EXECUTIVE SUMMARY

I. INTRODUCTION

The New York City Economic Development Corporation ("NYCEDC"), on behalf of the City of New York, is proposing 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 66-acre 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 and existing private streets to be mapped, constitute the "Project Area". The Project Area encompasses approximately 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 area is divided into the following development parcels:

- Parkland: The NYC Department of Parks and Recreation ("NYCDPR") would ~~map and~~ develop an approximately 23-acre park site (Fairview Park) with areas for both active and passive recreation. Adjacent to this 23-acre new park that would be mapped, the existing approximately 20-acre Conservation Area 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 a ~~public~~ street 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 Pproposed U~~u~~tility Access corridor and existing private easement areas which divides the site). If ~~the proposed utility corridor~~this 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: ~~The NYCEDC would offer the~~This approximately 9.1-acre site would be offered for senior housing ~~in the~~pursuant to a future RFP.
- Public School: The NYC School Construction Authority ("NYCSCA") would construct a combined elementary/middle school on the approximately 5.9-acre site.
- Street Mappings and Constructions: Englewood Avenue would be mapped and constructed across the northern border of the Project Area (approximately 6 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 currently serve the adjacent Bricktown Centre shopping center, would be mapped as ~~public~~ streets (approximately 6.4 acres).
- Proposed Utility Access Corridor: An approximately 50-foot wide ~~access and u~~Utility Access C~~c~~orridor, running 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).

The elements of the Proposed Project are being assessed for two analysis years. Construction of Retail Site "A" and Fairview Park and the mapping of Bricktown Way and Tyrellan Avenue are expected to be completed by 2015. Construction of the remainder of the project elements, including the developments of

Retail Site "B," the school, the senior housing, and the Englewood Avenue road construction are expected to be completed by 2020.

II. PURPOSE AND NEED FOR PROPOSED PROJECT

The City of New York is seeking to comprehensively plan for the beneficial use of approximately 66 acres of undeveloped 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 where feasible; and (iii) expand local employment options.[1] The Proposed Project would provide new recreational facilities and public open spaces, a new school, a new public library, a mix of new neighborhood and medium- to large-format retail uses, and opportunities for housing for senior citizens.

The mapping of Fairview Park, the creation of new recreational facilities, the construction of the combined elementary/middle school, the creation of a new public library branch, and the preservation of natural lands, would all be implemented for the use of the surrounding community. Staten Island residents and elected officials have strongly expressed a desire for active recreation facilities in this area and for preservation of unique natural features such as wetlands, existing topography, and densely forested areas. This project would also map as parkland approximately 20 acres (including a New York State Department of Environmental Conservation mapped wetland, an oak-hickory forest, and a red maple-sweetgum swamp) contiguous to the CPPSPP and previously designated as an environmental Cconservation Aarea in connection with the development of Bricktown Centre. The proposed park mapping would ensure that this large expanse of relatively untouched, vegetated land is preserved. In addition, the park mapping would provide protection for the historic foundation remains of Fairview, Balthasar Kreischer's 19th century mansion, which are located in the western portion of the proposed park (see **Chapter 2.6**).

The proposed housing for seniors, as well as the new school, would address the changing demographics of the borough as a whole. As indicated by the New York City Department of City Planning ("NYCDCP"), by 2030 the borough is projected to grow by 65,000 residents and 25,000 households[2] – a projection similar to the region's growth rate. Staten Island's growth will be driven by seniors and young adults – 90 percent of Staten Island's population growth will come as a result of existing residents living longer and having larger families. The borough is projected to go from the City's youngest (in 1970) to its oldest in 2030, based on the median age of the borough's population. By 2035, the borough is projected to gain 35,000 seniors (65+ years) and 17,000 young adults (20-34 years).

The currently undeveloped Project Area is appropriate for new retail development since it is surrounded by a variety of large and small format retail developments, including the Bricktown Centre, South Shore Commons, and other proposed retail projects. The area benefits from the availability of regional access roadways including the West Shore Expressway, the Korean War Veterans Parkway, and Richmond Parkway that connect the site to points to the north and east, while the Outerbridge Crossing connects the Charleston area to New Jersey. The area is also served by public transportation and is conveniently located near growing residential neighborhoods such as Richmond Valley, Tottenville, Woodrow, and Pleasant Plains. The proposed retail would enhance this growing retail node and would further fulfill the community's demand for additional commercial goods and services.

In addition, the Proposed Project would provide an efficient traffic network, with the expansion of Englewood Avenue from its current terminus eastward to Veterans Road West, providing access westward to Arthur Kill Road. By 2020, Englewood Avenue would be mapped and constructed, within an approximately 80-foot wide right-of-way across the northern border of the Project Area from Veterans Road West on the east to Arthur Kill Road on the west. The fully-constructed length of Englewood Avenue would be approximately 3,265 feet and would include bicycle and pedestrian facilities

[1] http://www.nyc.gov/html/dcp/pdf/west_shore/wsfinalreport.pdf
[2] http://www.nyc.gov/html/dcp/pdf/west_shore/wsfinalreportchap1.pdf

(approximately 6 acres, including both currently mapped portions and portions to be mapped). A portion of this proposed roadway, extending approximately 1,465 feet west from Veterans Road West, is already mapped to a width of 80 feet. The remaining approximately 1,800 feet of this approximately 3,265-foot roadway is being mapped as part of the Proposed Project.

III. DESCRIPTION OF THE PROPOSED PROJECT

The entire Project Area is vacant, undeveloped and covered with vegetation. The amount of vegetation varies across the Project Area, with the majority of it covered by trees and other vegetation. The majority of the Project Area is undisturbed.

Under the Proposed Project, the Development Area would be redeveloped with new residential, commercial, community facility and recreational uses, along with the mapping and construction of new streets. More information on the individual components of the Proposed Project is provided below.

Parkland

The preliminary site concept places the proposed approximately 23-acre Fairview Park within the western and central portion of the Development Area. To the east of the Development Area is the existing approximately 20-acre Conservation Area (north and east of Bricktown Centre), which would also be mapped as park. Overall, the Proposed Project would map approximately 43 acres as parkland – the proposed Fairview Park and the existing Conservation Area -- that would both serve the surrounding communities.

Fairview Park is expected to be developed by the year 2015. A passive trail system (an unpaved system generally following existing paths through these areas) would be located within the western portions of the proposed park. This portion of the park includes building foundations and other elements of the former Kreischer Estate site, and these potential archaeological resources limit the amount of disturbance within that sensitive area. East of the passive trail system would be a proposed multi-purpose field, followed by a park comfort station, tennis courts and junior baseball fields. Overall, the trail system and a parking lot for park users would be the only park facilities planned in the western and southern portions of the park, except for the multi-purpose field, leaving existing natural areas in those sections undisturbed. The park would include 60 parking spaces (in a separate lot) for visitors in the southeast corner of the park. An additional 30 parking spaces would also be provided for shared-use between the retail stores and park visitors on the northwest corner of Retails Site "A."

Retail Site "A"

Retail Site "A" would be centrally located in the Project Area, north of Bricktown Way and south of the park amenities. A private developer has been selected to develop this approximately 11-acre site with up to approximately 195,000 square feet of commercial space for medium- and large-format retail stores along with approximately 633 parking spaces (which includes 30 spaces to be shared with proposed park visitors, as described above). It is expected that a series of five separate one and two-story buildings would be built on around the western, northern and eastern boundaries of that development site, with the majority of surface parking provided in the middle and southern sections. In addition to the retail stores, one of the five buildings would be a new library branch. The library building would consist of up to 15,000 square feet of floor area, within a new two-story building near the site's northern boundary. To comply with zoning requirements, 15 spaces would be provided on Retail Site "A" for library parking. The spaces would be shared with adjoining retail uses. The new public library would be contained within a new separate tax lot. The public library would be adjacent to two proposed access points into the proposed park. The entire area for the development of Retail Site "A," including the library, would be rezoned to a C4-1 district to facilitate the planned retail development. Retail Site "A" would be accessed from Bricktown Way and Tyrellan Avenue, both privately-owned streets that would mapped as streets as part of the Proposed Project by the year 2015. Additionally, the City would be provided with an easement for

unrestricted public vehicular, pedestrian and bicycle access over these streets to access Retail Site "A," the library and the park.

Retail Site "B"

By 2020, a series of new one-story retail stores would be built on Retail Site "B" along the east side of Arthur Kill Road. This site consists of approximately 7.3 acres and would be privately developed in the future, with an anticipated 90,000 square feet of neighborhood retail space and 300 parking spaces. An existing private utility easement from Arthur Kill Road extends eastward through the center of Retail Site "B." It serves Bricktown Centre and divides this development site into northern and southern halves. The entire area for the development of Retail Site "B," including the portion of the easement within that site, would be rezoned to a C4-1 district to facilitate the planned retail development. In Staten Island, residential use in a C4-1 district is not as-of-right, but is allowed by CPC "special permit". The proposed commercial buildings on Retail Site "B" are expected to be constructed per C4-1 bulk regulations.

Senior Housing

The approximately 9.1-acre site for senior housing would be located along the northern border of the Development Area, adjacent to the proposed Englewood Avenue. The proposed senior housing component, which would be built by 2020, is expected to include single-family detached residences, a community center, and multi-family buildings along Englewood Avenue. The senior housing complex would include a total of 162 senior housing units, consisting of 80 affordable multi-family rental units, 82 for-sale detached units, and a community center, along with 195 parking spaces.

Public School

The proposed public school would be situated on an approximately 5.9-acre site east of the senior housing site. It is expected that the NYCSCA would construct a combined elementary/middle school with an approximately 750-seat capacity for kindergarten through 8th grade, along with an estimated 60 parking spaces. Based on plans for similar schools in the City, the proposed school building is expected to contain approximately 100,000 square feet of floor area and be constructed as a single two-story building adjacent to an open school yard. The school, projected to be built by 2020, would be located directly north of the proposed park that would be operational before the year 2020. It is expected that the school would utilize portions of the adjacent park for some of its recreational programs during school hours.

Street Mapping

By the 2015 analysis year, the existing privately-owned Bricktown Way and the portion of privately-owned Tyrellan Avenue within the Project Area (totaling approximately 6.4 acres) would be mapped.

By 2020, Englewood Avenue would be mapped and constructed, within an approximately 80-foot wide right-of-way across the northern border of the Project Area from Veterans Road West on the east to Arthur Kill Road on the west. The fully-constructed length of Englewood Avenue would be approximately 3,265 feet and would include bicycle and pedestrian facilities (approximately 6 acres). A portion of this proposed roadway, extending approximately 1,465 feet west from Veterans Road West, is already mapped to a width of 80 feet. The remaining approximately 1,800 feet of this approximately 3,265-foot roadway is being mapped as part of the Proposed Project. Capital funds have not yet been identified for the construction of Englewood Avenue. Prior to any future roadway design or construction work, funding sources would need to be identified.

Within the existing 80-foot wide mapped portion of Englewood Avenue, an area approximately 45 feet deep of the mapped roadway bed, extending for approximately 1,488 feet westward from Veterans Road West, is owned by the State of New York. In order to construct Englewood Avenue to the full existing mapped width of 80 feet, a transfer of ownership of this area from the State to the City is required. There is no current acquisition agreement with the State; however, the EIS conservatively assesses a worst

case scenario that includes the build-out of Englewood Avenue at the full 80-foot width. Before the roadway is constructed, the terms of transfer would need to be negotiated.

In addition, to facilitate possible future east-west access and/or utility connections, an approximately 50-foot wide parcel would be created (a Proposed Utility Access Corridor), extending approximately 1,820 feet along the southern boundary of Fairview Park from Arthur Kill Road to Bricktown Way. Unless such east-west connections were made in the future, this roughly 1.9-acre parcel (except for the segment within Retail Site "B") would remain in its present natural state.

IV. REQUIRED PUBLIC ACTIONS AND APPROVALS

To facilitate the individual project elements in the Project Area, the following discretionary public actions would be required:

- Zoning Map amendments to rezone the existing M1-1 to R3-2 for the housing and school sites and C4-1 for the retail sites (see **Figures 1-3, 1-3a** and **1-3b** in **Chapter 1.0**), including the rezoning of two privately-owned lots (Block 7494, lots 1 and 88) that will not be redeveloped by the proposed project (see **Chapter 2.1**). 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 City Planning Commission ("CPC") related to the Special South Richmond Development District ("SRD") site plan approval, and reduction in required parking within C4-1 zoning districts;
- Certification pursuant to New York City Zoning Resolution ("ZR") Section 36-596 from the CPC to waive the requirement for cross access connections between retail sites (between 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 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 an easement for public unrestricted 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 Kent Street at a width of 80 feet, including authorization to acquire all or portions of privately owned property within the proposed bed of the mapped street (see **Figure 1-4** in **Chapter 1.0**), and the negotiated transfer of ownership from New York State to City of a portion of land within the existing mapped bed of the proposed roadway from New York State (the negotiated transfer of ownership from New York State may require further state environmental review);
- Mapping as streets of the privately-owned Bricktown Way to 85 feet and privately-owned Tyrellan Avenue to 70 feet within the Project Area ~~as streets~~;
- Extinguish Third Street, Pembine Street, Bayne Avenue, Goethals Avenue, Burr Avenue, Claude Street, Alice Street, Baxter Street, Beaver Street, and Cady Avenue in their entirety.. These 10 record streets are currently established at a width of 50 feet, respectively, but are not built.
- Extinguish Coke Street south of Englewood Avenue. Coke Street is a record street that is currently established at a width of 50 feet but is not built.
- Replacement of impacted trees (see **Chapter 2.8**) 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; and

- New York State Department of Environmental Conservation ("NYSDEC") and~~/or~~ United States Army Corps of Engineers ("USACE") permits: In order to implement the proposed plan, USACE and~~/or~~ NYSDEC permits may be required for building wetlands and within buffer zones surrounding wetland determined to be NYSDEC regulated/USACE jurisdictional wetlands (see **Chapter 2.8**).

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 applicable environmental reviews. 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. These additional actions would be subject to additional environmental review as necessary. The negotiated transfer of ownership of a portion of land within the existing mapped bed of the proposed ~~roadway~~ Englewood Avenue from New York State may require further state environmental review.

V. SUMMARY OF TECHNICAL ASSESSMENTS

A. Land Use, Zoning & Public Policy

The 2012 *CEQR Technical Manual* states that an assessment of land use, zoning, and public policy is appropriate if a proposed project has the potential to result in a significant change in land use or zoning, or would substantially affect regulations or public policies governing land uses. A land use analysis characterizes the uses and development trends in the study area and assesses whether a proposed project is compatible with, or may affect, land use conditions. An assessment of zoning is performed in conjunction with a land use analysis when a proposed project would change the zoning on the site or result in the loss or change of a particular land use. An assessment of public policy typically accompanies the land use and zoning assessments to address the compatibility of the project with relevant public policies.

Land Use

Year 2015 Analysis

As further reviewed in **Chapter 2.1**, the land use changes, although significant over the Development Area, 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 CPPSPP, the 260-acre nature preserve located north of Englewood Avenue.

The proposed retail uses on Retail 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 the year of 2020 would also be fully consistent with the general land use patterns of the study area. The proposed retail use on Retail Site "B,"

as well as the retail use on Site "A" that would already exist by the year 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 nearby 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 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 actions include creating an R3-2 district that would encompass the senior housing and school sites, and is 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," as well as two adjacent private lots to facilitate the planned retail development. Both of these zoning changes would occur by the 2015 year, though some developments would follow by 2020 (see **Chapter 2.1**).

The Proposed Project includes the rezoning of two privately-owned lots (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). These two private properties are being rezoned at the request of NYCDCP to provide a regular and rational zoning district boundary. 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. Under the proposed C4-1 zoning, Lot 88 could be developed with a 1,000 square foot retail use and 7 required parking spaces, and Lot 1 could be developed with approximately 3,500 square feet of retail use and 23 parking spaces. However, the sites could also be developed under the existing M1-1 regulations with lower requirements for accessory parking spaces allowing for higher densities on each site. The likely development under the existing zoning regulations would double on Lot 88 to 2,000 square feet with a parking requirement of 7 spaces, and on Lot 1 approximately 5,500 square feet of retail could be developed with about 18 required parking spaces. These sites would be rezoned but are not part of the area to be developed and are not included in the Development Area. As the existing M1-1 zoning allows for a higher intensity of development the change of zoning to C4-1 will not induce additional new development on these sites, but rather they would continue to be occupied with their current uses as pre-existing non-conforming uses in the new C4-1 zone, which will encompasses a larger area around these sites to promote the long-term redevelopment of this area with commercial uses.

In addition, CPC Authorizations and Certifications related to the SRD special district and C4-1 Zoning District are part of the Proposed Action. 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.

Public Policy

The proposed actions would support and further the objectives of applicable public policies, including WRP / Coastal Zone Management and PlaNYC 2030, as further demonstrated in **Chapter 2.1**. The proposed actions would not result in any significant adverse public policy impacts. The proposed actions would be in broad accordance with Staten Island CB3'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.

B. Socioeconomic Conditions

Socioeconomic changes may occur when a project directly or indirectly changes any of these elements. The *CEQR Technical Manual* states that socioeconomic assessments should be conducted if a project may be reasonably expected to create socioeconomic changes within the area affected by a project that would not be expected to occur without the project. Direct displacement of residents or businesses is the involuntary displacement of residents or businesses from a site or sites directly affected by the proposed project. The extent of direct displacement is generally known, as are the exact businesses, residents and workers affected. Direct displacement would occur if an occupied site was redeveloped or if an action on one site limited the existing use of another site. Indirect displacement is the involuntary displacement of residents, businesses, or employees that results from a change in socioeconomic conditions created by the proposed project. Some projects may also impact the operation of a major industry or commercial operation, but not directly or indirectly displace businesses. If a proposed project may impact a specific industry, an economic impact assessment may be necessary.

As further stated in **Chapter 2.2**, the analysis concludes that the Proposed Project would not result in any significant adverse socioeconomic impacts. 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. Only four of these 22 properties are privately owned. The other 18 properties are currently owned by the City of New York and are within the Development Area.

For most of the properties, only minor front yard portions 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. 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 displacement and no further analyses are required

There are also a few commercial properties abutting the existing built portion of Englewood Avenue that may be affected by its mapping and reconstruction. Portions of these properties adjacent to the roadway may be modified by the widening and realignment of Englewood Avenue, however, total displacement of these commercial uses would not occur. Although businesses on four properties (Block 7380, Lot 51; Block 7465, Lot 1; Block 7464, Lot 1; and on Block 7465, Lot 6) would lose a portion of their parking/front landscaping, no businesses would need to be relocated as part of the Proposed Project.

The 162 age-restricted residential units added by the Proposed Project would be less than the 200-unit CEQR threshold requiring further assessment for potential indirect residential displacement. The proposed affordable multi-family and senior housing units would not raise market rents in the area.

The assessment of the potential for indirect business displacement due to increased rents and retail market saturation showed that indirect displacement of businesses due to increased rents is unlikely. This was based on the very low retail vacancy rate near the project site and the fact that 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 identified three-mile trade 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.

C. Community Facilities and Services

As defined in the *CEQR Technical Manual*, community facilities are public or publicly funded schools, libraries, child care centers, health care facilities and fire and police protection. A project can affect facility services when it physically displaces or alters a community facility or causes a change in population that may affect the services delivered by a community facility, as might happen if a facility is already over-utilized, or if a project is large enough to create a demand that could not be met by the existing facility.

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 preliminary screening threshold for a police and fire services assessment is met if the proposed project would lead to a direct effect on police and fire services, which is generally considered to be a project that affects the physical operation of, or access to and from, a police or fire facility. The Proposed Project would not directly affect physical operations of any local police or fire facility, and it would not result in a significantly large residential population that would affect emergency services in the area. In addition, any new structures developed as part of the Proposed Project would be subject to the requirements of the City's Fire and Building Codes, and would not add to the ~~Fire Department's~~FDNY's workload. In addition, a detailed assessment of service delivery for health care is generally conducted only if a proposed project would affect the physical operations of, or access to and from, a hospital or a public health clinic, or where a proposed project would create a sizeable new neighborhood where none existed before. 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.

According to the *CEQR Technical Manual*, potential impacts on libraries may result from the displacement or alteration of an existing library or a large increase in user/resident population. By the year 2015, the components of the Project Area that would be developed include the proposed park and retail stores on Retail Site "A", along with a new public library branch. By the year 2020, the Proposed Project would generate only 162 new residential units as part of the senior housing complex, which is less than the 653 unit threshold stated the *CEQR Technical Manual*. As such, no further analysis is warranted and significant adverse library impacts are not expected.

The proposed residential component of the project will be targeted to seniors and, as such, would not introduce or induce school-age children or potential day care eligible populations, and 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. However, further analysis is not warranted as the residential components of the Proposed Project would not generate any children, and significant adverse impacts to public schools and child care centers are not expected.

D. Open Space

Open space is defined as publicly or privately owned land that is publicly accessible and operates, functions, or is available for leisure, play, or sport, or set aside for the protection and/or enhancement of the natural environment. According to the *CEQR Technical Manual*, an analysis of open space is conducted to determine whether or not a proposed project would have a direct impact resulting from the elimination or alteration of open space and/or an indirect impact resulting from overtaxing available open space.

The entire Development Area is vacant and undeveloped. The amount of vegetation varies across the area, with the majority of the area covered by 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, an assessment of direct effects is not warranted.

Year 2015

The Proposed Project would not generate any residential units by the year 2015. As such, the indirect assessment focus is on non-residential workers by the year 2015. As part of the Proposed Project by the year 2015, the NYCDPR would develop a new 23-acre park, which would not generate any additional park employment, as the NYCDPR expects to maintain the proposed park areas with existing staff. However, adjacent to the park, the 11-acre site of Retail Site "A" is expected to be developed by a private developer with up to approximately 195,000 square feet of commercial space for medium- and large-format retail stores. Assuming an average of one employee per 400 square feet of general retail floor area (2.5 employees per 1,000 square feet of floor area)[3], it is estimated that the development of Retail Site "A" would introduce approximately 488 employees. This site will also include an approximately 15,000-square-foot branch of the New York Public Library. For the public library, the same rate used for general retail of an average of one employee per 400 square feet of floor area was applied. As such, the library is expected to employ in approximately 38 persons. Therefore, by the year 2015, the Proposed Project has the potential to generate approximately 526 new employees to the Project Area, as further discussed in **Chapter 2.4**.

The addition of the new 23-acre park would increase parkland in this study area from approximately 63.5 acres (all passive open space) to approximately 86.5 acres. Of the new 23 acres within Fairview Park, approximately 7.5 acres would be active open space and 15.5 acre would be passive open space. As such, the passive open space in the area would increase from approximately 63.5 acres to approximately 79 acres of passive open space.

The analysis of this non-residential study area (one-quarter mile) focuses on passive open spaces that may be used by workers and students in the area. The passive open space ratio for this non-residential study area is projected to decrease from approximately 74 acres of passive open space per 1,000 workers under the Future No-Action Condition to approximately 57.1 acres per 1,000 workers of passive open space under this Future With-Action Condition, an approximately 22.9 percent decrease. Although the number of workers in the area would increase by approximately 526 new workers on Retail Site "A" and within the public library, the new 23-acre park (with 15.5 acres of passive open space) would add a substantial amount of new open space to the study area, somewhat offsetting the 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 this Future With-Action Condition by the year 2015, the passive open space ratio for this non-residential study area of approximately 57.1 acres of open space per 1,000 workers will continue to greatly exceed the City's guideline of 0.15 acres per 1,000 workers, and further assessment is not warranted.

Year 2020

By the year 2020, the remainder of the Development Area would be redeveloped with additional retail space, a public school and senior housing, along with the mapping and construction of Englewood Avenue. The NYCEDC will offer an approximately 9.1-acre site for senior housing in the future for up to 162 units, consisting of 80 affordable multi-family rental units and 82 age-restricted for-sale detached units. It is expected that each senior housing unit would have an estimated occupancy of one to two adults. For conservative analysis purposes, two adults per senior housing unit were used. This would add an estimated 324 new residents to the open space study area by the year 2020 of the Proposed

[3] Based on rates used in the Environmental Impact Statements for the Willets Point and 161st Street rezoning projects.

Project. The addition of approximately 324 new residents to the area from the development of the senior housing site would increase the population of this one-half mile study area from 5,125 residents under the Future No-Action Condition to approximately 5,449 residents under the Future With-Action Condition by the year 2020, as discussed in **Chapter 2.4**.

Within the one-half mile study area, the addition of the new 23-acre park would increase parkland from approximately 203.7 acres (currently all passive open space) to approximately 226.7 acres of total open space, including both passive and active open space. The open space ratio in this 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 this Future With-Action Condition, an approximately 4.7 percent increase. The open space ratio under this Future With-Action Condition of approximately 41.6 acres of open space per 1,000 residents would continue to be well above the Citywide median community district open space ratio of 1.5 acres of open space per 1,000 residents and the City's planning goal of 2.5 acres of open space per 1,000 residents, and includes the additional active open space being provided in Fairview Park.

As part of the Proposed Project, by the year 2020, the remainder of the Development Area would be redeveloped with additional retail space, a public school and senior housing, along with the mapping and construction of Englewood Avenue. Along Arthur Kill Road, Retail Site "B" would also be privately developed in the future with an anticipated 90,000 square feet of neighborhood retail space. Assuming an average of one employee per 400 square feet of general retail floor area, it is estimated that the development of Retail Site "B" would introduce approximately 225 employees. Assuming an average of 0.04 employees per dwelling unit of residential use, it is expected that the senior housing would generate approximately seven employees, such as superintendents, doormen, handymen, porters, etc. East of the housing, a combined elementary/middle school would be constructed with a 750-seat capacity for kindergarten through 8th grade. An estimated 58 teachers and staff are expected for the combined elementary/middle school. Therefore, by the year 2020, the Proposed Project has the potential to generate approximately 290 additional employees to the Project Area, which would be added along with the 526 employees expected by the year 2015, for a total of 816 workers as a result of the Proposed Project.

The addition of the new 23-acre park would increase parkland in this one-quarter mile study area from approximately 77.5 acres (all passive open space) to approximately 100.5 total acres. Of the new 23 acres, approximately 7.5 acres would be active open space and 15.5 acre would be passive open space. As such, the passive open space in this one-quarter mile study area would increase from approximately 77.5 acres to approximately 93 acres of passive open space. The passive open space ratio for this non-residential study area is projected to decrease from approximately ~~42.1~~41.4 acres of passive open space per 1,000 workers under the year 2020 Future No-Action Condition to approximately ~~35~~ 34.6 acres per 1,000 workers of passive open space under this Future With-Action Condition, an approximate ~~16.8~~16.4 percent decrease. Under this Future With-Action Condition, the passive open space ratio for this non-residential study area of approximately ~~35~~ 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 further assessment is not warranted.

E. Shadows

The *CEQR Technical Manual* defines a shadow as the condition that results when a building or other built structure blocks the sunlight that would otherwise directly reach a certain area, space or feature. An incremental shadow is the additional or new shadow that a building or other built structure resulting from a proposed project would cast on a sunlight-sensitive resource during the year. Shadows can have impacts on publicly accessible open spaces or natural features by adversely affecting their use and important landscaping and vegetation. The *CEQR Technical Manual* states that a shadow assessment considers projects that result in new shadows long enough to reach a sunlight-sensitive resource. Therefore, a shadow assessment is required only if the project would either result in new structures or additions to existing structures, including the addition of rooftop mechanical equipment, that (a) would be 50 feet or more in height; or, (b) located adjacent to, or across the street from, a sunlight-sensitive

resource.

Existing open space resources are located in the immediate area. North of the Development Area, across Englewood Avenue, is CPPSPP. East of the Development Area is the approximately 20-acre Conservation Area, which is proposed to be mapped as parkland and remain in its natural state under the Proposed Project. Therefore, the Proposed Project could result in an increase in shadows falling on nearby sun-sensitive resources, and further shadow screening assessments were performed, as detailed in **Chapter 2.5**.

The shadow assessment begins with a preliminary screening assessment to ascertain whether a project's shadow may reach any sunlight-sensitive resources at any time of the year. If the screening assessment does not eliminate this possibility, a detailed shadow analysis is generally required to determine the extent and duration of the incremental shadow resulting from the project. The effects of shadows on a sunlight-sensitive resource are site-specific; therefore, as noted in the *CEQR Technical Manual*, the screening assessment and subsequent shadow assessment (when required) are performed for each of the sites where a new structure could be built as a result of a project (e.g. for projected and potential development sites).

The Preliminary Screening Assessment is divided into Tier 1, 2 and 3 Screening Assessments. The first step in the preliminary shadow screening assessment is a Tier 1 Screening Assessment. A base map is developed that illustrates the proposed site location in relationship to the sunlight-sensitive resources. After the base map is developed, the longest shadow study area is determined, encompassing the site of the proposed project(s) and a perimeter around the site's boundary with a radius equal to the longest shadow that could be cast by the proposed structure, which is 4.3 times the height of the structure that occurs on December 21st, the winter solstice. To find the longest shadow length, the maximum height of the structure (including any rooftop mechanical equipment) resulting from the proposed project building(s) is multiplied by the factor of 4.3.

A shadow radius of 4.3 times the maximum expected heights of buildings over the Development Area under the Proposed Project was performed, for both the 2015 and 2020 analyses years. The results of the Tier 1 Screening Assessment also show 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 all of buildings under the Proposed Project by 2020, and thus further study under the next screening level is 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 CPPSPP situated north of the Englewood Avenue corridor. Furthermore, the shadows would also not reach the nearest designated historic resource, the Kreischer House. As such, further shadow analyses screening under Tiers 2 and 3, and detailed shadow assessments, are not warranted, as all of the building components of the Proposed Project would not cast any new shadows that would reach the nearest sunlight-sensitive resources. Therefore, the Proposed Project would not result in any significant adverse shadow impacts under the 2015 or the 2020 year analysis.

F. Historic Resources

Historic and cultural resources include both archaeological and historic architectural resources, and are defined in the *CEQR Technical Manual* as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. This includes resources listed in the State/National Registers of Historic Places ("S/NRHP"), resources determined eligible for listing in the S/NRHP by the New York State Office of Parks, Recreation, and Historic Preservation ("OPRHP"), landmarks designated or under consideration for designation by the New York City Landmarks Preservation Commission ("NYCLPC"), National Historic Landmarks ("NHL"), National Monuments, and previously unidentified resources that meet the S/NRHP and/or NYCLPC eligibility requirements.

The *CEQR Technical Manual* recommends that a historic and cultural resources impacts assessment be conducted for projects that would result in ground disturbance, new construction, physical alterations to

existing structures, and/or change in scale, visual prominence or visual context of buildings, structures, or landscape features, among others.

Archaeological Resources

Construction of the ~~Charleston Mixed-Use Development Project~~Development Area has the potential to disturb or destroy four archaeological sites ~~located within these sections of 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 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.
- Balthasar Kreischer Estate (Fairview) Ruins (NYS Site A08501.002814). Phase II fieldwork conducted at the Kreischer Estate in 1999 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~~ Conservation ~~area~~Area. However, completion of Englewood Avenue and the pedestrian/bicycle path along the northern boundary of the ~~conservation~~ Conservation ~~area~~ 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 18*).* Development of the remaining sections of the ~~proposed~~ 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. Completion of 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.

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. Construction activities associated with completion of the Englewood Avenue extension have the potential to 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 and the pedestrian/bicycle 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. At this time, there are no specific development proposals for ~~Site~~ Retail Site "B" and the Senior Housing site and future developers will be selected pursuant to a ~~RPP~~ RFP process. Further archaeological investigation will be required to be undertaken by the developer(s) after selection. A Scope of Work for archaeological field testing will be prepared and submitted to NYCLPC for review and approval. For all developments in the Project Area, 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~~/or~~, if appropriate, OPRHP, will be required to be undertaken by the developer(s) through provisions in the ~~Contract~~ contract of ~~Sale~~ sale or lease, or other legally binding agreement between NYCEDC or ~~the~~ the City 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 ~~H~~historic ~~A~~architectural ~~R~~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 have no significant adverse impacts to historic architectural resources by the year 2015 or year 2020.

G. Urban Design and Visual Resources

The *CEQR Technical Manual* defines urban design as the totality of components that may affect a pedestrian's experience of public space. As noted in the *CEQR Technical Manual*, the following elements play an important role in that experience: streets, buildings, visual resources, open space, natural features, and wind. In an urban design assessment, the *CEQR Technical Manual* suggests consideration of whether and how a project may change the experience of a pedestrian in the project area. The assessment focuses on the components of a proposed project that may have the potential to alter the

arrangement, appearance, and functionality of the built environment. In general, an assessment of urban design is needed when the project may have effects on one or more of the elements that contribute to the pedestrian experience described above. The *CEQR Technical Manual* also notes that there is no need to conduct an urban design analysis if a proposed project would be constructed within existing zoning envelopes, and would not result in physical changes beyond the bulk and form permitted "as-of-right." However, as the Proposed Project and subsequent development within the rezoning area will result in physical changes to the proposed rezoning area beyond the bulk and form currently permitted as-of-right within the existing zone, it has the potential to result in development that could alter the arrangement, appearance, and functionality of the built environment, and therefore, change the experience of a pedestrian in the Project Area. As such, further assessment is warranted.

The Proposed Project would result in changes to urban design elements within the Project Area, which is currently vacant and undeveloped. The Proposed Project would promote new development, construct a new public street (Englewood Avenue), and map as parkland an existing Conservation Area located in Charleston, Staten Island.

Year 2015

The Proposed Project would not result in any of the conditions that would merit further detailed assessment of urban design and visual resources. While the Proposed Project would result in the construction of new developments by the 2015 analysis year, the proposed park structures and buildings of Retail Site "A" 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 (east and south) as part of the adjacent Bricktown Centre. The proposed buildings would also adhere to and comply with zoning requirements of the new zoning districts, and the retail structures would be constructed "as-of-right" to the C4-1 zone. In addition, the Proposed Project would not alter or result in substantial changes to the built environment of a historic district, or effect the components of an historic building that contribute to the resource's historic significance by the 2015 analysis year.

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 development sites along Veterans Road West would be altered, but not significantly impacted. The development of these sites would also not block any views to the waterfront or along the area roadways, as the proposed developments would be confined to each respected site. The proposed construction of the new park would create a new open space and visual resource for the area, helping to connect the public realm to the public park.

Therefore, the Proposed Project is not expected to result in any significant adverse urban design or visual resource related impacts by the 2015 analysis year.

Year 2020

The full build out of the Proposed Project by the year 2020 would not result in any of the conditions that would merit further detailed assessment of urban design and visual resources. While the Proposed Project would result in the construction of the remaining new developments by the 2020 analysis year, the proposed structures and buildings of Retail Site "B," the senior housing and the proposed school 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 of the Project Area, and additional residences are located west of the Project Area along Arthur Kill Road. The proposed buildings would also adhere to and comply with zoning requirements of the new zoning districts, and the retail structures would be constructed "as-of-right" to the proposed C4-1 zone, while the proposed residential and school buildings may require further discretionary and public review process once rezoned to R3-2 zone. 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 effect 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 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 the area roadways, as the proposed developments would be confined to each respected site.

The full build out of the Proposed Project also includes the mapping and construction of Englewood Avenue along the northern border of the Project Area, which would alter the street network and would include bicycle and pedestrian facilities, as well as allow for new views along Englewood Avenue towards both Arthur Kill Road and the West Shore Expressway, adjacent to CPPSPP. The new mapping and street construction would not, however, result in changes to any urban design features that would significantly alter the context or approach of any natural or built visual resource.

Therefore, the Proposed Project is not expected to result in any significant adverse urban design or visual resource related impacts by the 2020 analysis year.

H. Natural Resources

The *CEQR Technical Manual* defines natural resources as areas "capable of providing habitat for plant and animal species or capable of functioning to support environmental systems and maintain the City's environmental balance." In order to document the natural resources in the Development Area and the proposed construction limits of Englewood Avenue, faunal surveys were conducted from June through November, and compared to previous four-season surveys. Vegetation on site was documented at 20 established study plots, through a tree survey, and a threatened and endangered species search. A wetland delineation was also performed.

In the past decade there have been several projects that have removed habitats adjacent to the Development Area. In 2005, development of the Bricktown Centre removed 43 acres of vegetated habitats to the south and east of the Development Area, and~~. In 2009,~~ the MTA Bus Annex in 2009, which removed approximately 9 acres along the Development Area's western boundary. The organisms in the Development Area and adjacent vegetated parcels have had to adapt to this reduction in available habitat.

Year 2015

The proposed removal of an additional 20.5 acres in 2015, would place further stress on the habitats within the Development Area and adjacent vegetated parcels. After the build out, the habitats north of Retail Site "A" would form a vegetated corridor between the large habitat complex of the CPPSPP and Conservation Area and Fairview Park and remaining vegetated Development Area. This vegetated corridor would allow for organisms to transit east and west within vegetated habitats. However, build out of ~~the~~ Retail Site "A" would allow anthropogenic encroachment and disturbances (e.g., noise, light, etc.) to impact the center of the Development Area, which now is a low-noise environment. This development would make portions of the Development Area an unattractive habitat to organisms that are intolerant of urban disturbances (e.g., forest birds better suited to larger continuous wooded areas). However, it should be mentioned again that during the fauna surveys, many of the species observed within the Development Area were those common to suburban environments (e.g., squirrels, raccoons).

Within portions of Fairview Park and Retail Site "A" the habitats are largely successional, and are heavily influenced by the presence of vines. The impacted wetlands in that area are very sparsely vegetated shallow depressions within on-site trails. It is unlikely the same organisms that utilize the large wetlands in the CPPSPP and Conservation Area utilize the small isolated wetlands within Retail Site "A" due to the slopes, dense upland vegetation and distance that separate them. In total, approximately 0.1 acres of wetlands in the Retail Site "A" site that likely serve as vernal pools will be removed and would represent an impact. However, the parkland would preserve approximately 0.1 acres of wetlands, including wetland

A, which is one of the largest wetlands in the Development Area and was previously identified as a habitat for sensitive insect species.

The ~~implementation~~ development of Retail Site "A" would remove ~~one of three remaining populations of~~ Torrey's ~~M~~mountain ~~M~~mint plants ~~in the State of New York~~ and approximately 10~~.4~~ percent of available boneset habitat in the ~~d~~Development ~~a~~Area. The removal of ~~the~~ Torrey's ~~M~~mountain ~~M~~mint would be a significant adverse impact. ~~Future mitigation efforts would look to create wetlands and suitable habitat for the growth of endangered species within the western portions of the proposed Fairview Park.~~

Year 2020

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 0.1 acre is ~~expected to be~~ deemed to be 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.

As described previously, bonesets were observed growing in the open fields throughout the Development Area. Completion of the Proposed Project by the year 2020 year would remove 17.3 acres or 78.2 percent of available boneset habitat observed in open fields throughout the Development Area, which would represent a significant impact. While successional vegetation patterns within ~~previous mowed areas and~~ open fields within the Development Area were identified in the 2012 survey, continued succession by woody species in these areas could reduce ~~it unclear how much of~~ the identified boneset habitat ~~would remain~~ by 2020 in the absence of the Proposed Project. ~~if woody species were left to continue to establish themselves and grow. The small area where Torrey's Mountain Mint was observed would be removed in 2015.~~

The construction of the proposed Englewood Avenue would result in substantial direct impacts to wildlife that uses the CPPSPP and the Conservation Area. , which together with the Englewood Avenue Corridor comprise a large forested parcel with mature trees~~.~~ A key component of the CPPSPP's southern boundary is the low-noise environment provided by the buffering effect of the Conservation Area. Construction and operation of an 80-foot wide roadway such as ~~a city street (i.e., the~~ proposed ~~future~~ Englewood Avenue~~)~~ in this area would bifurcate a valuable habitat and adversely impact fauna within ~~result in a degree of habitat fragmentation and change the character of the habitats along the southern boundary of~~ the CPPSPP.~~—~~. Construction of an 80-foot wide paved roadway, ~~in the absence of appropriate mitigation in its design,~~ would increase the mortality of amphibians, reptiles and small mammals, resulting in their potential decline in this area. ~~It is anticipated that mitigation measures would be employed to provide wildlife the ability to cross under the roadway between the CPPSPP and Conservation Area, thereby reducing some of these impacts of fragmentation~~. This proposed roadway corridor would be impactful to forest birds due to the removal of the undisturbed continuous tree canopy and other disturbances during construction and long-term. Opportunities to minimize impacts to natural resources will be explored through the freshwater wetland permitting process and mitigation ~~measures~~requirements.

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 and removal of most of the potential boneset habitat in the Development Area may be viewed as significant.~~

I. Hazardous Materials

The potential for significant hazardous material impacts can occur when hazardous materials exist at a site and an action would increase pathways for human or environmental exposure to the materials. Hazardous materials are toxic or potentially harmful substances that may be present in soil, groundwater and structures; and are frequently encountered during construction activities in urban areas that have been subject to past disturbance from construction, excavation, and commercial uses. Since there are no existing structures on the Project Area, this hazardous material assessment focuses on evaluating the presence of hazardous materials in soil and groundwater.

Year 2015

A Phase I Environmental Site Assessment ("Phase I ESA") was performed for the Project Area in ~~general~~ accordance with the American Society of Testing and Materials ("ASTM") Standard Practice E 1527-05. Based on the findings of the Phase I ESA (dated October 2012), a Phase II Subsurface Investigative Work Plan (Phase II Work Plan) and Site Specific Health and Safety Plan (HASP) were~~have~~ ~~been~~ prepared and submitted to NYCDEP for review and approval for the proposed parkland and Retail Site "A". ~~The Phase II Work Plan included~~s soil, groundwater, and soil vapor testing at locations distributed ~~across the two sites.~~

A 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 measure would be implemented for the 2015 developments:

- 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 Site Management Plan (SMP) Remedial Action Plan ("RAP"), respectively, to NYCDEP for review and approval. The SMP and 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 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.

- NYCDPR and the developer for Retail Site "A" will submit a Construction Health and Safety Plan ("CHASP") to NYCDEP for review and approval. 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 must 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.

~~If indicated by the results of the testing, a Remedial Action Plan ("RAP") and Site Specific Construction Health and Safety Plan ("CHASP") will be prepared and submitted to NYCDEP for review and approval. Required remediation will be performed in compliance with all federal, state, and local regulations. With the implementation of these measures prior to construction, no significant adverse hazardous material impacts are expected during construction or operation of these sites.~~

~~The Proposed Project would require excavation of soil within these sections of the Development Area, and possibly dewatering of groundwater from excavations depending on the depth and location of the excavations for the park structures and buildings for Retail Site "A." If necessary, the RAP would govern all soil disturbances and would include procedures for handling, stockpiling, testing, transportation, and disposal of excavated materials, including any unexpectedly encountered contaminated soils. If unexpected areas of contamination are discovered during construction, these materials would be removed in accordance with all applicable local, state, and federal regulations. The general debris and junk vehicles observed on-site would be removed and properly disposed of in accordance with applicable requirements.~~

~~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, including preparation of a CHASP prior to construction to include contingency procedures for protecting project workers and the surrounding community from exposure to hazardous materials if encountered, separating and storage of contaminated soils from non-contaminated soils to prevent runoff and public exposure pending testing for disposal, and transporting contaminated soils from the site in covered vehicles and their disposal at a licensed facility with chain-of-custody documentation.~~

Year 2020

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 senior 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 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 ~~NYC~~ 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.

As noted above, if unexpected areas of contamination are discovered during construction, these materials would be removed in accordance with all applicable local, state, and federal regulations. The general debris and junk vehicles observed on-site would be removed and properly disposed of in accordance with applicable requirements.

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, the same preventative and mitigation measures noted in the Year 2015 Analysis above would be undertaken as necessary to protect project workers and the surrounding community from exposure to hazardous materials.

J. Water and Sewer Infrastructure

As further discussed in **Chapter 2.10**, 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

Year 2015

The proposed development by the year 2015 would generate a water supply demand of approximately 86,100 gallons per day (gpd) or 0.09 mgd, which represent less than 0.1 percent of the City's water supply demand. The incremental demand with the Proposed Project by the year 2015 would, therefore, not adversely impact the City's water supply.

Year 2020

By the year 2020 the Proposed Project would generate a water supply demand of approximately 189,400 gpd (0.19 mgd), which still 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.

Wastewater Treatment

Year 2015

In the 2015 Future No-Action condition, wastewater generated from the study area would be treated by the Oakwood Beach WPCP, which would continue to have a SPDES permitted capacity of 40 mgd. The Proposed Project would generate approximately 50,400 gpd of sanitary sewage by the 2015 year. This increase represents 0.42 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 as a result of the Proposed Project, by the 2015 analysis year.

Year 2020

In the 2020 Future No-Action condition, wastewater generated from the study area would continue to be

treated by the Oakwood Beach WPCP, which would still have a SPDES permitted capacity of 40 mgd. The Proposed Project would generate approximately 121,400 gpd of sanitary sewage. This increase represents approximately 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 as a result of the Proposed Project, by the 2020 analysis year.

Stormwater and Sanitary Management

Year 2015

In the future with the Proposed Project by the year 20215, the ~~3,964,450 square foot~~91.01 acre Project Area would have a total of ~~716,552 square feet~~16.45 acres of impervious surface area. Consequently, the stormwater runoff in the Future With-Action condition would be greater than under existing conditions.

The full mapping and construction of Englewood Avenue from Arthur Kill Road to Veterans Road West and the proposed rezoning within the Development Area require an amendment to applicable NYCDEP Drainage Plans to address the effects of these changes on sanitary and stormwater flows and the system changes required to manage them.

Proposed Sanitary Systems

Year 2015

- Retail Site "A" has an agreement with the existing Bricktown Centre to connect directly into the existing 10-inch diameter sanitary sewer within Bricktown Way, which connects to an existing 10-inch sanitary line within the 35-foot wide east-west easement, finally connecting to the existing 18-inch diameter NYCDEP sanitary sewer under Arthur Kill Road. The proposed library branch will also connect to the existing 10-inch diameter sanitary sewer within Bricktown Way. 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 and 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" and its flows (from the planned comfort station) would represent a relatively small portion of the overall sanitary demand from Retail Site "A."

Making the proposed sanitary sewage connections requires demonstration to NYCDEP that the existing private and public system could handle the increased sanitary flows. The NYCDEP would require a formal connection permit approval for this action. Preliminary analyses prepared by the developer of Retail Site "A" and presented to NYCDEP for review indicate the following:

- ~~the~~ The on-site sanitary sewer systems within Bricktown Centre have sufficient capacity to handle the Proposed Project's 2015 sanitary demand (from Retail Site "A," the library and Fairview Park);
- ~~the~~ The 10-inch east-west sanitary line connecting Bricktown Centre's system west to Arthur Kill Road has sufficient capacity to handle the Proposed Project's 2015 sanitary demands plus the wastes generated by other planned projects connecting to that system; and
- ~~the~~ The existing 18-inch diameter NYCDEP sanitary sewer in Arthur Kill Road into which this 10-inch east-west sanitary line connects has adequate capacity to handle the additional sanitary flows generated by the Proposed Project and other planned projects by 2015.

Year 2020

- 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. It is possible, for example, that due to environmental concerns and with no planned developments in that area, the sanitary system in the eastern segment of Englewood Avenue and through the Conservation Area would not be constructed. The eventual design of the sanitary and stormwater sewers in Englewood Avenue and connecting elements off of them will be included in the amended Drainage Plan, as discussed in Section 2.10.4.6.

- Retail Site "B" would connect directly into the existing NYCDEP 18-inch sanitary sewer under Arthur Kill Road. The site's eventual developer could request sanitary sewer connection permits from NYCDEP, either to the existing 10-inch diameter sanitary sewer within the 35-foot wide easement that divides Retail Site "B" or to the 18-inch sewer line in Arthur Kill Road.
- The senior housing component would require design and construction of the planned 10~~"~~inch 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. This sewer line would connect into the existing 10-inch sanitary system within the existing 35-foot east-west sanitary easement between Bricktown Way and Arthur Kill Road.
- The proposed school, to be developed by the NYC School Construction Authority (SCA), 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. However, sewage from the school and ~~and~~ the senior housing site discussed above may be handled by a sanitary line included in the proposed Englewood Avenue that would connect to a north-south collector sewer in Arthur Kill Road. The eventual plans for the handling of these sanitary flows will be defined by the analyses included in the eventually amended drainage plans

All of the proposed methods of handling sanitary sewage from the proposed school and senior housing sites would require sewer connection permits from NYCDEP, which require demonstrations that the existing sanitary system could handle the increased sanitary flows. The NYCDEP would eventually require a formal connection permit approval for each of those sites and for Retail Site "B." If the system could not handle these loads, changes to the sanitary system sufficient to meet those demands would be included within the amended Drainage Plan, as discussed in Section 2.10.4.6 of this chapter. Alterations to the concept presented could include direct drainage into the storm drain sewer under Arthur Kill Road, or other such alterations as required to handle increased sanitary flows.

Proposed Storm Drainage Systems

Year 2015

- Retail Site "A" has an agreement with the existing Bricktown Centre to connect directly into its existing storm drainage system. Special care will be needed to demonstrate the existing storm drainage system could handle the additional storm flows, after accounting for on-site detention, as required under current regulations described in the NYCDEP document "Criteria for Determination of Detention Facility Volume" (June 2002). The eventual end point of this storm drainage would be the large watershed area south of the West Shore Expressway. These connections would need a stormwater connection permit from NYCDEP. The proposed library branch will also connect to 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.

Preliminary drainage analyses prepared by the developer of Retail Site "A" and submitted to NYCDEP indicate that the existing Bricktown Center stormwater management system has adequate capacity with appropriate adjustments to handle those projected stormwater flows not handled on-site from Retail Site "A" (including the proposed library) and Fairview Park.

Year 2020

- 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. As this site is divided into two parcels by the existing 35-foot wide sanitary easement, the future developers of Retail Site "B" could require two drainage sewer connection permits from NYCDEP.

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 within the amended Drainage Plan.

Amended Drainage Plans

The mapping of Englewood Avenue, along with the rezoning of portions of the Development Area, create an obligation to amend the NYCDEP Drainage Plans for this area. There are two applicable Drainage Plans that would be affected by the Proposed Project – the Mill Creek Watershed TD-2 and the Clay Pit Ponds Park Watershed TD-7. NYCEDC ~~will begin~~has begun work on the ADPs for these areas between the Draft and Final EIS. These ADPs must be approved by NYCDEP before (1) any proposed sewer infrastructure can be constructed (e.g., those in portion of the proposed Englewood Avenue or in existing streets) and (2) any sewer connection permits for of these proposed uses can be granted by NYCDEP. The required elements of an ADP are discussed in **Chapter 2.10:** Water and Sewer Infrastructure.

The sanitary sewer needs of Retail Site "A" and Fairview Park, to be completed by 2015, are proposed to be handled by the existing infrastructure presently serving the Bricktown Centre. Stormwater needs for Retail Site "A" will also be met by connecting to existing Bricktown Centre systems, while stormwater flows from Fairview Park not handled by on-site detention systems will be handled through an overflow connection to the City storm sewer system at a location to be determined. Preliminary analyses prepared by the Retail Site "A" developer indicate that the receiving sewer systems have sufficient capacity to receive these additional flows.

K. Solid Waste and Sanitation Services

According to the *CEQR Technical Manual*, a solid waste assessment determines whether a project has the potential to cause a substantial increase in solid waste production that may overburden available waste management capacity, or otherwise be inconsistent with the City's Solid Waste Management Plan ("SWMP"), or with state policy related to the City's integrated solid waste management system. Most projects would not have the potential to generate sufficient waste to overburden the available waste management capacity and would not warrant a detailed solid waste analysis. However, it is recommended by the *CEQR Technical Manual* that the estimated demand for solid waste and services that could be generated by a proposed project be disclosed, if applicable.

The entire Development Area is vacant, undeveloped and covered with vegetation, including the area for the construction of Englewood Avenue. As a result, total solid waste generation in the Development Area is estimated to be zero.

Year 2015

As part of the Proposed Project, by the year 2015, the City would develop a new 23-acre park, which is not expected to generate any additional notable amounts of MSW. Woody waste from the park would be chipped and composted either within the park, or at DSNY's Staten Island Composting Facility Adjacent to the park, the 11-acre site of Retail Site "A" is expected to be developed by a private developer with approximately 195,000 square feet of commercial space for medium- and large-format retail stores. This site would also include an approximately 15,000-square-foot branch of the New York Public Library.

As shown in **Chapter 2.11**, the proposed development of Retail Site "A" and the library by 2015 would create an incremental solid waste generation of approximately 39,002 pounds (19.5 tons) of solid waste per week compared to Future No-Action conditions (the continuance of existing conditions). This would be in addition to solid waste generated during construction, such as clean fill from excavations, and mixed construction and demolition ("C&D") debris, both of which would be managed by private carters and private transfer stations in the region.

Year 2020

By the year 2020, the remainder of the Development Area would be redeveloped with additional retail space, a combined public elementary/intermediate school and senior housing, along with the mapping and construction of Englewood Avenue. By the year 2020, 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 DSNY, and private carters would handle about 29.6 tons per week. Additional solid waste generated during construction, such as excavated material and C&D debris, would be managed by the private carting and waste transfer system in the region, likely including facilities in New Jersey, with adequate capacity for such materials. 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, 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. As such, the Proposed Project would not lead to significant adverse impacts to municipal or commercial solid waste collection and disposal services, nor would the proposed project conflict with or affect the City's SWMP. Therefore, the Proposed Project would not have a significant adverse impact on the City's solid waste and sanitation services.

The *CEQR Technical Manual* requires that any commercial development of more than 100,000 square feet should indicate the location and method of storage of solid waste at the proposed buildings in the EIS. The only commercial element of the Proposed Project going for site plan approval at this time is Retail Site "A," which would include up to approximately 195,000 square feet of retail space, plus an approximately 15,000 square foot library. The conceptual plans for the proposed commercial buildings on that site include specified areas for the storage and pick-up of solid waste and recyclables in the rear of each building, in locations and with screening consistent with zoning and building code requirements.

L. Energy

According to the *CEQR Technical Manual*, an energy analysis focuses on a project's consumption of energy and, where relevant, potential effects on the transmission of energy that may result from the project. The assessment is of the energy sources typically used in a project's operation (HVAC, lighting, etc.) and includes electricity, fossil fuels, etc. According to the *CEQR Technical Manual*, all new structures requiring heating and cooling are subject to the New York City Energy Conservation Code, which reflects state and City energy policy. The incremental demand caused by most projects results in incremental supply, and consequently, an individual project's energy consumption often would not create a significant impact on the availability of energy supply. Consequently, a detailed assessment of energy impacts is typically limited to projects that may significantly affect the transmission or generation of energy. Although significant adverse energy impacts are not anticipated for the great majority of projects analyzed under CEQR, it is recommended that the projected amount of energy consumption during long-term operation be disclosed in the environmental assessment.

The measure of energy used in the analysis is British Thermal Units ("BTUs") per year. One BTU is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit. This unit of measure may be used to compare consumption of energy from different sources (e.g., gasoline, hydroelectric power, etc.), taking into consideration how efficiently those sources are converted to energy. The use of BTU avoids the confusion inherent in comparing different measures of output (e.g., horsepower, kilowatt hours, etc.) and consumption (e.g., tons per day, cubic feet per minute, etc.). In general 1 kilowatt ("KW") is equivalent to 3,413 BTU per hour.

The entire Development Area is vacant, undeveloped and covered with vegetation, including the area for the construction of Englewood Avenue. As a result, total energy consumption in the Development Area is estimated to be zero.

Year 2015

As shown in **Chapter 2.12**, the proposed development of Retail Site "A" by 2015, with up to approximately 195,000 square feet of retail floor area and the proposed approximately 15,000 square foot library, would create an incremental energy demand for approximately 45,939,000 thousand BTUs in annual energy use compared to Future No-Action conditions.

Year 2020

By the year 2020, the Proposed Project would create a total incremental energy demand for approximately 127,729,601 thousand BTUs in annual energy use, with up to approximately 285,000 square feet of retail floor area, as well as the proposed residential and institutional components of the Proposed Project. Compared with the approximately 333 trillion BTUs of energy consumed annually within Con Edison's New York City and Westchester County service area, this incremental increase would be considered a negligible increment. The proposed project would not be an energy intensive facility that would significantly affect the transmission or generation of energy, and would not result in significant adverse impacts to the transmission or generation of energy.

The Proposed Project would comply with the New York State Energy Conservation Construction Code Act, which governs performance requirements of heating, ventilation, and air conditioning systems, as well as the exterior building envelope. The code requires that new and recycled buildings (both public and private) be designed to ensure adequate thermal resistance to heat loss and infiltration. In addition, the code provides requirements for the design and selection of mechanical, electrical, and illumination systems. In compliance with the code, the building's basic designs would incorporate all required energy conservation measures, including meeting the code's requirements relating to energy efficiency and combined thermal transmittance.

The Proposed Project includes a number of commitments that would ensure that energy efficient buildings are constructed. If the Proposed Project requires city capital funding to construct the library, the approximately 15,000 square foot library building would comply 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 Contract of Sale for Retail Site "A" will require the developer to: (i) design and construct to achieve a 10 percent% 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. The 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 could include designing and constructing to achieve Leadership in Energy and Environmental Design ("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. These designs may also include other features aimed at reducing energy consumption and greenhouse gas ("GHG") emissions.

Based on all of the above factors, no potential for significant adverse energy impacts would result from the Pproposed Pproject.

M. Transportation

The Transportation assessment presented in **Chapter 2.13** assesses the Proposed Action's potential impact on traffic, parking, transit, and pedestrian facilities in the vicinity of the Project Area.

Traffic

A study area was selected to encompass those roadways and other facilities most likely to be used by the majority of persons and vehicles traveling to and from the Development Area. The study area is bounded on the north and west by Arthur Kill Road, on the south by Richmond Valley Road and Amboy Road, and on the east by Bloomingdale Road. A total of 24 intersections within the study area were analyzed for potential vehicular traffic during four time periods—the weekday AM (8–9 AM), weekday midday (12–1 PM), weekday PM (5–6 PM), and Saturday midday (12:45–1:45 PM) peak hours.

Five of the 24 study area intersections have one or more existing congested movements in one or more of the analyzed peak hours. Generally, the Saturday peak hour has the most congested locations as a result of shopping activity at the Bricktown Centre. There are two intersections with one or more congested movements during the weekday AM peak hour, zero during the weekday midday peak hour, two during the weekday PM peak hour, and three during the Saturday midday peak hour.

Under year 2015 Future No-Action conditions, 10 of the 24 study area intersections are projected to have one or more congested movements in one or more of the analyzed peak hours. There are four intersections with one or more congested movements during the weekday AM peak hour, two four during the weekday midday peak hour, five during the weekday PM peak hour, and seven ten during the Saturday midday peak hour. Under year 2020 Future No-Action conditions, 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. There are four intersections with one or more congested movements during the weekday AM peak hour, five during the weekday midday peak hour, seven during the weekday PM peak hour, and nine during the Saturday midday peak hour.

Trip generation, distribution and assignment for the Development Area, for both the year 2015 and year 2020 analyses, was estimated using previously approved transportation planning assumptions and assuming the construction of Englewood Avenue eastward to Veterans Road West. Under the 2015 Future With-Action Condition, The analysis indicated that 1112 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 ten 11 during the Saturday midday peak hour. Under the 2020 Future With-Action conditions, 13 1716 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 seven intersections with one or more impacted movements during the weekday AM peak hour, ~~eight~~ nine during the weekday midday peak hour, ~~13~~ ~~12~~11 during the weekday PM peak hour, and ~~14~~ ~~17~~16 during the Saturday midday peak hour. ~~These are discussed in more detail below:~~

Significant traffic impacts have the potential to occur at study intersections with build-out by both the 2015 and the 2020 analysis year. Such impacts, as well as mitigation measures, are briefly reviewed below in Section U and Section X of this Executive Summary, as well as within **Chapter 4.0** and **Chapter 7.0**.

Parking

A parking analysis was conducted to determine the extent to which the projected parking demand associated with the Proposed Project would be accommodated by the proposed on-site parking supply (i.e., the proposed number of on-site parking spaces). The projected hourly parking demand for each land use under the Proposed Project was estimated throughout the course of a 24-hour period for both a typical weekday and a typical weekend day. 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 under both the 2015 analysis year (where the parking supply for Retail Site "A", the library, and the park are shared) and the 2020 analysis year (where the parking supply and demand for the senior housing, school, and Retail Site "B" are independent of one another). 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.

Transit

According to the Metropolitan Transportation Authority bus schedule, the S74, S84, and S78 bus lines serve the Bricktown Centre area, which is adjacent to the proposed development sites. Because the Charleston Mixed-Use Development, as a whole, is not projected to generate more than the CEQR threshold of 200 net peak hour bus trips during any peak hour, a detailed bus transit analysis is not warranted.

The Staten Island Rapid Transit ("SIRT") stops at the Richmond Valley station within walking distance (approximately one mile) of Bricktown Centre. The Richmond Valley station is located west of the Richmond Valley Road/Amboy Road intersection, to the south of the proposed sites. The SIRT is a single-route train that runs north-south between the St. George Ferry Terminal and the Tottenville neighborhood of Staten Island. Because the number of peak hour rail transit trips in the AM and PM peak hours generated by the Charleston Mixed-Use Development, as a whole, would be below the CEQR threshold of 200 trips per hour, a detailed analysis at this station (stairways and entrance control facilities) in the AM and PM peak hours is not warranted as impacts are not expected.

Pedestrians

Currently, pedestrian activity is relatively light at the sidewalks, crosswalks, and street corners in the study area, due in part to limited pedestrian facilities throughout the study area and existing low development densities. Sidewalks are typically provided in the residential neighborhoods and along commercial properties. Bricktown Way and Tyrellan Avenue both provide sidewalks on each side of the road to access the Bricktown Centre development. Sharrotts Road and the existing portion of Englewood Avenue provide pedestrian facilities for residential homes. Sidewalks are also provided along the majority of the other roadways in the surrounding area; however, the majorities of these roadways 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, detailed pedestrian analyses are not warranted for the Proposed Action. However, because the Development Area includes an elementary/middle school, a traffic safety analysis for the students was warranted for any areas that are a "high crash location" (a location with 48 or more total reportable and non-reportable crashes, or five or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available). Crash data compiled by the NYCDOT for the most recent available three-year period (i.e., 2008 to 2010) was reviewed to identify the crash history at the study intersections. The NYCDOT data indicates that there were no fatal crashes at the study intersections during the three-year period between 2008 and 2010. There were also no more than eight total crashes at any one intersection during the three-year period. Therefore, the total numbers of crashes at each study intersection are well below the 48-crash CEQR threshold for a "high-crash location." There were two pedestrian/bicyclist crashes in the study area from 2008 to 2010. Both pedestrian crashes were described as resulting in a "possible injury."[4] 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 schools and elderly housing. Pedestrian and bicycle activity 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 locations (limited pedestrian activity), the potential for vehicle-pedestrian conflicts would be expected to increase substantially with the Proposed Action. To address the increased presence of children, improvements to Englewood Avenue would include school crossing signs and pavement markings at its intersections with Arthur Kill Road and with Veterans Road West, as well as mid-block pavement markings within the vicinity of the school.

N. Air Quality

Air quality analyses were conducted, following the procedures outlined in the *CEQR Technical Manual*, to determine whether the Proposed Project would result in exceedances of ambient air quality standards or health-related guideline values. Potential air quality impacts can be either direct or indirect. Direct impacts can result from pollutant emissions generated by stationary sources, for example emissions from fuel burned for heating. Indirect impacts include emissions from motor vehicles or other mobile sources, or from existing pollutant emission sources affecting the air quality of new sensitive receptors (e.g., residences) introduced by a Proposed Project.

Components ~~Developments~~ of the Proposed Project are expected to be completed over several years. Construction of Retail Site "A" and Fairview Park are expected to be completed by the year 2015, which would include new stationary and mobile sources emitting air pollutants ~~and generate new mobile sources for air quality~~. ~~However, the~~The mobile source air quality analyses of conditions in 2015 presented in **Chapter 2.14** were ~~conducted~~ based on ~~using~~ the worst-case traffic forecasts for the 2015 ~~approach by focusing on potential air quality impacts under the 2020~~ analysis year, as presented in **Chapter 2.13**. ~~by which time all of the components of the proposed development would be constructed and operational, as described below and presented in this chapter.~~

The *CEQR Technical Manual* defines pollutants of concerns based on typical project types and/or land uses surrounding the project. The Proposed Project would include residential and commercial uses that would induce traffic and create new stationary sources related to heating venting and air conditioning systems ("HVAC"). The criteria pollutants of concern related to the Proposed Project are CO, particulate matter ("PM"), SO_2 and NO_2. Since the Development Area is essentially bounded by either vacant land or commercial uses with no major industrial facilities present, other criteria pollutants and air toxics from neighborhood existing sources are not of a concern for the Proposed Project. No major industrial facility and/or large building stack emissions exist within 1,000 feet of the Development Area.

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

The air quality impact analysis was performed following the *CEQR Technical Manual* guidance and procedures to demonstrate compliance with all applicable air quality standards and criteria. The air quality analysis considered stationary source operations (the potential impacts from new fossil fuel-fired HVAC systems induced by the Proposed Project) and mobile source operations (the potential air quality impacts at intersections due to the Proposed Project).

Stationary Sources

The anticipated new stationary sources generated by the Proposed Project would be limited to common indoor HVAC systems that would be installed inside new commercial or residential buildings. Given the large size of the Development Area, buildings were grouped in several clusters and the potential air quality impact from these clusters would be relatively isolated. A 400-foot radius was used to separate these building clusters and the potential HVAC sources were screened using the stationary source screening charts provided in the *CEQR Technical Manual* to determine whether a further microscale analysis would be required for the sources within that 400-foot radius. Because these HVAC systems are typically considered insignificant sources, if the distance from the potential source location to the nearest sensitive receptor is beyond the screening threshold for that HVAC system, no further microscale analysis is considered necessary. For those HVAC systems that fail the screening process described above, a further microscale analysis to evaluate HVAC emissions and dispersion analyses using the USEPA AERMOD model to predict concentration levels is warranted.

It is anticipated that HVAC equipment would use natural gas as part of an effort to reduce both air pollutants and greenhouse gas emissions as compared to fuel oil, a goal of the City as part of *PlaNYC*. 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. In addition to the fuel type, the design of HVAC system will follow common green building design practice. By considering energy conservation in the design process, air emissions would be further reduced.

All exhaust stack locations for the buildings in the study clusters were conservatively assumed to be located near the edge of the building closest to the nearest receptor. The various proposed separated building or building clusters would not exceed the CEQR screening criteria, and as such, there would be no potential significant stationary source air quality impacts. Therefore further analyses of microscale stationary source impacts are not warranted.

Mobile Sources

Traffic data used for the air quality analysis were derived from existing traffic counts, projected future growth in traffic, and other data developed as part of the traffic analysis for the Proposed Project. Traffic data for the future without and with the Proposed Project were used in their respective air quality modeling scenarios. Weekday peak periods (i.e., AM, Mid-day [MD], and PM) and Saturday MD were evaluated. These time periods were selected for the mobile source analysis because these periods produce the maximum anticipated project-generated traffic, particularly at those signalized intersections with the greatest congestion and which therefore have the greatest potential for significant air quality impacts.

Each signalized intersection analyzed for potential peak period impacts was first screened using the thresholds recommended in the *CEQR Technical Manual*. If the screening thresholds were not exceeded at an intersection, no further microscale analysis was warranted. For those intersections that exceeded the screening thresholds, a further ranking to determine the four worst-case intersections was performed. The ranking was made based on worst-case LOS, overall highest Future With-Action traffic volume, and incremental increase in traffic attributable to the Proposed Project. The four worst-case intersections were subject to a further microscale analysis. A CO microscale analysis is typically performed using the CAL3QHC model to determine the wind direction resulting in the maximum concentrations at each receptor following the EPA guidelines. A $PM_{2.5}$ microscale analysis is typically performed with the

CAL3QHCR model, which includes the modeling of hourly concentrations based on hourly traffic data and the most recent five years of hourly meteorological data. In order to compare the analysis results with the applicable NAAQS, cumulative concentration levels were calculated by combining the highest pollutant concentrations as a result of the Proposed Project with background pollutant concentrations.

USEPA's Motor Vehicle Emission Simulator ("MOVES") program was used to predict vehicle CO emission factors. The NYSDOT has supplied model inputs and guidance to handle various factors in using MOVES to predict emissions factors applicable to Richmond County where the project site is located. Given the lack of speed survey data at each analyzed intersection, the free flow travel speed of ten (10) miles per hour ("mph"), as compared to the post speed of 30 mph, was used to predict the CO emission factors using MOVES. The use of this slow speed reflects the traffic delay caused by the congestion at each intersection selected for the CO microscale impact analysis.

In order to predict CO concentrations at the selected intersections with the worst-case traffic conditions, geometric models were developed for the roadway network within a 1,000-foot radius of each selected intersection. The analysis summarizes the CAL3QHC-predicted worst-case CO concentration levels at the selected worst-case intersections during the worst-case period, i.e., the Saturday midday period. For comparison purposes, the levels under the Future No-Action Condition were also predicted. Although the CO concentration levels under the future with the Proposed Project condition would be higher than the Future No-Action Condition, the levels are well below the CO NAAQS. Therefore, the mobile source air quality impacts from the Proposed Project would not be significant under both 2015 and 2020 proposed conditions.

In addition, none of the parking lots that are planned to be constructed under the Proposed Project would be located immediately adjacent to any sensitive receptors. Furthermore, such parking lots would be used mainly by passenger vehicles with negligible PM emissions. Therefore, potential air quality impacts from proposed parking lots are anticipated to be minimal and a parking lot air quality impact modeling analysis is not warranted.

O. Greenhouse Gas Emissions

As discussed in the *CEQR Technical Manual*, increased concentrations of greenhouse gases ("GHGs") are changing the global climate, resulting in wide-ranging effects on the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change are also likely to be felt at the local level.

The contribution of a proposed project's GHG emissions to global GHG emissions will be insignificant when measured against the scale and magnitude of global climate change. However, certain projects' contribution of GHG emissions still should be analyzed to determine their consistency with the City's citywide GHG reduction goal, which is currently the most appropriate standard by which to analyze a project under CEQR. The *CEQR Technical Manual* recommends that for any project of 350,000 square feet or more of development and other energy-intensive projects, a GHG analysis should quantify project-related GHG emissions and assess the project's consistency with the citywide GHG reduction goal.

The *CEQR Technical Manual* lists six GHGs that could potentially be included in the scope of an EIS: CO_2, nitrous oxide ("N_2O"), methane, Hydrofluorocarbons ("HFCs"), Perfluorocarbons ("PFCs"), and Sulfur Hexafluoride ("SF_6"). A project's GHG emissions can generally be assessed in two steps: estimate the GHG emissions of the Proposed Project; and examine the Proposed Project in terms of the qualitative goals for reducing GHG emissions consistent with PlaNYC goals. The *CEQR Technical Manual* recommends that the project's emissions be estimated with respect to on-site stationary operational GHG emissions (direct and indirect), mobile source GHG emissions (direct and indirect), and construction GHG emissions and GHG emissions from solid waste management (when applicable).

Operational GHG emissions from the full operations of the Proposed Project are estimated to be approximately 5,173.8 metric tons on an annual basis. This level represents less than 0.0001 percent of the City's overall GHG emissions in 2011 of 54.3 million metric tons (per the City's inventory amount of

September 2011). The mobile source operational GHG emissions are estimated to be approximately 25,568 metric tons on an annual basis. The annual GHG emissions from the Proposed Project are predicted to be approximately 30,742 metric tons.

According to the *CEQR Technical Manual*, the assessment of consistency with the City GHG reduction goal should answer the following question: "*Is the project consistent with the goal of reducing GHG emissions, specifically the attainment of the City's established GHG reduction goal of reducing citywide GHG emissions by 30 percent below 2005 levels by 2030?*" Four major goals are cited for projects in the *CEQR Technical Manual* are to pursue transit-oriented development, generate clean and renewable power, construct new resource- and energy-efficient buildings with the use of sustainable construction materials and practices, and to encourage sustainable transportation.

The Proposed Project is in an area served by the nearby bus routes, which would help encourage sustainable transportation, and the mixed-use design promotes walking between the proposed uses. 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. For 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. Designs may also include features aimed at reducing energy consumption and greenhouse GHG emissions, such as energy efficient building envelopes to reduce cooling and heating, high-efficiency HVAC systems, window glazing to optimize energy performance by allowing for day-lighting, and fuel from renewable sources or less GHG-intense fuels, such as natural gas.

The Contract of Sale for Retail Site "A" will require the developer to design and construct to achieve a 10 percent reduction in energy performance, and to employ low flow fixtures, fittings and appliances, which are described in LEED Core and Shell, Water Efficiency, Prerequisite (see **Chapter 2.15**).

P. Noise

The *CEQR Technical Manual* defines noise as any unwanted sound, and sound is defined as any air pressure variation that the human ear can detect. According to the CEQR guidelines, an assessment of potential noise impacts evaluates three principal types of noise sources: mobile, stationary and construction.

Components ~~Developments~~ of the Proposed Project are expected to be completed over several years. Construction of Retail Site "A" and Fairview Park are expected to be completed by the year 2015 and~~,~~ ~~which~~ would include new stationary sources of noise (i.e., mechanical equipment) and ~~generate~~ would create new mobile sources (i.e., vehicular traffic) that would ~~create~~ generate noise. ~~However, the~~The mobile source noise analyses of conditions in 2015 were ~~conducted~~ based on ~~using~~ the worst-case traffic forecasts ~~approach by focusing on potential noise impacts under the~~for the 2015 ~~2020~~ analysis year, as presented in **Chapter 2.13**, and also discussed in **Chapter 2.16**. ~~by which time all of the components of the proposed development would be constructed and operational, as in **Chapter 2.16**.~~

Stationary Sources

The anticipated new stationary sources under the Proposed Project would be limited to those typical HVAC equipment installed at commercial, residential or community facility buildings and the proposed new school playground noise. For larger buildings, such equipment is either inside the proposed buildings, or on their respective rooftops. Smaller residential buildings may include window or built-in wall air conditioning units or have some equipment located outdoors in side or rear yards. Indoor equipment is not considered substantial stationary noise sources as defined in the *CEQR Technical Manual.* The larger building's rooftop equipment is typically screened and would be sufficiently removed from existing or proposed sensitive receptors to avoid creating significant noise impacts. Noise from window or wall units

would similarly not warrant detailed impact analysis and would be unlikely to result in any significant noise impacts to the surrounding community. Therefore the HVAC noise impacts to the neighborhood from the Proposed Project are considered to be negligible and require no further analysis in this chapter.

Mobile Sources

A total of nine noise-sensitive sites in the neighborhood surrounding the Project Area were selected for weekday peak period noise monitoring to determine current noise conditions. These selected sites include existing residential areas, a motel, a park, as well as the future senior housing and Fairview Park sites. Several noise monitoring sites were selected based on their proximity to existing residences in the area, such as the Tides residential community across Arthur Kill Road, and those residences located along the western segment of Englewood Avenue. With the exception of the monitoring site located on the dead-end section of Englewood Avenue near the proposed housing and school sites, the predominant source of noise at each monitoring location is vehicular traffic along highways and principal arterial or local roadways. At this location along Englewood Avenue, ambient noise levels are generated primarily by sounds from wind and area-wide background noise, as existing traffic along this portion of Englewood Avenue is minimal.

The monitored hourly noise levels indicate that noise levels at each site are comparable among three monitored peak periods. The differences among these peak periods are less than five dBA, the threshold at which differences are noticeable. Noise levels at monitoring sites located on Englewood Avenue and Bricktown Way, which are away from major highways or arterial roadways, are classified “Acceptable” under the City’s noise exposure guidelines, while noise levels on Arthur Kill Road and areas adjacent to major highways or arterial roadways at are classified as “Marginally Acceptable” or “Marginally Unacceptable.” Existing noise levels at two additional sites within the Development Area that are close to both the MTA bus depot and the Colonial Rifle & Pistol Club were also monitored. These sites represent the proposed sensitive land uses (the senior housing and Fairview Park) that could be impacted by existing noise-generating activities. The measured ambient levels at these two sites indicate that high ambient noise levels are expected in the park areas that are immediately behind the MTA bus depot and directly along the shooting path of gun firing from the Colonial Rifle & Pistol Club during peak hours. The noise levels show that the areas measured may be classified as “Marginal Acceptable” for noise sensitive land uses. When the noise receptor moves further away from the MTA bus depot, the existing noise levels become lower in other park areas and senior housing areas are considered “Acceptable” for noise sensitive land uses.

Noise from the proposed new school playground activities was predicted based on the measurement data and analysis approach adopted by the New York City School Construction Authority to assess potential school noise impacts on the community. Based on the school playground boundary reference level, during the daytime school opening hours, the closest residential land use, the proposed on-site senior housing, would experience noise levels well below the noise exposure guideline as 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 including the senior housing that would be immediately adjacent to the new school.

If a proposed project would double Passenger Car Equivalents (“PCE”) volumes at a given intersection, noise levels would increase by 3 dBA, the threshold for a significant noise impact from the proposed project at nighttime and daytime, provided Future No-Action levels exceed 62 dBA (see **Chapter 2.16**). The mid-block PCEs along the immediately adjacent roadway where noise sensitive receptors are located were calculated for each of three peak traffic analysis periods, (AM, Mid-day and PM) for which future traffic was predicted. For the No-action condition, vehicle mix data compiled by NYSDOT for corresponding roadway types was used to calculate the future PCE volumes. The project-generated vehicle mix was used to calculate the incremental traffic-related PCEs under the Future With-Action condition. The weekday AM peak period would generally have the highest incremental PCEs due to higher truck percentage as compared to the other analysis periods. An incremental increase greater than 3 dBA was predicted in areas along Englewood Avenue. Even with the projected 7 dBA increment at one of the monitoring sites, the predicted peak traffic noise level would be well below the absolute impact

threshold level. By combining with the school playground-generated noise with the traffic generated noise, the total project noise would still well below the threshold, and therefore, there is with no potential for a significant noise impact at this location.

However, at another monitoring site, the measured ambient level is above the threshold and was exceeded. A further valuation was therefore performed to better predict the project's incremental noise contribution along that segment of Englewood Avenue east of the West Shore Expressway. The results indicate that the combined sound levels in all three peak periods would be above the absolute level for significant impacts, but comparing the combined sound levels with the actual monitored values shows a projected increase due to the project of less than the 3 dBA increment for significant impact.

Additionally, 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 maximum noise 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. Therefore, it is anticipated that the ~~adverse~~ impulsive noise effects from the existing gun firing on the proposed on-site sensitive land uses would ~~not~~ create a ~~be~~ significant adverse noise impact.

Q. Public Health

According to the *CEQR Technical Manual*, public health is the organized effort of society to protect and improve the health and well-being of the population through (1) monitoring; (2) assessment and surveillance; (3) health promotion; (4) prevention of disease, injury, disorder, disability and premature death; and (5) reducing inequalities in health status. The goal of CEQR with respect to public health is to determine whether adverse impacts on public health may occur as a result of a proposed project, and if so, to identify measures to mitigate such effects.

The *CEQR Technical Manual* states that a public health analysis is not necessary for most proposed projects. Where no significant unmitigated adverse impact is found in such CEQR analysis areas as air quality, water quality, hazardous materials or noise, no public health analysis is warranted. If, however, an unmitigated significant adverse impact is identified in one or more of those analysis areas, a public health assessment may be warranted. In addition, in unusual circumstances, a project may also have potential public health consequences that may not be related to the issues already addressed in other technical analysis areas in CEQR reviews, and the lead agency may determine that a public health assessment is warranted.

As described in **Chapter 2.17** and the individual technical chapters, the Proposed Project would not result in unmitigated significant adverse impacts in such areas as air 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.

R. Neighborhood Character

As defined in the *CEQR Technical Manual,* neighborhood character is considered to be an amalgam of the various elements that give a neighborhood its distinct personality. These elements include land use, socioeconomic conditions, historic and cultural resources, urban design and visual resources, transportation, noise, open space and shadows, as well as any other physical or social characteristics that help to define a community. Not all these elements are equally relevant to the character of every neighborhood; a neighborhood usually draws its distinctive character from a few defining features.

According to the *CEQR Technical Manual,* an assessment of neighborhood character is generally needed when the action would exceed preliminary CEQR impact thresholds in any one of the technical areas noted below. An assessment is also appropriate when the action would have no significant adverse impacts in any one of these technical area but moderate effects in several of them. As stated in the

CEQR Technical Manual, a "moderate" effect is generally defined as an effect considered reasonably close to the significant adverse impact threshold for a particular technical analysis area.

Of the technical areas that define neighborhood character, the Proposed Project has the potential to result in significant adverse zoning, historic and cultural resources and transportation impacts, as further discussed in **Chapter 2.18**. However, it is not expected that the significant adverse zoning, 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 not expected to lead to significant adverse neighborhood character impacts. Subject to NYCDOT approval, several mitigation measures are proposed that would serve to mitigate the majority of significant adverse transportation impacts projected to occur as a result of the Proposed Project.

Although there are a few moderate effects, t~~T~~he 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 socioeconomic conditions, shadows, open space, and urban design and visual resources. Further, as discussed in their respective chapters of this EIS, 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.

S. Construction

As further stated in **Chapter 2.19***,* construction impacts, although temporary in duration, can have disruptive and noticeable effects on the area that surrounds a project site. Construction impacts are considered to become significant when construction activity would result in a significant adverse effect in such technical areas as land use, open space, historic and cultural resources, natural resources, hazardous materials, transportation, air quality, noise, and neighborhood character.

Construction within the Development Area is expected to occur over several years. Retail Site "A" and Fairview Park are expected to be complete by the year 2015. The development of the remainder of the Development Area is expected to be complete by the year 2020, including the development of Retail Site "B," the school, and the senior housing, along with the construction of Englewood Avenue. Land clearing and construction-related activities for the 2015 analysis year are expected to occur over an approximately 24-month period for Fairview Park and the same approximately 24-month period for Retail Site "A." Land clearing and construction-related activities for the 2020 analysis year are expected to occur over an approximately 12-month period for the construction of Englewood Avenue, over approximately 24-month periods for Retail Site "B" and the senior housing components, and over an approximately 30-month period for the proposed school.

Under the CEQR process, any construction period expected to last longer than 24 months is considered "long-term," though construction activities are themselves not permanent. As construction activities

associated with the Proposed Project would last for longer than 24 months, a preliminary assessment was performed of the technical areas reviewed that could be affected.

Land Use and Neighborhood Character

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. 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 alter or impact the adjacent Conservation Area, which would be mapped as parkland as part of the overall Project Area, and is separated from the Development Area by a series of fences. Standard construction protection measures (i.e., fencing) would 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

The *CEQR Technical Manual* states construction impacts may occur on historic and cultural resources if in-ground disturbances or vibrations associated with project construction could undermine the foundation or structural integrity of nearby resources. Both impacts on archaeological resources from construction and demolition of an architectural resource as a result of the project are assessed as part of the historic and cultural resources analysis.

Historic and Architectural Resources

One resource has been identified within the Historic Architectural Resources study area. As discussed above, the NYCLPC-designated and S/NR-listed Charles Kreischer House has the potential to be indirectly affected by the Proposed Project. The eastern boundary of the Charles Kreischer House property is just over 400 feet west from the western boundary of the Development Area, where the passive trail system of Fairview Park is planned. However, the Development Area is generally screened from the Charles Kreischer House by the existing Colonial Rifle Range and the MTA Bus Annex, which provide buffers between the Charles Kreischer House and the proposed development. As a result, it is anticipated that views of the Development Area from the Charles Kreischer House would continue to be screened by these existing buffers. In the event that construction activities become visible from the resource, they would not be anticipated to impact its setting, because nearby activities would be short-term in nature and result in parkland, commercial, residential and civic buildings compatible with the current setting. Overall, in terms of construction-related effects, it is not anticipated that development occupying from the Proposed Project either by the 2015 or 2020 years analysis would result in indirect visible or audible impacts, including vibratory or dust impacts, because of the distance between the Proposed Project and this resource.

Archaeological Resources

By the year 2015, construction activities do have the potential to disturb or destroy three archaeological sites located within these sections of the Development Area that were identified through previous Phase IB/II archaeological surveys conducted in 1999 and 2000 by John Milner Associates, Inc. for the

Bricktown Centre at Charleston Project, resulting in the potential for adverse impacts to archaeological resources. Two of these resources are prehistoric sites and one is a historic site complex (see **Chapter 2.19**). The proposed Fairview Park has been designed to minimize the potential for adverse impacts to these identified archaeological sites. During construction, protection measures, such as fencing will be installed to assure that sensitive areas are preserved.

In addition, a prehistoric site was located during the Phase IB survey atop a prominent knoll in the east-central portion of the current Project Area. This approximately 150 foot by 40 foot site, which is considered to be archaeologically significant, is located in Block 7452, Lot 75, the parcel on which Retail Site "A" would be developed. To mitigate the loss of portions or components of this prehistoric site, a Phase III Archaeological Data Recovery Excavation process would be completed to recover those resources and prehistoric data the site may contain before construction begins and the prehistoric site is lost.

Construction of the remainder of the Development Area by the year 2020 has the potential to disturb or destroy one prehistoric archaeological site located within the remaining sections of the area, which was identified through prior archaeological survey work. In addition, there are portions of the remainder of the Development Area that possess archaeological potential that have never been surveyed. The potential for the Proposed Project to result in significant adverse impacts on these identified sites stated above is not yet known.

Actions, such as fencing off areas where these resources are located prior to the start of construction, could limit potential disturbance to those areas. 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. At this time, there are no specific development proposals for Site Retail Site "B" and future developers will be selected pursuant to a RPP process. Further archaeological investigation will be required to be undertaken by the developer(s) after selection. A Scope of Work for archaeological field testing will be prepared and submitted to NYCLPC for review and approval. For all developments in the Project Area, 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~~/or~~, if appropriate, OPRHP, will be required to be undertaken by the developer(s) through provisions in the Contract of Sale, lease or other binding agreement between ~~NYC~~ the City and the developer(s).

Natural Resources

The *CEQR Technical Manual* states that if a project or construction staging area is located near a sensitive natural resource, such as 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 both the 2015 year and 2020 year under the Proposed Project, general Best Management Practices (BMPs) would be adhered to in order to protect natural resources during construction. ~~As design plans for the project are only conceptual at the time of publication o this document, e~~Examples of construction BMPs for natural resources include, but are not limited to general construction practices including environmental inspectors, exclusion barriers, sediment and erosion control, pollution prevention, and material disposal; as well as specific construction BMPs for flora and fauna, focusing on endangered species, seasonal restrictions, and tree protection. For wetlands, measures include wetland identifications, reduced disturbance, and stockpiling and storage of fill elsewhere.

Year 2015

The Proposed Project would result in significant adverse construction-related impacts to natural resources. By the year 2015, as part of the Proposed Project, the City would develop the new

approximately 23-acre Fairview Park. Adjacent to the park, the 11-acre site of Retail Site "A" is expected to be developed by a private developer. The ~~development of this area~~ construction of Retail Site "A" would impact approximately 0.1 acres of non-regulated wetland habitats, and would not result in any ~~although no~~ impacts to NYSDEC regulated wetlands ~~would occur~~. ~~These wetland impacts would occur during the construction of this area.~~

The ~~development that would occur by~~ 2015 development sites would involve the loss of ~~also remove or alter~~ approximately 20.5 acres of habitat for flora and fauna while approximately 13.7 acres of habitat areas would be preserved within Fairview Park. Approximately 85 percent of the lost ~~over portions of the Development Area. These~~ habitats would be ~~are largely~~ successional woodlands and fields. None of the habitats are rare or unique and are common in southern New York State. However, ~~Yet~~ the parcels of Retail Site "A" and Fairview Park sites do ~~area~~ support~~s~~ a variety of mammals (e.g., mice, voles, raccoons, deer, etc.). Displacement of wildlife within the area would occur during construction. ~~Some of these h~~Habitats on Retail Site "A" and the active recreation and parking areas of Fairview Park would be permanently altered and/or removed, which ~~and~~ would render portions of the remaining habitat (areas adjacent to the park's recreation areas) unsuitable for those ~~some~~ species more sensitive to human activity. Visual and noise disturbances during the construction phase may cause animals to relocate to the undisturbed suitable habitats adjacent to these development areas ~~expected building footprints~~. However, once construction activities are completed, ~~it is expected that proposed landscaping~~ the 13.7 acres of preserved natural areas within the proposed Fairview Park ~~on these sites and within the park~~ would allow for some species to relocate back to the area or to contiguous tracts of land adjacent to or near the area (i.e., north and west of Fairview Park).

The construction activities by the year 2015 would result in some minor ~~habitat~~ fragmentation of contiguous habitat of the CPPSPP, the Conservation Area, and the Development Area~~. Fragmentation would~~ impacting the mammals, birds and some reptiles that would normally use the contiguous habitat for migration, feeding, foraging and/or breeding. The impacts of this habitat fragmentation would be reduced because the development of Retail Site "A" and Fairview Park would leave a vegetated corridor (north of these parcels) that is contiguous with the CPPSPP, the Conservation Area and other undeveloped portions of the Development Area. During construction of ~~new retail on~~ Retail Site "A" and Fairview Park, it is estimated that 538 trees would be impacted. The removal of additional vegetated areas, during ~~and after~~ construction, would further reduce available habitats for species that are less ~~not~~ adaptable~~ed~~ to disturbed environments.

~~Two~~ One endangered and one threatened plant species were observed within the proposed footprints of the development that would occur by 2015. ~~Two species, the bonesets (one~~ Fringed boneset (threatened) ~~and one endangered), were~~ was observed in open areas (e.g., successional old fields Variants I and II, and unpaved paths) throughout the area. ~~As such, t~~The development of Retail Site "A" and the ~~removal and/or disturbance of open~~ recreational areas~~, during and after construction, would impact~~ of the proposed Fairview Park by 2015 would remove approximately 2.2 acres or 10 percent of potential boneset habitat ~~the bonesets~~ through habitat loss and/or direct removal of individual plants. ~~However, due to the observed prevalence of bonesets throughout the area, i~~It is not anticipated that this level of ~~the onsite open area habitats by the 2015 analysis year~~potential habitat loss and direct plant removal due to the Proposed Project in 2015 ~~the removal of some of the onsite open area habitats by the 2015 analysis year~~ would pose~~result in~~ a significant impact to these boneset species.

Torrey's ~~M~~mountain ~~M~~mint, an endangered species, occurs in one discreet location on the southern border of Retail Site "A". A review of the NYS–NHP website indicates that, "*There are three existing populations in New York but all of them are small or highly threatened.*" One of the three locations noted by NYNHP is the Bricktown Centre retail complex, which is located directly adjacent to the Project Area. The mountain mint found at Bricktown Centre was preserved onsite along the southern property edge, creating a protected habitat area for these plants. This preserve is approximately 700 feet south of the colony of mountain mint plants identified in 2012 on Retail Site "A." Given the proximity of these two mountain mint colonies, evidence suggests they are both part of the larger Charleston colony identified on the NYNHP website. As such, development of Retail Site "A" would remove a portion of the plants in one of the statewide sites identified. The removal of the mountain mint, an endangered listed species, from

Retail Site "A" would be considered a significant adverse impact. However, the Bricktown Centre colony along Veterans Road West within the Charleston site will remain preserved in its protected habitat area. Therefore, the Charleston site mentioned by NYNHP above will be impacted, but it will not be removed in its entirety. and *"A recently discovered population on Staten Island was almost destroyed by the construction of a shopping center*." NYS NHP conservation and management strategies for the species identify that "open areas need to be maintained without directly damaging existing plants." The removal of one of the remaining three sites for this species would be viewed as a significant adverse impact by regulatory agencies.

Year 2020

By the 2020 analysis year, approximately an additional 29.625.7 acres of habitat area land would be subject to earthmoving and filling, for a total of approximately nearly 60 50 acres altered within the Development Area. Impacts under this analysis would be similar to those described above for the 2015 analysis year. For the construction of the Englewood AvenueRoad, the current topography may require substantial earthmoving activities in order to create a road embankment capable of supporting street traffic.

Implementation of the full Proposed Project by developments under the 2020 year would impact approximately 0.3 additional acres of unregulated/non-jurisdictional wetland habitats, and 0.07 acres of NYSDEC regulated/USACE jurisdictional wetland associated with none of which would be determined to be NYS DEC regulated. The total acreage of wetland impacts of the Proposed Project, as well as within the area for the construction of Englewood Avenue, would be 0.4 acres specifically the segment between the CPPSPP and the Conservation Area. This roadway's assumed 80-foot wide The construction footprint would end several feet from the delineated boundary of Wetland B, also regulated by the NYSDEC. Actions to mitigate the impacts to these regulated and jurisdictional wetlands would be required by the two regulatory agencies. Representatives of the USACE noted during a field visit in January 2013, that impacts to these types of jurisdictional forested wetlands should be reduced to the greatest extent practicable and that unavoidable impacts would require mitigation. These impacts would begin during construction activities, which in the vicinity of wetlands could cause such impacts as siltation due to increased erosion from clearing and grading activities.

The development that would occur by the 2020 analysis year would bifurcate divide remaining undeveloped habitats on site 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, and within the area for the construction of Englewood Avenue. 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 open areas that serve or could serve as habitat to threatened and endangered bonesets, resulting in a significant impact. Measures proposed to establish and protect areas within portions of Fairview Park as habitat for boneset are discussed in **Chapter 4**. The opening of an 80-foot wide corridor roadway (Englewood Avenue) through this forested area would create an "edge effect" on both sides of the road and would likely contribute to localized increases of dense understory vegetation, which would further impact the value of the habitat on the parcels.

The CPPSPP, Conservation Area, Wetlands B and C, and the portions of these areas in the Englewood Avenue corridor comprise a large forested parcel with mature trees. As identified in subchapter 2.8-3, CPPSPP is a NYSDEC Bird Conservation Area, and bird species (including State-listed species) and other fauna that live in the CPPSPP, likely transit to the Conservation Area for usage of the habitat. The existing dirt path within the Englewood corridor is relatively narrow and the canopies of the trees on both of its sides provides a relatively undisturbed continuous canopy. During the 2012 survey no State-listed species or evidence of State-listed species (e.g., nests, tracks, etc.) were observed in the Englewood Avenue corridor.

~~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 on the Site. Under this scenario, these habitats would be impacted and removed once construction activities commence.~~

As noted above, significant adverse impacts to natural resources are expected to occur during construction activities in the Development Area. Potential construction impacts would be reduced by implementing the construction BMPs discussed above. In addition, as more fully detailed in **Chapter ~~4~~42.21**, mitigation efforts for natural resources can also be applied during construction, including avoidance of resources, compensatory replacement for lost wetlands, enhancement of existing habitats, as well as a variety of other actions tailored to the characteristics of the Proposed Project. The impacts of the construction of Englewood Avenue on natural resources as discussed above are based on a worst-case assumption. Opportunities to minimize these impacts are discussed in the Mitigations chapter and will be determined during the subsequent planning and design phases for this roadway, including permitting applications, in consultation with permitting agencies.

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 ~~general~~ 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) ~~have been~~ were prepared and submitted to NYCDEP for review and approval for the proposed parkland and Retail Site "A."

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

- 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 Site Management Plan (SMP) Remedial Action Plan ("RAP"), respectively, to NYCDEP for review and approval. The SMP and 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 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.
- NYCDPR and the developer for Retail Site "A" will submit a Construction Health and Safety Plan ("CHASP") to NYCDEP for review and approval. 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 must be covered with polyethylene sheeting while disposal options are determined. Additional testing would be conducted, as required, by the disposal/recycling facility.

With the implementation of these measures no significant adverse hazardous material impacts are expected by the year 2015 developments.

~~The Phase II Work Plan includes soil, groundwater, and soil vapor testing at locations distributed across the two sites. If indicated by the results of the testing, a Remedial Action Plan (RAP) and Site Specific Construction Health and Safety Plan (CHASP) will be prepared and submitted to NYCDEP for review and approval. Required remediation will be performed in compliance with all federal, state, and local~~

~~regulations. With the implementation of these measures prior to construction, no significant adverse hazardous material impacts are expected during construction or operation of these sites.~~

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" 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 ~~Land Disposition Agreement~~contract of sale ~~(LDA)~~ between New York City and the developer(s).

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, including preparation of a CHASP prior to construction, separating any contaminated soils from non-contaminated, and transporting contaminated soils from the site in covered vehicles and disposed at a licensed facility with chain-of-custody documentation. Based on these measures, significant adverse impacts regarding hazardous materials during construction are not expected to occur.

Transportation

Construction activities within the Development Area by the 2015 and 2020 analysis years would not require the closing or narrowing of moving lanes along the adjacent roadways of Arthur Kill Road and Veterans Road West, as all construction activities are expected to be accommodated on each site for development. No key pedestrian facilities, parking lanes and/or parking spaces, bicycle routes, bus lanes or access points to transit would also be altered.

By the year 2020, Englewood Avenue would fully connect Veterans Road West on the east with Arthur Kill Road on the west. The existing built section of Englewood Avenue in its western segment would be re-aligned and widened. These activities would result in temporary disturbance to those existing properties along this section of the roadway. Construction activities, including the widening and re-alignment of the existing portion and the land clearing, grading and paving of the new eastern portion of the roadway, would last approximately 12-months.

Construction-related trips to and from the site are projected to occur on weekdays between 5:00 a.m. and 5:00 p.m., although the majority of the trips are expected to take place between 6:00 to 7:00 a.m. and between 3:00 to 4:00 p.m., in conjunction with the arrival and departure of construction workers. On a typical weekday, the peak periods for existing vehicular traffic generally occur between approximately 8:00 a.m. to 9:00 a.m., and between approximately 5:00 p.m. to 6:00 p.m. Therefore, the timing of the on-site construction activities reduces the impact that construction vehicles have on traffic on the surrounding street network during these peak periods, largely because workers are expected to initiate daily construction activity before the morning peak hour of traffic on the surrounding roadway network, and also conclude construction activities before the afternoon peak hour (i.e., the majority of the construction travel occurs during "off-peak" hours).

The proposed construction schedule assumes construction activities and construction trips would peak in the third quarter of 2018 with 97 total Passenger Car Equivalents (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. These two time periods represent peak days of work, and many days over the entire seven-year construction period would have fewer construction workers and trucks on-site.

The construction schedule assumes that all site activities would take place during the typical construction shift of 7:00 a.m. to 3:30 p.m. Construction worker travel would typically take place during the hours before and after the work shift. It is estimated that 80 percent of all workers would arrive in the 60-minute period before the start of the construction shift, and also leave in the 60-minute period after the end of each shift. The remaining workers (i.e., 20 percent) would travel in the hours immediately before and after these times. This is due to slight variations in the particular schedules and day-to-day work activities of the various trades. Construction-related trips to and from the site are projected to occur on weekdays between 5:00 a.m. and 5:00 p.m., although the majority of the trips are expected to take place between 6:00 to 7:00 a.m. and between 3:00 to 4:00 p.m., in conjunction with the arrival and departure of construction workers. It is anticipated that construction workers would travel to and from the development sites primarily by private autos (approximately 90 percent of the total workforce).

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 year) 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.

During the peak construction period for the second analysis (year 2020), the incremental numbers of additional construction vehicle trips to be added at any one intersection are projected to be well below the CEQR threshold of 50 peak-hour trips. Traffic increases of this magnitude are not considered to be significant, regardless of the background traffic volume (i.e., the 2015 year analysis, or Phase 1, in operation). Therefore, further quantitative analysis of the year 2020 construction in conjunction with year 2015 operation is not required.

Air Quality

- Temporary impacts on local air quality during construction within the Development Area include fugitive dust (particulate) emissions from land clearing operations and mobile source emissions from operations of off-road equipment and on-road trucks. Fugitive dust emissions could occur from land clearing, excavation, hauling, dumping, spreading, grading, compaction, wind erosion, and traffic over unpaved areas. Actual quantities of emissions depend on the extent and nature of the land clearing operations, the type of equipment employed, the physical characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. Much of the fugitive dust generated by construction activities consists of relatively large-size particles, which are expected to settle within a short distance from the construction site and not significantly impact nearby buildings or people particularly for those elements relatively far away from them. All appropriate fugitive dust control measures, including watering of exposed areas and dust covers for trucks, would be expected to be employed during construction to minimize potential fugitive dust emissions. To ensure that the construction of the proposed project would result in the lowest practicable diesel particulate emissions, the project would implement an emissions reduction program for all construction activities, such as: diesel equipment reduction; clean fuel (i.e., use of ultra-low sulfur diesel); best available tailpipe reduction technologies; utilization of newer equipment; source location; dust control; and idle restriction.

- Mobile source emissions may result from the operation of construction equipment, trucks delivering materials and removing debris, workers' private vehicles, or occasional disruptions in traffic near the construction site. Localized pollutant increases due to trucks and workers traveling to and from the site would be minimized by following standard traffic maintenance requirements, such as limiting any

temporary street closings to off-peak hours whenever possible, maintaining the existing number of traffic lanes to the maximum extent possible, not permitting delivery trucks or other equipment to idle during unloading or other inactive times, and following applicable air pollution control codes to use ultra-low diesel fuel ("ULSD") during construction activities and other applicable BMPs, which. will be used exclusively for all diesel engines throughout the construction sites.

In addition, Cconstruction of the Proposed Project will minimize the use of diesel engines and use electric engines, to the extent practicable. Nonroad diesel engines with a power rating of 50 horsepower ("hp") or greater and controlled truck fleets (i.e., truck fleets under long-term contract with the project) including but not limited to concrete mixing and pumping trucks, will utilize the best available tailpipe ("BAT") technology for reducing DPM emissions. Diesel particle filters ("DPFs") have been identified as being the tailpipe technology currently proven to have the highest reduction capability. Construction contracts will specify that all diesel nonroad engines rated at 50 hp or greater will utilize DPFs, either installed on the engine by the original equipment manufacturer ("OEM") or retrofit with a DPF verified by EPA or the California Air Resources Board, and may include active DPFs if necessary; or other technology proven to reduce DPM by at least 90 percent. In addition to the tailpipe controls commitments, the construction program will mandate the use of Tier 2 or later construction equipment for non-road diesel engines greater than 50 hp. In addition, to minimize hourly emissions of NO_2, non-road diesel-powered vehicles and construction equipment meeting or achieving the equivalent of higher USEPA non-road diesel emission standards will be used in construction, where practical and feasible.

The construction elements of the Proposed Project would mostly occur on separate timelines and on separate parcels within the Project Area, and construction on any one parcel would be completed within three 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 will be divided into widely separated clusters and thus the potential for impact at any given time and location is minimal. Therefore, the on-site construction equipment activities associated with each element can be considered independent and temporarythe potential for impacts is minimal. Among these construction elements, the effects from Retail Site "A" and Fairview Park construction would have the least temporary independent impacts since the activity would occur at 800 feet or greater distance from the nearest residences along Englewood Avenue.

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 are not expected as a result of the Proposed Project. By 2015, construction of Fairview Park and Retail Site "A" would occur over a 24-month period, with the closest sensitive receptors (e.g., existing residences, publicly accessible parkland, etc.) being the Tides residential community located approximately 900 feet to the west, across Arthur Kill Road. For the construction of Retail Site "B," land clearing and construction-related activities are expected to occur over an approximately 24-month period, ending in 2018. The closest sensitive receptor to this site is the Tides residential community located approximately 80 feet to the west, across Arthur Kill Road, and the proposed Fairview Park to the east that will be in operation by the 2015 year. The closest park amenities to the area for construction of Retail Site "B" would be the passive trail system, which is located over 80 feet away (the same distance as the Retail Site "B" is in relation to the Tides residential community). To the north of the park are the southern boundaries for construction of the school and housing sites. Construction activities from the school and housing sites are expected to be at least approximately 50 feet from park amenities that are in operation by the year 2015. Therefore, significant adverse construction-related air quality impacts are not expected as a result of the Proposed Project.

Noise

Construction noise impacts would be caused by the operation of construction equipment on or near the Project Area, and by the travel of construction-related car and truck traffic through the community. Construction noise levels are typically highest during any excavation and foundation phases, when several large pieces of construction equipment operate on construction sites. Peak noise levels from

impact equipment (e.g., pile drivers, pavement breakers, etc.) can be close to or over 100 dB(A) or higher at 50 feet from the equipment. Placing applicable noise barriers (e.g., temporary plywood walls) around areas where ~~those~~ equipment ~~operate~~ is operating or minimizing their use by utilizing quieter equipment to achieve the same purposes would help reduce these potential temporary noise impacts.

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 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. By 2015, construction of Fairview Park and Retail Site "A" would occur over a 24-month period, with the closest sensitive receptors (e.g., existing residences, publicly accessible parkland, etc.) being the Tides residential community located approximately 900 feet to the west, across Arthur Kill Road. For the construction of Retail Site "B," land clearing and construction-related activities are expected to occur over an approximately 24-month period, ending in 2018. The closest sensitive receptor to this site is the Tides residential community located approximately 80 feet to the west, across Arthur Kill Road, and the proposed Fairview Park to the east that will be in operation by the 2015 year. The closest park amenities to the area for construction of Retail Site "B" would be the passive trail system, which is located over 80 feet away (the same distance as the Retail Site "B" is in relation to the Tides residential community).

Land clearing and construction-related activities for the construction of Englewood Avenue to Veterans Road West are expected to occur over an approximately 12-month period, ending in December 2016. The closest sensitive receptors to this site are existing two-story residence located along the north side of Englewood Avenue, directly adjacent to the re-alignment of the roadway. Some of these residences are also located near and across the street from the development site of the senior housing parcel, which is expected to occur over an approximately 24-month period ending in August 2020. Adjacent to the senior housing parcel is the proposed school site, which is located approximately 250 feet from the nearest existing residence along the north side of the roadway. Construction of the school would over an approximately 30-month period (including approximately six months of interior setup) ending in December 2020. To the south, portions of Fairview Park (which would be operational by the year 2015) would be situated adjacent to the southern boundaries for construction of the school and housing sites. Construction activities from the school and housing sites are expected to be at least approximately 50 feet from park amenities that are in operation by the year 2015.

T. Alternatives to the Proposed Action

As stated in the *CEQR Technical Manual*, CEQR requires that alternatives to a proposed project be identified and evaluated in an EIS, so that the decision-maker may consider whether alternatives exist that would minimize or avoid adverse environmental effects. As further reviewed in **Chapter 3.0**, the alternatives to the Proposed Project evaluated include:

- **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, along with 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 Development Area would remain vacant and covered with vegetation, and Englewood Avenue would not be mapped and constructed.
- **Shortened Englewood Avenue Alternative.** This alternative assumes that Englewood Avenue would only be mapped and constructed from Arthur Kill Road east to the existing mapped area of

the roadway which currently terminates at the un-built Kent Street. ~~The existing mapped but un-built portion~~ Englewood Avenue from Kent Street to Veterans Road West, the existing mapped but un-built portion of Englewood Avenue, would contain a highly permeable, limited access, 34 foot-wide emergency roadway~~would remain un-built under this alternative, and Englewood Avenue would end at the un-built Kent Street just east of the northeast corner of the proposed school site~~. Conceptual plans for this alternative roadway ~~call for its eastern terminus to~~ include a turn-around meeting ~~NYC~~ New York City Fire Department (FDNY) requirements for emergency access~~ and a limited access single lane emergency roadway extending east to Veterans Road West~~. It is expected that the road would be 34 feet wide, extending southward from the northern edge of the 80-foot wide right-of-way. The northern portion of this right-of-way generally contains an existing dirt path and trail, while the southern portion of the right-of-way contains wetland areas. The location of the 34-foot wide emergency access road along the northern side of the right-of-way would minimize disturbance to these wetland areas, as it would be placed within the more disturbed northern portion of the right-of-way. This alternative would not require a transfer of state-owned property to the City. The remainder of the Development Area would be constructed as planned under the Proposed Project.

- **40-Foot Wide Englewood Avenue Alternative.** This alternative assumes that Englewood Avenue would be mapped and constructed from Arthur Kill Road east to Veterans Road West; however, east of the presently mapped but un-built Kent Street, the roadway and sidewalk areas would be constructed to a total width of 40 feet, instead of the current 80-foot wide scenario under the Proposed Project. The remainder of the Development Area would be constructed as 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 ~~u~~Utility Access ~~c~~Corridor from Arthur Kill Road through Retail Site "B" and eastward to a connection with Bricktown Way near the southeast corner of Fairview Park. The remainder of the Development Area would be constructed as planned under the Proposed Project.

- **No Unmitigated Impact Alternative.** This alternative assumes that elements of the Proposed Project would be reduced or eliminated in a manner that would remove the unmitigated impacts of the Proposed Project as identified in **Chapter 4: Mitigation** and **Chapter 7: Unavoidable Adverse Impacts**. As noted in those chapters, the Proposed Project c~~w~~ould result in unmitigated adverse impacts in traffic operations and potentially unmitigated impacts on natural resources and on historic and cultural resources.

No-Action Alternative

Under No-Action Alternative, 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 City's WRP or Working West Shore 2030. It is expected that the City will 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 PlanNYC'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, 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 related to the Proposed Project would not be met. The projected generation of over 700 new 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. These impacts would not occur under the No-Action Alternative.

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. Neither the Proposed Project nor the No-Action Alternative is projected to result in any adverse impacts to Urban Design or Visual Resources.

Without the Proposed Project, conditions related to natural resources would not change over existing conditions, and no impacts would occur. Under the Proposed Project, the developments from the 2015 analysis year would remove or alter approximately 50.1 acres of habitat for flora and fauna in the Development ~~a~~Area, and would impact 538 of the surveyed trees. Two endangered and one threatened plant species were also observed within the proposed areas of the 2015 year developments. The removal of a group of plants of one of these species ~~would be viewed as~~ is a significant adverse impact ~~by regulatory agencies~~. Implementation of developments under the 2020 year analysis would impact approximately 0.30 acres of wetland habitats, none of which would be determined to be jurisdictional, and remove approximately 1,156 of the surveyed trees. Under the 2020 year analysis for the No-Action Alternative, these conditions would generally not be altered, with the exception of any natural succession changes. 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, 10 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 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),

1716 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 air quality or noise 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.

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 from Kent Street to Veterans Road West, Tthe existing mapped but un-built portion of Englewood Avenue, would contain a highly permeable, limited access, 234-foot -wide emergency roadway. would remain un-built under this alternative, and Englewood Avenue would end at the un-built Kent Street just east of the northeast corner of the proposed school site. The conceptual plan Englewood Avenue would includes a turn-around meeting NYC Fire Department FDNY requirements for emergency access, and potentially a 24-foot wide limited access single-lane emergency roadway, extending east to Veterans Road West. 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.

This alternative has the potential to minimize some of the potential significant adverse impacts on one archaeological site that would occur with the Proposed Project. 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. The completion of that portion 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. It is also possible that other remains of prehistoric occupation are present in the 80-foot wide roadway corridor where Englewood Avenue is to be extended. Construction activities have the potential to adversely impact intact archaeological resources that may be present along this linear corridor. Under the Shortened Englewood Avenue Alternative, a more minimalno roadway construction would occur through this sensitive area, public services and utility lines and thus the potential for impacts at this location would not be as much of a concern as under the Proposed Project. All of the other development components would still be constructed in the Development Area.

This alternative would reduce some of the potential significant adverse impacts on natural resources relative to the Proposed Project, as identified in **Chapter 2.8**, particularly within the area where Englewood Avenue would be constructed eastward along the existing mapped portion to Veterans Road West. With the exception of a dirt track, this area is not developed and is currently in its natural state. Under this alternative, a 34 foot-wide, highly permeable emergency access road would be constructed which would offer both turf protections and load support for the infrequent use by emergency vehicles, but require less topographical and grade alterations that under the Proposed Project with a 80-foot wide, four-lane roadway. The~~this~~ area would remain partially in its natural state, between the Conservation Area and CPPSPP. ~~The approximately 0.07 acres of NYSDEC-regulated wetlands and USACE jurisdictional wetlands that would be impacted under the Proposed Project would not be impacted under this alternative.~~ Under this alternative, only approximately 0..054 acres of wetlands (Wetlands C) would be impacted, compared to the~~.~~ approximately 0.07 acres of NYSDEC-regulated wetlands and USACE jurisdictional wetlands that would be impacted under the Proposed Project. Under the Shortened Englewood Avenue Alternative, there would be much less topographical change required to construct the emergency access road due to its construction with highly permeable materials, though some grading would occur to meet the load requirements for the emergency access road. Additionally, this portion of Englewood Avenue would require little to no utilities which would further reduce impacts to natural resources~~topographical changes would not occur~~. The Shortened Englewood Avenue Alternative would also not ~~directly~~ significantly impact wildlife that use the area between the CPPSPP and the Conservation Area. 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.~~This undisturbed continuous canopy would not be disturbed under this alternative, and thus the bifurcating of valuable habitat for fauna between CPPSPP and the Conservation Area would not occur.~~

A variant of Red Maple-Sweetgum Swamp, a New York State-listed Significant Plant Community, is present within the proposed Englewood Avenue's build footprint. The street construction would remove approximately 0.3 acres of this habitat type. Removal would result in further encroachment to this community but would not result in a significant adverse impact. ~~The State-listed rare red-maple sweetgum swamp habitat is present in this portion of the mapped area of Englewood Avenue. Under the Proposed Project, this removal would result in further encroachment to this rare habitat and would result in a degree of impact, although after construction activities cease, it is not anticipated that further impacts to the forest would occur under the Proposed Project, and it is anticipated that stormwater would be managed so as not to increase erosion of the habitat.~~ However, under this alternative, the full removal of approximately 0.26 acres of this habitat type would not occur, though portions would still be removed for construction of the emergency access road. Development under this alternative would also remove less than approximately 0.22 acres of Red Maple-Sweetgum Swamp.~~.~~ ~~In addition,~~ Fewer trees are over six inches at dbh would be impacted under this alternative, 112, compared with 319 ~~of the surveyed trees that are over six inches at diameter breast height (dbh) in this area would not be impacted under this alternative, as they would~~ 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 with this alternative compared with the 2.2 acres or 10 percent removal with the Proposed Project.. Listed species occur in the CPPSPP and the Conservation Area. Many of these species either move between these two areas 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 under the Proposed Project. Such impacts would not occur under this alternative to the extent that they would with the Proposed Project given the more narrow width of the roadbed and the infrequent use of the emergency access road.~~.~~

With identified transportation improvement measures in place, the majority of potential significant traffic impacts are projected to be mitigated under the Shortened Englewood Avenue Alternative. However, unmitigable 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~~Sharrotts Road/Arthur Kill Road~~, and
- Englewood Avenue/Arthur Kill Road.

Under the Shortened Englewood Avenue Alternative, traffic impacts were identified at six~~five~~ signalized intersections and one unsignalized intersection during the weekday AM peak hour, at eight~~seven~~ signalized intersections during the weekday MD peak hour, at ten~~nine~~ signalized intersections ~~and one unsignalized intersection~~ during the weekday PM peak hour, and at 11 signalized intersections ~~and one unsignalized intersection~~ during the Saturday MD peak hour. Under the Proposed Project, traffic impacts were identified at seven~~six~~ signalized intersections ~~and the same unsignalized intersection~~ during the weekday AM peak hour, at nine~~eight~~ 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 ~~and the same unsignalized intersection~~ during the Saturday MD peak hour. 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 ~~A~~alternative than under the Proposed Project, as all vehicular traffic from the school and housing would be require to travel west through the intersection of Englewood Avenue and Arthur Kill Road, and the surrounding intersections would experience increased traffic, due to the dead-end of Englewood Avenue, than under the Proposed Project.. 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.~~.~~

40-Foot~~r~~ 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 under the Proposed Project. It is expected that the road would be 40 feet wide, extending southward from the northern edge of the 80-foot wide right-of-way. The northern portion of this right-of-way generally contains an existing dirt path and trail, while the southern portion of the right-of-way contains wetland areas. The location of the 40-foot wide road along the northern side of the right-of-way would minimize disturbance to these wetland areas, as it would be placed within the more disturbed northern portion of the right-of-way. 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.

The 40-foot Wide Englewood Avenue Alternative would not alter the findings for the majority of the technical areas discussed for the Proposed Project, with the exception of the technical areas of Historic and Cultural Resources, Natural Resources, Water and Sewer Infrastructure, Transportation, and Construction, which are further discussed below.

This alternative has the potential to minimize some of the potential significant adverse impacts on one archaeological site that would occur with the Proposed Project. Construction activities associated with the completion of the Englewood Avenue extension and construction of the pedestrian/bicycle path likely include cutting, filling, grading, paving, and installation of public services and utility lines. All these activities have the potential to adversely impact intact archaeological resources that may be present along this linear corridor. Under this 40-foot wide alternative for Englewood Avenue, roadway construction would be limited in width, and thus the potential for impacts at this location would be lower than under the Proposed Project. All of the other development components would still be constructed on the Development Area. As with the Proposed Project, a Scope of Work for archaeological field testing would 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 on the results of the Phase 1B testing, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and, if appropriate, OPRHP, would be required to be

undertaken by the developer(s) through provisions in the Contract of Sale, lease or other binding agreement between the City and the developer(s).

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. This area is not developed and is currently in its natural state with trees and wetlands. The development of Englewood Avenue under the 80-foot wide concept plan would impact approximately 0.07 acres of NYSDEC-regulated wetlands and USACE jurisdictional wetlands. Under this alternative's 40-foot wide roadway, the impacts would be reduced to approximately 0.0080.05 acres of wetlands. Actions to mitigate the impacts to these regulated and jurisdictional wetlands under this alternative would still be required by regulatory agencies. 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. Under this alternative, approximately 170 135 surveyed trees over a six-inch dbh would be removed, as compared to the expected 319 surveyed trees that would be removed for under the 80-foot wide roadway of the Proposed Project. Development underThe implementation of this alternative would also remove approximately 0.22 acres of Rred- mMaple- sSweetgum sSwamp, as compared to 0.26 acres under the Proposed Project. The separation of the avian canopy would be lessened due to the reduction in width of the roadbed for this alternative, as compared with the Proposed Project. However, 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.

The findings for transportation from the analysis for the Proposed Project would not change under this alternative. Under this alternative, this section of the 40-foot wide Englewood Avenue would contain one travel lane in each direction, as compared to two travel lanes under the Proposed Project. This type of 40-foot wide roadway segment can accommodate expected future traffic volumes, including existing traffic diverting to this new roadway segment and trips generated by the Proposed Project's school and senior housing sites accessed from Englewood Avenue. To ensure a conservative approach, the traffic analysis of the Proposed Project presented in **Chapter 2.13** conservatively assumed only one travel lane in each direction on the eastbound approach of the Englewood Avenue/Veterans Road West intersection. Those analyses demonstrate that the projected future traffic volumes heading east from the Project Area on Englewood Avenue or west from Veterans Road West toward the Project Area could be accommodated with acceptable traffic operations at the Englewood Avenue/Veterans Road West intersection. No significant adverse impacts would occur under this alternative, provided the same transportation improvement measures as discussed in **Chapter 4.0** were implemented.

Under both the Proposed Project and the 40-Foot Wide Englewood Avenue Alternative, traffic impacts were identified at sevenfive signalized intersections and one unsignalized intersection during the weekday AM peak hour, at ninesix signalized intersections during the weekday MD peak hour, at 11 signalized intersections and one unsignalized intersection during the weekday PM peak hour, and at 1110 signalized intersections and one unsignalized intersection during the Saturday MD peak hour. Those improvement measures identified for the Proposed Project to mitigate these impacts would be the same under this Alternative.

Arthur Kill Access Road Alternative

Under Tthis alternative, assumes that an east-west access road would be constructed along the planned instead of the 50-foot wide, 1.95-acre Proposed uUtility Access cCorridor from Arthur Kill Road through Retail Site "B" and eastward to a connection with Bricktown Way, an east-west roadway would be constructed near the southeast corner of Fairview Park, as shown in **Figure 3-3**. Under the Proposed Project, the Proposed Utility Access Corridor utility corridor would remain in its general natural state above gradeand the roadway would not be constructed. Under this alternative, the corridoraccess road would be constructed as Arthur Kill Access Road. The remainder of the Development Area would be constructed as planned under the Proposed Project, including Englewood Avenue and its full east-west

mapping and construction from Arthur Kill Road to Veterans Road West, as well as the public mapping of privately owned Bricktown Way and Tyrellan Avenue.

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 ~~the~~ an access road ~~from Arthur Kill Road through Retail Site "B" to Bricktown Way~~. Construction within this ~~portion of the Project Area~~ 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. ~~At this site (Block 7487, Lot 100), the areas for this access road runs just north of the existing 35-foot-wide sanitary sewer easement that runs from Bricktown Way to Arthur Kill Road. A portion of the access road corridor in the eastern half of Block 7487 and bordering on Bricktown Centre appears to have been included in the JMA 1999 Phase IB survey area.~~ However, the western half of Block 7487, including the access road corridor has not been previously surveyed. ~~It is possible that remains of prehistoric occupation are present on this parcel. It is possible that intact prehistoric resources are located in this corridor.~~ The construction of the Arthur Kill Access Road~~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. As with the Proposed Project, a Scope of Work for archaeological field testing would 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 on the results of the Phase 1B 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(s). Therefore, no significant adverse impacts would occur under this alternative, provided the same remedial measures as discussed in **Chapter 2.8** were implemented.

This alternative would also alter existing natural resources as compared to the Proposed Utility Access Corridor. This area is vacant and covered with low-level vegetation, within the Successional Old Field-Variant 1 mapped ecological community (see **Chapter 2.8**). Much of the corridor in which the Arthur Kill Access Road would be constructed are open fields that are currently habitat for boneset, and construction of the roadway would potentially eliminate up to approximately 1.85~~2.5~~ acres, increasing the potential loss of the existing open field habitat from approximately 16.4 acres under the Proposed Project to 18.2 acres under this alternative. Of note, vegetation in this area may change without any proposed construction by the 2020 analysis year, due to natural succession. This natural conversion may alter or reduce the amount of suitable habitat within the Development Area capable of supporting the existing plant species, including bonesets. In addition, grading for this roadway would result in some changes in topography due to the required cut/fill actions necessary to establish the necessary roadway surface and grade. Only seven additional trees with a breast-height diameter of six inches or more would be removed if this access road were constructed instead of the Proposed Utility Access Corridor.

It is also anticipated~~,~~ under this alternative, that an additional 0.067 acres USACE regulated wetlands would be impacted, consisting of Wetlands H (0.035 acres), HA (0.006 acres), NB (0.009 acres), and NW (0.017acres), which would require additional mitigation by the USACE. Wetlands H, HA, NB, and NW are all small emergent wetlands (see **Chapter 2.8**). Wetland NB, a small 0.009 acres USACE jurisdictional wetland located approximately 125 feet west of Bricktown Way and partially within the Proposed Utility Access Corridor, in which this roadway would be constructed, requires actions to mitigate the loss of this emerging wetland habitat. Other than the additional loss of open field habitat and the impacts on this wetland, the impacts to natural resources under this alternative would be the same as those projected to occur under the Proposed Project. All of the mitigation requirements for the Proposed Project would remain and be required, with the possible addition of further requirements for plants and wetlands replacements due to the construction of this alternative.

~~This alternative would also alter existing natural resources within this area for the access road. This area is vacant and covered with low-level vegetation, within the Successional Old Field-Variant 1 mapped ecological community (see **Chapter 2.8**). Only seven additional trees with a breast-height diameter of six~~

~~inches or more would be removed if this access road were constructed. Construction of the Arthur Kill Access Road would eliminate approximately 2.5 acres or 11.4 percent of the open area habitat presently found within the Development Area, which is potential boneset habitat, and grading a cut/fill actions necessary to establish roadway surface and grade would result in changes in topography. However, if the utility easement corridor is modified and the Arthur Kill Access Road developed under this alternative, it is anticipated that an additional 0.067 acres of U.S. Army Corps of Engineers (USACE) regulated wetlands would be impacted, consisting of Wetlands H (0.035 ac), HA (0.006 ac), NB, (0.009 ac) and NW (0.017), which would require additional mitigation by the USACE. Wetlands H, HA, NB, and NW are all emergent wetlands (see **Chapter 2.8**).~~

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 ~~utility corridor~~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.~~; and~~
- ~~Sharrotts Road/Arthur Kill Road.~~

Under the Arthur Kill Access Road Alternative, traffic impacts were identified at seven~~six~~ signalized intersections ~~and one unsignalized intersection~~ during the weekday AM peak hour, at nine~~eight~~ 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 ~~and one unsignalized intersection~~ during the Saturday MD peak hour. Under the Proposed Project, traffic impacts were identified at the same seven~~six~~ signalized intersections ~~and the same unsignalized intersection~~ during the weekday AM peak hour, at the same nine~~eight~~ 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 ~~and the same unsignalized intersection~~ during the Saturday MD peak hour. Those improvement measures identified for the Proposed Project would generally be the same under this alternative, with some additional timing changes ~~(~~at the intersection~~s~~ of ~~Veterans Road West/Bricktown Way-Korean War Veterans Parkway Off-Ramp~~ and 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 as identified in **Chapter 4: Mitigation** and **Chapter 7: Unavoidable Adverse Impacts**. As noted in those chapters, the Proposed Project would result in unmitigated adverse impacts ~~in traffic operations and potentially unmitigated impacts~~ on natural resources and on historic and cultural resources, and could result in~~.~~ potentially
~~After the implementation of proposed mitigation measures, the Proposed Project would result in~~ unmitigated traffic impacts in one 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.

~~Future No-Build traffic conditions at these locations are highly congested on multiple approaches in one or more peak hours. Under such conditions, significant traffic impacts can result from a relatively small increase in traffic, with limited measures available at this time to increase capacity at those locations sufficiently to fully mitigate those impacts. In the impacted peak periods, 80 percent to 90 percent of the Proposed Project's vehicular traffic would be generated by Retail Site "A" in 2015 and by Retail Sites "A" and "B" combined in 2020. Substantial reductions in the size of these retail sites – likely a 60 percent reduction or greater – would therefore be needed to eliminate the projected unmitigated traffic impacts at the one noted location in 2015 and the two noted locations in 2020. Substantial reductions in development acreage of these retail sites would reduce projected employment figures and tax revenues resulting from the development of the retail sites which would not achieve the Proposed Project's goals and objectives. The Proposed Project has several goals regarding generating new public amenities and economic activity, including the creation of new jobs, which would not occur in their full amounts under this alternative. Such a smaller project, under this alternative, would fail to meet the goals and objectives of the Proposed Project.~~

The Proposed Project in 2020 would potentially result in impacts on fringed boneset, a threatened plant species, by reducing by approximately 78 percent the open field-type habitats within the Development Area where that species is presently found and is generally conducive to its growth. As discussed in **Chapter 2.8**, the potential extent of the impact and the effectiveness of possible mitigation measures depend on how much of these areas would change through natural succession from open field to more woody habitats not suitable for boneset growth. Under worst-case conditions, three of the Proposed Project's development components – Retail Site "B" (which would already be substantially reduced to avoid unmitigated Traffic Operations impacts under this alternative) and 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 and the 40-foot wide alternative discussed in this chapter. Other than the no-action alternative, the only alternative that would avoid some of these unmitigated impacts would be the Shortened Englewood Avenue alternative that would avoid the construction of this portion of the roadway and have a minimal-impact emergency vehicle access roadway extending to Veterans Road West.

U. Mitigation Measures

Where significant adverse impacts are identified, the *CEQR Technical Manual* states that mitigation to reduce or eliminate the impacts to the fullest extent practicable is generally developed and evaluated. This chapter presents a summary of the analyses presented in the preceding chapters for each technical area regarding mitigation measures examined to minimize or eliminate identified potential impacts.

Historic and Cultural Resources

As discussed in **Chapter 2.6**, "Historic and Cultural Resources," 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. 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 recreation facilities, they are not planned to be located in this area, and to the greatest extent possible, the park has been designed to avoid 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.

A prehistoric site was located during the Phase IB survey atop a prominent knoll in the east-central portion of the current Project Area. This approximately 150 foot by 40 foot site, which is considered to be archaeologically significant, is located on which Retail Site "A" would be developed. Further archaeological investigation will be required to be undertaken in the parkland and on Retail Site "A" prior to construction or substantial ground disturbing activities. A Scope of Work for archaeological field testing will be prepared and submitted to the NYCLPC for review and approval. 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~~/or~~, if appropriate, 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 ~~NYC~~ the City and the developer(s).

Construction of the remainder of the Project Area by the year 2020 has the potential to disturb or destroy five other prehistoric archaeological sites and areas that possess archaeological potential that have never been surveyed. The full potential for Proposed Project components projected for completion by 2020 to result in significant adverse impacts on identified historic or prehistoric resources is not yet known.

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 ~~RPF~~ 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, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and/or OPRHP, will be required to be undertaken by the developer(s) through provisions in the Contract of Sale between NYC and the developer(s).~~ For City properties to be completed by the year 2020 that may be managed by the NYCEDC, 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 and the developer(s).

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

Natural Resources

All of the mitigation concepts summarized below and full presented in **Chapter 4.0** will require further consultation with an agreement from applicable regulatory agencies, including NYSDEC, USACE and NYCDPR. These measures include the following by resource or habitat areas:

- **Wetlands**
  - Wetlands impacted by the Proposed Project (wetlands C and regulated adjacent area of Wetlands B and C) would require mitigation by the USACE and NYSDEC, primarily associated with the development of Englewood Avenue in the vicinity of these wetlands.

  - Mitigation would likely not occur in either the CPPSPP or the Conservation Area, but some potential areas may exist within the proposed Fairview Park section of the Development Area,

~~especially near Wetland A If the utility/roadway easement corridor is developed, mitigation for impacts to emergent wetlands would be required.~~

~~o~~ In addition to other nearby sites, areas within the 20-acre Conservation Area may provide wetland mitigation opportunities to offset the anticipated impacts to ~~W~~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 at the time of application for the Part 663 permit, would need to be conducted to determine the suitability of the Conservation Area to provide mitigation opportunities in 2020. Additionally, potential areas may exist within the proposed Fairview Park section of the Development Area, especially near Wetland A. If 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.

~~o~~ Proper design of the proposed Englewood Avenue – its alignment, wide and other design elements ~~– is critical , will be an important~~ 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. ~~Design measures could include minimizing the disturbance footprint to the greatest extent practicable, using grates when possible to reduce shading, and treatment of stormwater discharges from the roadway.~~

- **Habitat and Flora Preservation**

~~Hybrid and Rare Species Preservation – A tree inventory for smaller trees (less than 6" dbh) should be performed prior to construction, with consideration given to transplant rare or unique species from the build footprint to undeveloped areas on site, with seeds from these species collected and provided to appropriate parties (e.g., botanists from NYCDPR).~~

~~o Topsoil Seed Bank Retention (see threaten and endangered species below)~~

General Recommendations

- Vernal Pool Habitat Preservation and/or Creation ~~–~~. For any wetland habitats not within the build footprints, a vegetated buffer should remain in place around them. In undeveloped areas, especially wooded areas at the base of slopes, shallow depressions could recreate the small isolated wetlands to be removed through the implementation of Retail Sites "A" and "B." Appropriate measures should be taken during construction to ensure that existing vernal pool~~s~~ habitat is ~~are~~ not directly or indirectly impacted by construction activities.

- 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.

Required Mitigation

- Englewood Avenue (portion between CPPSPP and Conservation Area) – the uses 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

- o New York City Local Law 3 of 2010 requires trees in public property under the jurisdiction of the New York City Parks Department (NYCDPR) to be mitigated (replaced) if removed. As noted in **Chapter 2.8, Natural Resources,** 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.

- **Threatened and Endangered Species**

~~The following area potential mitigation actions for address possible impacts to threatened and endangered plant species, especially Torrey's Mountain Mint (on Retail Site "A") and boneset (found throughout open field areas throughout the Development Area):~~

~~Soil Retention and Similar Habitat Development :~~

~~Establish locations in the proposed Fairview Park or in other nearby locations with a growth habitat similar to the area on Retail Site "A" where the Torrey's Mountain Mint was observed, with top soil from that area preserved and relocated within the identified preservation area(s). The area(s) would be monitored and maintained to ensure proper growing conditions for the species.~~

~~Establish a program to protect and maintain on-site open field areas, primarily within the western portions of Fairview Park or in other suitable locations, of the type that presently provide habitat for boneset within the Development Area.~~

~~Transplant and Seed Propagation – Transplanting the species and collecting appropriate cutting and seed stock to grow Torrey's Mountain Mint and bonesets at an appropriate facility (for instance, NYCDPR's Greenbelt Native Plant Center), and transplanting those plants to appropriate habitats within Fairview Park or other locations.~~

~~Advanced Species Search – Ecologists would survey publically owned parcels (up to 10 acres) to determine if other populations of Torrey's Mountain Mint occur near the site. If observed, the species will be documented and location will be identified to the regulatory agency(s).~~

- o **Torrey's mountain mint –** Given the success of the Bricktown Plan's propagation ~~to two outplanting 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, soil, cuttings, and seeds from the Retail Site "A" mountain mint population would be used to propagate these plants at one or more of NYCDPR's existing outplanting parcels or on other suitable NYCDPR-controlled sites to support the continuation of this plant in the area.

- o **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 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, or suitable habitat in Fairview Park, 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

Based on the potential traffic impacts identified in **Chapter 2.13**, transportation improvements are recommended at the following intersections by the year 2015 (further discussed in **Chapter 4.0**):

- 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.

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 the 2015 year.

~~After completion and occupation of the approximately 195,000 sq. ft. of proposed retail within Site "A," NYCEDC will conduct a traffic monitoring plan at the two intersections where significant unmitigable traffic impacts due to the Proposed Project are projected in 2015 (see **Chapter 4).**: (1) Boscombe Avenue/Outerbridge Crossing Ramps, and (2) Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp. This monitoring plan will include a full traffic inventory at those two locations in the relevant peak traffic periods. Using those data, updated Level of Service (LOS) analyses for those locations will be performed and the resultant volumes and LOS conditions will then be compared with the 2015 With-Action conditions projected in the FEIS. This comparison will demonstrate one of the following:~~

- ~~The mitigation measures included in the FEIS for these locations (or similar measures refined to reflect these updated traffic analyses) were found sufficient to reasonably mitigate the Proposed Project's traffic impacts. Under these findings, a similar mitigation monitoring plan would be carried out upon completion and occupation of the entire Proposed Project to confirm if further mitigation at one or both of these two locations would be warranted at that time.~~
- ~~The volumes and delays associated with the unmitigated traffic impacts projected in the FEIS at these locations were confirmed, and further mitigation to address these conditions would be identified. Under these findings, no further mitigation monitoring at these locations would be required.~~

~~NYCEDC would be responsible for all costs associated with the monitoring plan. Before commencing the monitoring plan, the NYCEDC will submit a scope of work to NYCDOT for review and approval and for review of the plan's results and recommendations.~~

Transportation improvements are recommended at the following intersections by the year 2020:

- 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
- ~~Sharrotts Road/Arthur Kill Road; and~~

- Englewood Avenue/Arthur Kill Road.

Traffic Mitigation Monitoring Plan

Prior to completion of the 2020 Proposed Project, NYCEDC or a developer of a portion of the 2020 Proposed Project will conduct a traffic monitoring plan for the intersection of Veterans Road West/Bricktown Way/KWVP Off-Ramp. This study may occur after development of any initial component of the 2020 proposed project, but must be completed, along with any resulting mitigation measures, prior to the occupation of the final component of the 2020 Proposed Project.

The results of the plan's updated traffic assessment would indicate the following:

- If the mitigation measures included in the FEIS for these locations upon completion of the entire Proposed Project would reasonably mitigate the Proposed Project's traffic impacts.
- If the volumes and delays projected for 2020 in the FEIS were found to have actually occurred and the proposed mitigation to address these newly measured conditions would be warranted.

NYCEDC or a developer of a portion of the 2020 Proposed Project would be responsible for all costs associated with the monitoring plan. Before commencing the monitoring plan, the NYCEDC or a developer of a portion of the 2020 Proposed Project will submit a scope of work to NYCDOT for review and approval and for review of the plan's results and recommendations.

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 **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.

~~After completion and occupation of the entire Proposed Project, NYCEDC will conduct a traffic monitoring plan for those intersections where:~~

- ~~significant unmitigable traffic impacts due to the Proposed Project are projected under 2020 With-Action conditions – i.e., Boscombe Avenue/Outerbridge Crossing Ramps, and Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp, and~~
- ~~the results of the monitoring plan studies previously completed for these locations upon full occupancy of the retail on Site "A" indicated that a follow-up monitoring assessment was necessary upon completion of the entire Proposed Project.~~

~~For the locations where this follow-up monitoring plan is warranted, the results of the plans updated traffic assessment would indicate the following:~~

- ~~The mitigation measures included in the FEIS for these locations (or similar measures refined to reflect the updated traffic analyses) upon completion of the entire Proposed Project would be sufficient to reasonably mitigate the Proposed Project's traffic impacts.~~
- ~~The volumes and delays associated with the unmitigated traffic impacts projected for 2020 in the FEIS were found to have actually occurred and further mitigation to address these newly measured conditions would be required.~~

~~NYCEDC would be responsible for all costs associated with the monitoring plan. Before commencing the monitoring plan, the NYCEDC will submit a scope of work to NYCDOT for review and approval and for review of the plan's results and recommendations.~~

~~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 the 2020 year. With the recommended transportation system improvement measures identified above in place, no significant adverse traffic impacts would occur as a result of the Proposed Project in the 2015 or 2020 analysis years, with the exception of the following locations for the 2015 and 2020 years:~~

- ~~Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp;~~
- ~~Boscombe Avenue/Outerbridge Crossing Ramps; and~~
- ~~Sharrotts Road/Arthur Kill Road.~~

~~At the Boscombe Avenue/Outerbridge Crossing Ramp intersection, a further mitigation measure could be provided to include the widening and restriping of the on-ramp to the Outerbridge Crossing to accommodate two lanes. This proposed mitigation measure is considered a higher cost item as per guidance in the CEQR Technical Manual, and has the potential to fully mitigate the impacts of the proposed project at this intersection. Between the Draft and Final EIS further analysis will be conducted to explore the feasibility of this measure. In order to fully inform consideration of this mitigation measure, and among other things, further analysis will explore: ownership of the land proposed for use in widening the on-ramp, the potential for additional impacts resulting from this proposed measure, overall benefits to the larger traffic network, and cost of construction.~~

V. Irreversible and Irretrievable Commitments of Resources

As detailed in **Chapter 5.0**, there are a number of resources, both natural and built, that would be expended in the construction of the area and by the future uses within the area that are expected to result from the Proposed Project. 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.

W. Growth-Inducing Aspects of the Proposed Action

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 is appropriate when a project adds substantial new land use, new residents or new employment that could induce additional development of a similar kind or of support uses; and/or introduces or greatly expands infrastructure capacity. As detailed in **Chapter 6.0**, the Proposed Project is not expected to induce additional notable growth outside of ~~area to be rezoned and redeveloped (~~the Development Area~~)~~. The neighborhood surrounding the area consists of a mixed-use neighborhood, and many new separately planned commercial projects are already under construction. This growth is anticipated to occur independent of the Proposed Action, and the new uses introduced by the Proposed Action would not trigger additional development outside of the Development Area.

X. Unavoidable Adverse Impacts

According to the *CEQR Technical Manual*, unavoidable significant adverse impacts are defined as those that meet the following two criteria: (1) There are no reasonably practicable mitigation measures to eliminate the Proposed Project’s impacts; and (2) 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. 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

By the year 2015 the proposed development activities would potentially disturb or destroy portions of one archaeological site located within the Development Area, identified through prior archaeological survey work. 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. Construction of the remainder of the Project Area by the year 2020 has the potential to disturb or destroy portions of one or more historic or prehistoric archaeological site located within the remaining sections of the Project Area, which was identified through prior archaeological survey work. In addition, there are portions of the remainder of the Project Area that possess archaeological potential that have never been surveyed. As noted in **Chapter 4.0**, "Mitigation Measures," the historic ruins and prehistoric sites within the former Kreischer (Fairview) estate could potentially extend into the southern portion of the proposed senior housing site.

At this time, there are no specific development proposals for Site Retail Site "B" and future developers will be selected pursuant to a ~~RPF~~ 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 on the results of the Phase 1B testing, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and~~/or~~, if appropriate, 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 ~~NYC~~ the City and the developer(s). For City properties that may be managed by the NYCEDC, remedial measures and, if needed as determined by NYCLPC based upon the results of the Phase 1B testing, ~~including Phase 1B testing,~~ any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and~~/or~~, 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 and the developer(s).

Natural Resources

Implementation of the Proposed Project by the year 2015 would impact approximately 0.106 acres of wetland habitats. No impacts to NYSDEC regulated wetlands or USACE jurisdictional wetlands would occur. The developments from the 2015 analysis year would remove or alter approximately 20.5 acres of habitat for flora and fauna on site. These habitats are largely successional woodlands and fields. None of the habitats are rare or unique and are common in southern New York State. Displacement of wildlife within the Development Area would be either temporary or permanent, depending upon the whether the construction would permanently alter the existing landscape and remove sufficient habitat to render the remaining habitat unsuitable for some species.

Development by the year 2015 would impact 538 of the surveyed trees within the Development Area including approximately 208 trees impacted by the development of Fairview Park and 330 that would be impacted on Retail Site "A.". A portion of these trees, especially those displaced from Fairview Park, would be replaced elsewhere in the Project Area or in other locations within Staten Island. The exact number, location and type of trees involved will be determined in the future as the plans for Fairview Park are finalized.

~~Two endangered and one threatened plant species were observed within the proposed areas of the 2015 year developments. Two species, the bonesets (one threatened and one endangered), were observed in open areas (e.g., successional old fields Variants I and II, and unpaved paths) throughout the Development Area. As such, the removal and/or disturbance of open areas would impact the bonesets through habitat loss and direct removal of individual plants. Due to the observed prevalence of bonesets throughout the site, it is not anticipated that the removal of some of the onsite open area habitats as part of the 2015 year analysis would pose a significant unavoidable impact to the species.~~

Torrey's ~~M~~mountain ~~M~~mint, an endangered species, was identified in the proposed parking lot on the southern portion 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.~~, occurs in one discreet location on the southern border of Retail Site "A."~~ Review of the NYS NHP 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*." NYS–NHP conservation and management strategies for the species identify that "open areas need to be maintained without directly damaging existing plants." ~~The removal of one of the remaining three sites for this species would be viewed as a significant impact by regulatory agencies.~~

The development of Retail Site "A" would remove Torrey's mountain mind plants and approximately 10 percent of available boneset habitat in the Development Area. The removal of Torrey's mountain mint would be a significant adverse impact. However, the Bricktown Centre colony along Veterans Road West within the Charleston site will remain preserved in its protected habitat area. Proposed mitigation measures for the Retail Site "A" mountain mint removal are discussed in **Chapter 4**: "Mitigation." These measures, along with other proposed actions to be developed in consultation with applicable regulatory agencies, would support the continued presence of Torrey's mountain mint in this area.

Implementation of development under the 2020 year analysis on Retail Site "B," the senior housing site and the school site would impact approximately 0.30 acres of unregulated/non-jurisdictional wetland habitats~~, none of which would be determined to be jurisdictional~~. The development of Englewood Avenue and specifically the segment between CPPSPP and the Conservation Area under the 80-foot wide ~~concept plan~~Proposed Project would impact about 0.07 acres of NYSDEC-regulated wetlands (Wetlands B and C) and USACE jurisdictional wetlands~~.~~. Also, under the 80-foot width of Englewood Avenue, approximately 0.89 acres of NYSDEC-regulated adjacent area would be impacted. Actions to mitigate the impacts to these regulated and jurisdictional wetlands would~~–~~ be reviewed by NYSDEC and USACE during the roadway design and permitting processes. ~~review by the two regulatory agencies.~~ Representatives of the USACE noted during a recent field visit that impacts to these types of jurisdictional forested wetlands should be reduced to the greatest extent practicable and unavoidable impacts would require mitigation.

Implementation of developments under the 2020 year analysis would ~~bifurcate~~ divide or fragment 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~~ CPPSPP and Conservation Area through removal and bifurcation of a large contiguous vegetated buffer area. Approximately 2,013 of the survey trees would be impacted in 2020 (including those impacted by the year 2015).

The construction of Englewood Avenue would result in substantial direct impacts to wildlife that uses the CPPSPP and the Conservation Area, which together with the Englewood Avenue corridor comprise a large forested parcel with mature trees. Within the footprint of Englewood Avenue, the existing dirt path located adjacent to the southern boundary of the CPPSPP and within the northern boundary of the Conservation Area is relatively narrow and the trees on both sides provide a relatively undisturbed canopy. The CPPSPP is a NYSDEC BCA, and bird species, including listed species that live in the preserve, likely transit to the Conservation Area for usage of the habitat – a movement that would be restricted by construction of an 80-foot wide roadway, resulting in significant adverse impacts on fauna within the CPPSPP and the Conservation Area.~~ The current dirt path that separates CPPSPP from the Conservation Area is not an impediment to fauna moving between these areas. Moreover, the canopies of the trees in both parcels intermingle in some locations, which provide an undisturbed continuous canopy. CPPSPP is a NYSDEC Bird Conservation Area, and bird species, including listed species that live in the preserve and likely transit to the Conservation Area for usage of the habitat there. Removal of the undisturbed continuous canopy for the new road would result in bifurcating valuable habitat and would have negative impacts on fauna within the preserve and the Conservation Area.~~ Moreover, unlike the Development Area, the forest habitats in CPPSPP and Conservation Area have fully developed mature

canopies, which have limited the undergrowth of dense vines that are stressing trees within the Development ~~a~~Area. The construction of Englewood Avenue~~opening of roadway~~ through this forested area would create an "edge effect" on both sides of the road and would likely contribute to localized increases of dense understory vegetation, which would further impact the value of the habitat on the parcels. ~~The New York State-listed rare red-maple sweetgum swamp habitat is also present within the Englewood Avenue's build footprint. The implementation of this option would remove approximately 0.26 acres of this habitat type.~~ Under Proposed Project~~In addition~~, 319 of the surveyed trees would be impacted ~~under this option~~ (inclusive of the 2,013 total trees impacted).

~~Implementation of developments under the 2020 year analysis would remove additional areas that serve or could serve as habitat to the threatened and endangered bonesets.~~ Although no listed species were observed in the 2007-2008 or 2012 surveys within the Development Area, ~~L~~listed species (e.g. mud turtle, etc.) have been observed ~~occur~~ in the CPPSPP and the Conservation Area, but not within the Development Area. Many of these species either move between these two areas, or depend on the contiguous habitats within the Development Area to provide a vegetated buffer from anthropogenic disturbance. The ~~bifurcating~~ division or fragmentation of habitats, from the construction of Englewood Avenue, would have a negative effect on wildlife. Although, there were no direct observations of listed species within the roadway's footprint, the adjacent Wetlands B and C and their surroundings~~adjacent parcels~~ provide habitat conditions favorable to listed species that occur within these two preserves~~that area~~. Portions of ~~T~~these habitats would be impacted and removed by the construction of the roadway.

Transportation

As further discussed in **Chapter 4.0, Mitigation**, each of the described 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) 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. Thus it is expected that all traffic impacts 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. With only the following partial mitigation measures in place, significant adverse impacts at the following intersections would be unavoidable.

- *Boscombe Avenue/Outerbridge Crossing Ramps:*
- ~~*Boscombe Avenue/Outerbridge Crossing Ramps:*~~
- *Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp:*

~~After the implementation of mitigation measures, the following potential significant traffic impacts due to the Proposed Project are projected to remain in 2015:~~

- ~~Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp:~~

  ~~Potential significant traffic impacts are projected to remain for the eastbound left-turn movement, the northbound approach, and the southbound through/right-turn lane during the Saturday midday peak hour.~~

  ~~However, the New York State Department of Transportation (NYSDOT) has announced that it will implement improvements to the southbound on- and off-ramps on the West Shore Expressway ("WSE") between Bloomingdale Road and Englewood Avenue by 2015. By improving the connection between the southbound WSE and its adjacent service road (Veterans Road West),~~

traffic heading south on the WSE could more easily access the major traffic generators along Veterans Road West (including the Bricktown Centre). The projected resultant traffic shifts would reduce the volume of traffic added by the Proposed Project to this intersection, potentially reducing or eliminating the unmitigated traffic impacts noted above. The effects of these announced WSE ramp improvements at this and other study area intersection will be analyzed and presented in the FEIS.

- Boscombe Avenue/Outerbridge Crossing Ramps.

  Potential significant traffic impacts are projected to remain for westbound right-turn movements at this intersection during the weekday midday and weekday PM peak hours.

After the implementation of mitigation measures, the following potential significant traffic impacts due to the Proposed Project are projected to remain in 2020:

- Veterans Road West/Bricktown Way/Korean War Veterans Parkway westbound off-ramp.

  Potential significant traffic impacts at this intersection are projected to remain for:

  - Westbound left-turn movements during the weekday midday and Saturday midday peak hours;
  - The northbound approach during the weekday midday, weekday PM, and Saturday midday peak hours; and
  - Eastbound left-turn movements and the southbound though/right-turn lane during the Saturday midday peak hour.

  However, as discussed above, improvements to the southbound on- and off-ramps on the WSE are projected to result in traffic shifts that would reduce the volume of traffic added by the Proposed Project to this intersection, potentially reducing or eliminating the unmitigated traffic impacts noted above. The effects of these announced WSE ramp improvements at this and other study area intersection will be analyzed and presented in the FEIS.