the east and Arthur Kill Road on the west.
- An alternative where all identified significant adverse impacts are mitigated. Under this No Unmitigated Impact Alternative, all identified impacts for vehicular traffic, natural resources and historic and cultural resources would be fully mitigated.

The analyses of these alternatives are primarily qualitative, except where specific project impacts have been identified (e.g., traffic intersections with significant impacts), where quantitative analyses may be provided. However, the analyses will be of sufficient detail to allow comparisons of associated environmental impacts and attainment of project goals and objectives.

3. PROBABLE IMPACTS OF THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Overall, this analysis concludes that the Proposed Project would not have any significant adverse impacts on land use, zoning, or public policy.

LAND USE

Year 2015 Analysis

The land use changes resulting from the Proposed Project by the year of 2015 would be fully consistent with the general land use patterns of the study area. The proposed park (year 2015) would provide amenities for the growing residential communities in the area. The mapping and development of the proposed parkland would fit in well with the surrounding mixed-use community. Additionally, this new park would be mapped along with the adjacent approximately 20-acre Conservation Area for a new,

approximately 43-acre mapped parkland. This parkland, which would serve the surrounding residential communities, would also fit in well with the other open spaces and natural areas of this section of Staten Island, including the CPPSPP, a 260-acre nature preserve located north of Englewood Avenue.

The proposed retail uses on Site "A" would also be supported by the surrounding residential community at large, and would support and complement existing retail uses adjacent to this portion of the Project Area. The land uses that would result from the Proposed Project are found in the immediate area surrounding the Project Area, and would, therefore, be compatible with them in the year 2015.

Year 2020 Analysis

The land use changes resulting from the Proposed Project by 2020 would also be fully consistent with the general land use patterns of the study area. The proposed retail use on Site "B", as well as the retail use on Site "A" that would already exist by 2020, would also be supported by the surrounding residential community at large, including the proposed senior housing, and would support and complement existing and other proposed retail uses in the immediate area. Additionally, the Project Area's connections to both the Richmond Parkway and the West Shore Expressway make it suitable for proposed retail uses of this density.

The housing components associated with the Proposed Project also fit in well with the surrounding mixed-use community. West of the project area is the Tides gated residential community, which is similar to the anticipated design of the senior housing components of the Proposed Project. Additional residences are located north of the Project Area, as are large residential communities to the east and south past the regional roadways, and the Working West Shore 2030 Study calls for modest amounts of additional residential growth in the surrounding area.

Therefore, although the Proposed Project represents a significant land use change for the Project Area itself and includes the mapping and construction of new streets, the uses proposed are consistent with the diversity of uses in the surrounding community, and the Proposed Project would not result in any significant adverse impacts to land uses.

ZONING

The Proposed Project includes creating an R3-2 district that would encompass the senior housing and school sites, and would be intended to accommodate those developments. C4-1 zoning districts would be mapped in two areas of the Project Area covering Retail Sites "A" and "B" to facilitate the planned retail development.

The Proposed Project also includes the rezoning of two privately-owned lots at the request of DCP to provide a regular and rational zoning district boundary (Block 7494, Lots 1 and 88) within the southwest corner of the Project Area at the intersection of Veterans Road West and Arthur Kill Road. These two lots are currently zoned M1-1 and would be rezoned to C4-1 as part of the rezoning for the adjacent Retail Site "B" parcel. Lot 1 is a 0.30 acre lot (13,280 square feet). Lot 88 is a 0.09 acre lot (4,000 square feet) located to the north along the east side of Arthur Kill Road. Both lots are used for contractor open storage and parking. These sites would be rezoned, but are not part of the area to be developed and are not included in the Development Area. They would continue to be occupied with their current uses as pre-existing non-conforming uses in the new C4-1 zone, which would encompass a larger area around these sites to promote the long-term redevelopment of this area with commercial uses. As these two sites are not directly adjacent to one another and cannot be combined, the redevelopment of these small sites from their rezoning would not be expected at this time.

In addition, CPC Authorizations and certifications related to the SRD special district and C4-1 Zoning District are part of the Proposed Project. These zoning actions would not result in any significant adverse impacts, and the proposed zoning districts are compatible with zoning in the surrounding area. The proposed residential zoning district is similar to the existing residential zoning districts found to the west within the study area and those to the east across the West Shore Expressway. The proposed commercial zoning district would allow for commercial retail development on Retail Sites "A" and "B" adjacent to the Bricktown Centre shopping area and South Shore Commons shopping complex, which although zoned M1-1, are developed with commercial uses.

The zoning changes proposed as part of the Proposed Project would not result in any significant adverse impacts, and the proposed zoning districts are compatible with zoning in the surrounding area.

PUBLIC POLICY

The Proposed Project would support and further the objectives of applicable public policies, including the Waterfront Revitalization Program ("WRP"), / *Coastal Zone Management*, *PlaNYC* 2030 and *Working West Shore* 2030. The Proposed Project would not result in any significant adverse public policy impacts and would be in broad accordance with Staten Island Community Board 3's redevelopment guidelines in terms of its mixed-use character, affordable and market housing development, commercial development, urban design plan, parking, and potential for community facility development.

SOCIOECONOMIC CONDITIONS

The analysis presented in this chapter finds that the Proposed Project would not result in significant adverse socioeconomic impacts. In accordance with *CEQR Technical Manual* guidelines, this socioeconomic analysis evaluates the RWCDS against six specific elements that can result in significant adverse socioeconomic impacts: (1) direct displacement of a residential population from a project site; (2) direct displacement of existing businesses from a project site; (3) indirect displacement of residential population in a study area due to increased rents; (4) indirect displacement of businesses or institutions in a study area due to increased rents; (5) indirect business displacement due to retail market saturation; and (6) adverse effects on specific industries.

DIRECT RESIDENTIAL OR BUSINESS DISPLACEMENT

Although the Development Area is vacant, there are residential and commercial properties abutting the existing built portion of Englewood Avenue that may be affected by its mapping and reconstruction. The following properties are situated within this area (from west to east):

- Along the north side of Englewood Avenue: Block 7380, Lots 51, 47, 40, 35, 29, 25, 18, 12, 7 and 1; Block 7376, Lots 8, 7 and 1; and
- Along the south side of Englewood Avenue: Block 7465, Lots 75 and 1; Block 7464, Lots 1 and 6; Block 7460, Lot 1; Block 7459, Lot 1; Block 7379, Lot 15; Block 7375, Lot 22; and Block 7374, Lot 22.

For most of the properties, only minor front yard portions of businesses are expected to be modified by the widening and realignment of Englewood Avenue. However, the widening will require acquisition of a portion of one property at 21 Englewood Avenue (Block 7380, Lot 51), located on the north side of Englewood Avenue, near the intersection with Arthur Kill Road. The proposed realignment of Englewood Avenue would encompass part of a two-story frame residential building with two residential units, with approximately 3,050 square feet of floor area on the approximately 28,054 square foot lot. The Proposed Project would directly displace these two residential units. According to the *CEQR Technical Manual*, displacement is not typically considered significant unless it involves 500 or more residents. Therefore, the Proposed Project is unlikely to have significant impacts based on direct residential or business displacement.

INDIRECT RESIDENTIAL DISPLACEMENT

A preliminary assessment finds that the Proposed Project would not result in significant adverse impacts due to indirect residential displacement. The Proposed Project includes senior housing to be constructed by the year 2020, with a total of 162 dwelling units. As the Proposed Project would not introduce a sizable number of new residences or exceed the CEQR threshold, further related assessment is not warranted.

The Proposed Project would include 80 affordable multi-family units that fall below existing market-rate units, and 82 age-restricted for-sale homes, which would not likely lead to rent increases. It is expected that the multi-family units would be occupied by households earning a range of low- to middle-incomes. The for-sale homes on the project site would attract residents above 55 years of age, many of whom may live alone, making an average household size of 1.5 more reasonable. In this case, the new residential

units would bring approximately 272 new residents to the study area. However, for conservative analysis purposes, should two adults reside in each housing unit, this would add an estimated 324 new residents to the area by the year 2020 of the Proposed Project.

INDIRECT BUSINESS DISPLACEMENT DUE TO INCREASED RENTS AND MARKET SATURATION

The Proposed Project includes up to approximately 285,000 square feet of new retail floor area, which is above the 200,000 square foot CEQR threshold. Detailed assessments of indirect business displacement were performed to examine existing conditions and then evaluate the changes under the Future With-Action condition as compared with those expected under the Future No-Action Condition for the 2015 and 2020 analysis years. The detailed assessment considered potential indirect business displacement due to increased rents and indirect business displacement due to market saturation.

This analysis concludes that the Proposed Project would not result in any indirect business displacement because:

- There are very low retail vacancy rates near the project site and existing retailers near the new development would likely benefit from the increased flow of consumers into the area due to the proposed retail development.
- The retail gap analysis showed that after accounting for other projected residential and commercial development in the area and the likely impact of the Proposed Project's residential and retail uses, the capture rate for retail would increase to over 40 percent within the three-mile Primary Trade Area. This value indicates that with the proposed development in place, the existing and projected retail outlets in that area would only meet roughly 40 percent of the projected retail demand generated by the trade area's residents and business.
- The data show that the three-mile Primary Trade Area is underserved for retail.
- The data for demographics show that the Primary Trade Area is continuing to grow in population.
- The lack of retail services in the Primary Trade Area likely causes area residents to leave the area to go shopping, either to other locations in Staten Island or to New Jersey
- While the new retail stores of the Proposed Project might divert some shoppers from visiting the other retail centers in Staten Island, many of these stores are of a different character than those that are expected to locate in the Development Area.
- Residents within the Primary Trade Area would still be expected to continue make shopping trips to other areas within Staten Island after the Proposed Project is completed.
- The Proposed Project would be expected recapture some volume of trade area sales that are now going to New Jersey.

ADVERSE EFFECTS ON SPECIFIC INDUSTRIES

The preliminary assessment concluded that the Proposed Project would not have the potential to have a significant adverse impact on any specific industries in the city as no businesses would be directly displaced.

COMMUNITY FACILITIES AND SERVICES

Based on a preliminary screening, the Proposed Project does not warrant a detailed analysis for potential community facility impacts. No direct effect to any community facility is anticipated, as the entire Project Area is vacant, undeveloped, and covered with vegetation. As such, no community facilities would be directly displaced by the Proposed Project. The Proposed Project also would not have an indirect effect on community facilities:

- Health Care: The Proposed Project would not have a direct effect on any health care facility and would not result in a significantly large residential population that would affect health care facilities in the area.
- Libraries: Only 162 new residential units would be developed as part of the senior housing

complex, which is less than the 653 unit threshold for performing further library impact analyses.

- Educational Facilities and Child Care: The proposed residential component of the project would be targeted to seniors and, as such, would not introduce or induce school-age children or potential day care eligible populations. The Proposed Project would not displace any existing schools or day care facilities in the study area. Of note, the Proposed Project includes development of a new public elementary/middle school, to be built by the year 2020.

OPEN SPACE

DIRECT EFFECTS

The entire Development Area is vacant and undeveloped. The amount of vegetation varies across the area, and is comprised predominantly of trees and other vegetation. The western portion of the area contains some vacant open areas, with trees along the east side of Arthur Kill Road. There are no existing public parks within the Development Area. The Proposed Project would not result in a physical loss of a public open space, change the use of an open space so that it no longer serves the same user population, limit public access to an open space, or cause increased noise or air pollutant emissions, odors, or shadows on a public open space that would affect its usefulness. Therefore, no significant adverse impacts are anticipated. The Proposed Project includes a site for a new 23-acre park with 7.5 acres of active recreation and 15.5 acres of passive recreation. This new park would be mapped along with the adjacent approximately 20-acre Conservation Area to create approximately 43 acres of new mapped parkland.

INDIRECT EFFECTS

Based on the methodology of the *CEQR Technical Manual*, a preliminary analysis of the Proposed Project's indirect effects on open space was conducted to determine the need for a detailed analysis. The preliminary analysis concluded that the Proposed Project would not result in a significant adverse impact on open space and that a detailed analysis was not necessary.

Future Residential Open Space Adequacy

By the completion of the Proposed Project in 2020, the open space ratio in the residential study area is projected to increase from approximately 39.8 acres of open space per 1,000 residents under Future No-Action Conditions to approximately 41.6 acres of open space per 1,000 residents under the Future With-Action Condition, an approximately 4.7 percent increase. Although the number of residents in the area would increase by approximately 324 persons within the proposed senior housing complex, the new 23-acre park would add a substantial amount of new open space to the study area, including both active and passive recreational areas. The open space ratio under the Future No-Action Condition would continue to far exceed the citywide median community district open space ratio of 1.5 acres per 1,000 residents and the City's planning goal of 2.5 acres per 1,000 residents.

Future Non-Residential Worker Open Space Adequacy

The passive open space ratio for this non-residential study area is projected to decrease from approximately 42.1 acres of passive open space per 1,000 workers under the year 2020 Future No-Action Condition to approximately 35 acres per 1,000 workers of passive open space under the Future With-Action Condition, an approximate 16.8 percent decrease. Although the number of workers in the area would increase by approximately 816 new workers from development of the entire Development Area, the new 23-acre park would add a substantial amount of new open space to the study area, including 15.5 acres of passive open space, somewhat offsetting the ratio decrease. For non-residential populations, the *CEQR Technical Manual* states that 0.15 acres of passive open space per 1,000 workers is typically considered adequate. As such, under the Future With-Action Condition, the passive open space ratio for the non-residential study area of approximately 34.6 acres of open space per 1,000 workers will continue to still exceed the City's guideline of 0.15 acres of open space per 1,000 workers, and no significant adverse impacts were projected.

SHADOWS

Projected building heights within the Development Area are not expected to exceed the height limits of the proposed C4-1 and R3-2 zoning districts, with the potential exception of portions of the multi-family

buildings of the senior housing that may reach 40 feet tall. The maximum building height permitted in the proposed C4-1 zoning district is governed by the sky exposure plane (after a 30-foot maximum base height), while R3-2 zoning districts allow a maximum building height of 35 feet. It is expected that the proposed retail buildings in the C4-1 zone would adhere to the sky exposure plane. While the proposed detached senior housing and school buildings would adhere to the R3-2 zoning district regulations and would rise to a maximum height of 35 feet tall, it is assumed for purposes of this analysis that the multi-unit senior housing would rise to 40 feet.

A Tier 1 Screening Assessment was performed to identify sunlight sensitive resources, if any, that might be impacted by shadows from buildings that are part of the Proposed Project. The Tier 1 screening showed that there are no sunlight-sensitive open space resources or sunlight-sensitive cultural or historic resources located within a potential shadow radius of 4.3 times the expected maximum heights of buildings, and thus further study under the next screening level was not warranted. Under both analyses for the 2015 year and the 2020 year, the longest shadows cast from the expected retail, library, school, housing and park buildings in the Development Area would not reach either the adjacent Conservation Area or the CPPSPP. Furthermore, the shadows would also not reach the nearest designated historic resource, the Kreischer House.

HISTORIC AND CULTURAL RESOURCES

ARCHAEOLOGICAL RESOURCES

Construction of the Charleston Mixed-Use Development Project has the potential to disturb or destroy four archaeological sites located within the Development Area that were identified through prior archaeological survey work, resulting in potential adverse impacts to archaeological resources. Three of these resources are prehistoric sites and one is a historic site complex. In addition, there are portions in these areas that possess archaeological potential that have never been surveyed. According to the *CEQR Technical Manual*, in the event the Proposed Project results in adverse effects to resources, mitigation measures must be developed.

Identified Archaeological Resources

- **Site C4-MCB-1 (NYS Site A08501.002766).** This prehistoric site was located during the Phase IB survey atop a prominent knoll in the east-central portion of the current Development Area. According to project mapping, this site is located in Block 7452, Lot 75, proposed Retail Site "A." The site is considered to be archaeologically significant. The construction of the proposed Public Library complex, associated retail buildings, and parking areas proposed as Retail Site "A" will adversely impact this prehistoric site.
- **Fairview Prehistoric Site (NYS Site A08501.002815).** This prehistoric site was located in 1999 during John Milner Associates (JMA) Phase II excavations at the Balthasar Kreischer Estate Ruins Site. Most of the prehistoric material was recovered from a small, 60-foot-by-40-foot area to the southeast of the main house foundation remains, but prehistoric cultural material was also recovered from test units to the northwest and east of the main house foundation. The limited testing conducted to date suggests that at least portions of the prehistoric site retain sufficient integrity to contribute important archaeological data; the site is considered to be archaeologically significant. Construction activities associated with the proposed 23-acre park trail system have the potential to adversely impact the site depending on their specific location and the degree of disturbance required for the trail construction. If construction of the proposed park trail system requires ground disturbance in these locations to a depth where the archaeological resource is located, the site would be adversely impacted.
- **Balthasar Kreischer Estate (Fairview) Ruins (NYS Site A08501.002814).** JMA conducted Phase II fieldwork at the Kreischer Estate in 1999. JMA documented 18 features with visible surface remains across the estate ruins. The site is historically significant in local terms for its association with the Kreischer Brickworks, the establishment of Kreischerville (Charleston), and other 19th century works that were sponsored by the Kreischer family. The site is also significant as an intact archaeological example of a 19th century elite residence and its associated features.

The project actions associated with the development of the 23-acre proposed park have the potential to adversely impact portions or components of this historic site complex.

- **Site A7-MCB-1 (NYS Site A08501.002767).** This prehistoric site was located during the Phase IB survey on a small, pronounced knoll or hill with a flat summit just south of the proposed route of Englewood Avenue, within the (now) existing Conservation Area. The site, which covers an area of approximately 65 feet by 25 feet, is considered to be archaeologically significant. Project actions are limited at this site location, as it lies within the existing Conservation Area. However, completion of Englewood Avenue and the pedestrian/bicycle path along the northern boundary of the conservation area has the potential to adversely impact this prehistoric site.

Unsurveyed Areas of Archaeological Potential

- **Retail Site "B" (Block 7494: Lots 8, 90, 95, 97, and 183*).*** Development of the remaining sections of the proposed Charleston Mixed-Use Development Project may disturb or destroy potential archaeological resources in areas of the proposed Retail Site "B" that have not been archaeologically surveyed. Development on the Retail Site "B" may disturb or destroy potential archaeological resources. It is possible that early features associated with the tenure of the Shea family (ca. 1853-1887) are present on this property. Such features could include wells, cisterns, or privies, in addition to foundation remains of the house itself. It is equally possible that features associated with the tenure of the Beckman family (ca.1887- ca.1917) are present. The Shea and Beckman families were the historic owners of this property.

  It is also possible that remains of prehistoric occupation are present on this parcel. Given the number of previously identified prehistoric sites and traces of occupation noted for the southwestern portion of Staten Island, including those located within the Development Area itself, it is quite possible that intact prehistoric resources are located on this parcel.

- **Englewood Avenue Extension and Pedestrian/Bicycle Path.** It is possible that remains of prehistoric occupation are present in this 80-foot wide roadway corridor where Englewood Avenue is to be extended. Given the density of prehistoric site locations already identified for this portion of Staten Island, including a site located less than 50 feet south of Englewood Avenue on the Development Area itself, it is possible that intact prehistoric resources are present. If archaeologically significant sites are determined to be located in the proposed Englewood Avenue Corridor, construction activities associated with completion of the Englewood Avenue extension would adversely impact intact archaeological resources that may be present along this linear corridor.

- **Block 7487, Lot 100 – Retail Site "B".** Block 7487, Lot 100 lies in the southwestern portion of the current Development Area. This Block has been impacted by recent development, notably the construction of the MTA Bus Annex that fronts on Arthur Kill Road. The bus annex occupies approximately one third of Block 7487, and is excluded from the current Development Area. However, the portion of Block 7487 that lies to the south of the bus annex and north of Block 7494 and the extant sewer line running along the southern block boundary has not been previously surveyed. Construction activities associated with completion of the Retail Site "B" and construction of its access roads have the potential to adversely impact intact archaeological resources that may be present.

Further archaeological investigation will be required to be undertaken in the parkland and on Retail Site "A" (limited to the area identified in the quadrant as C4-MCB-1) prior to construction or any ground disturbing activities. A Scope of Work for archaeological field testing will be prepared and submitted to the New York City Landmarks Preservation Commission ("NYCLPC") for review and approval prior to any ground disturbance. At this time, there are no specific development proposals for Retail Site "B" or the senior housing site and future developers would be selected pursuant to a RFP process. Further archaeological investigation will be required to be undertaken by the developer(s) after selection. Remedial measures, including Phase 1B testing and, if needed as determined by NYCLPC based on the results of the Phase 1B testing, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and, if necessary, OPRHP, will be required to be undertaken by the developer(s) through provisions in the Contract of Sale, lease or other legally binding agreement between

NYCEDC and the developer(s).

ARCHITECTURAL RESOURCES

No historic architectural resources have been identified within the Development Area. Therefore, the Proposed Project would not directly affect historic architectural resources. However, one resource has been identified within the Historic Architectural Resources study area: the NYCLPC-designated/S/NR-listed Charles Kreischer House, which has the potential to be indirectly affected by the Proposed Project. It is anticipated that the Proposed Project may result in increased traffic along Arthur Kill Road. However, it is not anticipated that an increase in traffic would impact the Charles Kreischer House because it is situated on a large parcel and is relatively well-screened from the road. Therefore, it is anticipated that the Proposed Project would not have any significant adverse impacts to historic architectural resources by the year 2015 or year 2020.

URBAN DESIGN AND VISUAL RESOURCES

The analysis concludes that the Proposed Project would not have any significant adverse impacts related to urban design and visual resources. The Proposed Project would not result in any of the conditions that would merit further detailed assessment of urban design and visual resources. The structures that would be developed as part of the Proposed Project would be similar to the surrounding buildings within the study area. Several other one- and two-story retail buildings are found in the surrounding area, including directly adjacent to and across the street from the Project Area, and additional residences are located west of the Project Area along Arthur Kill Road. In addition, the full build out of the Proposed Project would not alter or result in substantial changes to the built environment of a historic district, or affect the components of an historic building that contribute to the resource's historic significance, by the 2020 analysis year.

The full build out of the Proposed Project would also not block any view corridors or views to/from any natural areas with rare or defining features. Pedestrian views of these sites along Veterans Road West and Arthur Kill Road would be altered, but would allow for more people to interact with the surrounding natural areas adjacent to the view corridor, which is currently undeveloped. The development of these sites would also not block any views to the waterfront or along area roadways, as the proposed developments would be confined to each respective site.

NATURAL RESOURCES

Construction within the Development Area by the year 2020 would remove approximately 0.4 acres of wetlands and 50.1 acres of upland habitats, a substantial amount of habitat and natural resources. Of the impacted wetlands acres, only approximately 0.07 acre of wetlands and 0.89 acre of regulated-adjacent areas are United States Army Corps of Engineers (USACE) jurisdictional and New York State Department of Environmental Conservation (NYSDEC) regulated. Also, a total of approximately 2,013 trees would be removed as a result of the total construction and development from the Proposed Project.

Fringed boneset, a state threatened species was observed growing in the open fields throughout the Development Area. The implementation of the Proposed Project would remove 17.3 acres or 78.2 percent of available boneset habitat. Although, it should be noted that successional vegetation within previous mowed areas and open fields were identified in the 2012 survey, it unclear how much of the identified boneset habitat would remain by 2020 if woody species were left to continue to establish themselves and grow. The small area where Torrey's mountain mint was observed on Retail Site "A" would be removed in 2015.

The cumulative impacts of the 2020 development will have significant adverse impacts on the flora and fauna of CPPSPP and the Conservation Area and on habitats and threatened and endangered species within the Development Area. The impacts to the CPPSPP are significant, and removal of portions of wetlands within the Englewood Avenue corridor, nearly 80 percent of the potential boneset habitat, and the Torrey's mountain mint on Retail Site "A" are significant adverse impacts.

HAZARDOUS MATERIALS

Based on the findings of the October 2012 Phase I ESA, a Phase II Subsurface Investigative Work Plan ("Phase II Work Plan") and Site Specific Health and Safety Plan (HASP) were prepared and submitted to

the New York City Department of Environmental Preservation ("NYCDEP") for review and approval for the proposed parkland and Retail Site "A." The approved Phase II Work Plan included soil, groundwater, and soil vapor testing at locations distributed across the two sites.
Subsurface environmental investigation was completed in July 2013. The purpose of the investigation was to determine if historical manufacturing activities have impacted soil and groundwater quality on-site. The July 2013 subsurface investigations included the collection of 16 soil samples, one groundwater sample and six soil gas samples in the areas of the proposed Fairview Park and Retail Site "A." The major findings were as follows:

- One soil sample collected on Retail Site "A" contained arsenic, copper, and lead at concentrations exceeding the respective Unrestricted SCOs, but below Restricted Residential and Commercial SCOs. However, all samples collected within the boundaries of the proposed Fairview Park met the standard for Unrestricted SCOs. Other than the soil sample collected on Retail Site "A," no other compounds or metals were detected in any of the soil samples above their respective Unrestricted SCOs. Any soil that requires offsite disposal will require waste classification sampling by the chosen disposal facility, and the final disposal classification of the material would depend on such results.

- The metals aluminum, cobalt, iron, manganese, and sodium in the collected groundwater samples were detected at concentrations above the respective Class GA values. Since groundwater beneath the Development Area is not intended as a potable water source, and construction dewatering would be performed in accordance with applicable regulations, the presence of these metals is not expected to impact the site.

- None of the soil gas samples exceeded AGVs for the four compounds for which NYSDOH has established mitigation action levels; however, several VOCs were detected above EPA National Ambient Air Averages. Therefore, a vapor barrier will be incorporated into the design and construction of structures on-site to prevent the potential for vapor intrusion.

- Paint chip samples from the eastern and western access gates detected concentrations of lead at 0.37 and 1.69 percent, respectively. Any disturbance to these gates must be conducted in accordance with OSHA Lead In Construction Standard (29 CFR 1926.62) requirements, and waste generation, handling, transport and disposal must be conducted in accordance with NYS Parts 360-364 Regulations and Federal Resource Conservation and Recovery Act (RCRA) requirements.

Based on the findings of the Phase I ESA and Phase II ESI, the following remediation and environmental control measures would be implemented:

- As per NYCDEP recommendations, a moisture/vapor barrier would be incorporated into the design plans of any proposed structures on the Retail Site "A," public library, and Fairview Park sites.

- NYCDPR and the developer for Retail Site "A" will submit a Soil Management Plan (SMP) and Remedial Action Plan (RAP) respectively, to DEP for review and approval. The SMP and RAP will indicate that contaminated soils would be properly disposed of in accordance with the applicable NYSDEC regulations. If re-use of soil is proposed on-site, the SMP and RAP will detail the amount of cut/fill, the proposed testing frequency and applicable standards, and for the park – the proposed locations for the re-used soil. The Retail Site "A" RAP will include information regarding the library parcel, which will be prepared and graded by the Retail Site "A" developer.

- NYCDPR and the developer for Retail Site "A" will each submit a Construction Health and Safety Plan ("CHASP") to NYCDEP to protect workers' potential exposure to contaminants for the

proposed construction project. Soil disturbance would not occur without NYCDEP's written approval of the CHASP. If excavated soils are expected to be temporarily stockpiled on-site, they would be covered with polyethylene sheeting while disposal options are determined. Additional testing would be conducted, as required, by the disposal/recycling facility.

- If any petroleum-impacted soils (which display petroleum odors and/or staining) are encountered during the excavation/grading activities, the impacted soils would be removed and properly disposed of in accordance with all NYSDEC regulations.

- Dust suppression would be maintained by the contractor during the excavating and grading activities at the site. Any underground storage tanks (including dispensers, piping, and fill-ports) that are encountered would be properly removed/closed in accordance with all applicable NYSDEC regulations.

- If de-watering into City storm/sewer drains occurs during the proposed construction, a NYCDEP Sewer Discharge Permit would be obtained prior to the start of any de-watering activities at the site.

Prior to construction, as part of the Due Diligence process for all schools, the NYCSCA will perform further environmental studies (if necessary) and investigations to determine the environmental conditions at the proposed school site. Environmental Due Diligence includes, but is not limited to, Phase I ESAs, Phase II ESAs and Mitigation as appropriate.

At this time there are no specific development proposals for Retail Site "B" or the housing site and future developers would be selected pursuant to a Request for Proposals. Further subsurface investigations will be required to be undertaken by the developer(s) after selection. For Retail Site "B" and the senior housing site, Phase II Environmental Site Assessments and mitigations as necessary, through continued consultation with NYCDEP, will be required to be undertaken by the developer(s) through provisions in the Contract of Sale, lease or other legally binding agreement between NYCEDC or the City and the developer(s). With the implementation of these measures prior to construction no significant adverse hazardous material impacts are expected during construction or operations within the entire Development Area.

If unexpected areas of contamination are discovered during construction, these materials would be removed during construction or isolated from public contact with impervious surfaces such as buildings, parking areas and roadways, thus eliminating the potential for public exposure during the operational period. In addition, the general debris and junk vehicles would be removed from the site and properly disposed offsite. The Proposed Project would require excavation of soil within the remaining sections of the Development Area, and possibly dewatering of groundwater from excavations depending on the depth and location of the excavations for the remaining proposed buildings. In the event that unexpected areas of contamination are encountered during construction, mitigation measures would be undertaken as necessary to protect project workers and the surrounding community from exposure to hazardous materials.

WATER AND SEWER INFRASTRUCTURE

This analysis finds that the Proposed Project would not result in any significant adverse impacts on the City's water supply, wastewater or stormwater conveyance and treatment infrastructure.

WATER SUPPLY

By the year 2020 the Proposed Project would generate a water supply demand of approximately 189,400 gpd (0.19 mgd), which represent less than 0.1 percent of the City's water supply demand. The incremental demand would, therefore, not adversely impact the City's water supply.

SANITARY SEWAGE

The Project Area, as per the latest amended NYCDEP Drainage Plan for the Mill Creek Watershed, dated February 2005 ("the 2005 Drainage Plan"), has two mapped sanitary sewer easements that: (1) bisect the Project Area through a north-south 40-foot wide easement within the Development Area (between Fairview Park and Retail Site "A"); and (2) an east-west 35-foot wide easement connecting Bricktown Way to Arthur Kill Road. The 40-foot wide north-south easement has a planned 10-inch diameter sanitary sewer while the 35-foot wide east-west easement contains an existing 10-inch diameter sanitary sewer constructed previously to connect the existing Bricktown Centre's sanitary system into an 18-inch NYCDEP sanitary system located in Arthur Kill Road. In addition to this internal network of sanitary system easements, the 2005 Drainage Plan also includes mapped plans for a 10-inch diameter sanitary system to be constructed under the mapped (but un-built) Englewood Avenue right-of-way, as well as under a 35-foot wide sanitary sewer easement mapped from the Englewood Avenue right-of-way, running southeast through the Conservation Area. Ultimately a connection would be made to the existing 18-inch sanitary sewer under Arthur Kill Road for eventual discharge into the Oakwood Beach WPCP.

Proposed Sanitary Systems

The Proposed Project would generate approximately 121,400 gpd of sanitary sewage. This increase represents 1.01 percent of the reserve capacity of the Oakwood Beach WPCP. Since the wastewater generated by the Proposed Project is well within the capacity of the treatment plant, no significant adverse impacts to the City's wastewater treatment services would occur. Connections to the treatment plant from the various components of the Proposed Project would be made as follows:

- Retail Site "A" and the Library would connect directly into the existing 10-inch diameter sanitary sewer within Bricktown Way. The developer of Site "A" has provided calculations to NYCDEP that both the on-site sanitary sewer systems within Bricktown Centre and the existing 18-inch diameter NYCDEP sanitary sewer in Arthur Kill Road have adequate capacity to handle the additional sanitary flows generated by Site "A" and Fairview Park. NYCDEP does not own the infrastructure under Bricktown Way and Tyrellan Avenue. In the future, NYCDEP's ownership and maintenance obligations will not change unless the infrastructure is built out to NYCDEP specifications pursuant to an approved drainage plan and NYCDEP accepts the infrastructure into its portfolio.
- The proposed Fairview Park would connect into the sanitary system within Retail Site "A," which would then connect into the existing sanitary sewer within Bricktown Way.
- Englewood Avenue would not generate any sanitary sewage, but under the 2005 Drainage Plan its construction would require installation of NYCDEP's planned sanitary sewers under the presently mapped sections of Englewood Avenue. However, this may be revised under the amended Drainage Plan. The eventual design of the sanitary and stormwater sewers in Englewood Avenue and connecting elements from them will be included in an amended Drainage Plan.
- Retail Site "B" would connect directly into the existing NYCDEP 18-inch sanitary sewer under Arthur Kill Road.
- The senior housing component would require design and construction of the planned 10" diameter sanitary sewer line within the presently mapped 35-foot wide north-south easement running along the western edge of Retail Site "B" down to Bricktown Way.
- The proposed school, to be developed by the NYC School Construction Authority (NYCSCA), would require a connection into the same north-south 10-inch sanitary sewer line system noted above for the senior housing complex. An easement may be required for this connection.

STORMWATER

The 2005 Drainage Plan indicates how planned storm drainage in this area would be handled:

- Stormwater flowing off site to the north and northeast would be collected into the proposed future Englewood Avenue stormwater collection system, consisting of catch basins and a 36" diameter

trunk sewer under the proposed Englewood Avenue segment west of Kent Street. This system would flow east to the future anticipated topographical low point along Englewood Avenue and discharge into the existing south flowing watercourse within the CPPSPP.

- Stormwater flows traveling east, southeast, and south from the Project Area would either collect directly into the channel flow water course described above or drain into the existing Bricktown Centre stormwater collection system.
- Stormwater flowing southwest would eventually drain onto Veterans Road West. The current 2005 Drainage Plan calls for a new 24'" to 30" diameter storm drainage sewer system with catch basins to be constructed west along Veterans Road West, connecting directly into the existing Arthur Kill Road 54-inch diameter storm drainage system.

In the Future With-Action condition, the 3,964,450 square-foot Project Area would have a total of 1,607,269 square feet of impervious surface area by the 2020 analysis year.

Proposed Storm Drainage Systems

- Retail Site "A" would connect directly into Bricktown Centre's existing storm drainage system.
- For Fairview Park, its proposed drainage system will endeavor to capture all storm water on site through the creation of bio-swales and detention areas as done at other active recreation sites. If it is determined that an overflow connection is needed, the park will connect to the City storm sewer at a location to be determined.
- Under the 2005 Drainage Plan, construction of Englewood Avenue would require installation of NYCDEP's planned stormwater sewers under the presently mapped sections of Englewood Avenue. However, this may be revised under the amended Drainage Plan. These sewers would be needed for drainage of the road itself as well as the Proposed Project's senior housing and school elements discussed below, both of which would front onto Englewood Avenue
- The senior housing component would connect into the new storm drainage system installed under Englewood Avenue.
- The proposed school would connect into the new storm drainage system installed under Englewood Avenue.
- Retail Site "B" would connect directly into the existing NYCDEP 54-inch storm drain sewer under Arthur Kill Road.

All of the proposed methods of handling stormwater would require sewer connection permits from NYCDEP, which require demonstrations that the existing stormwater system, after accounting for required on-site detention, could handle the increased flows. The NYCDEP would require a formal connection permit approval for each site. If it is determined that the system could not handle these loads, changes to the stormwater system sufficient to meet those demands would be included in the amended Drainage Plan.

SOLID WASTE AND SANITATION SERVICES

The Proposed Project would generate incremental solid waste at a rate of 69,080 pounds (approximately 34.5 tons) per week. Of this amount, about 4.9 tons per week would be handled by the NYC Department of Sanitation ("DSNY"), and private carters would handle about 29.6 tons per week. The incremental increase of approximately 4.9 tons per week, as a result of the Proposed Project, in residential and community facility-related solid waste to be picked up by DSNY is relatively small compared to the estimated nearly 13,000 tons of residential and institutional refuse and recyclables collected by DSNY per day. In addition, due to the Proposed Project, the net incremental non-residential waste collected by private carters would increase by approximately 29.6 tons per week over the Future No-Action Scenario, an insignificant amount compared to the estimated 10,000 tons of commercial MSW and recyclables currently removed by private carters per day. Furthermore, the total incremental increase in solid waste generated by the Proposed Project of approximately 34.5 tons per week is less than the 50 tons per week CEQR screening threshold, and therefore the Proposed Project does not warrant a detailed solid waste

assessment.

ENERGY

The Proposed Project would not have a significant adverse impact on energy systems and services. Although the Proposed Project would increase demand on electricity, this increase in demand would be insignificant relative to the capacity of these systems and the current levels of service in the Con Edison service area. Upon completion, development associated with the project would comply with the New York City Energy Conservation Code. In compliance with the code, the basic designs of all buildings would incorporate the required energy conservation measures, including meeting the code's requirements relative to energy efficiency and combined thermal transmittance.

In addition, the affordable housing components are expected to be certified under the Enterprise Green Communities Program, or meet equivalent sustainability standards. Therefore, no significant adverse energy impacts would result from the Proposed Project.

TRANSPORTATION

TRAFFIC

The intersection capacity analyses presented in the FEIS are based on the methodology presented in the Highway Capacity Software Version HCS+ 5.4. Traffic data required for these analyses include volumes on each approach, as well as various other physical and operational characteristics. Signal timing plans for each intersection were obtained from NYCDOT. Field inventories were also conducted to document curbside parking regulations, vehicle classifications, and other relevant characteristics.

The HCM methodology expresses quality of flow in terms of level-of-service (LOS), which is based on the average control delay that drivers experience at an intersection. Control delay includes delays associated with acceleration, deceleration, and queue move-up time, in addition to stopped delay at the intersection. For signalized intersections, LOS ranges on a letter-grade scale from "A" (average control delays of 10 seconds or less per vehicle) to "F" (average control delays exceeding 80 seconds per vehicle). The methodology also provides a volume-to-capacity (v/c) ratio for intersection traffic movements. A ratio of under 0.90 is generally considered to represent non-congested conditions, whereas above this value, congestion increases. At a v/c ratio of between 0.95 and 1.00, near-capacity conditions are reached and delays can become substantial. Ratios of greater than 1.05 indicate saturated conditions with queuing.

<u>2015 Analysis Year Results</u>

In accordance with *CEQR Technical Manual* guidelines, a RWCDS was developed to estimate the peak hour vehicular and pedestrian volumes expected as a result of the project elements completed by 2015.The analysis of these volumes indicated that 12 of the 24 study area intersections are projected to have one or more significantly impacted movements in one or more of the analyzed peak hours. There are four intersections with one or more impacted movements during the weekday AM peak hour, five during the weekday midday peak hour, seven during the weekday PM peak hour, and eleven during the Saturday midday peak hour. The impacted intersections are:

- **Allentown Lane-Veterans Road West/Arthur Kill Road** – During the weekday PM and Saturday midday peak hours, the southbound approach is projected to operate at LOS "F" with v/c ratios exceeding 0.90 during both peak hours. Overall, the intersection as a whole is projected to operate with a v/c ratio exceeding 0.90 during the weekday PM and Saturday midday peak hours.
- **Sharrotts Road/Arthur Kill Road** – During the Saturday midday peak hour, the eastbound approach is projected to operate at LOS "E".
- **Richmond Valley Road/Arthur Kill Road** – During the weekday midday, weekday PM, and Saturday midday peak hours, the southbound approach is projected to operate with v/c ratios exceeding 0.90, and with delays corresponding to LOS "E" during the weekday midday peak hour, and LOS "F" during the weekday PM and Saturday midday peak hours. Overall, the intersection as a whole is projected to operate with v/c ratios exceeding 0.90 during the weekday midday, weekday PM, and

Saturday midday peak hours, and with delays corresponding to LOS "E" during the weekday PM and Saturday midway peak hours.

- **Richmond Valley Road/Page Avenue** – During the Saturday midday peak hour, the northbound through/right-turn lane group is projected to operate with a v/c ratio of 0.90.

- **Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp** – During the weekday AM peak hour, the westbound left-turn movement is projected to operate with delays corresponding to LOS "F" and a v/c ratio exceeding 0.90. During the weekday midday peak hour, the eastbound and westbound left-turn movements are projected to operate with delays corresponding to LOS "F" and with v/c ratios exceeding 0.90. During the weekday PM peak hour, the eastbound and westbound left-turn movements are projected to operate with delays corresponding to LOS "F" and v/c ratios exceeding 0.90. In addition, the U-turn movement on the northbound approach to this intersection (an unsignalized movement) is projected to operate with delays corresponding to LOS "E" during the weekday PM peak hour. During the Saturday midday peak hour, the eastbound and westbound left-turn lanes, and the southbound through/right-turn lane are projected to operate with delays corresponding to LOS "F," "F," and "E," respectively, and v/c ratios exceeding 0.90. The intersection as a whole is projected to operate at LOS "F" overall during the Saturday midday peak hour.

- **Veterans Road West/Tyrellan Avenue** – During the weekday midday, weekday PM, and Saturday midday peak hours, northbound left-turn movements are projected to operate with delays corresponding to LOS "F" and v/c ratios exceeding 0.90. During the weekday PM and Saturday midday peak hours, the westbound approach is projected to operate with v/c ratios exceeding 0.90, and with delays corresponding to LOS "F" during the Saturday midday peak hour. During the weekday midday and Saturday midday peak hours, the southbound approach is projected to operate with v/c ratios exceeding 0.90 and with delays corresponding to LOS "E" during the weekday midday peak hour and LOS "F" during the Saturday midday peak hour. The intersection as a whole is projected to operate with an overall v/c ratio exceeding 0.90 during the weekday midday, weekday PM and Saturday midway peak hours, and with delays corresponding to LOS "E" overall during the weekday PM peak hour and LOS "F" overall during the weekday midday and Saturday midday peak hours.

- **Boscombe Avenue/Outerbridge Crossing ramps** – During all four analysis peak hours, the eastbound left-turn lane is projected to operate with v/c ratios exceeding 0.90. During the weekday midday and Saturday midday peak hours, the westbound shared through/left-turn lane is projected to operate with delays corresponding to LOS "E" and v/c ratios exceeding 0.90. During the weekday midday, weekday PM, and Saturday midday peak hours, the westbound right-turn movement is projected to operate with delays corresponding to LOS "F" with v/c ratios exceeding 0.90. In addition, during the weekday PM peak hour, delays for southbound left-turn movements are projected to correspond to LOS "E." The intersection as a whole is projected to operate at LOS "E" overall with a v/c ratio exceeding 0.90 during the weekday midday peak hour, and LOS "F" overall with a v/c ratio exceeding 0.90 during the weekday PM peak hour, and LOS "F" overall with a v/c ratio exceeding 0.90 during the weekday midday and Saturday midday peak hours

- **Boscombe Avenue/Tyrellan Avenue** – During the weekday midday, weekday PM, and Saturday midday peak hours, southbound right-turn movements are projected to operate with delays corresponding to LOS "F" and v/c ratios exceeding 0.90. The intersection as a whole is projected to operate at LOS "E" overall during the weekday PM peak hour, and LOS "F" overall with a v/c ratio exceeding 0.90 during the weekday midday and Saturday midday peak hours.

- **Englewood Avenue/Veterans Road West** – During the Saturday midday peak hour, westbound left-turn movements are projected to operate with a v/c ratio exceeding 0.90.

- **Englewood Avenue/Veterans Road East** – During the Saturday midday peak hour, movements in the eastbound shared through/left-turn lane are projected to operate with delays corresponding to LOS "F" and a v/c ratio exceeding 0.90.

- **Veterans Road East-Drumgoole Road West/Bloomingdale Road** – During the weekday AM peak hour, the southbound approach is projected to operate with a v/c ratio exceeding 0.90. During the

Saturday midday peak hour, the westbound approach is projected to operate with a v/c ratio exceeding 0.90. The eastbound right-turn lane and the northbound left-turn lane are both projected to operate with v/c ratios exceeding 0.90, with delays corresponding to LOS "F" and LOS "E", respectively during the Saturday midday peak hour. The intersection as a whole is projected to operate with an overall v/c ratio exceeding 0.90 during the Saturday midday peak hour.

- **Pleasant Plains Avenue-Amboy Road/Bloomingdale Road** – During the weekday AM and PM peak hours, the southbound approach is projected to operate with v/c ratios exceeding 0.90.

2020 Analysis Year Result

Under 2020 Future With-Action conditions, 16 of the 24 study area intersections are projected to have one or more impacted movements in one or more of the analyzed peak hours. There are seven intersections with one or more impacted movements during the weekday AM peak hour, nine during the weekday midday peak hour, 11 during the weekday PM peak hour, and 16 during the Saturday midday peak hour. These are discussed in more detail below:

- **Sharrotts Road/Arthur Kill Road** – During the Saturday midday peak hour, the eastbound approach is projected to operate with delays corresponding to LOS "E."
- **Allentown Lane-Veterans Road West/Arthur Kill Road** – During the weekday PM and Saturday midday peak hours, the westbound through/left-turn lane is projected to operate with a v/c ratio exceeding 0.90. During the Saturday midday peak hour, the northbound approach is projected to operate with a v/c ratio exceeding 0.90. During the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, the southbound approach is projected to operate with v/c ratios exceeding 0.90 and with delays corresponding to LOS "F". The intersection as a whole is projected to operate with overall v/c ratios exceeding 0.90 during the weekday AM, weekday midday, weekday PM and Saturday midday peak hours, and with overall delays corresponding to LOS "E" during the weekday midday peak hour, and LOS "F" during the weekday PM and Saturday midday peak hours.
- **Richmond Valley Road/Arthur Kill Road** – During the weekday midday, weekday PM, and Saturday midday peak hours, the westbound approach is projected to operate with v/c ratios exceeding 0.90, and the southbound approach is projected to operate with v/c ratios exceeding 0.90 and with delays corresponding to LOS "F." During the Saturday midday peak hour, the westbound approach is also projected to operate with delays corresponding to LOS "E." The intersection as a whole is projected to operate with overall v/c ratios exceeding 0.90 and with delays corresponding to LOS "F" during the weekday midday, weekday PM, and Saturday midday peak hour.
- **Richmond Valley Road/Page Avenue** – During the weekday PM peak hour, the southbound approach is projected to operate with a v/c ratio exceeding 0.90. During the Saturday midday peak hour, the northbound through/right-turn lane and the southbound approach are projected to operate with a v/c ratio exceeding 0.90.
- **Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp** – During the weekday AM peak hour, the westbound left-turn lane is projected to operate with delays corresponding to LOS "F" and a v/c ratio exceeding 0.90. During the weekday midday peak hour, the eastbound and westbound left-turn lanes are projected to operate with delays corresponding to LOS "F" and with v/c ratios exceeding 0.90. During the weekday PM peak hour, the eastbound and westbound left-turn lanes and the U-turn movement on the northbound approach (an unsignalized movement) are projected to operate with delays corresponding to LOS "F" and v/c ratios exceeding 0.90. In addition, during the weekday PM peak hour, the eastbound through/right-turn lane group is projected to operate with a v/c ratio exceeding 0.90. During the Saturday midday peak hour, the eastbound approach, the westbound left-turn lanes and the northbound approach are projected to operate with delays corresponding to LOS "F" and v/c ratios exceeding 0.90. Also during the Saturday midday peak hour, the southbound through/right-turn lane is projected to operate with delays corresponding to LOS "E" and with a v/c ratio exceeding 0.90. The intersection as a whole is projected to operate at LOS "E" during the weekday PM peak hours, and at LOS "F" during the weekday midday and Saturday midday peak hours.

- **Veterans Road West/Tyrellan Avenue** – During the weekday midday, weekday PM, and Saturday midday peak hours, the eastbound approach is projected to operate with v/c ratios exceeding 0.90, and with delays corresponding to LOS "E" during the weekday midday and PM peak hours, and LOS "F" during the Saturday midday peak hours. During the weekday midday, weekday PM, and Saturday midday peak hours, northbound left-turn movements are projected to operate with delays corresponding to LOS "F", and with v/c ratios exceeding 0.90. During the weekday PM and Saturday midday peak hours, the westbound approach is projected to operate with delays corresponding to LOS "E" and "F", respectively, and with v/c ratios exceeding 0.90. The intersection as a whole is projected to operate with overall v/c ratios exceeding 0.90 during the weekday midday, weekday PM, and Saturday midday peak hours, and with delays corresponding to LOS "F" during the weekday midday, weekday PM, and Saturday midday peak hours.

- **Boscombe Avenue/Outerbridge Crossing ramps** – During all four analysis peak hours, the eastbound left-turn lane is projected to operate with v/c ratios exceeding 0.90. In addition, during the weekday AM and weekday PM peak hours, delays in the eastbound left-turn lane are projected to correspond to LOS "E". During the weekday midday and Saturday midday peak hours, the westbound shared through/left-turn lane is projected to operate with delays corresponding to LOS "F" and with v/c ratios exceeding 0.90. In addition, during all four analysis peak hours, the westbound right-turn lane is projected to operate with v/c ratios exceeding 0.90. The westbound right-turn lane is also projected to operate with delays corresponding to LOS "E" during the weekday AM peak hour, and at LOS "F" during the weekday midday, weekday PM, and Saturday midday peak hours. During the weekday PM peak hour, delays for southbound left-turn movements are projected to correspond to LOS "F". During all four analysis peak hours, the intersection as a whole is projected to operate with v/c ratios exceeding 0.90, and during the weekday midday, weekday PM, and Saturday midday peak hours, the intersection as a whole is projected to operate with delays corresponding to LOS "F".

- **Boscombe Avenue/Tyrellan Avenue** – During the Saturday midday peak hour, eastbound left-turns are projected to operate with a v/c ratio exceeding 0.90. During the weekday midday, weekday PM, and Saturday midday peak hours, southbound right-turn movements are projected to operate with v/c ratios exceeding 0.90 and with delays corresponding to LOS "F". During the weekday midday, weekday PM, and Saturday midday peak hours, the intersection as a whole is projected to operate with v/c ratios exceeding 0.90 and with delays corresponding to LOS "F."

- **Englewood Avenue/Veterans Road West** – During the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours, the westbound left-turn lane is projected to operate with delays corresponding to LOS "E" in the weekday PM peak and LOS "F" in the other three peak periods, with a v/c ratio exceeding 0.90 in all four peak periods. During the Saturday midday peak hour, the intersection as a whole is projected to operate with overall delays corresponding to LOS "E".

- **Englewood Avenue/Veterans Road East** – During the weekday PM peak hour, movements in the eastbound shared through/left-turn lane are projected to operate with a v/c ratio exceeding 0.90 and experience delays corresponding to LOS "E." During the Saturday midday peak hour, movements in the eastbound shared through/left-turn lane are projected to operate with a v/c ratio exceeding 0.90 and experience delays corresponding to LOS "F." The intersection as a whole is projected to operate with a delay corresponding to LOS "F" during the Saturday midday peak hour.

- **Englewood Avenue/Bloomingdale Road** – During the Saturday midday peak hour, the eastbound approach is projected to operate with a v/c ratio exceeding 0.90.

- **Sharrotts Road/Bloomingdale Road** – During the Saturday midday peak hour, the northbound approach is projected to operate with a v/c ratio exceeding 0.90.

- **Veterans Road East-Drumgoole Road West/Bloomingdale Road** – During the weekday AM peak hour, the southbound approach is projected to operate with a v/c ratio exceeding 0.90. Also during the weekday AM peak hour, the eastbound right-turn lane and the northbound left-turn lane are projected to operate with delays corresponding to LOS "F," with the eastbound right-turn lane also projected to operate with a v/c ratio exceeding 0.90. During the weekday midday peak hour, the eastbound right-turn lane is projected to operate with a delay corresponding to LOS "E" and a v/c ratio exceeding 0.90.

During the weekday PM peak hour, the northbound left-turn lane is projected to operate with a delay corresponding to LOS "E" and a v/c ratio exceeding 0.90. During the Saturday midday peak hour, the westbound approach is projected to operate with a v/c ratio exceeding 0.90, and the eastbound right-turn lane and the northbound left-turn lane are projected to operate with delays corresponding to LOS "F" and v/c ratios exceeding 0.90. The intersection as a whole is projected to operate with an overall v/c ratio exceeding 0.90 during the Saturday midday peak hour.

- **Pleasant Plains Avenue-Amboy Road/Bloomingdale Road** – During the weekday AM, weekday PM, and Saturday midday peak hours, the southbound approach is projected to operate with v/c ratios exceeding 0.90. During the weekday AM peak hour, the southbound approach is also projected to experience delays corresponding to LOS "F" and the intersection as a whole is projected to operate with delays corresponding to LOS "E."
- **Arthur Kill Road/Bloomingdale Road** – During the weekday midday peak hour, the westbound approach is projected to operate with a v/c ratio exceeding 0.90. During the weekday PM and Saturday midday peak hours, the westbound approach is projected to operate with delays corresponding to LOS "F" and with v/c ratios exceeding 0.90. During the weekday PM peak hour, the northbound approach is projected to operate with a v/c ratio exceeding 0.90 and delays corresponding to LOS "E". During the weekday PM and Saturday midday peak hours, the intersection as a whole is projected to operate with v/c ratios exceeding 0.90 and at LOS "E" and LOS "F," respectively.

PEDESTRIANS

At present, pedestrian activity is relatively light at the sidewalks, crosswalks, and street corners in the study area. Low pedestrian activity in Charleston is due to (1) limited pedestrian facilities throughout the study area and (2) development densities that are not high enough to encourage a significant amount of pedestrian travel between desired origins and destinations. Sidewalks are typically provided in the residential neighborhoods and along commercial properties. However, the majority of roadways within the study area (including key roadways such as Bloomingdale Road, Veterans Road East, and Arthur Kill Road) have discontinuous sidewalk facilities across long distances and, as such, are not likely to encourage much pedestrian travel. Given the low number of pedestrian trips generated by the Charleston Mixed-Use Development, as a whole, significant adverse impacts are not anticipated and detailed pedestrian analyses are not warranted.

VEHICULAR AND PEDESTRIAN SAFETY

Accident data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) compiled by the NYCDOT for the most recent available three-year period (i.e., 2008 to 2010). The data obtained quantify the total number of reportable accidents (involving fatality, injury, or more than $1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of pedestrian- and bicycle-related accidents at each location. There were two pedestrian/bicyclist crashes in the study area from 2008 to 2010. Based on the crash detail reports, the first pedestrian crash occurred on May 4, 2008 at 1:30 AM when a pedestrian crossed near the South Bridge Street/Page Avenue-Boscombe Avenue intersection at a location with no crosswalk. The second pedestrian crash occurred at the Sharrotts Road/Bloomingdale Road intersection on June 25, 2009 at 6:43 AM when the pedestrian was crossing with the traffic signal. Both pedestrian crashes were described as resulting in a "possible injury."[1] None of the other study intersections had any pedestrian and bicyclist crashes over the three-year period. Based on the findings noted above, none of the study intersections are classified as "high crash locations" as defined in the *CEQR Technical Manual*.

According to the *CEQR Technical Manual*, pedestrian safety is especially of concern at sensitive land use locations, such as hospitals, schools, parks, nursing homes, and elderly housing, where there would be substantial child or elderly activities. The Proposed Project would include an approximately 750-student elementary/middle school as well as senior housing on the project site. Pedestrian and bicycle activity from these uses is expected to concentrate at the intersections of Englewood Avenue/Arthur Kill Road and Englewood Avenue/Veterans Road West. While these intersections are presently not high-accident

[1] A "possible injury" is defined by NYCDOT as: "No visible signs of injury, but complaint of pain or momentary unconsciousness."

locations (limited pedestrian activity), the potential for vehicle-pedestrian conflicts would be expected to increase substantially with the Proposed Project. To address the increased presence of children, improvements to Englewood Avenue would include school crossing signs and pavement markings at the intersections of Englewood Avenue/Arthur Kill Road and Englewood Avenue/Veterans Road West, as well as mid-block pavement markings within the vicinity of the school.

PARKING

The total hourly parking demands over the course of both a typical weekday, and a typical weekend day, are not projected to exceed the proposed on-site parking supply for any development component. This applies to the proposed development components individual. Overall the Proposed Project will have a total parking supply for 1,248 vehicles. Demand is projected to peak at 893 on a typical weekday and at 987 on a typical weekend. Based on the findings of the parking analysis, the Proposed Project is anticipated to have sufficient on-site parking supply to accommodate projected hourly parking demands throughout the course of both a typical weekday and a typical weekend day. Therefore, no overflows of parked vehicles are projected to occur onto surrounding public streets and neighboring properties, and no significant parking impacts are anticipated, under typical weekday and weekend conditions.

AIR QUALITY

The maximum predicted pollutant concentrations and concentration increments from mobile sources with the Proposed Project would be below the corresponding guidance thresholds and ambient air quality standards. The Proposed Project's parking facilities would also not result in any significant adverse air quality impacts. Based on a refined stationary source modeling analysis, there would be no potential for significant adverse air quality impacts from the heating and hot water systems for the proposed development. The only fossil fuel that would be used for heating and hot water systems at the development sites included in the Proposed Project would be natural gas. This requirement will be included in the developers RFP(s) and agreements. The RFP requirements could be modified or eliminated in the future if additional air quality modeling shows that the requirements are not needed to meet national and local ambient air quality standards and thresholds. However, in accordance with New York City rules, developers would still be required to use clean fuel sources, such as ultra-low sulfur Number 2 oil. Future modeling could rely on information that is expected to become available as the design for the proposed sites progresses.

Therefore, there would be no potential for significant adverse impacts on air quality with the Proposed Project.

GREENHOUSE GAS EMISSIONS

The annual GHG emissions from the Proposed Project are predicted to be approximately 30,742 metric tons of CO_{2e}. This does not represent a net incremental increase in GHG emissions, since similar GHG emissions would occur if the residential units, school, library, retail development and associated uses were to be constructed elsewhere. However, the Proposed Project would include measures aimed at reducing energy consumption and GHG emission and therefore, is generally consistent with the City's citywide GHG and climate change goals.

The Proposed Project pursues transit-oriented development and provides access to public transportation. Incorporating the mixed-use design promotes transit-oriented development with new residences, new parkland, a new school and a new library that are all walkable form the proposed retail shopping centers, including the nearby bus routes of the S74, S84, and S78 lines that serve this section of Staten Island, which would help encourage sustainable transportation.

The Proposed Project includes a number of commitments that would ensure that energy efficient buildings are constructed. If city capital funding is used to construct the library, the library would be built in accordance with the requirements of Local Law 86 of 2005, as applicable. The proposed school would be built according to the New York City Green Schools Guide, which addresses the sustainable design, construction, and operation of new schools. The Green Schools Guide and Rating System include strategies that substantially reduce energy costs and water use as compared with buildings constructed to meet code, and require the use of recycled content, and regional materials, if feasible, in construction. The contract of sale for Retail Site "A" will require the developer to: (i) design and construct to achieve a 10%

reduction in energy performance, calculated in accordance with LEED Core and Shell, Energy and Atmosphere, Prerequisite 2, Option 1, or design and construct in accordance with the Prescriptive Compliance Path set forth in LEED Core and Shell, Energy and Atmosphere Credit 1, Option 3; and (ii) employ low flow fixtures, fittings and appliances, which are described in LEED Core and Shell, Water Efficiency, Prerequisite 1. For the remaining retail (Retail Site "B") and senior housing components of the development, through the request for proposals process the City would look favorably upon proposals that enhance the energy-efficiency of buildings. This may include, but not necessarily be limited to, designing and constructing to achieve LEED Silver certification, using fewer raw materials, making the best of natural light where appropriate, improving indoor air quality, and decreasing the total impact on the natural and human environment.

Overall, the Proposed Project, therefore, is consistent with the City's citywide GHG reduction policy.

NOISE

Three types of potential noise impacts were addressed in the FEIS analysis: 1) mobile-source noise impacts on existing and future sensitive receptors, 2) playground noise generated at the new school impacts on future residents/park patrons, and 3) impulse noise from the adjacent gun club on future residents/park patrons. The analysis concluded that there would be no significant adverse noise impacts from the Proposed Project:

- Mobile Source Noise. The potential for mobile source impacts is screened out at most locations. Two monitoring sites, both adjacent to sensitive receptors (the park and the senior housing) within the Project Area were identified for further analysis. At both locations it was determined that the predicted peak traffic noise level would be below the 65 dBA absolute impact threshold level.
- School Playground Noise. During the daytime school opening hours, the closest residential land use, the proposed on-site senior housing, was projected to experience a maximum of 55 dBA $L_{eq}(1)$ which is equivalent to approximately 58 dBA L_{10}. This level is well below the 65 dBA noise exposure guidelines classified "Acceptable" for general residential external use. Therefore the proposed daytime school operation itself would not result in a significant noise impact in the neighborhood
- Gunshot Impulse Noise. Although gunshot impulsive noise would be noticeable within the proposed sensitive land uses with the highest levels observed along the trail in the park, the Lmax levels are still comparable to those generated from other background noise sources such as on road traffic in the neighborhood particularly within the most sensitive development site, the senior housing site.

PUBLIC HEALTH

As described in the preceding chapters of the FEIS, the Proposed Project would not result in unmitigated significant adverse impacts in such areas as air quality, water quality, hazardous materials, or noise. Further, the Proposed Project would not introduce any unusual circumstances that have potential public health consequences related to other issues. Therefore, a detailed public health assessment is not warranted and significant adverse impacts to public health are not expected to occur.

NEIGHBORHOOD CHARACTER

Of the technical areas that define neighborhood character, the Proposed Project has the potential to result in significant adverse historic and cultural resources and transportation impacts. However, it is not expected that the significant adverse historic and cultural resources and transportation impacts that would result from the Proposed Project would significantly affect the neighborhood character for the study area.

The significant adverse historic and cultural resources impacts identified are related to the potential for archeological resources to be present in the Development Area. While the potential adverse impacts to the archaeological resources would be significant, the potential archeological resources on site are not a defining feature of this area of Staten Island that is central to the character of the neighborhood.

The significant adverse transportation impacts projected as a result of the Proposed Project also are not expected to lead to significant adverse neighborhood character impacts. Subject to DOT approval, several mitigation measures are proposed that would serve to mitigate the significant adverse transportation impacts projected to occur as a result of the Proposed Project. The additional level of congestion is not expected to significantly alter neighborhood character.

The Proposed Project is not expected to result in a combination of moderate effects that would collectively result in a significant adverse neighborhood character impact. The Proposed Project would not cause significant adverse impacts with regard to land use, zoning and public policy, socioeconomic conditions, shadows, open space, or urban design and visual resources. Further, as discussed in their respective chapters of the FEIS, these technical areas are not considered reasonably close to their significant adverse impact threshold. The area surrounding the Development Area already contains retail shopping centers found within Bricktown Centre and the South Shore Commons, as well as a mixed-use neighborhood to the north and west. The changes of land uses on the sites within the Development Area would also generate beneficial impacts to the character of the neighborhood, as it would develop vacant and underused land, creating a more cohesive neighborhood in this section of Staten Island. Therefore, although some significant adverse impacts would occur in the CEQR technical areas that define neighborhood character, it is not expected that the significant adverse impacts in these technical areas would lead to significant adverse neighborhood character impacts. No significant adverse neighborhood character impacts are expected as a result of the Proposed Project.

CONSTRUCTION

For each of the various technical areas presented below, appropriate construction analysis years were selected to represent reasonable worst-case conditions relevant to that technical area, which can occur at different times for different analyses. For example, the noisiest part of the construction may not be at the same time as the heaviest construction traffic. Therefore, the analysis periods may differ for different analysis areas. Where appropriate, the analysis accounted for the effects of project elements that would be completed and operational during the selected construction analysis years.

At this time, there are no specific construction programs or designs for any development that is projected to result from the Proposed Project. The construction durations are conservatively chosen to serve as the basis of the analyses in this chapter and are representative of the reasonable worst-case for potential impacts. The conceptual schedule represents a very compressed and conservative potential timeline for construction, which shows overlapping construction activities and simultaneously operating construction equipment for development sites in proximity to one another. Thus, the analysis captures the cumulative nature of construction impacts, which would result in the greatest impacts at nearby receptors.

LAND USE AND NEIGHBORHOOD CHARACTER

The Proposed Project is not expected to result in any significant adverse construction-related impacts on land uses or neighborhood character within the surrounding area. While construction activities in the Development Area are expected to span approximately seven years, each individual development, with the exception of the school, would take less than two years to complete. The on-site land clearing and construction activities would last for limited durations on each specific development site within the Development Area. Further, the construction that would occur would result in the enhancement of land uses by introducing new uses that would be compatible with the surrounding area. In addition, the development sites within the Development Area are buffered from potential sensitive resources in the surrounding area by the Bricktown Centre and other shopping areas, and by Arthur Kill Road and Veterans Road West. Therefore, although land use changes would occur, significant adverse impacts during construction activities to land uses and neighborhood character are not expected.

OPEN SPACE

The Proposed Project is not expected to result in any significant adverse construction related impacts on open space or on the public use of open space areas. Construction activities would occur within the vacant portions of the Development Area and would not directly alter or impact the adjacent Conservation Area,

which would be mapped as parkland as part of the overall Proposed Project, and is separated from the Development Area by a series of fences. Standard construction protection measures (i.e., fencing) could also be taken to minimize any disturbance on adjacent open space or other open spaces in the surrounding area, including CPPSPP, which is adjacent to the location for the proposed construction of Englewood Avenue. Therefore, significant adverse impacts to open spaces during construction are not expected to occur. The exact nature of those protective measures would be developed as the conceptual plans for the individual development sites are refined.

HISTORIC AND CULTURAL RESOURCES

No historic architectural resources have been identified within or sufficiently close to the Development Area that would be affected by construction of the Proposed Project.

Project construction activities have the potential to disturb or destroy one identified archaeological site on Retail Site "A." In addition, three identified archaeological sites located within other sections of the Development Area may be impacted depending on the location of future construction. These sites were identified through previous JMA Phase IB/II archaeological surveys conducted in 1999 for the Bricktown Centre at Charleston Project. Three of these resources are prehistoric sites and one is the historic Balthasar Kreischer site complex.

NATURAL RESOURCES

The *CEQR Technical Manual* states that if a project or construction staging area is located near a sensitive natural resource, such as federal or state regulated wetlands, construction activities may result in the disruption of these areas. The analysis of construction's effects on natural resources would also consider the loss or additional destruction of natural resources on the project site or in the staging area. An assessment could also include an inventory of existing street trees within the construction impact zone if the project would potentially result in the loss of those trees. For construction of the Proposed Project, general Best Management Practices (BMPs) would be followed in order to protect natural resources during construction.

By the 2020 analysis year, approximately 29.6 acres of habitat would be subject to earthmoving and filling associated with construction for a total nearly 50 acres altered within the Development Area. For the construction of Englewood Avenue, the current topography may require substantial earthmoving activities in order to create a road embankment capable of supporting street traffic.

The total acreage of wetland impacts of the Proposed Project would be 0.4 acres. The construction of Englewood Avenue between the CPPSPP and the Conservation Area under the proposed 80-foot wide conceptual roadway design, would impact approximately 0.07 acres deemed to be jurisdictional by the USACE and regulated by NYSDEC, included in the total above. The construction footprint would end several feet from the delineated boundary of Wetland B, also regulated by NYSDEC. Actions to mitigate the impacts to these regulated and jurisdictional wetlands would be required by the two regulatory agencies.

Construction by the 2020 analysis year would divide or fragment the remaining undeveloped habitats within the Development Area from the CPPSPP and the Conservation Area. Although many of the directly impacted habitats are generally successional habitats that are common to New York State, construction activities would potentially have indirect impacts on the CPPSPP and Conservation Area through removal and bifurcation of a large contiguous vegetated buffer area. Approximately 1,156 trees within the remaining portions of the Development Area would be removed as a result of construction activities, and overall, the Proposed Project would impact approximately 2,013 trees. Construction and implementation of development by the 2020 analysis year would also remove additional areas that serve or could serve as habitat to threatened bonesets.

The construction of the 80-foot wide Englewood Avenue would result in direct impacts to wildlife that exists in the CPPSPP and the Conservation Area. Currently, the dirt track that separates the CPPSPP from the Conservation Area does not serve as an impediment to fauna transiting between the parcels. Moreover, the canopies of the trees in both parcels intermingle in some locations, which provide an undisturbed continuous canopy. The CPPSPP is a NYSDEC Bird Conservation Area ("BCA") and bird species, including listed species, that live in the CPPSPP are likely transit to the Conservation Area for

usage of the habitat there. Removal of the undisturbed continuous canopy for the construction of an 80-foot wide road would result in bifurcating valuable habitat and would have negative impacts on fauna within the CPPSPP and the Conservation Area.

Listed species exist in the CPPSPP and the Conservation Area. Many of these species either transit between both parcels or depend on the contiguous habitats to provide a vegetated buffer from anthropogenic disturbance. The bifurcating of habitats would have a negative effect on wildlife. Although there were no direct observations of listed species within the build footprint, Wetlands B and C and adjacent parcels provide habitat conditions favorable to listed species that occur within the Conservation Area and CPPSPP. Under this scenario, portions of these habitats would be impacted and removed once construction activities commence.

General Best Management Practices (BMPs) would be adhered to in order to protect natural resources during construction of project components near sensitive natural resources, Examples of construction BMPs for natural resources that apply to actions in both the 2015 year and 2020 year under the Proposed Project include, but are not limited to:

- Sediment and Erosion Control – Construction activities would adhere to a sediment erosion and control plan. When necessary and appropriate, measures such as hay bales, check dams, eco-logs, silt fencing and/or other sediment and erosion control measure would be implemented as dictated by the local soil conservation district.. These structures would be regularly inspected to ensure they function properly.
- Material Disposal – All waste materials generated during construction would be handled and disposed of properly in approved receptacle or facility.
- Tree Protection - It is likely that trees located along the edge of the construction boundary would have portions of their drip lines or critical root zones lie within the construction footprint. When this occurs, appropriate protective measures (e.g. root mats, etc.) will be utilized to prevent compression of soils and root damage. If trees growing on site are to be retained and utilized in as part of the future landscape designs, it is recommended that the trees be protected with root mats and exclusion barriers around the dripline. After construction ceases, it is recommended that the trees be inspected by a certified arborist to determine what, if any damage may have occurred to the trees and what, if any, corrective measures would be required.

  It is anticipated that some pruning of trees would be required along future roadways and/or for site access. If pruning of a tree is required, the pruning would occur under the supervision of a certified arborist. Also, if an engineered slope is to impact the soils within the critical root zone, consideration would be given to modifying the slope with retaining walls, tree wells, tree pits, etc., to allow for the preservation and future growth of established trees.
- Invasive and Nuisance Species Removal – restoration programs should include a program for the removal of invasive plants and nuisance species and the reintroduction of native plant species, where feasible, especially in recently disturbed habitats and along the edges of habitats. Where possible, parcel development will include removal of nuisance and invasive species and inclusion of native and noninvasive species. Where the opportunity allows on Retail Site "A," the Library, Retail Site "B," the school, and the senior housing sites, the associated developers and/or responsible agencies will remove invasive/nuisance species and strive to use native and noninvasive species in the landscaping of their sites and will share their planting lists with NYCDPR for their review and consultation.

Mitigation will be required to reduce or eliminate projected impacts during construction. Mitigation concepts proposed are subject to review and approval by applicable regulatory agencies, including NYSDEC, USACE and NYCDPR. These measures include the following by resource or habitat areas:

<u>Wetlands</u>

General Recommendations/Best Management Practices

Compliance with all construction restrictions and permit conditions contained within the NYSDEC/USACE freshwater wetland permits that would ultimately be obtained for disturbance of

wetlands as a result of constructing Englewood Avenue. These permits are likely to include measures including not limited to the following:

- Environmental Inspector – The project sponsor would provide Environmental Inspectors ("EINSPs") who are both experts in ecology and who would confirm in the field that plans and stipulations are adhered to. EINSPs would have "stop work" authority should an activity deviate from a designed plan and potentially impact natural resources. The EINSP would ensure compliance with permit conditions.
- Wetland Identification. The wetlands on site have been delineated. Prior to construction, all field identified sensitive resources (e.g., federal and state regulated wetlands and regulated adjacent areas, etc.) will be flagged to ensure resource protection. Protection measures will be implemented to ensure minimization of impacts to these wetlands and other water resources resulting from sedimentation, erosion, turbidity, unanticipated spills or leaks of fuel, and/or other toxic materials, etc. Wetland Disturbance. Disturbance to federal and state regulated wetlands would be reduced to the greatest extent practicable. If a regulated wetland area needs to be impacted, temporary road mats, or swamp mats, will be used to minimize compaction of soils and disturbance to existing vegetation when accessing wetland areas. Following construction, swamp mats will be removed in reverse order of placement as soon as practicable. Impacts arising from the use of temporary road mats will be mitigated by implementing restoration measures developed in coordination with the regulatory agencies during the permitting process.
- Exclusion Barriers - In order to prevent disturbance to natural resources outside the construction footprint, construction fencing and/or exclusion barriers would be erected along the border of the disturbance footprint. To further reduce potential impacts to natural resources, prior to the initiation of work, the boundaries of the disturbance footprints will be clearly flagged in order to provide a visual reference of the limits of disturbance.
- Pollution Prevention. No refueling, washing and/or handling of toxic substances would occur within 100 feet of a regulated wetland or regulated adjacent area. These activities would only occur in designated laydown areas with appropriate containment measures
- Stockpiling and Storage - Fill, construction material, spoils, etc. will not be stored within 100 feet of a federal or state regulated wetland or regulated adjacent area, or waterbody. Moreover, most construction related items would not be stored and/or deposited within 100 feet of a wetland or regulated adjacent area.
- Installation of high visibility snow fencing along the boundary of existing regulatory wetlands to avoid construction activities within wetland areas not covered by the future wetland permit that would need to be obtained for this project.

Mitigation Measures

- Wetlands impacted by the Proposed Project (Wetland C and regulated adjacent area of Wetlands B and C) would require mitigation by the USACE and NYSDEC, associated with the development of Englewood Avenue in the vicinity of these wetlands.
- Potential areas for wetland mitigation include the vicinity of Wetland A within the proposed Fairview Park and areas within the existing Conservation Area**.** Once design plans for Englewood Avenue are progressed to a sufficient level of detail, further ecological studies and consultation with involved regulatory agencies would need to be conducted to determine the suitability of the Conservation Area to provide mitigation opportunities in 2020If the Proposed Utility Access Corridor is developed, mitigation for impacts to a USACE jurisdictional wetland in that area would likely be required due to displacement of Wetland NB.
- Proper design of the proposed Englewood Avenue – its alignment, width and other design elements – is critical to avoiding and mitigating impacts to wetlands. As the roadway's design

plans advance in the future, full consideration of avoidance and reduced-impact design options will be required by the permitting agencies, and there will be opportunities to minimize impacts on these wetland resources. Measures during the design, construction and long-term operation of this roadway will be required to avoid or minimize impacts to the maximum extent practicable.

Habitat and Flora and Fauna Preservation

General Recommendations/Best Management Practices

- CPPSPP BCA – The development of Englewood Avenue between CPPSPP and the Conservation Area from dirt path to paved road could reduce the co-mingling of some tree canopies, impacting the ability of some avifauna to travel between these two parcels, thereby adversely impacting the NYSDEC-designated BCA. The BCA could be extended to officially include the approximately 20-acre NYCDPR Conservation Area.

- In areas where access for construction equipment is needed, tracking pads could be installed to minimize the earth disturbance associated with use of this equipment.

- Vernal Pool Habitat Preservation and/or Creation. Only Wetland B has been identified as a vernal pool habitat meeting all four criteria. For any wetland habitats that do not occur within the build footprints, a vegetated buffer should remain in place around them. In undeveloped areas on site, especially wooded areas at the base of slopes, shallow depressions should be created, when possible, to recreate the small isolated wetlands that would be removed through the implementation of Retail Sites "A" and "B." These areas should have a vegetated buffer around them. Also, during construction appropriate measures would be taken to ensure that existing vernal pools are not directly or indirectly impacted by construction activities.

Mitigation Measures

- Englewood Avenue (portion between CPPSPP and Conservation Area) – the use of culverts or other structures underneath the road surface are recommended to allow for the passage of fauna under the roadway is advisable as part of the eventual design of this roadway. This would also maintain suitable travel ways for organisms between CPPSPP and the Conservation Area. Plans for underpasses, wildlife crossings, etc. would be designed in consultation with the appropriate regulatory agencies. A nuisance and invasive species removal program could be targeted along the edges of Englewood Avenue.

Threatened and Endangered Species

General Recommendations/Best Management Practices

- Endangered Species Survey– Prior to construction, qualified individuals would survey the area for threatened and endangered species. If these species are present, the project's sponsor would consult with the appropriate regulatory agency for guidance on transplantation or translocation of the resource.

- For threatened and endangered resources outside, but in close proximity to, the construction footprint, appropriate protection and avoidance measures would be adhered to ensure they are not directly or indirectly impacted. These measures would be developed in consultation with the regulatory agencies.

- Seasonal Restrictions – If the regulatory agencies require the construction not occur or be modified during an ecologically sensitive time frame (e.g., nesting, etc.), the project construction schedule and sponsors will adhere to these requirements.

Mitigation Measures

- Torrey's mountain mint (Impact as of 2015)– Given the success of the Bricktown Plan's propagation to two out-planting sites, it is proposed that a similar propagation program be implemented to mitigate the displacement of the mountain mint colony identified on Retail

Site "A." Trans-located stock, cuttings, and seeds from the Retail Site "A" mountain mint colony would be used to propagate these plants at one or more of NYCDPR's existing out-planting parcels or on other suitable NYCDPR-controlled sites to support the continuation of this plant in the area.

- Boneset – Updated field surveys will be performed in advance of the 2020 development sites' construction to determine the extent to which bonesets are still present on these sites and the extent to which any mitigation would be warranted. If these surveys determine that open field habitats are still present within the Development Area and that they would be displaced by the Proposed Project's continued development, a portion of these habitats would be maintained as mitigation for the projected loss of these open field habitat areas due to the Proposed Project's 2020 development sites.

HAZARDOUS MATERIALS

The Proposed Project is not expected to result in any significant adverse construction related impacts to hazardous materials. A Phase I Environmental Site Assessment ("Phase I ESA") was performed for the Project Area in accordance with the American Society of Testing and Materials ("ASTM") Standard Practice E 1527-05. Based on the findings of the Phase I ESA, a Phase II Subsurface Investigative Work Plan (Phase II Work Plan) and Site Specific Health and Safety Plan (HASP) were prepared and submitted to NYCDEP for review and approval for the proposed parkland and Retail Site "A."

The Phase II Environmental Site Investigation was completed in July 2013 which consisted of the collection and analysis of soil, soil vapor, and groundwater samples.

A summary of the laboratory analysis included:

- No VOCs, SVOCs, PCBs, or Pesticides were identified in the soil samples collected at concentrations above their respective Unrestricted, Restricted Residential, or Commercial SCOs.
- The metals arsenic, copper, and lead were detected in one soil sample at concentrations exceeding Unrestricted SCOs, but below the respective Restricted Residential and Commercial SCOs;
- No VOCs, SVOCs, PCBs or Pesticides were identified in the groundwater sample at concentrations above the NYSDEC Class GA values;
- Total (non-filtered) aluminum, cobalt, iron, and sodium were detected above their respective NYSDEC Class GA values in the collected groundwater sample. Dissolved (filtered) cobalt, iron, manganese, and sodium were detected above respective NYSDEC Class GA values; and
- VOCs were detected in several of the soil gas samples at concentrations slightly above their respective USEPA ambient air concentrations but not above NYSDOH Air Guidance Values.
- Laboratory results of the paint chip samples indicated that the eastern gate's coating contained 0.37 percent lead and the western gate's coating contained 1.69 percent lead.

Based on the findings of the Phase I ESA and Phase II ESI, the following environmental control measures would be implemented:

- As per NYCDEP recommendations, a moisture/vapor barrier would be incorporated into the design plans of any proposed structures on the Retail Site "A," public library, and Fairview Park sites.
- NYCDPR and the developer for Retail Site "A" will submit a Soil Management Plan (SMP) and a Remedial Action Plan ("RAP"), respectively, to NYCDEP for review and approval. The SMP and the RAP will indicate that contaminated soils would be properly disposed of in accordance with the applicable regulations of the NYSDEC. If re-use of soil on-site is proposed, the SMP and the RAPs will detail the amount of cut/fill, the proposed testing frequency, and applicable standards, and for the park – the proposed locations for the re-used soil. The Retail Site "A" RAP will include information regarding the library parcel, which will be prepared and graded by the Retail Site "A" developer.

- NYCDPR and the developer for Retail Site "A" will each submit a Construction Health and Safety Plan (CHASP) to NYCDEP to protect workers' potential exposure to contaminants for the proposed construction project. Soil disturbance would not occur without NYCDEP's written approval of the CHASP. If excavated soils are expected to be temporarily stockpiled on-site, they would be covered with polyethylene sheeting while disposal options are determined. Additional testing would be conducted, as required, by the disposal/recycling facility.
- If any petroleum-impacted soils (which display petroleum odors and/or staining) are encountered during the excavation/grading activities, the impacted soils would be removed and properly disposed of in accordance with all NYSDEC regulations.
- Dust suppression would be maintained by the contractor during the excavating and grading activities at the site. Any underground storage tanks (including dispensers, piping, and fill-ports) that are encountered would be properly removed/closed in accordance with all applicable NYSDEC regulations.
- If de-watering into City storm/sewer drains occurs during the proposed construction, a NYCDEP Sewer Discharge Permit would be obtained prior to the start of any de-watering activities at the site.
- Paint chip samples from the eastern and western access gates detected concentrations of lead at 0.37 and 1.69 percent, respectively. Any disturbance to these gates must be conducted in accordance with OSHA Lead In Construction Standard (29 CFR 1926.62) requirements, and waste generation, handling, transport and disposal must be conducted in accordance with NYS Parts 360-364 Regulations and Federal Resource Conservation and Recovery Act (RCRA) requirements.

With the implementation of these measures no significant adverse hazardous material impacts are expected to result from the construction of the year 2015 developments.

Prior to construction, as part of the due diligence process for all schools, the NYCSCA will perform further environmental studies (if necessary) and investigations to determine the environmental conditions at the proposed school site. Environmental due diligence includes, but is not limited to, Phase I Environmental Site Assessments, Phase II Environmental Site Assessments and Mitigation as appropriate.

At this time there are no specific development proposals for Retail Site "B" and the housing site and future developers will be selected pursuant to a Request for Proposal. Further subsurface investigations will be required to be undertaken by the developer(s) after selection. For Retail Site "B" and the senior housing site, Phase II ESAs and mitigations as necessary, through continued consultation with NYCDEP, will be required to be undertaken by the developer(s) through provisions in the contract of sale between New York City and the developer(s).

TRANSPORTATION

Because the Proposed Project would involve construction on multiple development sites in the same geographic area, with the potential for several construction timelines to overlap, and last for more than two years overall, an assessment of the effect of construction on transportation was performed.

The proposed construction schedule assumes construction activities and construction trips would peak in the third quarter of 2018 with 97 total PCE trips, coinciding with construction of Retail Site "B" and the proposed school. In addition, a slightly lower but more sustained peak would occur during 2014 and the first half of 2015 with 96 total PCE trips, coinciding with construction of Retail Site "A," the library, and the park. For a conservative reasonable worst-case analysis of potential construction traffic impacts, these two peak periods of construction activity were used as the basis for estimating peak hour construction traffic volumes. Construction traffic associated with the first peak construction period (i.e., 2014 year and early 2015 year) generates a peak of 54 total PCEs during the 6:00 a.m. to 7:00 a.m. hour, and 52 total PCEs during the 3:00 p.m. to 4:00 p.m. hour. Similarly, construction traffic associated with the second peak construction period (i.e., third quarter of 2018) generates a peak of 49 total PCEs during the 6:00 a.m. to 7:00 a.m. hour, and 46 total PCEs during the 3:00 p.m. to 4:00 p.m. hour throughout the study area roadway network.

These projected incremental numbers of vehicle-trips would be distributed to multiple site-access points and intersections in the vicinity of the development sites and, therefore, would not reach the *CEQR Technical Manual* analysis threshold of 50 PCEs at any one intersection in any one peak hour. Furthermore, the projected volumes of construction traffic during the weekday AM and PM peak hours are not projected to exceed the projected operational (post-construction) traffic volumes during the weekday AM and PM peak hours. Based on these findings, a detailed construction traffic analysis is not warranted, as significant adverse construction-related traffic impacts are not expected to occur as a result of the Proposed Project.

AIR QUALITY

Construction of each of the components of the Proposed Project would occur on separate timelines and on separate parcels within the Project Area, and construction on any one parcel would be completed within two years, and thus would be temporally spread out through the seven years of total build period. In addition, because the site is large, the construction activities would be divided into widely separated clusters and thus the potential for impact at any given time and location would be minimal. Therefore, the on-site construction equipment activities associated with each element can be considered independent and the potential for impacts is minimal.. Give the distribution of construction among five different parcels over a seven-year period and the lack of sensitive receptors on or immediately adjacent to these construction sites, significant adverse construction-related air quality impacts, including to other elements of the Charleston Mixed-Use Development, are not expected as a result of the Proposed Project.

NOISE

As with most construction projects in the City, the Proposed Project would result in temporary and short-term impacts on adjacent properties. Construction noise is regulated by the New York City Noise Control Code and by the U.S. Environmental Protection Agency ("EPA") noise emission standards for construction equipment. These local and federal controls require that certain types of construction equipment and vehicles meet specific noise emission standards. Except under exceptional circumstances, City regulations limit construction activity to weekdays between the hours of 7:00 a.m. and 6:00 p.m., and construction materials must be handled and transported in a manner that avoids the generation of unnecessary noise. Therefore, given these factors, the distribution of construction among five different parcels over a seven-year period and the lack of sensitive noise receptors on or immediately adjacent to these construction sites, significant adverse construction-related noise impacts are not expected as a result of the Proposed Project.

OTHER TECHNICAL AREAS

In addition to the technical areas discussed above, a preliminary assessment of the potential for construction-related impacts in other technical areas was performed for the Proposed Project. As per the *CEQR Technical Manual*, the other technical areas assessed were: socioeconomic conditions; community facilities; shadows; urban design and visual resources; and infrastructure, as follows below:

Socioeconomic Conditions

The Proposed Project is not expected to result in any significant adverse construction related impacts on socioeconomic conditions. The entire Project Area is vacant, and as such no direct displacement of businesses or residents would occur. The proposed construction activities would create construction and related jobs, a positive benefit. Construction activities would result in direct benefits due to expenditures on labor, materials, and related services, as well as indirect benefits due to expenditures for material suppliers and by construction workers and other employees involved in construction activities.

Community Facilities and Services

The Proposed Project is not expected to result in any significant adverse construction related impacts on community facilities within the area. Construction activities would not displace any existing community facilities, as none exist within or in close proximity to the Development Area. Local police departments, fire departments, and hospitals have sufficient resources to provide emergency services, if necessary, during construction activities.

Urban Design and Visual Resources

The Proposed Project is not expected to result in any significant adverse construction-related impacts on urban design or visual resources within the Development Area or within the surrounding area. Any visual impacts within the area that would occur due to construction activities, including various construction equipment and materials placed on the site, would be temporary and would be buffered from the neighboring areas by existing trees and vegetation.

Infrastructure

Construction activities associated with the Proposed Project are not expected to result in any significant adverse construction-related impacts on infrastructure (e.g., water supply and wastewater/stormwater conveyance). Best management and other practices would be adhered to, following all applicable local and state regulations, during construction activities to minimize and control stormwater runoff on the site.

4. ALTERNATIVES

As mandated by both CEQR and SEQRA, the FEIS examines a No-Action Alternative, which describes the conditions that would exist if the Proposed Project were not implemented. The FEIS also analyzes four other alternatives that are differentiated by how the Project Area is accessed and the extent of potential impact they could have on the environment. The four other alternatives are as follows:

- **Shortened Englewood Avenue Alternative.** This alternative would map and build out the western section of Englewood Avenue as currently planned under the Proposed Project and terminate at the western end of the existing mapped portion of Englewood Avenue. A 34-foot wide, highly permeable emergency access road that would restrict unauthorized vehicular access through mechanisms like siren-activated gates and/or removable bollards, would be constructed from Kent Street to Veterans Road West. This alternative build-out of Englewood Avenue would not require a transfer of state-owned property to the City, and would also avoid some of the potential impacts to natural resources in the section of Englewood Avenue between the CPPSPP and the Conservation Area.
- **40-Foot Wide Englewood Avenue Alternative.** This alternative would build out the western section of Englewood Avenue as currently planned under the Proposed Project, and extend the roadway eastward from its current terminus to Veterans Road West at a width of 40-feet wide (one travel lane in either direction), instead of the currently planned 80-foot wide roadway (with two travel lanes in each direction). The remainder of the Development Area would be constructed as currently planned under the Proposed Project.
- **Arthur Kill Access Road Alternative.** This alternative assumes that an east-west access road would be constructed along the planned 50-foot wide, 1.95-acre Proposed Utility Access Corridor from Arthur Kill Road through Retail Site "B" and eastward to a connection with Bricktown Way near the southeast corner of Fairview Park. Englewood Avenue would be constructed as described in the Proposed Project.
- **No Unmitigated Impact Alternative.** Under this No Unmitigated Impact Alternative, all identified impacts for vehicular traffic, natural resources, and historic and cultural resources would be fully mitigated.

NO ACTION ALTERNATIVE

The No-Action Alternative, analyzed throughout the document as the Future No-Action Condition, consists of normal and anticipated growth patterns by the 2015 and 2020 analysis years of the Proposed Project, as well as any other separately planned projects within the surrounding area, but does not include the construction of the proposed uses within the Development Area. Under this alternative, the Proposed Project would not be constructed and the Development Area is expected to remain in a natural state. However, many of the ecological communities in the Development Area that are currently dominated by herbaceous vegetation (e.g., the successional old fields, pasturelands, etc.), could convert, in whole or in part, to wooded habitats through natural succession by 2020. This natural conversion may alter or reduce the amount of suitable habitat within the Development Area capable of supporting the existing plant

species observed in those areas in the 2012 and 2013 natural resources surveys. If the pastureland habitat is continued to be utilized by equestrians, it is anticipated that this ecological community would persist through 2020. Under this alternative, Englewood Avenue would not be mapped and constructed and the adjacent Conservation Area, which is part of the overall Project Area, would not be mapped as parkland, No changes or development within the Conservation Area would occur under this alternative.

The No-Action Alternative uses existing conditions as a baseline and adds to it changes known or expected to be in place by the 2015 and 2020 analysis years. For many technical areas, the No-Action Alternative incorporates known development projects that are likely to be built by the analysis years. The No-Action Alternative analyses must also consider other future changes that will affect the environmental setting, such as the possibility of natural succession from herbaceous to wooded areas as noted above. These could include technology changes (such as advances in vehicle pollution control and roadway improvements), changes to City policies (such as zoning regulations), or changes in public policy.

In the future without the Proposed Project, the Project Area is expected to remain in its existing vacant condition. No other projected or potential development is planned or considered likely to occur in the Project Area by the 2015 analysis year or 2020 analysis year of the Proposed Project. Under the No-Action Alternative, the Project Area would also not be rezoned from M1-1, and the existing zoning district would remain.

The No-Action Alternative would not further the goals of the PlaNYC 2030, the City's WRP or Working West Shore 2030 Study. It is expected that the City would continue to refine polices and guidelines over the next several years related to sustainability with PlaNYC 2030; however, as the area would remain vacant, new development compatible with the PlaNYC's sustainability would not occur. It is also expected that the City will continue to refine polices and guidelines over the next several years related to the goals and objectives of Working West Shore 2030 Study, the guiding document and framework to improve the area's infrastructure and create jobs while managing the area's growth and preserving its open spaces.

Under the No-Action Alternative, no new jobs would be created in the Development Area, and the economic goals of the Working West Shore 2030 Study related to the Proposed Project would not be met. The projected generation of over 800new jobs under the Proposed Project would not occur under the No-Action Alternative. The Proposed Project would not result in any significant adverse socioeconomic impacts, nor would any occur under the No-Action Alternative.

Although no impacts to community facilities were anticipated as a result of the Proposed Project, under the No-Action Alternative, the proposed school and public library that would be developed under the Proposed Project would not be constructed. Furthermore, planning improvements to open space would not take place. While the existing 20-acre Conservation Area would remain undeveloped, it would not be mapped as new parkland, and the existing 23-acre portion of the Development Area planned for Fairview Park would remain in its natural vegetative state, used by area residents as unofficial passive open space.

Under the No-Action Alternative, it is estimated that no major changes would occur on the Project Area site. Remaining vacant, it is anticipated that there would be no new threats to the archaeological sites present. It is anticipated that buried archaeological resources would remain *in situ*. In comparison, the Proposed Project includes identified adverse impacts to prehistoric resources within the Development Area. By the year 2015 the proposed development activities would potentially disturb or destroy portions of one archaeological site located on Retail Site "A." Construction of the remainder of the Project Area by the year 2020 has the potential to disturb or destroy portions of several more historic or prehistoric archaeological site located within the remaining sections of the Project Area that were identified through prior archaeological survey work or that may exist in areas not previously studied.

In the future without the Proposed Project, the Development Area would remain vacant and Englewood Avenue would not be constructed. Therefore, changes related to urban design and visual resources would not occur. The Proposed Project includes changes to the urban design and visual context in the area, with the mapping and construction of new streets and development of new buildings; however, no significant adverse impacts were identified.

Under the No-Action Alternative, the Development Area is expected to remain in a vacant condition. No

other projected or potential development is planned or considered likely to occur in the Development Area by the 2015 or 2020 analysis years. As such, conditions related to natural resources would be similar to existing conditions, and no impacts would occur. However, many of the ecological communities in the Development Area that are currently dominated by herbaceous vegetation (e.g., the successional old fields, pasturelands, etc.), could convert, in whole or in part, to wooded habitats through natural succession by 2020. This natural conversion may alter or reduce the amount of suitable habitat within the Development Area capable of supporting the existing plant species observed in those areas in the 2012 and 2013 natural resources surveys (e.g., boneset).Under the Proposed Project, the developments from the 2015 analysis year would remove or alter approximately 20.5 acres of habitat for flora and fauna in the area, and would impact 538 of the surveyed trees. One[2] endangered and one threatened plant species were also observed within the proposed areas of the 2015 developments. The removal of a group of plants of one of these species would be viewed as a significant impact by regulatory agencies. Implementation of developments under the 2020 year analysis would impact approximately .107acres of wetland habitats, none of which would be determined to be under the jurisdiction of either NYSDEC or USACE, and remove approximately 1,156 of the surveyed trees. These impacts would not occur under the No-Action Alternative.

Under the No-Action Alternative, the Development Area is expected to remain in its existing vacant condition. No other projected development is planned or considered likely to occur in the Development Area by the 2015 or 2020 analysis years. Therefore, total water, wastewater and stormwater generation in the Development Area and the area for the construction of Englewood Avenue under the No-Action Alternative would be similar to existing conditions. The increased sanitary and stormwater sewage demands due to the Proposed Project would require revisions to applicable NYCDEP Drainage Plans for the affected watersheds. However, no impacts were identified under the Proposed Project.

The Future No-Action condition traffic analysis identified how the study area's transportation system is projected to operate in the future without the Proposed Project, and include anticipated future increases in background traffic volumes for the 2015 and 2020 analysis years. With these increases under the No-Action Alternative, by the year 2015 ten of the 24 study area intersections are projected to have one or more congested movements (having a traffic volume to capacity ratio of .90 or greater) in one or more of the analyzed peak hours. Under the No-Action Alternative by the year 2020, 11 of the 24 study area intersections are projected to have one or more congested movements in one or more of the analyzed peak hours. Under the Proposed Project (by the year 2020), 17 of the 24 study area intersections are projected to have one or more congested movements in one or more of the analyzed peak hours.

Under the No-Action Alternative, no development would occur in the Development Area, and thus no new stationary sources would be constructed. Air Quality emissions from mobile sources would be similar to, but slightly higher due to natural traffic growth, when compared to emission levels under existing conditions. While the Proposed Project would result in increases in stationary and mobile source emissions, no significant adverse impacts were identified.

Noise levels from mobile sources on surrounding roadways without the Proposed Project would be similar to, but slightly higher due to natural traffic growth, when compared to noise levels under existing conditions. Under the Proposed Project, noise levels would be further increased from additional vehicular traffic; however, significant adverse impacts were not identified.

Under the No-Action Alternative, the character of the neighborhood is not expected to substantially change. Existing conditions in the Development Area would remain, and no impacts would occur. Under the Proposed Project, the character of the neighborhood would be altered with the proposed residential, educational, recreational and retail developments under the 2015 and 2020 year analysis; however, no significant adverse impacts to neighborhood character due to the Proposed Project were identified.

[2] NYSDEC, 2013, August 22, telephone communication, regarding NYSDEC adopted revision to regulation 6 NYCRR Part 193.3 Protected Native Plants (May of 2012), which included changes to incorporate information compiled by NYNHP and reflects changes in the scientific names of many plants. One of the updated changes was the removal of late-flowering boneset (*Eupatorium serotinum)* which no longer appears on any of the lists of protected plants set forth in 6 NYCRR Part 193.3, and therefore it has no regulatory status.

If the Proposed Project did not proceed, no construction activities would occur within the Development Area or the area for the construction of Englewood Avenue, and thus no impacts would occur. Under the Proposed Project, the Development Area would witness construction over several years on the retail, park, senior housing, and school sites, along with the construction of Englewood Avenue, removing natural resources on these sites and potentially destroying prehistoric resources, none of which would occur under the No-Action Alternative.

SHORTENED ENGLEWOOD AVENUE ALTERNATIVE

This alternative assumes that Englewood Avenue would only be mapped and constructed from Arthur Kill Road eastward to the existing mapped area of the roadway which currently terminates near the un-built Kent Street. Englewood Avenue would not be constructed along the existing mapped, but un-built, portion from Kent Street to Veterans Road West. Instead, a highly permeable, limited access, emergency roadway would be constructed that would be accessible by emergency vehicles only and would restrict unauthorized vehicular access through mechanisms like siren-activated gates and/or removable bollards. At Kent Street, there would be a turn-around meeting New York City Fire Department ("FDNY") requirements for emergency access. It is expected that the road would be 34 feet wide and would be sited on the southernmost portion of the 80-foot mapped right of way. Currently, the state owns the northern 45 feet and the city owns the southern 35 feet of this right of way. Unlike the Proposed Project and the 40-Foot Wide Alternative, this alternative would not require a transfer of state-owned property to the City. This alternative would not continue the 19-foot wide bicycle and pedestrian greenway east of Kent Street, which would therefore compromise a goal of the Proposed Project.

The remainder of the Development Area would be constructed as planned under the Proposed Project. Because the amount, location, and nature of development under this alternative are identical to the Proposed Project, the potential for impact does not differ in most technical areas. Hence, the findings for the majority of the technical areas analyzed for the Proposed Project would be substantially the same for this alternative, with the exception of Cultural and Historic Resources, Natural Resources, Transportation, Air Quality, and Noise.

The construction of Englewood Avenue may require substantial earthmoving activities in certain segments to create a road embankment capable of supporting the proposed city street, and the future contractor would need to comply with a sediment and erosion control plan during the construction activities. Under the Shortened Englewood Avenue Alternative, such topographical changes reduced and the potential impacts reduced

The Shortened Englewood Avenue Alternative would also not significantly impact wildlife that uses the area between the CPPSPP and the Conservation Area. The existing dirt track that separates the CPPSPP from the Conservation Area does not present an impediment to fauna transiting between the parcels and given the infrequent use expected for the emergency access road, most fauna would be able to move between parcels as they do today. This is a significant reduction in impact compared to Englewood Avenue under the Proposed Project and the 40-Foot Wide Englewood Avenue Alternative. An impact to the tree canopies would exist as with the Proposed Project as the new emergency access road would prevent the tree canopies from intermingling, however the impact would be lessened due to the reduction in width of the roadbed for this alternative compared with the Proposed Project.

Fewer trees are over six inches at dbh would be impacted under this alternative, 140, compared with 319 trees under the Proposed Project. Approximately one acre, or 4.5 percent of potential boneset habitat, would be additionally removed by the construction of Englewood Avenue. The Proposed Project would remove approximately 2.2 acres or 10.3 percent of potential boneset habitat through habitat loss and/or direct removal of individual plants.

The primary traffic implication of this Shortened Englewood Avenue Alternative is that Englewood Avenue would not serve "through" traffic between Arthur Kill Road and Veterans Road West. The potential traffic impacts associated with this alternative were assessed by reassigning the year 2020 project-generated vehicle trips during each of the four analysis peak hours (i.e., weekday AM, weekday midday, weekday PM, and Saturday midday) in accordance with the access scheme under this alternative, as described above. The projected diversion of portions of the east-west traffic using Sharrotts Road to the

full-length Englewood Avenue under the Proposed Project would also not occur under this alternative. The elimination of Englewood as an east-west connection would lead to the concentration of future traffic on existing roads.

Under the Shortened Englewood Avenue Alternative, traffic impacts were identified at the following intersections:

- Allentown Lane-Veterans Road West/Arthur Kill Road
- Richmond Valley Road/Arthur Kill Road
- Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp
- Veterans Road West/Tyrellan Avenue
- Boscombe Avenue/Outerbridge Crossing Ramps
- Boscombe Avenue/Tyrellan Avenue
- Englewood Avenue/Veterans Road West
- Englewood Avenue/Veterans Road East
- Veterans Road East-Drumgoole Road West/Bloomingdale Road
- Pleasant Plains Avenue-Amboy Road/Bloomingdale Road
- Arthur Kill Road/Bloomingdale Road
- Englewood Avenue/Arthur Kill Road

Transportation improvement measures were then investigated to identify those that mitigate the potential significant traffic impacts identified above. Those improvement measures identified for the Proposed Project would generally be the same as under this Alternative, but more unmitigable significant traffic impacts would remain under this Alternative than under the Proposed Project. Unmitigable traffic impacts would remain at the intersections of:

- Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp,
- Boscombe Avenue/Outerbridge Crossing ramps,
- Veterans Road West/Tyrellan Avenue-and
- Englewood Avenue/Arthur Kill Road.

Under this alternative, mobile source impacts within the studied off-site roadway network would change at several locations as discussed above in the traffic section for this alternative. However, the maximum increase in traffic volume at any of the worst-case study intersections selected for CO microscale analysis would be 140 during the worst-case Saturday period at the intersection of Veterans Road West/North Bridge Street-Bricktown Way. Such an increase is less than 5 percent of total intersection volume and would result in negligible differences in microscale CO concentration levels, as compared to those predicted for the Proposed Project. Since the predicted CO levels for the Proposed Project are well below the CO NAAQS, this alternative would not result in significant adverse air quality impacts from mobile source operations.

Mobile source noise impacts would be slightly different as compared to the Future With-Action Condition, given the small fractional change in traffic volume at each studied intersection. It is anticipated that the change in mid-block traffic volume within the studied roadway network would also be small, resulting in an equally small change in noise relative to the level projected under the Future With-Action condition. Therefore, the conclusion that 3-dBA or greater incremental noise would only occur at two noise monitoring locations under the Proposed Project, Sites #4 and #7, would be the same under this alternative.

40-FOOT WIDE ENGLEWOOD AVENUE ALTERNATIVE

This alternative assumes that Englewood Avenue would be mapped and constructed as proposed from Arthur Kill Road east to Veterans Road West. However, east of its current terminus at the un-built Kent Street, Englewood Avenue would taper down to a 40-foot wide roadway. This portion of the proposed Englewood Avenue, extending approximately 1,465 feet west from Kent Street to Veterans Road West, is already mapped to a width of 80 feet. However, under this alternative, the constructed roadway would occupy only 40 feet of the mapped 80-foot width, with one travel lane provided in each direction,

compared to two travel lanes in each direction as under the Proposed Project. The remaining approximately 1,800 feet of Englewood Avenue west of Kent Street that would be mapped and constructed to 80 feet in width as part of the Proposed Project would remain the same under this alternative. This alternative would not continue the 19-foot wide bicycle and pedestrian greenway shown in Figure 1-5, east of Kent Street, which would therefore compromise a goal of the Proposed Project.

The remainder of the proposed developments would be constructed as planned under the Proposed Project. The proposed retail stores, park, senior housing and school would still be constructed by the 2015 and 2020 analysis years within the Development Area. Hence, the findings for the majority of the technical areas analyzed for the Proposed Project would be substantially the same for this alternative, with the exception of Historic and Cultural Resources and Natural Resources.

This alternative would reduce some of the potential significant adverse impacts on natural resources relative to the Proposed Project, within the area where Englewood Avenue is proposed to be extended eastward along the existing mapped portion to Veterans Road West. The development of Englewood Avenue under the Proposed Project would impact approximately 0.07 acres of NYSDEC-regulated wetlands and USACE-jurisdictional wetlands. These wetlands are of greater value because they also coincide with the red-maple sweetgum swamp community. Under this alternative's 40-foot wide roadway, the impacts would be reduced to approximately 0.008 acres. This alternative would still directly impact wildlife that use the area between the CPPSPP and the Conservation Area. Thus the impacts to wildlife within the adjacent Conservation Area and CPPSPP under this alternative would be the same as the Proposed Project. However, fewer trees would be removed under this alternative, approximately 135 surveyed trees over a six-inch dbh, as compared to the expected 319 surveyed trees under the 80-foot wide roadway of the Proposed Project. All of the other noted potential significant adverse impacts to Natural Resources in the remainder of the Development Area would remain and not change under this alternative. However, all of the other noted potential significant adverse impacts to Natural Resources in the remainder of the Development Area would remain under this alternative.

ARTHUR KILL ACCESS ROAD ALTERNATIVE

This alternative assumes that an east-west access road would be constructed along the planned 50-foot wide, 1.95-acre Proposed Utility Access Corridor from Arthur Kill Road through Retail Site "B" and eastward to a connection with Bricktown Way near the southeast corner of Fairview Park. Under the Proposed Project, the Proposed Utility Access Corridor would remain in its general natural state and the roadway would not be constructed. Under this alternative, the access road would be constructed. The remainder of the Development Area would be constructed as planned under the Proposed Project, including Englewood Avenue and all mapping actions.

This alternative has the potential for greater impacts on historic and cultural resources than the Proposed Utility Access Corridor under the Proposed Project. Although all of the development components would still be constructed on the retail, park, senior housing and school sites, this alternative includes the additional construction of an access road. Construction within this parcel has the potential to disturb or destroy a portion of one prehistoric archaeological site (Block 7487, Lot 100), identified in the JMA 1999 Phase IB survey, resulting in potential adverse impacts to archaeological resources. However, the western half of Block 7487, including the access road corridor has not been previously surveyed. The construction of the access road under this alternative could disturb or destroy any such resources in this area. Further research on the potential presence of such resources and designs for this connecting roadway during planning stages would determine whether such impacts would occur and potential ways to avoid or minimize them.

This access road alternative would also alter existing natural resources. This parcel is currently vacant and covered with low-level vegetation, within the Successional Old Field-Variant 1 mapped ecological community. Because of series of grade changes between Retail Site "A" and Arthur Kill Access Road, changes to the surrounding topography would likely be required to construct this alternative. Seven additional trees with a dbh of six inches or more would be removed if this access road were constructed instead of a utility corridor. Construction of the Arthur Kill Access Road would eliminate approximately1.85 acres or 11.4 percent of the open area habitat presently found within the Development Area, which is potentially suitable for boneset habitat, and grading and cut/fill actions necessary to

establish roadway surface and grade would result in changes in topography. If the Arthur Kill Access Road developed under this Alternative is constructed, it is anticipated that up to an additional 0.009 acres of Wetland NB would be impacted, for which additional mitigation would be required by the USACE. Wetland NB is a small emergent wetland.

This alternative would not significantly alter the findings for water and sewer infrastructure from the analysis provided for the Proposed Project. Additional stormwater runoff from the roadway's impervious surfaces would occur, as this area would contain the access roadway with a reasonable worst case of up to approximately 84,770 square feet of new pavement for the access road in the 1.95-acre Proposed Utility Access Corridor area. This would have to be addressed in the overall drainage plans for the Project Area.

With identified transportation improvement measures in place, all potential significant traffic impacts are projected to be mitigated under the Arthur Kill Access Road Alternative, with the exception of those noted at the intersections of:

- Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp; and
- Boscombe Avenue/Outerbridge Crossing ramps.

Under the Arthur Kill Access Road Alternative, traffic impacts were identified at seven signalized intersections during the weekday AM peak hour, at nine signalized intersections during the weekday MD peak hour, at 11 signalized intersections and one unsignalized intersection during the weekday PM peak hour, and at 11 signalized intersections during the Saturday MD peak hour. Under the Proposed Project, traffic impacts were identified at the same seven signalized intersections during the weekday AM peak hour, at the same nine signalized intersections during the weekday MD peak hour, at the same 11 signalized intersections and the same unsignalized intersection during the weekday PM peak hour, and at the same 11 signalized intersections during the Saturday MD peak hour. Those improvement measures identified for the Proposed Project would generally be the same under this alternative. Some additional timing changes (at the intersections of Allentown Lane-Veterans Road West/Arthur Kill Road) that would be required under this alternative but would not be required under the Proposed Project, and some additional phasing changes at the intersection of Veterans Road West/Bricktown Way-Korean War Veterans Parkway Off-Ramp that would be required under the Proposed Project, but that would not be required under this alternative.

NO UNMITIGATED IMPACT ALTERNATIVE

Under this alternative, elements of the Proposed Project would be reduced or eliminated in a manner that would remove the unmitigated impacts of the Proposed Project. The Proposed Project would result in potentially unmitigated impacts on natural resources and on historic and cultural resources, and could result in potentially unmitigated impacts onone or more peak traffic period at the Boscombe Avenue/Outerbridge Crossing ramps intersection in 2015 and 2020, and at the Veterans Road West/Bricktown Way/Korean War Veterans Parkway ramps intersection in 2020.

The Proposed Project in 2020 would potentially result in impacts on fringed boneset, a threatened plant species, by reducing by approximately 76 percent the open field-type habitats within the Development Area where that species is presently found and is generally conducive to its growth. The potential extent of the impact depends on how much of these areas would change through natural succession from open field to more woody habitats not suitable for boneset growth. In order to avoid the boneset areas the senior housing and school sites – would have to be substantially reduced. The school site design concept was based on designs requirements for similar schools within Staten Island, anticipated student enrollment and capacity needs, and applicable zoning and land use regulations. Any substantial reduction in size would likely make these design and construction requirements untenable. Likewise, if the senior housing site were reduced to avoid a reduction in the open field-type habitat that presently covers over half of that parcel, that project component would not achieve the project's goals and objectives due to a substantial reduction in units.

Development of the Englewood Avenue segment between the CPPSPP and the Conservation Area in 2020 would result in a number of significant impacts on wetlands, flora and fauna within and between those two natural areas. While the types of potential mitigation measures presented in **Chapter 4** could reduce these impacts substantially, elements of these wetland and natural resource impacts would remain

under both the Proposed Project's 80-foot wide roadway design, the 40-foot wide alternative, and the Shortened Englewood Avenue alternative discussed in this chapter. All alternatives discussed in Chapter 3 would require some bifurcation of habitat other than the No-Action Alternative. At a minimum, emergency access requirement from Veterans Road West is necessary to achieve construction of the school and senior housing components of the Proposed Project.

5. MITIGATION MEASURES

The preceding sections discuss the potential for significant adverse environmental impacts resulting from the proposed Charleston Mixed-Use Development Project. Such potential impacts were identified in the areas of historic and cultural resources, natural resources, and transportation. Measures have been examined to minimize or eliminate these anticipated impacts. These mitigation measures are discussed below.

HISTORIC AND CULTURAL RESOURCES

Specific plans are under preparation for the development of Retail Site "A" and for the proposed Fairview Park. Construction on these parcels has the potential to disturb or destroy other prehistoric archaeological sites and areas that possess archaeological potential that have never been surveyed. These resources and proposed mitigation strategies are noted below:

- ***Fairview Park***. Two sites with historic and cultural resources have been identified within the current location of the proposed Fairview Park: *Fairview Prehistoric Site (NYS Site A08501.002815)* and *Balthasar Kreischer Estate (Fairview) Ruins (NYS Site A08501.002814)*. To avoid impacts on these resources, the proposed Fairview Park has been designed to minimize the potential for adverse impacts to these identified archaeological sites. In the northwest portion of the proposed park where these sites are located, the Fairview Park plan would retain the existing walking trails with minimal changes to any surrounding areas. While the park would include playing fields and other active reaction facilities, none of them would be located in this area, avoiding major grading and topographic changes that could result in impacts to these resources. With this resource-avoidance design, combined with careful attention to the presence of those resources during construction of other aspects of the park, adverse impacts to these resources due to the proposed park would be avoided.
- ***Retail Site "A".*** A prehistoric site was located during the Phase IB survey atop a prominent knoll in the east-central portion of the current Project Area where Retail Site "A" would be developed. To mitigate the loss of portions or components of this prehistoric site, further archaeological investigation will be required to be undertaken in the parkland and on Retail Site "A" prior to construction or any ground disturbing activities. A Scope of Work for archaeological field testing will be prepared and submitted to the NYCLPC for review and approval prior to any ground disturbance. The exact protocol to be used for excavation, resource recovery and documentation would be defined in consultation with the NYCLPC prior to the initiation of work, all of which would occur prior to any construction activities in that portion of the Retail Site "A" parcel. Remedial measures, which could include Phase 1B testing and, if needed as determined by NYCLPC based on the results of the Phase IB testing, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and, if appropriate, OPRHP, will be required to be undertaken by the developer through the provisions the Contract of Sale between the City and the developer(s).

Further archaeological investigation will be required to be undertaken in the parkland and on Retail Site "A" (limited to the area identified in the quadrant as C4-MCB-1) prior to construction or ground disturbing activities. A Scope of Work for archaeological field testing will be prepared and submitted to the New York City Landmarks Preservation Commission (NYCLPC) for review and approval. Remedial measures, including Phase 1B testing, and if needed as determined by NYCLPC based upon the results of the Phase 1B testing, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and, if necessary, OPRHP, will be required to be undertaken by the developer(s) through the provisions of a contract for sale or lease, or other legally binding agreement between NYCEDC or the City and the developer(s).

The other components of the Proposed Project; Englewood Avenue, the school and the senior housing, would not be developed until 2020 and no specific plans exist at present. Consequently, the full potential for these Proposed Project components to result in significant adverse impacts on identified historic or prehistoric resources is not yet known. The potential cultural resources of concern are:

- ***Englewood Avenue.*** In addition to the known prehistoric "*Site A7-MCB-1"* It is possible that remains of prehistoric occupation are present elsewhere in this 80-foot wide linear corridor. Given the density of prehistoric site locations already identified for this portion of Staten Island, it is possible that other intact prehistoric resources are present.
- ***Retail Site "B".*** *Block 7494: Lots 8, 90, 95, 97, and 183 - Retail Site "B" (Features associated with occupation by Shea or Beckman families. Remnants of prehistoric occupation)* and *Block 7487, Lot 100 – Retail Site "B"*. Block 7487(some areas within the existing sewer easement line running have not been previously surveyed).
- ***Senior Housing Site.*** *Fairview Prehistoric Site (NYS Site A08501.002815) and Balthasar Kreischer Estate (Fairview) Ruins,* as discussed under Year 2015 above.

At this time, there are no specific development proposals for the Senior Housing Site or Retail Site "B" and future developers will be selected pursuant to a RFP process. Further archaeological investigation will be required to be undertaken by the developer(s) after selection. For all developments in the Project Area to be completed by the year 2020, remedial measures, including Phase 1B testing, and if needed as determined by NYCLPC based upon the results of the Phase 1B testing, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and, if necessary, OPRHP, will be required to be undertaken by the developer(s) through the provisions of a contract for sale or lease, or other legally binding agreement between NYCEDC or the City and the developer(s).

With these types of mitigation strategies, adverse impacts to these resources could potentially be avoided or substantially minimized.

NATURAL RESOURCES

The FEIS presents mitigation strategies for impacts to wetlands and habitats that are summarized below.

WETLANDS

It is anticipated that the wetlands impacted by the Proposed Project would require mitigation by the USACE and NYSDEC. Federal Executive Order (EO) 11990 Protection of Wetlands, issued in 1977, is an overall wetlands policy for all agencies managing federal lands, sponsoring federal projects, or providing federal funds to state or local projects. EO 11990 requires that, when a construction project involves wetlands, a finding must be made by the federal agency that there is no practicable alternative to such construction, and that the Proposed Project includes all practicable measures to minimize impacts on wetlands resulting from such use. It requires federal agencies to follow avoidance, mitigation, and preservation procedures, with public input, before proposing new construction in wetlands, and generally requires the minimization of activities in wetlands and coordination with United States Army Corps of Engineers (USACE) regarding wetlands mitigation. If federal funding would be utilized for the Proposed Project, the Proposed Project would need to comply with EO 11990. Wetlands are also regulated under Section 404(b)(1) of the Clean Water Act).

Permits from the USACE for work in and around regulated wetlands would be required; the permits would require compensatory mitigation. Compensatory mitigation is the restoration, establishment, enhancement, or in certain circumstances preservation of aquatic resources to offset a Proposed Project's unavoidable adverse impacts after all appropriate and practicable avoidance and minimization has been achieved (33 Code of Federal Regulations [CFR] Part 332.2). The principal objectives of compensatory mitigation are to replace the functions and values lost from the impacted aquatic resources, and to comply with the goal of no net loss of wetlands.

The NYSDEC prioritizes wetland mitigation options differently than do the USACE and the U.S. Environmental Protection Agency ("USEPA"). NYSDEC guidelines (NYSDEC, 1993) specify that

preferably compensatory mitigation should be on site. Off-site mitigation, although generally not preferred, is acceptable in some circumstances; notably, when on-site mitigation is not possible or desirable. NYSDEC guidelines on compensatory mitigation specify that the preferred order of compensatory mitigation is wetland restoration, then creation, and finally enhancement. Also, New York State wetland laws do not allow the use of in-lieu fee programs.

The NYSDEC typically regulates a 100-foot adjacent area to NYSDEC-regulated freshwater wetlands. Mitigation is required for impacts to wetlands and the regulated adjacent area; although, impacts to adjacent areas typically require mitigation of a smaller magnitude than wetlands.

NYSDEC-regulated Freshwater Wetlands within the Development Area are Class II Wetlands. As indicted in Part 663: Freshwater Wetlands Permit Requirements "A permit shall be issued only if it is determined that the proposed activity satisfies a pressing economic or social need that clearly outweighs the loss of or detriment to the benefit(s) of the Class II wetland." Thus, the purpose and need for impacts to these wetlands would need to be demonstrated and the project sponsor would need to demonstrate that the loss of functions and value would be minimized and mitigation performed.

Required Mitigation

It is anticipated that approximately 0.07 acres of NYSDEC- and USACE-regulated wetlands and 0.9 acres of NYSDEC-regulated adjacent areas would require mitigation. Therefore, it is anticipated that the USACE and NYSDEC would require mitigation for the wetlands impacted by the Proposed Project.

If compensatory mitigation is required, regulatory agencies prefer to have mitigation occur within the same watershed as the impacted wetlands. The ratio of mitigation for regulated wetlands and adjacent areas would be determined in consultation with the regulatory agencies. Currently, the amount of regulated wetlands and adjacent areas that would require mitigation is 0.07 and 0.09 acres, respectively. As noted earlier, other wetlands delineated in the area, may be considered jurisdictional by the USACE. If so, additional wetland mitigation may be required.

In addition to other nearby sites, areas within the 20-acre Conservation Area may provide wetland mitigation opportunities to offset the anticipated impacts to Wetlands B and C in 2020. Once design plans for Englewood Avenue are progressed to a sufficient level of detail in 2020, further ecological studies and consultation with involved regulatory agencies would need to be conducted to determine the suitability of the Conservation Area to provide mitigation opportunities in 2020. Some mitigation opportunities may also exist within the proposed Fairview Park section of the Development Area. In the southern portion of proposed Fairview Park, in the vicinity of Wetland A the land area is of lower elevation than much of the Development Area and it is anticipated that hydrology (e.g., sheet flow, runoff, etc.) could be conveyed to this location. Thus, this area should be examined as a potential candidate for wetland creation on site.

The regulatory agencies require post-mitigation monitoring for created and/or enhanced wetlands. Created and/or enhanced forested wetlands usually require longer mitigation monitoring periods than emergent wetlands.

While the location and width of its right-of-way is defined, the plans for Englewood Avenue within that area, especially between CPPSPP and the Conservation Area, are conceptual in nature and have not yet reached the design phase. As the design plans for the roadway advance in the future, it is anticipated that there will be opportunities to minimize impacts on these wetland resources. Design measures that will be considered here include, but are not limited to, minimizing the disturbance footprint to the greatest extent practicable, using grates when possible to reduce shading, treatment of stormwater discharges etc.

FLORA AND HABITATS

Flora

New York City Local Law 3 of 2010 requires trees in public property under the jurisdiction of the NYCDPR to be mitigated (replaced) if removed. Approximately 208 trees would be impacted by the development of Fairview Park. The total amount of mitigation required will be determined after an evaluation of each tree to be removed is performed. The replacement trees will first be considered at the proposed Fairview Park site and then within the surrounding areas of Staten Island Community District 3.

Habitats

General recommendations presented for the preservation of habitats includes:

- Vernal Pool Habitat Preservation and/or Creation. – Only Wetland B has been identified as a vernal pool habitat meeting all four criteria. Many of the small wetlands on site that will be lost due to construction are small isolated depressions that likely serve as vernal pool habitat only in the late winter and early spring. For any wetland habitats that do not occur within the build footprints, a vegetated buffer should remain in place around them. These areas should have a vegetated buffer around them. Also, during construction appropriate measures would be taken to ensure that existing vernal pools are not directly or indirectly impacted by construction activities.
- Bird Conservation Area – The NYSDEC designated CPPSPP Bird Conservation Area could be officially be extended to include the approximately 20-acre Conservation Area.
- Invasive and Nuisance Species Removal – restoration programs should include a program for the removal of invasive plants and nuisance species and the reintroduction of native plant species, especially in recently disturbed habitats and along the edges of habitats. Where possible, parcel development will include removal of nuisance and invasive species and inclusion of native and noninvasive species.

The specific mitigation presented in the FEIS was for the use of culverts or other structures underneath Englewood Avenue (portion between CPPSPP and Conservation Area) road surface are recommended to allow for the passage of fauna under the roadway is advisable as part of the eventual design of this roadway. This would also maintain suitable travel ways for organisms between CPPSPP and the Conservation Area. Plans for underpasses, wildlife crossings, etc. would be designed in consultation with the appropriate regulatory agencies. A nuisance and invasive species removal program could be targeted along the edges of Englewood Avenue.

THREATENED AND ENDANGERED SPECIES

There is a small colony of Torrey mountain mint growing along the edge of an expanding wood line in the southeast portion of Retail "A." Boneset plants were observed in the southern and central portion of the Development Area. Also, another 20-30 specimens were observed in the central successional old field. Below are the mitigation options presented in the FEIS to offset the potential impacts to these species.

- **Torrey's mountain mint –** Given the success of the Bricktown Plan's propagation, it is proposed that a similar propagation program be implemented to mitigate the displacement of the mountain mint colony identified on Retail Site "A." Trans-located stock, soil, cuttings, and seeds from the Retail Site "A" mountain mint colony would be used to propagate these plants at one or more of NYCDPR's, successful outplanting parcels or on other suitable NYCDPR-controlled sites to support the continuation of this plant in the area.
- **Boneset** – Updated field surveys will be performed in advance of the 2020 development sites' construction to determine the extent to which fringed boneset is still present on these sites and the extent to which mitigation would be warranted. If these surveys determine that open field habitats are still present within the Development Area and that they would be displaced by the Proposed Project's continued development, a portion of these habitats would be maintained as mitigation for the projected loss of these open field habitat areas due to the Proposed Project's 2020 development sites.

TRANSPORTATION

TRAFFIC

The Proposed Project would result in significant adverse traffic impacts at a number of locations in the traffic study area. The major overall finding of the traffic mitigation analysis is that the majority of the 24 intersections analyzed would either not be significantly impacted or could be mitigated with readily implementable traffic improvement measures, including signal timing and phasing changes, regulation changes to gain or widen a travel lane at key intersections, and lane restriping. These measures represent some of the standard traffic capacity improvements that are typically implemented by NYCDOT.

Based on the identified potential traffic impacts, transportation improvements are recommended at the following intersections for one or more of the four weekday or Saturday peak periods under the year 2015 analysis:

- Allentown Lane-Veterans Road West/Arthur Kill Road;
- Richmond Valley Road/Arthur Kill Road;
- Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp;
- Veterans Road West/Tyrellan Avenue;
- Boscombe Avenue/Outerbridge Crossing Ramps;
- Boscombe Avenue/Tyrellan Avenue;
- Englewood Avenue/Veterans Road West;
- Englewood Avenue/Veterans Road East;
- Veterans Road East-Drumgoole Road West/Bloomingdale Road; and
- Pleasant Plains Avenue-Amboy Road/Bloomingdale Road.

Based on the identified potential traffic impacts, transportation improvements are recommended at the following intersections for one or more of the four weekday or Saturday peak periods under the year 2020 analysis:

- Allentown Lane-Veterans Road West/Arthur Kill Road;
- Richmond Valley Road/Arthur Kill Road;
- Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp;
- Veterans Road West/Tyrellan Avenue;
- Boscombe Avenue/Outerbridge Crossing Ramps;
- Boscombe Avenue /Tyrellan Avenue;
- Englewood Avenue/Veterans Road West;
- Englewood Avenue/Veterans Road East;
- Veterans Road East-Drumgoole Road West/Bloomingdale Road;
- Pleasant Plains Avenue-Amboy Road/Bloomingdale Road;
- Arthur Kill Road/Bloomingdale Road; and
- Englewood Avenue/Arthur Kill Road.

The improvement measures are designed to accommodate the future traffic volumes projected to occur on the roadway network during critical periods of peak traffic activity under the future with the Proposed Project condition; specifically, during the peak 15-minute periods, by both the 2015 and 2020 years.

Each of the highway network-related improvements that involve the widening of streets or highway facilities (such as components of the mitigation measures proposed for Boscombe Avenue/Outerbridge Crossing Ramps and Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp) described in **Chapter 4.0, Mitigation**, beyond the operational improvements which are under NYCDOT jurisdiction, would require a collaborative review process between NYCDOT and the New York State Department of Transportation (NYSDOT). Final design for construction of those measures which do not fall under the jurisdiction of NYCDOT will be further reviewed by NYSDOT closer to the time of construction. These measures represent preferred improvements that would benefit the overall traffic network. If these mitigation measures are modified or rejected by NYCDOT or NYSDOT, significant adverse impacts identified above may be unmitigated

6. UNAVOIDABLE ADVERSE IMPACTS

As described above, a number of the potential impacts identified for the Proposed Project could be mitigated. However, in some cases, impacts from the Proposed Project would not be fully mitigated. Most of the potential significant adverse impacts of the Proposed Project could be avoided or mitigated by implementing a number of measures. However, in a few instances, no practicable mitigation was identified to fully mitigate significant adverse impacts, and there are no reasonable alternatives to the Proposed Project that would meet its purpose and need, eliminate its impacts, and not cause other or similar significant adverse impacts.

HISTORIC AND CULTURAL RESOURCES

The Proposed Project would potentially disturb or destroy portions of the following archaeological site located within the Development Area, identified through prior archaeological survey work. These activities could result in potential adverse impacts to the following archaeological resources:

- ***Site C4-MCB-1 (NYS Site A08501.002766) – Retail Site "A".*** This prehistoric site was located during the Phase IB survey atop a prominent knoll in the east-central portion of the current Project Area. According to project mapping, this site is located in Block 7452, Lot 75, proposed Retail Site "A". The potential resources within this site are considered to be archaeologically significant. Further archaeological investigation will be needed on this site.***Fairview Prehistoric Site (NYS Site A08501.002815) – Senior Housing Site Area.*** This prehistoric site was located in 1999 during JMA Phase II excavations at the Balthasar Kreischer Estate Ruins Site. Most of the prehistoric material was recovered from a small, 60-foot-by-40-foot area to the southeast of the main house foundation remains, but prehistoric cultural material was also recovered from test units to the northwest and east of the main house foundation. The limited testing conducted to date suggests that at least portions of the prehistoric site retain sufficient integrity to contribute important archaeological data.

- ***Balthasar Kreischer Estate (Fairview) Ruins (NYS Site A08501.002814) – Senior Housing Site Area.*** JMA conducted Phase II fieldwork at the Kreischer Estate in 1999. JMA documented 18 features with visible surface remains across the estate ruins. The features included the main house foundation, an extensive complex of foundation remains, intact archaeological features (such as possible cisterns and wells), landscape features (such as summer house/gazebo remains, pond, and driveways), and mid-Late-19th century and Early-20th century sheet middens (ceramic and glass shards, etc.).

- ***Site A7-MCB-1 (NYS Site A08501.002767) – Englewood Avenue Area.*** This prehistoric site was located during the Phase IB survey on a small, pronounced knoll or hill with a flat summit just south of the proposed route of Englewood Avenue, within the existing Conservation Area. The Proposed Project would include no development component at this site, which lies within the existing Conservation Area. However, completion of Englewood Avenue along the northern boundary of the Conservation Area has the potential to adversely impact this prehistoric site.

- ***Englewood Avenue Extension and Pedestrian/Bicycle Path.*** Given the density of the prehistoric site locations already identified for this portion of Staten Island, including the site located less than 50 feet south of Englewood Avenue in the Conservation Area, it is possible that intact prehistoric resources are present.

- ***Retail Site "B" and Proposed Utility Corridor.*** Completion of Retail Site "B" may disturb or destroy potential archaeological resources. It is possible that early features associated with the tenure of the Shea family (ca.1853-1887) are present on this property. It is also possible that remains of prehistoric occupation are present on this parcel. Such features could include wells, cisterns, or privies, in addition to foundation remains of the house itself. It is equally possible that features associated with the tenure of the Beckman family (ca.1887-ca.1917) are present. It is also possible that remains of prehistoric occupation are present on this parcel. Given the number of previously identified prehistoric sites and traces of occupation noted for the southwestern portion

of Staten Island, including those located within the Project Area itself, it is quite possible that intact prehistoric resources are located on this parcel.

- ***Block 7487, Lot 100 – Retail Site "B".*** Block 7487, Lot 100 lies in the southwestern portion of the current Project Area. However, the portion of Block 7487 that lies to the south of the bus depot and north of Block 7494 and the extant sewer line running along the southern block boundary has not been previously surveyed.
- ***Retail Site "B" and Proposed Utility Access Corridor.*** There are unsurveyed areas of archaeological potential in these sections of the Project Area that may be impacted by development of the Proposed Project. It is possible that remains of prehistoric occupation are present on this parcel.

Further site testing, including Phase 1B assessments would be performed in the future as plans for these project elements advance further in the development process. This would confirm if there are resources in these areas and define ways for proposed future developments to minimize or avoid impacts to those resources.

NATURAL RESOURCES

Construction of the Proposed Project by the year 2020 would remove a substantial amount of habitat and natural resources within the Development Area. Approximately 0.4 acres of wetlands and 50.1 acres of upland habitats would be removed by the 2020 analysis year. Of the impacted wetlands acres, only approximately 0.07 acres are jurisdictional by the USACE and regulated by NYSDEC. Also, a total of approximately 2,013 trees would be removed as a result of the total construction and development from the Proposed Project, consisting of 538 trees impacted by the developments under the 2015 year analysis, 1,156 trees impacted by the developments under the 2020 year analysis, and 319 trees impacted by the construction of Englewood Avenue.

Completion of the Proposed Project as a whole by 2020 and in particular the construction of Englewood Avenue would bifurcate remaining undeveloped habitats within the Development Areas from the CPPSPP and the Conservation Area. Although many of the directly impacted habitats are generally successional habitats that are common to New York State, the proposed uses within the Development Area would have further indirect impacts on the preserve and Conservation Area through removal and bifurcation of a large contiguous vegetated buffer area.

Torrey's mountain mint, an endangered species, was identified in the proposed parking lot near the southern border of Retail Site "A," in a polygon approximately three feet wide and 100 feet long, located within a bed of a man-made drainage channel. Review of the NYNHP website indicates "*There are three existing populations in New York but all of them are small or highly threatened"* and *"A recently discovered population on Staten Island was almost destroyed by the construction of a shopping center*."[3] NYNHP conservation and management strategies for the species identify that "open areas need to be maintained without directly damaging existing plants." The shopping center location noted by NYNHP is the Bricktown Centre retail complex located directly south of the Project Area (See **Figure 2.8-12** for existing mountain mint locations). The Bricktown Centre preserved mountain mint area is located approximately 700 feet south of the Retail Site "A" mountain mint and is outside of the Project Area. [4] However, the proximity of the Retail Site "A" and Bricktown Centre mint colonies suggests they are both part of the larger Charleston site in Staten Island identified by the NYNHP.[5]

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[3] http://www.acris.nynhp.org/report.php?id=9144

[4] Internal morphological research recently completed for the Greenbelt Native Plant Nursery suggests that the mountain mint within the Bricktown Centre preserve area, previously considered to be Torrey's mountain mint, may be Whorled mountain mint (*Pycnanthemum.verticillatum*), which is also an endangered species. (Kelly/Native Plant Nursery, March 2013). The two plant species are closely related to one another. Accordingly, it is anticipated that similar methodologies would be utilized for preserving, cultivating or propagating either type of mint.

[5] New York State Register and Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR), Section 193.3 defines "site" as "a colony or colonies of plants separated from other colonies by at least one-half mile." http://www.dec.ny.gov/regs/15522.html

The development of Retail Site "A" would remove a colony of mountain mint from the Charleston site, which would be considered a significant adverse impact. However, the Bricktown Centre colony along Veterans Road West within the Charleston site would remain preserved in its protected habitat area..

Taken in whole, the cumulative impacts of the 2020 development would have significant adverse impacts on the flora and fauna of CPPSPP and the Conservation Area and habitats and threatened and endangered species within the Development Area. The impacts to the CPPSPP may be viewed as significant, and removal of most of the potential boneset habitat and the Torrey mountain mint in the Development Area may be viewed as substantial.

TRANSPORTATION

As further discussed in **Chapter 4.0**, each of the highway network-related improvements that involve the widening of streets or high-way facilities (such as components of the mitigation measures proposed for Boscombe Avenue/Outerbridge Crossing Ramps and Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp) described in the mitigation chapter beyond the operational improvements which are under NYCDOT jurisdiction would require a collaborative review process between NYCDOT and the New York State Department of Transportation (NYSDOT). Final design for construction of those measures that do not fall under the jurisdiction of NYCDOT will be further reviewed by NYSDOT closer to the time of construction. These measures represent preferred improvements that would benefit the overall traffic network. If these mitigation measures are modified or rejected by NYCDOT or NYSDOT, significant adverse impacts may be unmitigated. Thus, it is expected that all traffic mitigations will be fully mitigated; however, if NYCDOT or NYSDOT rejects the highway network-related improvements only partial mitigation measures could be achieved solely by modifications to NYCDOT facilities. The partial mitigation measures have been reviewed by NYCDOT and could be implemented on their facilities. With only the partial mitigation measures in place, significant adverse impacts would be unavoidable at two intersections.

7. GROWTH-INDUCING ASPECTS OF THE PROPOSED PROJECT

The term "growth-inducing aspects" generally refers to the potential for a proposed action to trigger additional development in areas outside of the project site or sites (i.e., directly affected area) that would not experience such development without the proposed action. The *CEQR Technical Manual* indicates that an analysis of the growth-inducing aspects of a proposed action is appropriate when an action:

- Adds substantial new land use, new residents, or new employment that could induce additional development of a similar kind or of support uses, such as retail establishments to serve new residential uses; and/or
- Introduces or greatly expands infrastructure capacity.

The purpose of the Proposed Project is to comprehensively plan and develop the beneficial use of approximately 93 acres of property in the Charleston neighborhood of Staten Island. The proposed development of the area is intended to achieve the following goals: (i) accommodate community needs including recreational, housing, cultural, educational, and commercial facilities; (ii) preserve and link open space; (iii) expand local employment options, and (iv) improve east-west connections in the surrounding traffic network, including pedestrian and bicycle facilities. The Proposed Project will address a rising demand for additional retail, cultural, educational, and recreational facilities by providing, a new school, a new public library, a mix of retail and office uses, new recreational facilities and public open spaces and opportunities for housing for seniors and in Charleston.

The Proposed Project is not expected to induce additional notable growth outside of the Development Area. The Project Area consists of a mixed-use neighborhood, and many new separately planned commercial projects are already under construction. This growth is anticipated to occur independently of the Proposed Project and the new uses introduced by the Proposed Project would not trigger additional development outside of the Development Area.

8. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

These resources include the materials used in construction; energy in the form of gas and electricity consumed during construction and operation of the project-generated development; and the human effort (time and labor) required to develop, construct, and operate various components of the project-generated development. They are considered irretrievably committed because their reuse for some purpose other than the project-generated development would be highly unlikely.

Both natural and man-made resources would be expended and utilized under the Proposed Project. The irretrievable and irreversible commitment of resources involves the construction materials and labor associated with the site developments within the Development Area, including mechanical equipment and energy committed to assist construction workers. The development of various sites within the Development Area with new mixed-use development, including new retail stores, housing, parkland and a new public school, constitutes a long-term commitment of land resources, thereby rendering land use for other purposes highly unlikely in the foreseeable future. These commitments of resources and materials are weighed against the goals of the Proposed Project of activating the Development Area by permitting the proposed site developments, including new senior housing and parkland, while enhancing the area's commercial base. Furthermore, by introducing a limited residential population and creating a demand for retail uses, the Proposed Project seeks to attract and retain a variety of commercial tenants that will contribute to the city's economy for decades to come.

Additionally, public services (e.g. police and fire protection, public school seats, etc.) necessitated in connection to service the area also constitute resource commitments that might otherwise be used for other programs or projects. However, the Proposed Project would generate a significant amount of additional gross and net tax revenues to the City of New York which is projected to far exceed public funds needed to provide such services.

9. NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

This Notice of Completion for the Final Environmental Impact Statement for the Charleston Mixed-Use Development Project has been prepared in accordance with Article 8 of the New York State Environmental Conservation Law.

10. CONTACT OFFICE

Requests for copies of this FEIS should be forwarded to the contact office, Mayor's Office of Environmental Coordination, 100 Gold Street – 2nd Floor, New York, NY 10007, or by email at rkulikowski@cityhall.nyc.gov.

The FEIS is also available on the New York City Mayor's Office of Environmental Coordination website: http://www.nyc.gov/oec

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Assistant to the Mayor

August 30, 2013
Date