

DRAFT SCOPE OF WORK FOR AN ENVIRONMENTAL IMPACT STATEMENT

CHARLESTON MIXED-USE DEVELOPMENT

CEQR No. 13DME001R

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1.0 Introduction

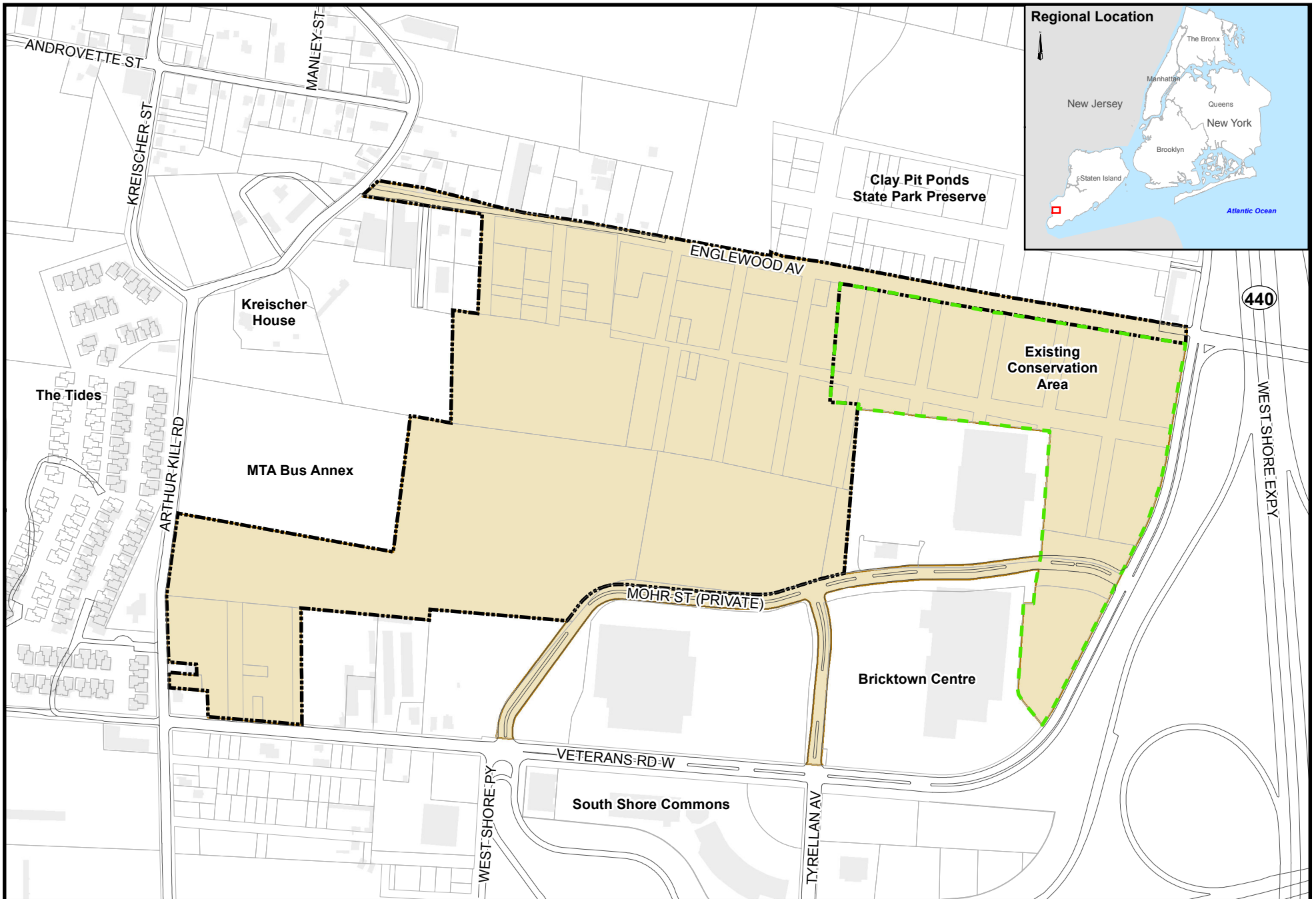
1.1 Description of the Proposed Project

The New York City Economic Development Corporation (NYCEDC), on behalf of the City of New York, is proposing the development of an approximately 63.5-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 20-acre conservation area, which is located adjacent to the 63.5-acre Development Area and the potential to map as public streets, 4.4-acres of the existing privately owned Mohr Street/Tyrellan Avenue. The overall proposed project is referred to as the Charleston Mixed-Use Development. The 63.5-acre Development Area, plus the Conservation Area and existing private streets to be mapped constitute the “Project Area.” The Project Area encompasses just under 88 acres. The Project Area is generally bounded to the north by the future northern limit of Englewood Avenue and Clay Pit Ponds State Park Preserve, 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”) (see **Figure 1**).

The Charleston Mixed-Use Development consists of a number of discrete project elements that will be undertaken by different entities. **Figure 2** provides a preliminary site concept for the proposed project showing the placement and relationship of the different project elements. The Project Area, as shown on the figure, is divided into five smaller sites for development as follows:

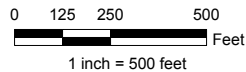
1. Parkland: The NYC Department of Parks and Recreation (“DPR”) would develop a 22-acre park site with areas for both active and passive recreation. This new park would be mapped along with the adjacent approximately 20-acre Conservation Area for a new, approximately-42 acre mapped park.
2. Retail Site “A”: A private developer has been selected to develop this approximately 10-acre site. This site would include a branch of the New York Public Library (“NYPL”). To provide access to Site A, either a direct connection would be made to the existing privately-owned Mohr Street/Tyrellan Avenue that would be mapped or, alternatively, an access road would be mapped and built within the Project Area to Arthur Kill Road.
3. Retail Site “B”: This site consists of approximately 6.5 acres and would be privately developed pursuant to an RFP in the future.
4. Housing: The NYC Department of Housing Preservation and Development (“HPD”) or NYCEDC would offer this approximately 9.5-acre site for senior housing in the future.
5. Public School: The NYC School Construction Authority (“SCA”) would construct a combined elementary/middle school on the approximately 7-acre site.

Englewood Avenue (the Englewood Avenue area on Figure 2) would be mapped and constructed at a width of 80 feet across the northern border of the Project Area and would connect Veterans Road West on the east to Arthur Kill Road on the west. The avenue would include sidewalks and a bicycle path for its entire length to enhance access to the adjacent uses, and in particular the parks and school. More information about these projected development components is provided in Section 2.4.



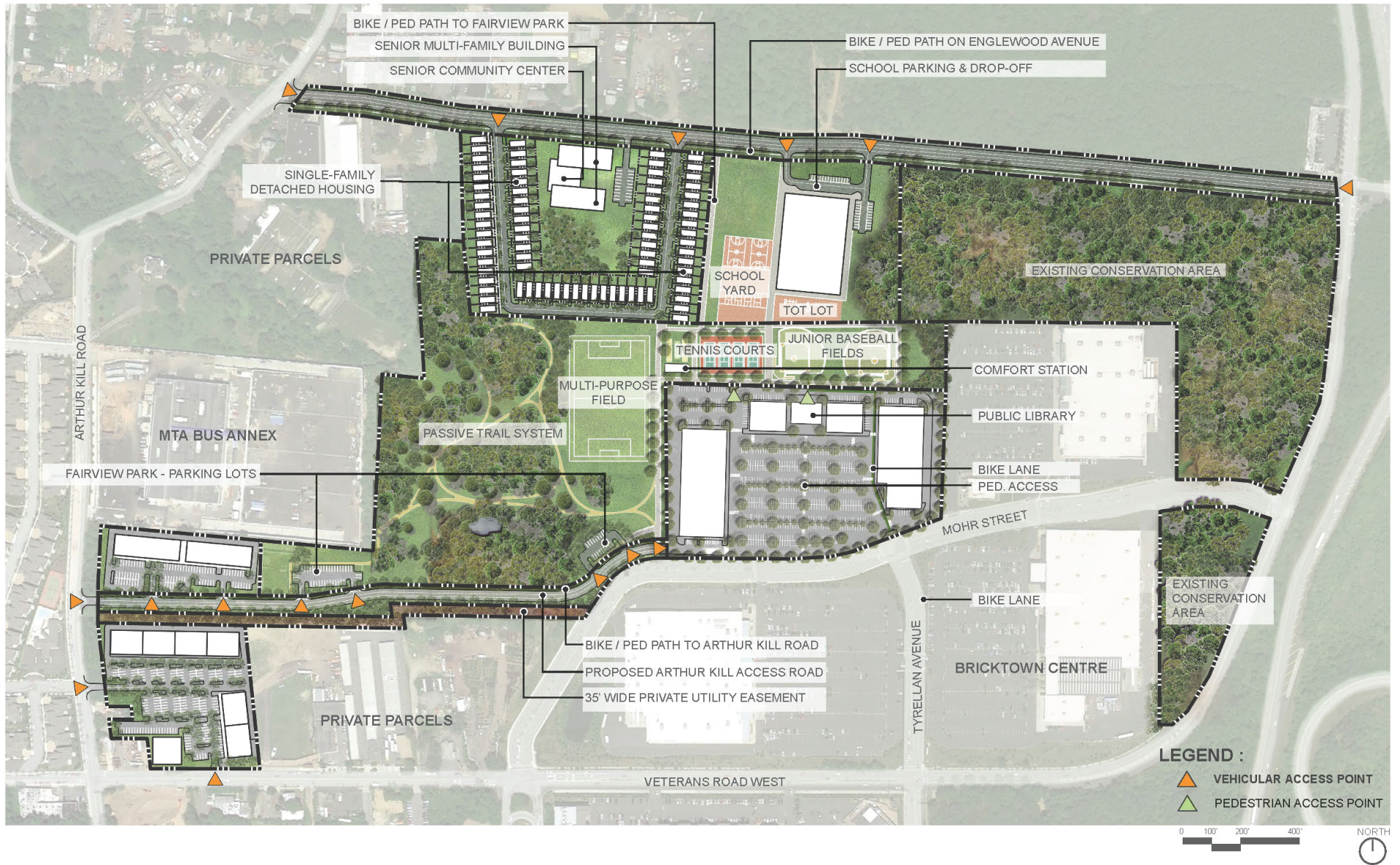
Legend

- Project Area
- Conservation Area
- Development Area
- Building Footprint



Charleston Mixed-Use
Development

Figure 1
Project Site Location



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

- Zoning Map amendments;
- Authorizations and Certifications by the City Planning Commission (“CPC”) related to the Special South Richmond Development District (“SRD”) and site plan approval and reduction in required parking within C4-1 zoning districts;
- Approval for acquisition and disposition of city-owned property;
- Potential disposition of the senior housing project site as an Urban Development Action Area and approval of the proposed project as UDAAP;
- 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 42 acres of parkland; including 22 acres of a new recreational area and 20 acres of an existing conservation area;
- Mapping and construction of Englewood Avenue, as needed, from Veterans Road West to Arthur Kill Avenue to a width of 80 feet, including authorization to acquire all or portions of privately owned property within the proposed bed of the mapped street;
- Mapping and construction of a new access road from Retail Site A to Arthur Kill Road on city-owned property or, alternatively, mapping of portions of Mohr Street/Tyrellan Avenue that are within the Project Area, including authorization for the City to acquire privately-owned property within the proposed bed of the mapped street;
- Site selection for a new NYPL branch library; and
- New York State Department of Environmental Conservation (DEC) or Army Corps of Engineers (ACOE) permits: In order to implement the proposed plan-- ACOE and/or DEC permits may be required for building within buffer zone surrounding jurisdictional wetlands.

More information about these public actions is provided in Section 1.4. Collectively, the proposed discretionary public actions and the development that is expected to be facilitated by them are the “Proposed Action”

1.2 Purpose and Need for the Proposed Project

The City of New York is seeking to comprehensively plan for the beneficial use of approximately 63.5 acres of undeveloped property in the Charleston neighborhood of Staten Island. The proposed development of the site, a priority project from the Working West Shore 2030 Report, 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. The proposed project will provide new recreational facilities and public open spaces, a new school, a new public library, a mix of retail and office uses, and opportunities for housing for seniors and active adults. The project will address a rising demand for additional retail, cultural, educational, and recreational facilities on the South Shore of Staten Island.

The currently undeveloped project site is appropriate for new retail development, as 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 project site benefits from superior regional access including the West Shore Expressway, the Korean War Veterans Parkway, and Richmond Parkway

which 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 well-served by public transportation. It is also conveniently located near growing residential neighborhoods such as Richmond Valley, Tottenville, Woodrow, and Pleasant Plains, all located directly across from the parkways. The proposed retail would enhance this growing retail node and would further fulfill the surrounding community's demand for additional commercial goods and services.

The proposed housing for seniors and active adults, as well as the new school, will address the changing demographics of the borough as a whole. By 2030, the borough is projected to grow by 65,000 residents and 25,000 households – 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 youngest (in 1970) to the oldest in 2030, based on median age of the population. By 2035, the borough is projected to gain 35,000 seniors (65+ years) and 17,000 young adults (20-34 years).

The mapping of Fairview Park, the creation of new recreational facilities, the creation of a new public library branch, and the preservation of natural lands, would all be implemented in response to community requests. Staten Island residents and elected officials have strongly expressed a desire for active recreation facilities in this area, as well as a desire for preservation of unique natural features such as wetlands, topography, and densely forested areas. This project would also designate approximately 20 acres (including a DEC-mapped wetland, an oak-hickory forest, and a red maple-sweetgum swamp) contiguous to Clay Pit Ponds State Park Preserve as an environmental preservation area to be left untouched. The proposed park mapping would ensure that a large expanse of the untouched, vegetated land is preserved. In addition, the park mapping would provide protection for the historic foundation remains of Fairview, Balthazar Kreisler's 19th century mansion, which are located on a portion of the proposed park.

1.3 Project Background

A 1978 Board of Estimate Resolution (ULURP# C780161-163 PPR) approved disposition of city-owned land in Charleston, Staten Island, including the Project Area, with stipulations against large open commercial amusement establishments as listed in Use Group 15 of the Zoning Resolution. In 2002, approximately 130 acres of city-owned land in Charleston, Staten Island were subdivided for potential development. Three years later, in 2005, a portion of the 130-acre site was developed into the approximately 42 acre Bricktown Centre project which included the retail shopping center as well as infrastructure improvements and the establishment of a 20-acre conservation area as project mitigation. In 2009, the Metropolitan Transportation Authority ("MTA") constructed a garage on an approximately 10 acre portion of the site, as shown on **Figure 2**. The Development Area is the remaining approximately 63.5 acre portion.

1.4 Required Actions and Discretionary Approvals

Development of the proposed Charleston Mixed-Use Development requires a number of public approvals. Discretionary approvals under the purview of the CPC are described below and except for Authorizations and Certifications and a consistency determination for the WRP, the actions also are subject to the Uniform Land Use Review Procedure (ULURP).

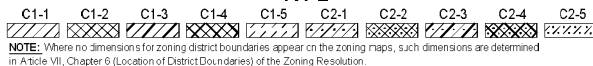
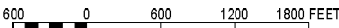
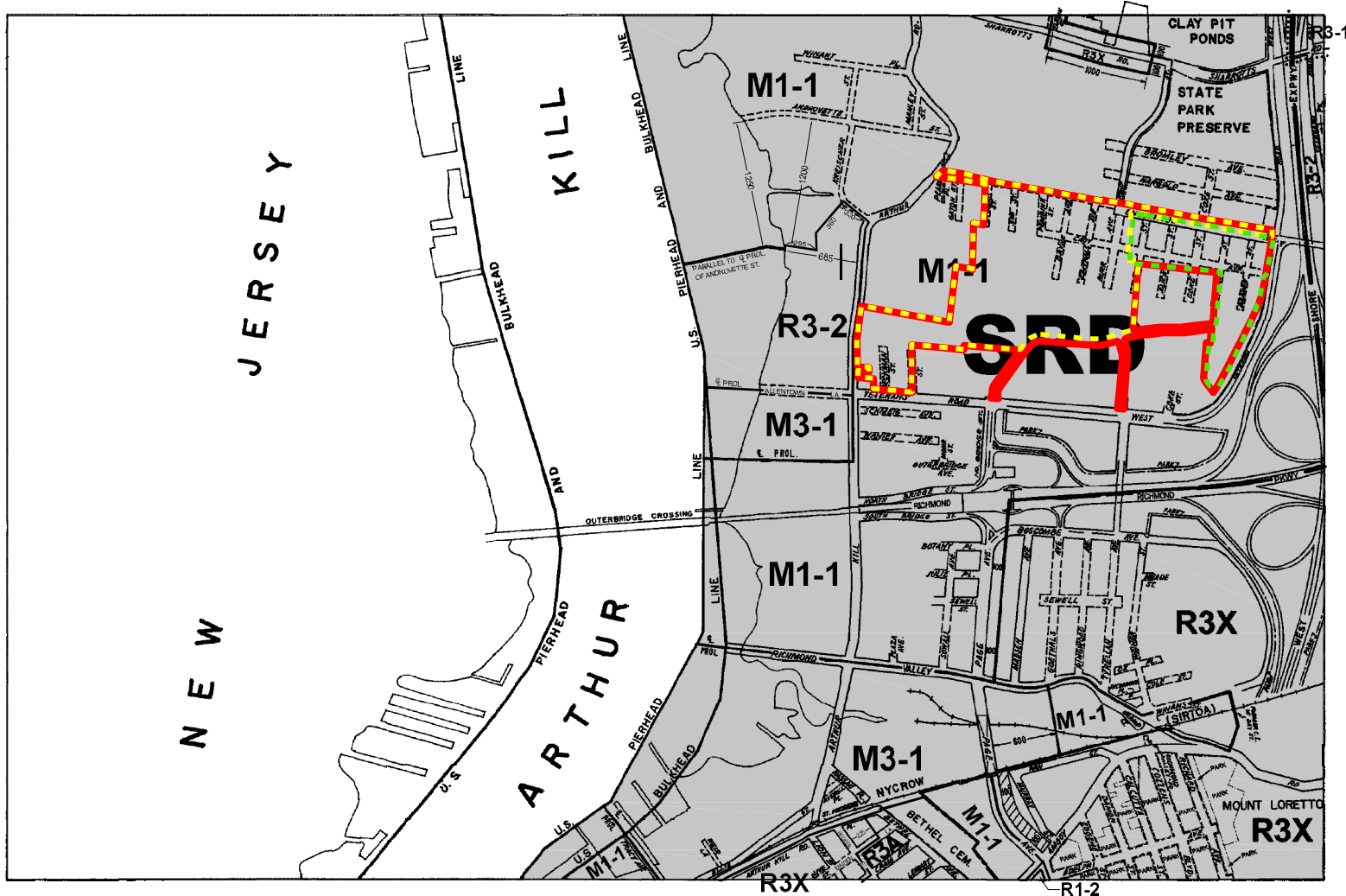
Proposed Zoning Map changes

The Project Area is located in an existing M1-1 zoning district (**Figures 3 and 3a**) and the Special South Richmond Development District (“SRD”). In the future with the project, two new zoning districts would replace portions of the M1-1 district: an R4 district along the northern edge of the Project Area and two C4-1 districts over the proposed retail sites: Site A and Site B (as shown in Figure 3b). The mapping of Fairview Park would remove zoning from that portion of the Project Area. The private parcels fronting on Veterans Road West and those fronting on Arthur Kill Road would remain M1-1 zoning districts. Proposed zoning districts and boundaries are shown on **Figure 3b**.

- The R4 district would be mapped over an approximately 16-acre portion of the project area, running approximately 1,440 feet along the centerline of the proposed Englewood Avenue and having a proposed depth ranging from approximately 500 to 600 feet. The R4 district would encompass the senior housing and school sites. R4 zoning districts allow all types of housing with a maximum Floor Area Ratio (FAR) of 0.75. That FAR may be increased by an attic allowance of up to 20 percent for inclusion of space under pitched roofs common to these districts. R4 zoning districts have a maximum height of 35 feet and often produce residential buildings with three stories.
- C4-1 zoning districts would be mapped in Retail Sites A and B and would facilitate the planned retail development. C4 districts are mapped in regional commercial centers that are located outside central business districts. In these areas, specialty and department stores, theaters and other commercial and office uses serve a larger region. Residential uses are not allowed as-of-right within C4-1 districts that are typically mapped in outlying areas, such as the Staten Island Mall, that require large amounts of parking. However, the Zoning Resolution (Section 36-023) allows for reductions in the parking requirement of up to 50 percent provided that the CPC finds that the applicant has demonstrated that the proposed parking is sufficient.

The SRD was established with the following general purposes:

- To guide future development in accordance with the Land Use Plan and Capital Improvement Plan for the area;
- To promote balanced land use and development of future land uses and housing in the Special District area;
- To avoid destruction of irreplaceable natural and recreational resources; and
- To promote the most desirable use of land in the South Richmond area and thus to conserve the value of land and buildings and thereby protect the city's tax revenues.



ZONING MAP

THE NEW YORK CITY PLANNING COMMISSION

Major Zoning Classifications:

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

- R - RESIDENTIAL DISTRICT
- C - COMMERCIAL DISTRICT
- M - MANUFACTURING DISTRICT
- SPECIAL PURPOSE DISTRICT
The letter(s) within the shaded area designates the special purpose district as described in the text of the Zoning Resolution.
- AREA(S) REZONED

Effective Date(s) of Rezoning:

02-03-2010 C 090042 ZMR

Special Requirements:

For a list of lots subject to CEQR environmental requirements, see APPENDIX C.
For a list of lots subject to "D" restrictive declarations, see APPENDIX D.
For Inclusionary Housing designated areas on this map, see APPENDIX F.

MAP KEY

	32c	33a
	32d	33b
	35a	35c

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NOTE: Zoning information as shown on this map is subject to change. For the most up-to-date zoning information for this map, visit the Zoning section of the Department of City Planning website www.nyc.gov/planning or contact the Zoning Information Desk at (212) 720-3291.

ZONING MAP 32d

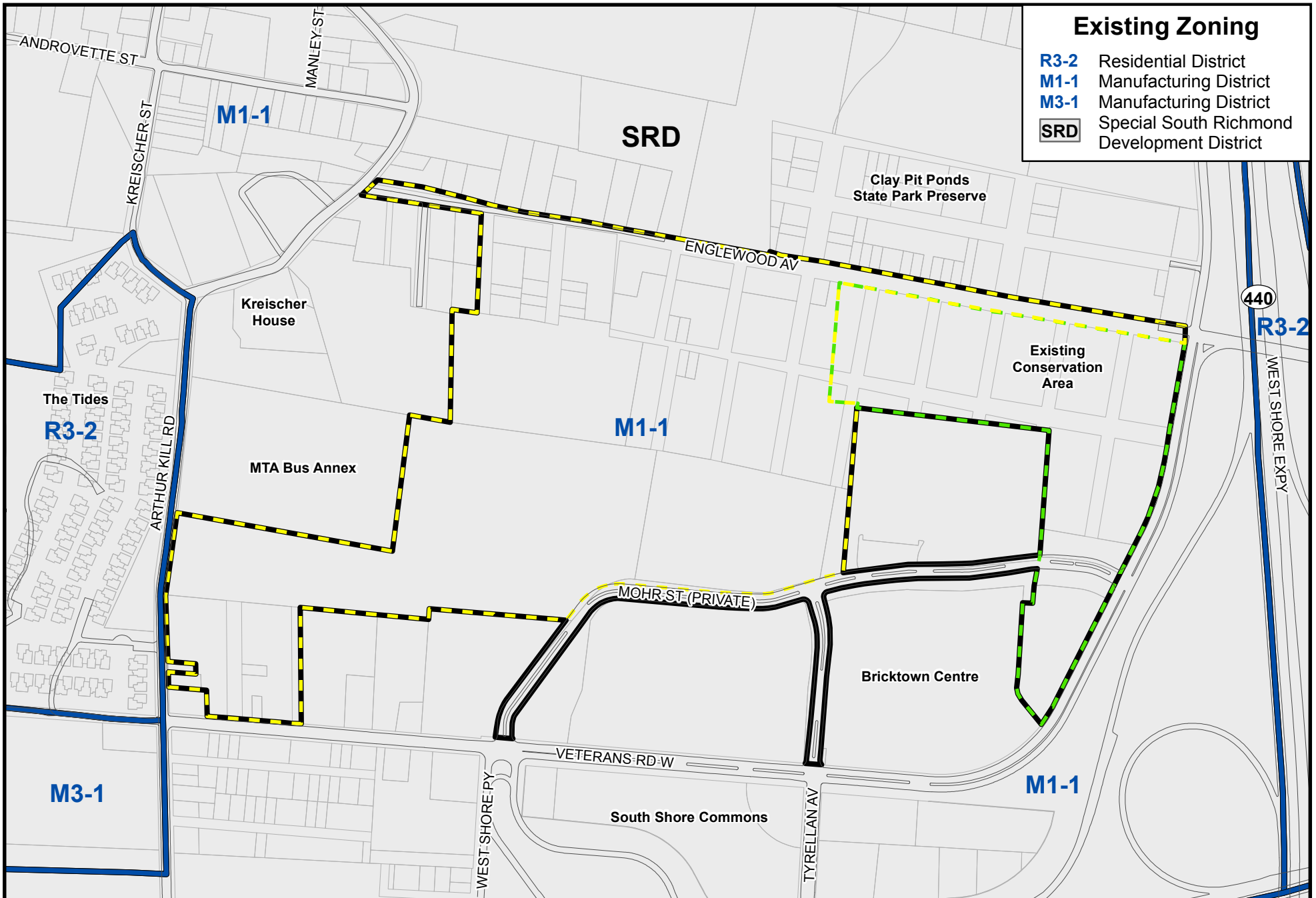


- Legend**
- Project Area
 - Development Area
 - Conservation Area



Charleston Mixed-Use
Development

Figure 3
Zoning Map

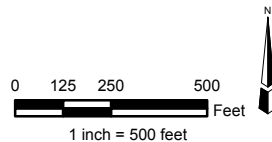


Existing Zoning

- R3-2** Residential District
- M1-1** Manufacturing District
- M3-1** Manufacturing District
- SRD** Special South Richmond Development District

Legend

- Project Area
- Existing Zoning Boundary
- Development Area
- Conservation Area

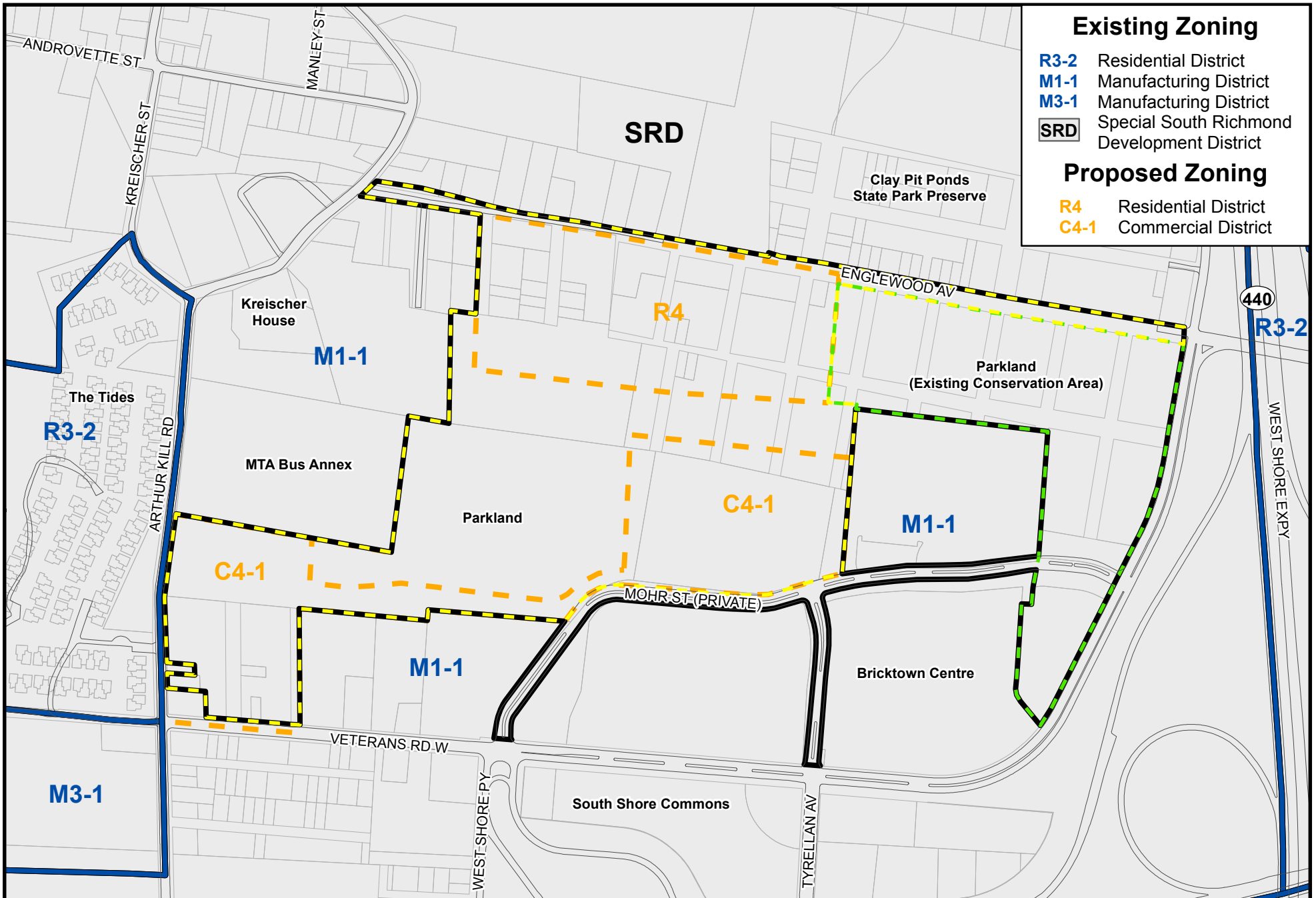


Charleston Mixed-Use
Development

Figure 3a

Existing Zoning





Existing Zoning

- R3-2** Residential District
- M1-1** Manufacturing District
- M3-1** Manufacturing District
- SRD** Special South Richmond Development District

Proposed Zoning

- R4** Residential District
- C4-1** Commercial District



Legend

- Project Area
- Existing Zoning Boundary
- Development Area
- Proposed Zoning Boundary
- Conservation Area

0 125 250 500 Feet

1 inch = 500 feet

Charleston Mixed-Use Development

Figure 3b
Proposed Zoning

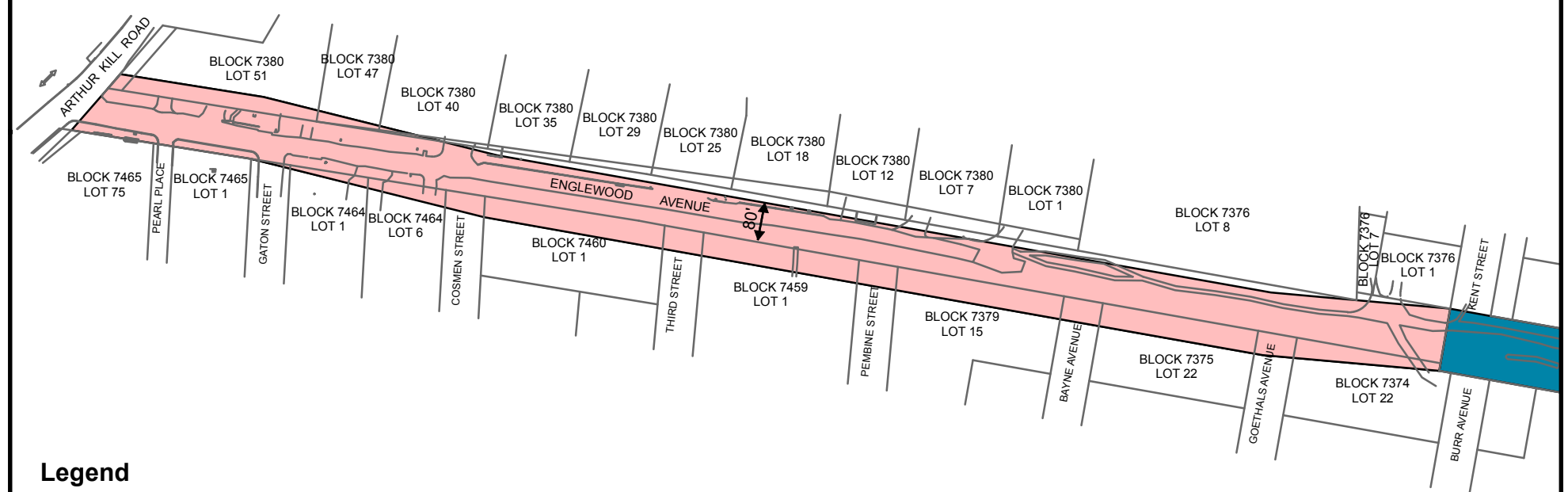
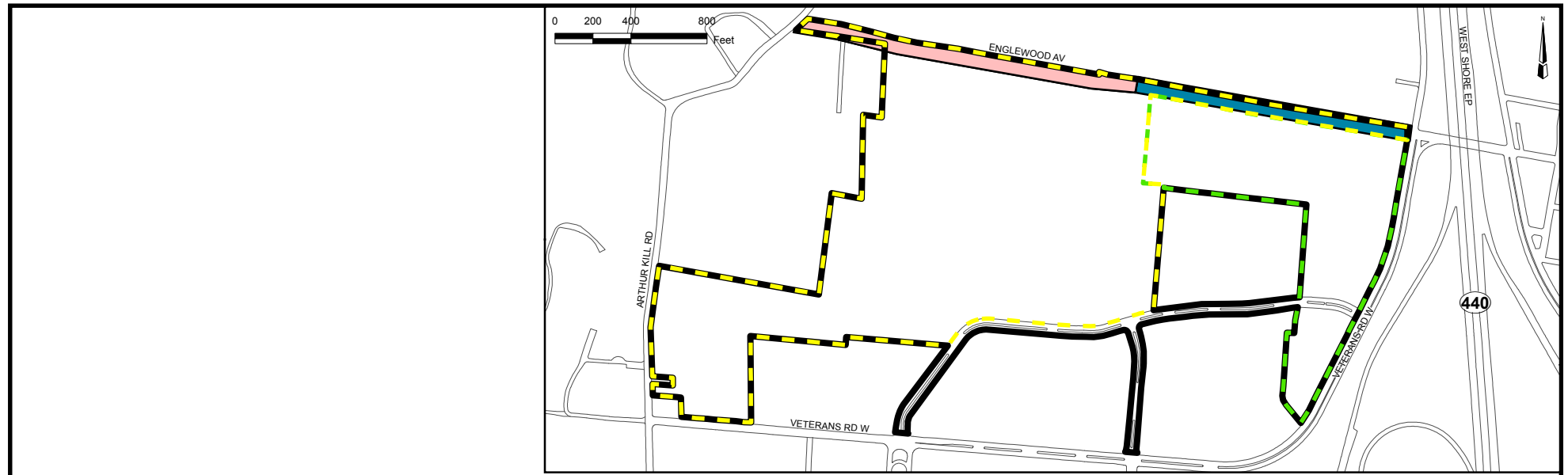
CPC Authorizations and Certifications that may be required include:

- CPC Certifications for:
 - The senior housing parcel, stating that sufficient school capacity exists to accommodate the anticipated residents of the development (per Zoning Resolution (ZR) Section 107-121).
 - Subdivision of zoning lots (Per ZR Section 107-08).
 - Modification of access restrictions concerning special provisions for arterial highways (ZR 107-251.) to allow curb cuts along Arthur Kill Road.
- CPC Authorizations:
 - Per ZR Section 107-30 for alterations to the existing topography of the Project Area, as well as the removal of trees.
 - Per ZR Section 107-68 to permit Group Parking Facilities with more than 30 spaces.
 - Per ZR Section 36-023: for parking lot approvals. Group parking facilities accessory to commercial uses on zoning lots larger than 4 acres in C4-1 districts require a CPC Authorization “to assure that the layout of such parking spaces is arranged and located in relation to the use or uses to which such spaces are accessory, so as to provide adequate ingress, egress, and circulation with respect to abutting streets or uses.” Furthermore, “the Commission shall find that such group parking facilities of any size comply with the maneuverability and landscaping provisions of ZR Sections 36-58 and 37-90 (PARKING LOTS), inclusive.”
 - Per ZR Section 36-21 for a reduction of up to 50 percent of required parking, provided that the Commission finds that the applicant has demonstrated that the proposed parking is sufficient for the use proposed.” Required parking without the reduction is 1 space per 150 square feet for general retail or services, 100 square feet for grocery stores, and 150 square feet for department stores or clothing stores.
 - Per ZR Section 107-68 for the modification of the size of an accessory group parking facility.

Mapping of Englewood Avenue, and mapping of either an Arthur Kill Road access road, or the existing Mohr Street/Tyrellan Avenue, plus mapping of Fairview Park

The Proposed Action includes mapping two streets and the proposed Fairview Park. The mapping action gives the City the authority to acquire all or portions of privately-owned property within the mapped bed of the proposed streets. Englewood Avenue is currently built near Arthur Kill Road, though it is neither mapped nor improved to the proposed width of 80 feet. To the east, Englewood Avenue is currently mapped for approximately one-quarter mile extending westward from Veterans Road West, but this section is not built. The Proposed Action would map the remainder of the corridor west to Arthur Kill Road, a distance of approximately 1,800 feet. The full constructed length of Englewood Avenue would be approximately 3,265 feet and would include bicycle/pedestrian facilities. The limits of the proposed mapping are shown on **Figure 4**. Portions of properties adjoining the proposed right of way of Englewood Avenue would need to be acquired. These acquisitions are envisioned to include all or part of several lots at the western end of the proposed Englewood Avenue.

The specifics of other street mapping actions will depend on how access to Retail Site A is designed. If access is provided directly off of the private Mohr Street/Tyrellan Avenue, then the por-

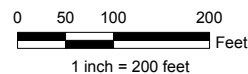


Legend

- Area to be Mapped and Constructed
- Existing Mapped Area to be Constructed



- Legend**
- Project Area
 - Development Area
 - Conservation Area



Charleston Mixed-Use
Development

Figure 4
**Proposed Mapping of
Englewood Avenue**

tions of these roads that are within the Project Area would be mapped as part of the Proposed Action. Alternatively, access to Retail Site A may be provided by a new access road connecting Arthur Kill Road with the retail site. That new access road would be mapped at a width of 50 feet and Mohr Street/Tyrellan Avenue would remain as unmapped private streets. Lastly, an approximately 42-acre area that will be designated as Fairview Park would be added to the City Map. This will include the existing 20-acre conservation area as well as the proposed new 22-acre portion of the park.

Acquisition and disposition of city-owned property

- Disposition of City-Owned Property for Retail Sites A and B and the Senior Housing Site. DCAS intends to dispose of the properties to the New York City Land Development Corporation (NYCLDC), which will dispose of the two properties to the New York City Economic Development Corporation or any successor thereto (NYCEDC). NYCEDC intends to sell each property to developers to be identified for each development parcel.
- Acquisition authorization for City acquisition of an approximately 4,000 square foot parcel located within the School Site.
- Mayoral and Borough Board approval of the sale terms of the disposition parcels pursuant to Section 384(b)(4) of the New York City Charter.
- Potential disposition of the senior housing project site as an Urban Development Action Area and approval of the proposed project as UDAAP.

DEC or ACOE permits.

In order to implement the proposed plan, ACOE or DEC permits may be required for building within regulated transition areas surrounding jurisdictional wetlands.

Site Selection

The proposed new branch of the NYPL requires Site Selection.

1.5 Project Area Description

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

The Project Area encompasses the tax lots as listed in **Table 1**. In addition, the table lists “Record Streets” affected by the Proposed Action. The Project Area, with the exception of the western end of Englewood Avenue, is undeveloped. It is largely covered with vegetation, including some wetland areas. Portions of the Project Area have been cleared for informal trails; however, these portions are limited and the majority of the Project Area is largely undisturbed..

Table 1: Block/Lots and Record¹ Streets Affected by the Proposed Action

Block/Lots and Record Streets in the Project Area Affected by Englewood Avenue Construction	
<ul style="list-style-type: none"> • Block 7374: Lot 22 (part of) • Block 7375: Lot 22 (part of) • Block 7379: Lot 15 (part of) • Block 7380: Lots 40, 47, and 51 (part of each) 	<ul style="list-style-type: none"> • Block 7459: Lot 1 (part of) • Block 7460: Lot 1 (part of) • Block 7464: Lots 1 and 6 (part of each)
<ul style="list-style-type: none"> • Goethals Avenue (part of) • Bayne Avenue (part of) • Pembine Street (part of) 	<ul style="list-style-type: none"> • Third Street (part of) • Cosman Street (part of) • Gaton Street (part of)
Block/Lots and Record Streets in Remainder of the Development Area	
<ul style="list-style-type: none"> • Block 7370: Lots 1 (part of) and 22 • Block 7374: Lots 1 and 22 (part of) • Block 7375: Lots 1, 7, 9, and 22 (part of) • Block 7379: Lots 1 and 15 (part of) • Block 7446: Lot 75 • Block 7448: Lot 1 (part of) • Block 7452: Lots 1 (part of) and 75 	<ul style="list-style-type: none"> • Block 7453: Lot 1 • Block 7454: Lots 1, 3, and 5 • Block 7459: Lots 1, 101, 103, 106, 25, and 50 • Block 7460: Lots 1 (part of), 12, 18, 21, 23, 75, 79, and 81 • Block 7487: Lot 100 (part of) • Block 7494: Lots 8, 90, 95, 97, and 183
<ul style="list-style-type: none"> • Claude Street (part of) • Burr Avenue • Goethals Avenue(part of) • Bayne Avenue(part of) 	<ul style="list-style-type: none"> • Pembine Street (part of) • Third Street (part of) • Cosman Street (part of) • Cady Avenue (part of)
Block/Lots and Record Streets in the Conservation Area	
<ul style="list-style-type: none"> • Block 7362: Lot 1 • Block 7363: Lot 1 • Block 7364: Lot 1 • Block 7368: Lot 1 • Block 7369: Lot 1 • Block 7370: Lot 1 • Block 7440: Lots 75 and 100 	<ul style="list-style-type: none"> • Block 7441: Lot 1 • Block 7442: Lot 1 • Block 7446: Lot 1 • Block 7447: Lot 1 • Block 7448: Lot 1 (part of) • Block 7452: Lot 1 (part of) •
<ul style="list-style-type: none"> • Beaver Street • Baxter Street • Coke Street 	<ul style="list-style-type: none"> • Alice Street • Claude Street (part of) • Cady Avenue (part of)
Block/Lots In Mohr Street /Tyrellan Avenue	
<ul style="list-style-type: none"> • Block 7446: Lot 75 	

Record Streets are areas that were intended as streets and, therefore, not included within a tax block, but have not been added to the City Map or constructed. Record streets are indicated on the zoning section map (Section 32d) with dashed lines.

2.0 City Environmental Quality Review

2.1 Public Review Procedures

Because the Proposed Project requires discretionary approvals by the City of New York, it is subject to City Environmental Quality Review (CEQR). The Office of the Deputy Mayor for Economic Development (ODMED) is the CEQR lead agency for the Proposed Project, which is a Type I action pursuant to 6 NYCRR Section 617.4.

The Office of the Deputy Mayor for Economic Development has determined, based on the examination of an Environmental Assessment Statement (EAS), that the proposed project has the potential for significant adverse environmental impacts and will require the preparation of an Environmental Impact Statement (EIS).

The EAS is the initial step in determining a project's potential impact on the environment. Its primary purpose is to provide the lead agency with the background and descriptive information needed to make a preliminary decision as to whether or not a project is likely to have one or more significant impacts.

This draft scope of work provides a description of the Proposed Project, outlines the proposed content of the EIS, and discusses the analytical procedures to be followed. The EIS will be prepared in conformance with all applicable laws and regulations and will follow the guidelines of the June 2012 *CEQR Technical Manual*. The EIS will contain:

- A description of the Proposed Project and its environmental setting.
- A statement of the environmental impacts of the Proposed Project, including its short-and long-term effects, and typical associated environmental effects.
- An identification of any adverse environmental effects that cannot be avoided if the Proposed Project is implemented.
- A discussion of alternatives to the Proposed Project.
- A discussion of any irreversible and irretrievable commitments of resources that would be involved in the Proposed Project should it be implemented.
- A description of mitigation measures proposed to minimize significant adverse environmental impacts.

The EAS and Positive Declaration for the Charleston Mixed-Use Development have been released concurrently with the publication of this Draft Scope of Work. The environmental analyses in the EIS will assess all proposed components of the Charleston Mixed-Use Development, and will identify the cumulative impacts of other projects in areas affected by the Proposed Project. The Office of the Deputy Mayor for Economic Development, as lead agency, will conduct and coordinate the review of the Proposed Project among the involved and interested agencies and the public.

2.2 Scoping

Scoping is the first step in the preparation of an EIS and provides an early opportunity for the public and other agencies to be involved in the EIS process. The goals of scoping are to determine the range of

issues to be evaluated in the EIS and to focus the EIS on the potentially significant impacts and to eliminate those that are irrelevant or insignificant. A thorough and open scoping process enables the lead agency to understand at the beginning of the process the issues of importance to government agencies and the potentially affected community. During scoping, the draft scope may be examined and comments may be made either in writing to the lead agency or at a public scoping meeting. A public scoping meeting will be held on Tuesday, October 30, 2012 at 6:00 PM at [the Tides at Charleston Community Center, 15 Tides Lane \(off Arthur Kill Road just north of Veterans Road West\)](#), Staten Island, New York. Written comments will be accepted until 5:00 PM on Wednesday, November 14, 2012. The Final Scope of Work will incorporate all relevant comments made on the Draft Scope of Work and will revise the extent or methodologies of the studies, as appropriate, in response to comments made during scoping. The Draft EIS (DEIS) will be prepared in accordance with the Final Scope of Work.

2.3 Environmental Impact Statement (EIS)

Once the lead agency is satisfied that the DEIS is complete, the document will be made available for public review and comment. The DEIS will accompany the ULURP application through the public hearings at the Community Board, Office of the Borough President, and City Planning Commission (CPC). At a date to be announced later, a public hearing will be held on the DEIS in conjunction with the CPC hearing on the ULURP applications to afford all interested parties the opportunity to submit oral and written comments. The record will remain open for 10 business days after the public hearing to allow additional written comments on the DEIS. At the close of the public review period, a Final EIS (FEIS) will be prepared that will incorporate all relevant comments made on the DEIS, as appropriate, along with any revisions to the technical analysis necessary to respond to those comments. The FEIS will then be used by the decision makers to evaluate CEQR findings, which address project impacts and proposed mitigation measures. The Office of the Deputy Mayor for Economic Development, as lead agency, and any other involved agencies, will issue Statements of Findings based on the information disclosed in the FEIS and any other appropriate criteria, before or contemporaneously deciding whether to approve the requested discretionary actions.

2.4 Reasonable Worst Case Development Scenario (RWCDS)

All of the elements of the Proposed Action are expected to be completed and operational by the year 2020. However, because the development timeline for some sites is more defined than for others, the impact assessments detailed in the EIS will be presented for two phases. An analysis will be performed for the intermediate Build Year of 2015 and an analysis will be performed for the completion Build Year of 2020. The elements of the plan that have a relatively defined construction horizon are the retail on Site A, including the library, and the proposed Fairview Park. These elements would be included in the first Build Year assessment and are expected to be completed and occupied by 2015. The second Build Year assessment will analyze the potential impacts of the full Charleston Mixed-Use Development which are expected to be completed by 2020.

2.4.1 Future Development without the Proposed Actions

For each technical area where a detailed analysis is required, the EIS will include an analysis of Future Development without the Proposed Project (Future No-Action Scenario). If the Proposed Project is not approved, 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 Build Year (first phase) or the 2020 Build Year (second phase) of the proposed Charleston Mixed-Use De-

velopment. The impact assessment chapters of the EIS would therefore assume that the existing conditions on the Project Area would continue without the approval of the Proposed Action. Proposed projects that are expected to occur in the community surrounding the Project Area will be included as appropriate in the analysis of the future without the Proposed Action. General background growth (e.g. population, traffic etc.) will be applied when analyzing future development in the Project Area without the Proposed Action.

The following is a list of known projects that will be considered in the analysis of the future without the Proposed Action:

- 236 Richmond Valley Road: 5,000 square feet of commercial development
- 245 Richmond Valley Road: 8,000 square feet of commercial development
- 4830 Arthur Kill Road: 14,674 square feet of retail
- Veterans Plaza Food Store: 70,000 square feet of retail
- Veterans Road West at Tyrellan Avenue: 58,030 square feet of retail
- Gateway Cathedral Residential: 70 residential units

This list will be updated as necessary through consultation with Community Board 3 and the NYCDGP.

2.4.2 Future Development with the Proposed Actions

The Proposed Action previously described in Section 1.4 would facilitate construction of the Charleston Mixed-Use Development. **Figure 2**, presented earlier, provides the preliminary site concept of the proposed project showing the placement and relationship of different project elements. The preliminary site concept also shows potential locations of parking, curb cuts and other design features relating to site access and circulation.

The Charleston Mixed-Use Development would involve a mix of different uses as summarized in **Table 2** below. The first Build Year assessment presented in the EIS would include the proposed development of Retail Site A and the development of Fairview Park as detailed in **Table 2**. A developer has been identified for Retail Site A and is expected to begin construction within a year of obtaining all required approvals. The development on Site A would also include construction of the new library branch and site access. In addition, DPR expects to proceed with the development of the 22-acre (non-conservation) portion of the proposed 42-acre mapped park.

Vehicular access to Retail Site A and to the proposed Fairview Park will be provided in one of two ways. As presented in the Preliminary Site Concept on **Figure 2**, access to these sites is currently planned via a proposed access road connecting to Arthur Kill Road. Another scenario that may be considered is access from Mohr Street/Tyrellan Avenue (shown on Figure 8, which follows), a private street which currently serves Bricktown Centre. Both alternatives will be analyzed and depending on the final selected access option, only one will be mapped as a City street.

Table 2: Reasonable Worst Case Development Scenario (RWCDs)

COMPONENT	SIZE (approx.)	DETAILS
Retail Site A	10 acres	<ul style="list-style-type: none"> • 185,000 sf of retail, including medium- to large-format retail • 675 parking spaces (includes shared parking for NYPL Branch and Fairview Park) • 15,000 sf New York Public Library Branch
Retail Site B	6.5 acres	<ul style="list-style-type: none"> • 90,000 sf of neighborhood retail • 300 parking spaces
Park (Fairview Park)	42 acres	<ul style="list-style-type: none"> • Mapping of existing 20-acre Conservation Area as parkland • Mapping of new 22-acre park, including of 7.5 acres of new active and 14.5 acres of new passive recreation • Potential shared uses with proposed school • 60 parking spaces located on the park site
School	7 acres	<ul style="list-style-type: none"> • 750 seat capacity • 40 parking spaces (estimated) • Kindergarten to 8th grades • Potential shared uses with proposed park
Senior Housing	9.5 acres	<ul style="list-style-type: none"> • 162 dwelling units: <ul style="list-style-type: none"> ○ 80 affordable multi-family rental units ○ 82 age-restricted for-sale detached units • 192 parking spaces
Street Mapping and Construction	12.2 acres	<ul style="list-style-type: none"> • Mapping and construction of Englewood Avenue – Map 80' wide corridor for a distance of approximately 1,800 feet. Full constructed length of Englewood Avenue would be approximately 3,265 feet and would include bicycle/pedestrian facilities (approximately 6 acres). • Retail Site A Access Alternatives: <ul style="list-style-type: none"> ○ Mapping and construction of access road to Arthur Kill Road (approximately 2.5 acres), or ○ Mapping of portions of Mohr Street/Tyrellan Avenue that are within the Project Area (approximately 4.4 acres).

Source: NYCEDC

The second Build Year assessment presented in the EIS would include, in addition to the developments that would occur by the first Build Year, Retail Site B, the school, Englewood Avenue Road construction, and the senior housing. These additional elements are anticipated to be completed and operational by 2020. The specific size and nature of these project elements as shown on **Figure 2**, and as presented in **Table 2**, represent a "Reasonable Worst Case Development Scenario" (RWCDS) that was created based on input from community consultation, zoning, site planning, the City's plan for the development of the sites, natural features such as wetlands, and programmatic constraints, such as inclusion of a play area and parking on the proposed school site. The placement of buildings, parking, circulation, and landscaping on each site, although preliminary, considered these constraints and, therefore, represents a reasonable projection of how future development may be organized on the site.

3.0 The Environmental Impact Statement

The following sections describe the objectives of each potential impact area that may be included in the EIS. The descriptions also offer background information to place the potential impacts within the context of the Charleston community and proposed methodologies where applicable. The EIS will include an Executive Summary that will summarize the key points of the individual technical assessment areas that are described below.

3.1 Project Description

The first chapter of the EIS introduces the reader to the Charleston Mixed-Use Development, identifies the involved and interested agencies and describes all public actions necessary for the proposed project to proceed. The chapter will contain:

- project identification (brief description and location of the project);
- the background and/or history of the project;
- a statement of the purpose and need of the project;
- key planning considerations that have shaped the current proposal;
- a detailed description of the proposed project;
- the current reasonable worst case development scenario (RWCDs);
- the assumed phasing of development sites with two Build Years; and
- a discussion of the involved agencies and approvals/actions required.

This chapter is key to understanding the Proposed Action and its impacts, and gives the public and decision-makers a base from which to evaluate the future with the project against the future without the project.

In addition, the Project Description chapter will present the planning background and rationale for the actions being proposed and summarize the reasonable worst-case development scenario for analysis in the EIS. The section on approval procedures will explain the Uniform Land Use Review Procedure (ULURP) process, its timing, and hearings before the Community Board, the Borough President's Office, the CPC, and the New York City Council. The role of the EIS as a full-disclosure document to aid in decision-making will be identified and its relationship to ULURP and the public hearings described.

Each chapter of the EIS that requires a detailed analysis will include an analysis of the Future Action condition compared to the Future No-Action condition, as set forth in the *June 2012 CEQR Technical Manual* ("CEQR Technical Manual"). The technical analyses of the EIS will examine the potential impacts related to the completion of the proposed project by the year 2020.

3.2 Land Use, Zoning and Public Policy

This section of the EIS will consider the project's compatibility with existing surrounding land use, zoning and development trends in the area, as well as public policy related to land use and economic development.

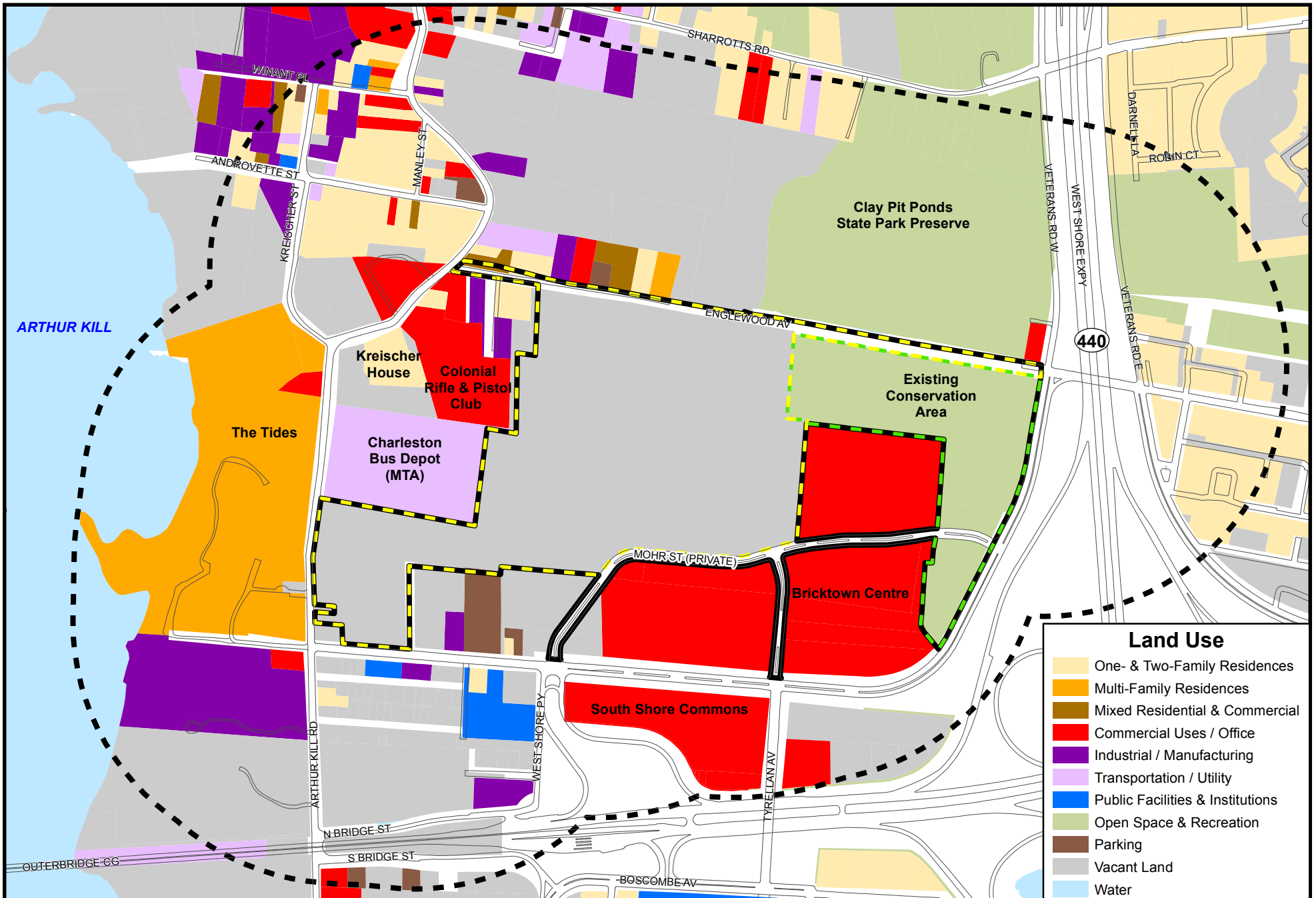
The RWCDs describes a mixed-use development of approximately 88 acres. To allow a discussion of land use that can better examine both the potential impacts on adjacent properties and the potential impacts on land uses at greater distance impacts, a primary and a secondary land use study area will be examined for both the first and second Build Year assessments. The primary study area for the second Build Year assessment will consist of the Project Area itself. Along most of the Project Area's edges, the land uses on adjoining properties are in uniform clusters (i.e. extensive retail to the south and open space to the north). Consequently, a more limited study area (i.e. 400 foot radius) would not capture the full character and diversity of Charleston. Therefore, a wider secondary study area will extend approximately a quarter mile further past the edges of the Project Area depicted in **Figure 5**, to capture a broader profile of the of the community,

The EIS will consider the primary study area to be the area where direct potential impacts of the proposed project would occur and the secondary study area to be where potential indirect land use impacts related to the Proposed Action could occur. Existing land uses in the primary and secondary study areas will be surveyed and the results presented in a graphic format and prevailing land use patterns would be identified and discussed in the text. The consistency and compatibility of the proposed land use and built form with zoning, land uses and other State and City policies and programs will be evaluated. Similarly, the existing zoning districts in the study area will be identified and their key features (e.g., FAR, special districts, etc.) summarized. This chapter of the EIS will include the following:

- Discussion of predominant land use patterns for the primary and secondary land use study areas and a description of recent land use trends in the study area and major factors influencing land use trends.
- Description of existing zoning in the primary and secondary study areas, any recent zoning actions in the study area and the consistency of the proposed rezoning action with existing zoning in the study area.
- A list of future development projects in the primary and secondary study areas that would be expected to influence future land use trends and pending zoning actions or other public policy actions that could affect land use patterns and trends in the study area.
- Assessment of impacts related to the Proposed Action on land use and land use trends, public policy, and zoning.
- A review of the Proposed Action's conformity to city goals, including consistency with the Waterfront Revitalization Plan (WRP), will be completed. The EIS will also discuss all relevant area planning documents (including *Working West Shore 2030 and PlanNYC 2030*) and their implications for existing land use and future development.

3.3 Socioeconomic Conditions

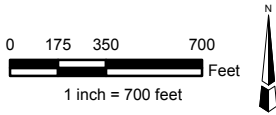
The *CEQR Technical Manual* states that a project may have a socioeconomic impact on the surrounding community if it directly or indirectly changes area population, housing stock or economic activity. The purpose of a socioeconomic assessment is to disclose changes that would be created by the pro-



Land Use	
	One- & Two-Family Residences
	Multi-Family Residences
	Mixed Residential & Commercial
	Commercial Uses / Office
	Industrial / Manufacturing
	Transportation / Utility
	Public Facilities & Institutions
	Open Space & Recreation
	Parking
	Vacant Land
	Water



Legend	
	Project Area
	Quarter Mile Radius
	Development Area
	Conservation Area



Charleston Mixed-Use
Development

Figure 5
Land Use Study Area

ject and identify whether these potential changes may result in significant adverse impacts and require mitigation measures to address such potential impacts. This section will first review potential direct and indirect displacement impacts related to the proposed project.

The analysis will provide a qualitative assessment of potential socioeconomic changes associated with the Proposed Action, including 1) direct displacement of residential population, businesses, or employees; 2) a new development that is markedly different from existing uses and activities within the neighborhood; 3) an adverse effect on conditions in the real estate market in the area; or 4) an adverse effect on socioeconomic conditions in a specific industry (with a specific focus on industrial and retail). The preliminary assessment will examine five areas of concern including:

- Direct residential displacement (none projected to occur)
- Direct business and institutional displacement (none projected to occur)
- Indirect residential displacement
- Indirect business and institutional displacement
- Adverse effects on specific industries

For both the first and second Build Year assessments and for each area of concern, the EIS socioeconomic analysis will determine, based on a preliminary screening assessment, whether a detailed analysis will be conducted. The study area for socioeconomic conditions will be generally delineated by adjusting the land use study area boundary (i.e., a quarter-mile radius from the Project Area) to reflect boundaries of census tracts generally lying within that radius. For some specific analyses, however, the specific boundaries will be tailored according to the industries affected. Based on a preliminary review, it is anticipated that the more limited development by the first Build Year of 2015 will screen out of the need for detailed socio-economic analyses.

Assessment of Direct Residential and Commercial Displacement. Direct displacement is the involuntary displacement of residents or businesses from within the site boundaries of a proposed project. Although the main Project Area has no existing development; there are properties, both residential and commercial, abutting the proposed alignment of Englewood Avenue that may be affected by its mapping and construction. According to CEQR, if the displacement involves fewer than 500 residents or 100 employees, it is unlikely that there would be a significant adverse impact. The EIS will note the nature and extent of the projected displacements. The EIS will qualitatively discuss the CEQR thresholds for direct displacement and confirm that the Proposed Action does not exceed those thresholds.

Assessment of Indirect Residential and Commercial Displacement. Indirect displacement is the involuntary displacement of area residents, businesses or employees resulting from a change in the socioeconomic conditions created by the proposal. Examples include rising land values and rents in a project area directly influenced by the project, or flight from a neighborhood caused by the introduction of a new use that creates adverse living or working conditions in the community.

The Proposed Action would introduce new retail development of approximately 275,000 square feet, plus associated on-site parking. A detailed assessment of significant adverse socioeconomic impacts from the indirect displacement as a result of the Proposed Action is warranted. The detailed assessment included as part of this chapter of the EIS will assess potential significant impacts related to indirect residential and business displacement, including the following:

Potential Indirect Business Displacement

- Description of existing economic activity in the study area, including the number and types of businesses and institutions and employment by key sectors.
- Description of the physical characteristics of the existing commercial and manufacturing buildings in the study area, including the general size of the structures, configurations, and condition. Discussion of the approximate vacancy rate and rent levels for buildings in the study areas, based on visual inspections, discussions with the Staten Island Borough Office of the NYC Department of City Planning (DCP), and discussions with real estate brokers.
- Description of trends in commercial, manufacturing, and institutional use in the future without the project.
- Estimation of net new employment and other economic activity in the study area under the reasonable worst-case development scenario.
- Estimation of direct displacement of commercial and manufacturing businesses and assessment of the impact of indirect displacement, if any. Identification of likely relocation areas nearby, if necessary.
- Assessment of real estate market in the study area and the potential for the mix of land uses introduced by the Proposed Action to alter existing trends in rents and vacancy in the commercial rental market.

Potential Indirect Business Displacement due to Retail Market Saturation

- Projection, to the extent possible, if the categories of goods to be sold at the proposed development are similar to the categories of goods sold in stores found on neighborhood retail streets within the study area.
- Identification of the trade area for the largest stores in the proposed development that are expected to be the primary sources of added retail sales.
- Estimation of sales volume of relevant retail stores within the trade area.
- Determination of the expenditure potential for relevant retail goods of shoppers within the primary trade area by the future Action year.
- Comparison of the sales generated by the project's large retailers and the expenditure profile developed for the primary trade area to determine whether the area is currently saturated with retail uses or whether there is likely to be an outflow of sales from the trade area.
- Projection of the sales volume for the project's anchor tenants.
- Comparison of the project sales volume with the dollars available within the trade area.

According to the *CEQR Technical Manual*, if the capture rate for relevant categories of goods would exceed 100 percent, it may have the potential to saturate the market for particular retail goods and a detailed assessment is warranted. However, given the historic pattern of growth in Staten Island, it is expected that there would be sufficient sales potential in the market area to support the proposed retail development.

Adverse Impacts on Specific Industries

The existing conditions analysis will identify the extent to which there are concentrations of specific industries (or retail types) in the area affected by the proposed project (directly or indirectly). The future conditions analysis will assess whether these businesses will be specifically impacted by existing trends or the Proposed Action itself.

3.4 Community Facilities and Services

The Community Facilities and Services chapter of the EIS will include a screening for all relevant analyses, following the methodologies of the *CEQR Technical Manual*. The City-owned parcels that comprise the Project Area do not contain community facilities and services. Thus, no community facilities would be directly displaced by the Proposed Action and direct impacts are not expected to occur. A community facilities impact screening will be presented based on the projected number of residents and employees under the Proposed Action, following the impact procedures and thresholds as defined under CEQR.

3.5 Open Space

Open space is defined by the *CEQR Technical Manual* 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 CEQR, 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. An open space analysis focuses on officially designated existing or planned public open space.

An open space assessment may be necessary if a project potentially has a direct or indirect effect on open space. In determining whether or not to prepare an open space assessment, consideration is given to whether the changes created by the project are likely to adversely affect utilization of existing resources or specific users of the resources. If a proposed project would have a direct effect on an open space, an assessment of the effects on open space and its users may be appropriate. Direct effects occur if a proposed project would result in a physical loss of public open space (by encroaching on an open space or displacing an open space), changing the use of an open space so that it no longer serves the same user population (e.g., elimination of playground equipment), limit public access to an open space, or result in increased noise or air pollutant emissions, odors or shadows on a public open space (so that it would affect its usefulness, whether on a permanent or temporary basis). The Proposed Project includes the proposed 42-acre Fairview Park, including the development and mapping of 22 acres of new parkland and the mapping of the existing Conservation Area. As part of the mapping action, there would be no changes in the existing Conservation Area. Thus, an assessment of direct effects is not warranted by the proposed project and the assessment of open space in the environmental review would focus on the potential for indirect impacts caused by the Proposed Action.

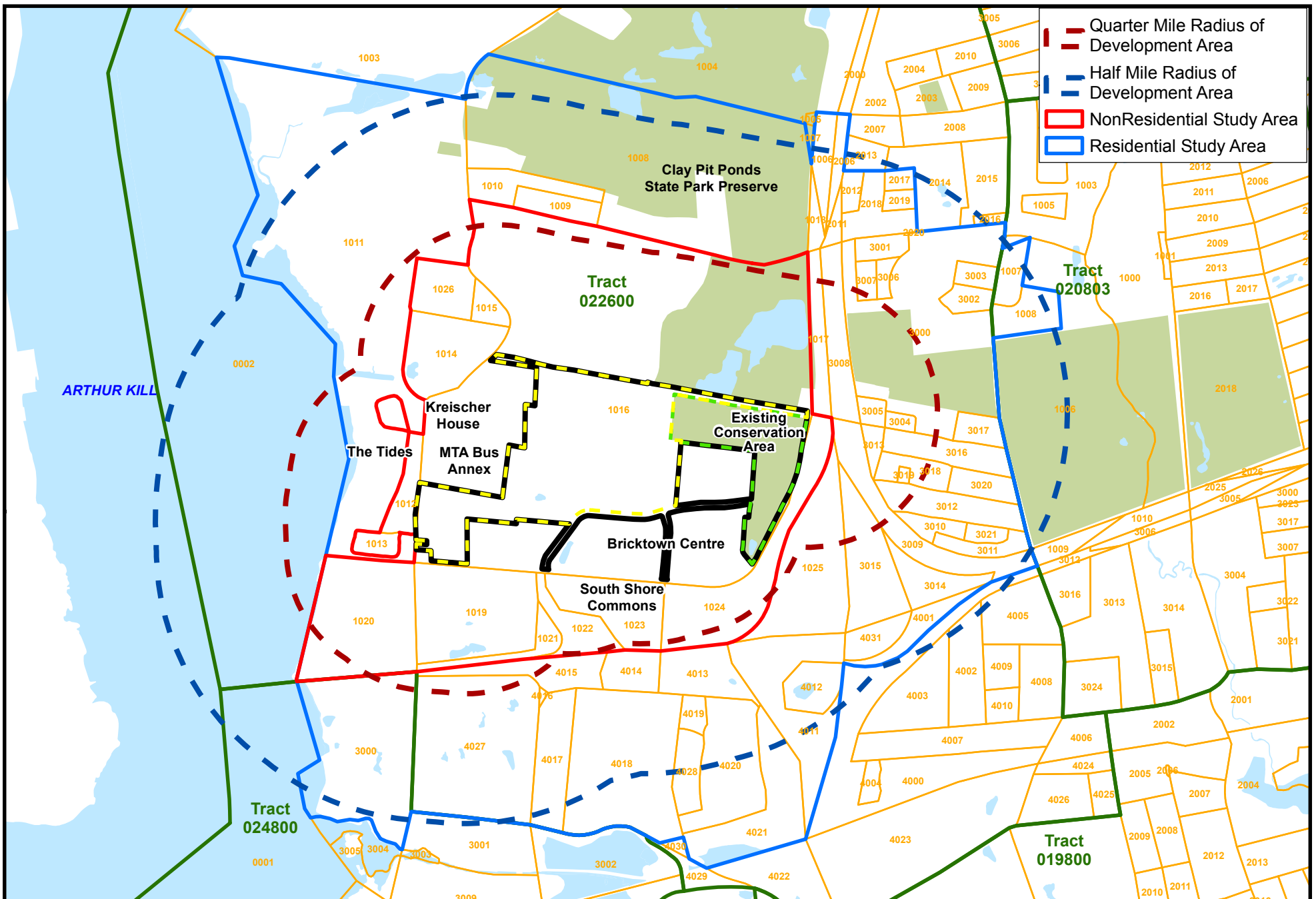
Indirect effects may occur when the population generated by a proposed project would be sufficiently large to noticeably diminish the ability of an area's open space to serve the future population. For the majority of projects, an assessment for indirect effects is conducted if the proposed project would generate more than 200 residents or 500 employees, or a similar number of other users (such as the visitor population that might be introduced by a large shopping area). However, the need for an open space assessment may also vary in certain areas of the city that are considered either underserved or well-served by open space. Underserved areas are areas of high population density that are generally the greatest distance from parkland where the amount of open space per 1,000 residents is currently less than 2.5 acres. Well-served areas have an open space ratio above 2.5 accounting for existing parks that contain developed recreational resources, or are located within 0.25 mile (approximately a 10-minute walk) from developed and publicly accessible portions of regional parks. According to the *CEQR Technical Manual*, the Project Area is not located in a section of Staten Island that is considered underserved or well-served by open space. Thus, the CEQR threshold of 200 residents or 500 employees would apply for the Proposed Action.

Based on a preliminary review, it is anticipated that the more limited development that would occur by the first Build Year of 2015 will screen out of the need for detailed open space analysis. However, by the second Build Year of 2020, the Proposed Action is expected to generate over 200 residents and over 500 employees, an open space assessment for indirect effects would be required. A quantitative screening assessment in accordance with the *CEQR Technical Manual* will be performed, including:

- Field check of all open space resources within $\frac{1}{4}$ and $\frac{1}{2}$ mile of the Project Area. A table and map with these data will be prepared and the area in each category of open space (passive and active resources) will be summed and noted.
- Tabulation of all residents in census tracts entirely within the $\frac{1}{2}$ mile radius or having the majority of their area within that radius.
- Tabulation of all workers in census tracts entirely within the $\frac{1}{4}$ mile radius or having the majority of their area within that radius.
- Calculation of the open space ratio (OSR) based on open space acreage per 1,000 residents and employees within the appropriate radius.

Development resulting from the Proposed Action is not expected to result in a significant change in the OSR. There are numerous accessible open space resources within a $\frac{1}{2}$ mile of the Project Area (See **Figure 6**) including:

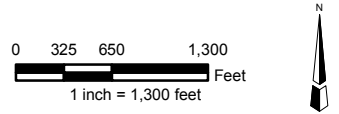
- Clay Pit Ponds State Park Preserve: A 260-acre nature preserve near the southwest shore of Staten Island.
- The Tides at Charleston: An approximately 2,500 linear-foot publicly accessible waterfront open space.
- Bloomingdale Park: An approximately 139-acre city-owned park located on the south shore of Staten Island offering recreational and natural areas.



- Quarter Mile Radius of Development Area
- Half Mile Radius of Development Area
- NonResidential Study Area
- Residential Study Area



- Legend**
- Project Area
 - Development Area
 - Conservation Area
 - Census Tract (2010)
 - Census Block (2010)
 - Open Space



Charleston Mixed-Use Development

Figure 6
Open Space Study Area

With the proposed 42-acre Fairview Park in the Project Area, and the aforementioned resources, a detailed assessment is not expected to be necessary.

3.6 Shadows

According to CEQR, sunlight and shadows affect people and their use of open space all day long and throughout the year, although the effects vary by season. This chapter's purpose is to assess whether the new structures resulting from the Proposed Action would cast shadows on any sunlight sensitive publicly-accessible resources or other resources of concern such as natural resources, and assess the significance of any impacts.

According to the *CEQR Technical Manual*, any building of less than 50 feet in height and not directly adjacent to a shadow-sensitive resource is unlikely to require a detailed shadow analysis. While design plans for the components of the Proposed Action are not yet prepared, the Proposed Project is unlikely to result in any structure more than 40 feet in height. Proposed zoning is relatively restrictive and would not encourage tall buildings. Under C4-1 zoning, the maximum height of structures within the Initial Setback Distance is 30 feet. Above that, one foot of setback would be required for every foot of height. Under R4 zoning, the maximum height of perimeter walls is 25 feet. Above this height, the slope of the roof (or setback) controls the overall height of the structure. Depending on their placement on their respective sites, new buildings such as the school could have a shadow that reaches one of the nearby open space resources. Therefore, a shadow assessment consisting of at least a Tier 1 and Tier 2 screening will be performed for both analysis Build Years in accordance with the *CEQR Technical Manual* methodologies. It is expected that no impacts on light-sensitive resources would be found within the maximum shadow reach. Therefore, no significant adverse impacts due to shadows are expected to occur.

3.7 Historic and Cultural Resources

According to the *CEQR Technical Manual*, a historic resources assessment is required if there is the potential to affect a historic resource. Historic resources encompass districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. These include designated New York City Landmarks, Interior Landmarks, Scenic Landmarks, and properties within designated New York City Historic Districts; properties calendared for consideration as one of the above by the New York City Landmarks Preservation Commission (LPC); properties listed on or formally determined eligible for inclusion on the State and/or National Register of Historic Places (S/NR), or contained within a district listed on or formally determined eligible for the S/NR; properties recommended by the New York State Board of Historic Preservation for listing on the S/NR; National Historic Landmarks; and properties not identified by one of the programs listed above, but that meet their eligibility requirements. Because the Proposed Project would induce development that could result in new in ground disturbance and construction of a building type not currently permitted in the affected area, it has the potential to result in impacts to archaeological and architectural resources.

The FEIS for the Bricktown Centre at Charleston (May 2002 CEQR number 96DME001R) indicates that there are designated New York City Landmarks, National Register-listed resources, in addition to potentially eligible resources, and prehistoric sites as well as potentially significant prehistoric archaeological sites. in the Charleston area. These resources are located within and adjacent to the Project Area slated for development in the vicinity of Arthur Kill Road.

Historic and cultural resources include both architectural and archaeological resources. Architectural resources generally include historically important buildings, structures, objects, sites, and districts. Archaeological resources are the physical remains of past human activity at a location, usually below ground, and not visible at the surface. Sites may date to the prehistoric or the historic periods and significant associated features may include burials, midden deposits, foundation remains, wells, cisterns, or privies.

According to the *CEQR Technical Manual*, historic and cultural resources that may be impacted by proposed projects must be identified and evaluated to determine whether they possess historic significance as defined by the New York City Landmarks Law and the National Park Service. The National Park Service oversees the National Register of Historic Places in conjunction with the New York State Historic Preservation Office (NYSHPO) in New York. If proposed projects result in adverse impacts on significant historic and cultural resources, the lead agency, working in conjunction with the New York City Landmarks Preservation Commission (LPC), NYSHPO, and consulting parties collaborates to devise methods to avoid adverse impacts. However, if adverse impacts are unavoidable, these agencies and parties would collaborate to devise a plan to mitigate adverse impacts.

Archaeological Resources

There are previously identified archaeological sites in the proposed Project Area. Therefore, a Phase IA archaeological survey will be performed and will include completion of the following tasks in order to assess the archaeological sensitivity of the entire proposed project area:

- Reconnaissance walkover to view existing conditions.
- Review of existing environmental documents and site file search at the NYSHPO and NYC LPC for previously identified archaeological sites on the Project Area and vicinity.
- Documentary and cartographic research at relevant New York City archives, agencies, and libraries.
- Documentation of the extent of prior subsurface disturbance to the project area.

A review of the archaeological site files and relevant survey reports housed at LPC will be performed, including a Phase IA archaeological survey completed in May 2002 for Bricktown Centre. A site file search will be conducted for previously identified NYSHPO and New York State Museum (NYSM) archaeological sites and relevant survey reports housed at the NYSHPO.

The land use history of the proposed project area will be determined primarily through cartographic research, utilizing such resources as fire insurance maps and atlases of the project area, including those published by E. Belcher Hyde and the Sanborn Map Company. The cartographic research will be conducted at the New York Public Library, Map Room, and the Staten Island Institute of Arts and Sciences.

The EIS will include a summary of prior subsurface disturbance and the locations of all potentially sensitive areas across the proposed project area (divided by the first or second Build Year area), if any, that are recommended for Phase IB archaeological testing.

Historic Architectural Resources

A brief historic overview of the Project Area will be included in the Cultural Resources chapter of the EIS based on the 2002 Bricktown FEIS. The chapter will include a list of known and potentially eligible resources in the Project Area and also will include maps indicating the location of resources. In addition, the chapter will assess probable impacts of development resulting from the Proposed Action on resources in the Project Area.

For this project, architectural historians will review all available environmental documents, and incorporate the appropriate information. In addition, architectural historians will conduct supplemental research at LPC and NYSHPO to determine if there are additional historic architectural resources in the project area that have been identified since 2002. Architectural historians will also conduct field work to verify the location of designated historic architectural resources, and identify potentially eligible historic architectural resources.

3.8 Urban Design and Visual Resources

The *CEQR Technical Manual* notes that an urban design/visual resource assessment is typically required only when the Proposed Action would result in buildings or block forms substantially different from the existing context, or if important visual resources (e.g., historic landmarks, scenic views) would be obstructed. This section of the EIS will evaluate the impacts that the proposed project will have on urban design and visual resources. An area's urban design components and visual resources together comprise the "look" of a neighborhood, according to CEQR guidelines. To determine whether the change constitutes a significant adverse impact, an assessment will be performed in accordance with the requirements of the *CEQR Technical Manual*.

The Project Area is generally vacant and undeveloped. The north and south boundaries of the Project Area have very different characters. The southern boundary abuts the Bricktown Centre, and the wide, busy Mohr Street/Tyrellan Avenue. The proposed retail on Site A would reinforce the existing character of a busy commercial corridor. The northern boundary, in contrast is abutted by parkland/conservation areas, residential, and light industrial uses. Because Englewood Avenue is not continuous, it is lightly traveled. In the future, Englewood Avenue would be connected from Arthur Kill Road to Veterans Road West, increasing the visual access to the Project Area. The construction of the senior housing and the school would change the visual character of the Project Area's northern edge., Fairview Park would bridge the two sections of the Project Area and preserve a portion of the natural and undeveloped character that exists today.. To evaluate potential visual impacts, zoning and land use relationships will be analyzed for appropriateness and compatibility with the existing surrounding districts. To the extent that the proposed project buildings' forms have been defined; the scale, scope, screening and location of parking, service, or utility areas will be addressed.

It is expected that only a preliminary assessment would be warranted for this project. The purpose of the preliminary assessment would be to determine whether any physical changes proposed by the project may raise the potential to significantly and adversely affect elements of urban design. As suggested by CEQR, the following elements would be included for the preliminary analysis:

- A concise narrative of the existing project area, the Future With-Action condition, and the Future No-Action condition;
- An aerial photograph of the study area (from a current online map, sufficient per CEQR);
- Zoning calculations of existing and the Future With-Action conditions, including floor area calculations, lot and tower coverage and building heights;
- Ground-level photographs of the site area with the immediate context;
- A three-dimensional representation of the Future With-Action condition streetscape; and
- A description of any view corridors in the study area.

Resultant environmental quality will be studied to ascertain how light, air, and views are provided. The effects of shade and shadow on proposed and existing surrounding structures will be assessed. Visual obstructions will be assessed to determine where views and vistas would be interrupted. This will be looked at not only at the pedestrian and vehicular levels, but also from the perspective of the surrounding residential and commercial areas as well.

The discussion will evaluate the extent to which the Proposed Action would foster the preservation and reinforcement of natural existing features. Terrain and level change will be evaluated. Existing conditions will be evaluated to determine unique local character/features.

3.9 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.”

Natural resource surveys will be conducted to document the existing conditions in the Project Area. Substantial changes in vegetation coverage and habitat value have occurred in the Project Area (other than the existing Conservation Area) over the last decade. A wetland delineation during the growing season (approximately April through October) will be conducted to document current conditions using the NYSDEC Freshwater Wetlands Delineation Manual (1995) and US Army Corps of Engineers Wetland Delineation Manual (1987). However, wetlands in the Conservation Area will not be evaluated, as the vegetation cover has not changed and no development activities are proposed here. The wetlands delineation report will be prepared and submitted to the US Army Corps of Engineers for their confirmation of the extent of jurisdiction under Section 404 of the Clean Water Act. In addition, the wetlands delineation report will be submitted to the New York State Department of Environmental Conservation for their confirmation of the extent of their jurisdiction under the Freshwater Wetlands Program.

The changes in the vegetation coverage in the Project Area since the prior assessments have changed the habitats and the habitat values in the Project Area. Excluding the Conservation Area, a multi-season fauna survey will be conducted. The initial multi-season fauna assessment was performed for the spring and summer of 2012. A fall 2012 assessment will be performed as well. The fauna survey report will document the following resources in the Project Area:

- Reptiles and amphibians,
- Birds,
- Mammal, and
- Insects.

According to the 2009 survey, there were 11 plant species and 12 animal species in the Project Area that have been designated as rare, special concern, threatened or endangered. Letters will be sent to the US Fish and Wildlife Service and the New York Natural Heritage Program to obtain current information on any rare, special concern, threatened, endangered, candidate species, or important habitat in the Project Area. As part of the multi-season fauna survey to be conducted as stated above, sightings of these previously documented species will be conducted as well as the evaluation of suitable habitat for these species.

The survey methods to be used in the evaluation of fauna will be similar to those used in the investigations conducted for the 2009 Natural Resources Report (project site sampling plots) to allow a comparison of the changes in resources over time as necessary.

The habitat communities that existed in the Project Area as reported in the 2009 Natural Resources Report are not the same as currently exist in many areas. The change in the size and location of the existing habitat communities will be documented. The 2009 Natural Resources Report indicated that about 240 species of plants were observed in the Project Area. In order to document the current vegetation on site, 20 sampling plots were established throughout the site. The plots were situated so that the various habitat types on site are represented. In each plot, the tree, shrub, vine and herbaceous layers are analyzed for species and coverage. In order to document the changes to the vegetative community throughout the growing season, the plots were evaluated in the late spring/early summer and in late summer/early fall time periods. In addition to evaluating the plots., plant species observed during surveys conducted outside of the sampling plots will be documented.

In July and again in September 2012, intensive searches for listed species were conducted in areas likely to contain listed species habitat. Several listed species were identified on site. These species include: a small patch of Torrey's Mountain Mint (*Pycnanthemum torrei*) located in the southern portion of the site near Mohr Street/Tyrellan Avenue and two species of bonesets, (*Eupatorium serotinum*, and *E. hyssopifolium*). The bonesets were located throughout the site in open fields.

As part of the ecological investigations, the surface water system and wildlife corridors between the Project Area and Clay Pit Ponds State Park Preserve will be evaluated. Based upon the design for the Project Area, direct impacts to wetlands, habitat, and plant and animal species will be determined as well as indirect impacts to adjacent natural resources, such as Clay Pit Ponds State Park Preserve and the Conservation Area.

The findings of the surveys will be presented first and second Build Year assessment. Depending on the location of wetland boundaries and the location and phasing of proposed structures, the assessment will note where DEC and/or ACOE permits may be required for impacts within wetlands and/or regulated transition areas surrounding jurisdictional wetlands. Opportunities for on-site mitigation including minimization or avoidance or minimization of impacts will be evaluated.

3.10 Hazardous Materials

The presence of hazardous or contaminated materials at a potential development site can be a significant condition that negatively impacts the cost and schedule of any project, and may even impact the suitability of a site for a proposed use. To that end, site investigations to determine the presence or ab-

sence of contamination and the development of remedial actions, when necessary, are integral parts of any site development process.

Serious contamination on the Project Area is considered unlikely as the properties involved have not been developed with manufacturing uses. A Phase I Environmental Site Assessment (ESA) was prepared for the adjacent Bricktown Centre at Charleston FEIS (February 2000) which identified three releases of diesel fuel on Englewood Avenue. Two of those listings were closed and the third was identified as having had corrective action taken. No other recognized environmental concerns were identified at that time.

A Phase I ESA will be conducted for the entire Project Area in accordance with CEQR and ASTM Standard E 1527-05 to determine if there is a reasonable potential for the Project Area to be impacted with hazardous materials due to current or past uses. However, within the EIS, the findings will be presented according to the relevant first or second Build Year development areas.

The Phase I ESA scope will include:

- A visual site reconnaissance of the study area and abutting areas to look for evidence of current or past hazardous material use, storage, or releases;
- Review of Federal, State, and local agency environmental records to identify documented hazardous material use, storage or spills in the vicinity of the Project Area;
- Review of available historic Sanborn Maps or aerial photography to identify past uses that could have impacted the Project Area with hazardous materials; and,
- Preparation of a Phase I Environmental Site Assessment Report to document the findings and provide recommendations on the need for further investigation.

Based on the findings of the Phase I ESA, recommendations will be made on the need for subsurface investigations in the areas to be disturbed by future development. If warranted, a sampling protocol (Phase II Environmental Site Investigation) will be prepared and submitted for review and approval to the DEP prior to the start of any work. The findings of any testing program would then be used to determine the scope of any Remedial Action Plan (RAP) and/or Construction Health and Safety Plan (CHASP) that would be implemented during construction and development of the Project Area.

The Hazardous Material Chapter of the EIS will summarize the information contained in the Phase I ESA to describe existing conditions in the Project Area; identify historic land uses with potential to have released hazardous materials; describe any potential site-specific environmental impacts; provide recommendations for the performance of a Phase II Environmental Site Investigation if warranted; and describe how potential impacts would be avoided during construction and operation of the Proposed Action, such as through a RAP and CHASP.

3.11 Water and Sewer Infrastructure

The *CEQR Technical Manual* outlines thresholds for analysis of a project's water demand and its generation of wastewater and stormwater. A preliminary water supply and projected water demand analysis

is warranted if a project would result in an exceptionally large demand for water (greater than one million gallons), or would be located in an area that experiences low water pressure (e.g., Rockaway Peninsula or Coney Island). A preliminary wastewater and stormwater infrastructure analysis is warranted if a proposed project exceeds the thresholds outlined in Section 220, "Wastewater and Stormwater Conveyance and Treatment." These thresholds include location of the proposed project, cumulative rezonings and/or development in the project area, proposed increase in density and proposed increase in impervious surfaces.

A water supply and demand analysis would not be warranted because the estimated water demand under the Proposed Action would not surpass the *CEQR Technical Manual* threshold of one million gallons per day. Additionally, the Project Area is not located in an area that experiences low water pressure.

A preliminary wastewater and stormwater infrastructure analysis, however, would be warranted for both the first and second build year assessment years because the Proposed Action would exceed the *CEQR Technical Manual* threshold of development on a site five acres or larger where the amount of impervious surface would increase and the threshold of 100 residential units in a separately sewered or other sewered area in a M zoning district in Staten Island. This preliminary analysis would include, among other elements, the following: description of the existing wastewater and stormwater conveyance systems and the affected wastewater treatment plant (WWTP) in the study area (if applicable); determination of the existing sanitary flows, Future No Action sanitary flows and With Action sanitary flows; consideration and analysis of incremental flows from the project on the capacity of the affected WWTP; description of existing surface types, Future No Action surface types and With Action surface types; determination of volume and peak discharge rates of stormwater expected from the site under existing, Future No Action and With Action conditions; and completion of the DEP flow calculations matrix. Based on the results of the preliminary analysis, a detailed assessment may be warranted and/or mitigation may be required if significant impacts are identified. A description and assessment of potential mitigation strategies would be included in this section.

3.12 Solid Waste and Sanitation Services

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 warrant a detailed solid waste analysis. By contrast, a project that would directly affect a component of the local integrated solid waste management system may require a detailed analysis to determine if it has the potential to cause a significant impact requiring mitigation.

Few projects have the potential to generate substantial amounts of solid waste (50 tons, or 100,000 pounds, per week or more) and, therefore, most projects do not result in a significant adverse impact. The Proposed Project's waste generation will also likely fall below this threshold.

The residential component of the project is projected to include up to 162 dwelling units. At 41 pounds per household per week, (from the *CEQR Technical Manual*), the total residential waste generated would be 6,642 pounds per week, or approximately 3.3 tons per week. The school and library compo-

nents of the Proposed Project would contribute an additional 3,075 pounds per week, or approximately 1.5 tons per week. This waste would be collected by the NYC Department of Sanitation (DSNY).

The commercial component of the project is assumed, for this proposal, to consist of 275,000 square feet of retail. Under CEQR, retail waste generation is calculated on the basis of the number of employees. Typical retail establishments are projected to have 2.5 employees for every 1,000 square feet of floor area. A reasonable number of employees would therefore be approximately 731. At the waste generation rates recommended by CEQR for general retail, this would translate into 54,313 pounds, or just over 27.2 tons of waste per week. This waste would be collected by private carters under contract with the retail establishments.

The total public and private waste generated, at 64,030 pounds per week, is below the CEQR thresholds for potential impact. Therefore, a detailed assessment of solid waste and sanitation services is not warranted. Within the EIS, the estimated solid waste and service demand that would be generated by the proposed project will be presented in more detail, again based on CEQR estimates. However, the chapter will also describe any features as part of the proposed project to minimize solid waste (e.g., air-dryers in public lavatories, kitchen garbage disposals, compactors, etc.).

3.13 Energy

Regulations require that environmental review include a discussion of the effects of a proposed project on the use and conservation of energy, if applicable and significant. In most cases, a project does not need a detailed energy assessment, but its operational energy consumption is often calculated. An analysis of energy focuses on a project's consumption of energy and, where relevant, potential effects on the transmission of energy that may result from the project.

All new structures requiring heating and cooling are subject to the New York City Energy Conservation Code, which reflects state and city energy policy. Projected generation and transmission requirements are forecasted by both the New York State Independent System Operator (NYISO) and Con Edison, ensuring that the city's power supply and transmission systems have the capacity to meet expected future demand. As such, the incremental demand caused by most projects results in incremental supply, and consequently, an individual project's energy consumption often does not create a significant impact on energy supply. Consequently, a detailed assessment of energy impacts would be limited to projects that may significantly affect the transmission or generation of energy.

Significant adverse energy impacts from the Proposed Action are not anticipated. The environmental assessment will demonstrate this with the disclosure of the projected amount of energy consumption per CEQR guidelines, along with a brief description stating why significant adverse impacts are not anticipated.

3.14 Transportation

3.14.1 Traffic

According to the *CEQR Technical Manual*, a trip generation analysis for a project generally will be appropriate to determine the volume of vehicular trips expected during the peak hours. In most areas of the city, including the project area, if a proposed action is projected to result in 50 or more peak hour

vehicular trip ends, a traffic analysis is likely to be necessary. Based on the approved Transportation Planning Factors [TPF] memorandum, dated September 21, 2012 prepared by Philip Habib Associates, **Appendix A**), the Charleston Mixed-Use Development program would generate a net increment of approximately 942 vehicle trips per hour (vph) in the weekday AM peak hour, 1,127 vph in the weekday midday peak hour, 1,180 vph in the PM peak hour, and 1,584 vph in the Saturday midday. Since the analyses in Appendix A indicate that the Proposed Action would generate over 50 vehicle trips during all four peak hours, a detailed analysis of traffic conditions is warranted and will be provided in the EIS.

Traffic Study Area

The Transportation Planning Factors memo recommended study intersections based on projected travel patterns to and from the Project Area. The majority of trips were projected to pass through approximately 24 key intersections that would be the subject of detailed analysis. These study area intersections are located proximate to the Project Area and are located along the roadways that would provide access to/from the Project Area. Project-generated traffic is expected to become rapidly less concentrated with increasing distance from the Project Area as vehicles disperse through the street/highway grid network. In addition to the traffic assignment of the project's increment, the establishment of Englewood Avenue as a through-street would affect a limited amount of existing traffic. This reassignment will be determined after the data collection phase that establishes the existing traffic network.

Data Collection

The study area includes six corridors; Arthur Kill Road, Sharrots Avenue, Veterans Road West, Bloomingdale Road, Boscombe Avenue, and Englewood Avenue. Manual turning movement counts were collected at each intersection in the study area on Saturday, June 4, and Tuesday, June 7, 2011. The study intersections are as follows (and also shown on **Figure 7**):

1. Arthur Kill Road and Sharrots Avenue
2. Arthur Kill Road and Englewood Avenue
3. Arthur Kill Road and Veterans Road West
4. Arthur Kill Road and North Bridge Street
5. Arthur Kill Road and South Bridge Street
6. Arthur Kill Road and Richmond Valley Road
7. Boscombe Avenue and South Bridge Street
8. Boscombe Avenue and Korean War Veterans Highway off/on ramp
9. Boscombe Avenue and Tyrellan Avenue
10. Page Avenue and Richmond Valley Road
11. Veterans Road West and N. Bridge Street
12. Veterans Road West and Tyrellan Avenue
13. Veterans Road West and Mohr Street
14. Veterans Road West and Englewood Road
15. Veterans Road East and Englewood Road
16. Mohr Street and Tyrellan Avenue
17. Sharrots Avenue and Southbound West Shore Parkway Service Road
18. Sharrots Avenue and Northbound West Shore Parkway Service Road
19. Sharrots Avenue and Bloomingdale Road
20. Bloomingdale Road and Arthur Kill Road (Outside area shown on Figure 7)

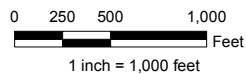
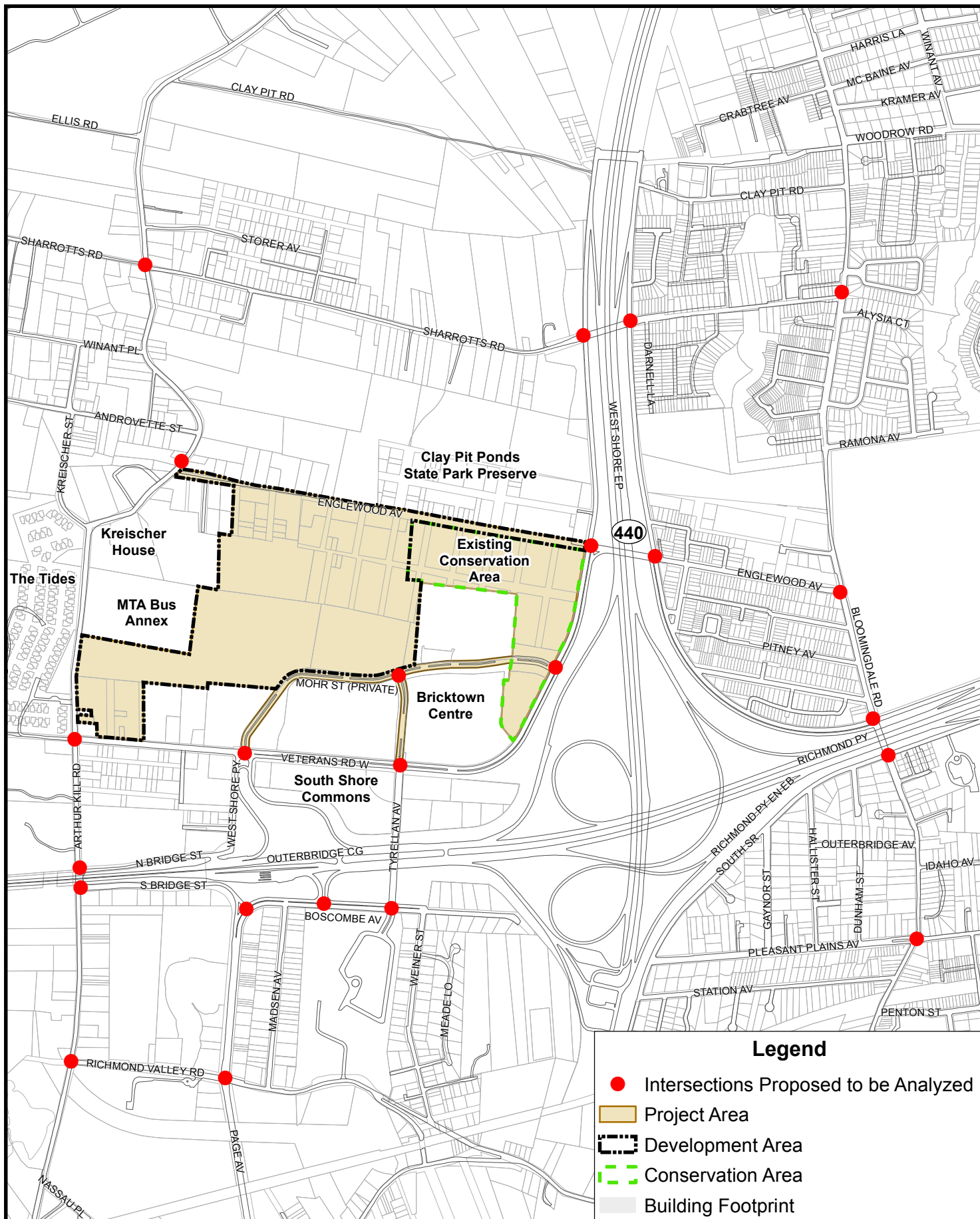
21. Bloomingdale Road and Englewood Avenue
22. Bloomingdale Road and Drumgoole Road West
23. Bloomingdale Road and Drumgoole Road East
24. Bloomingdale Road and Amboy Road

A number of Automatic Traffic Recorders (ATR) were placed for balancing the traffic network and used to calculate the corridor peak hour factors for analysis. The ATR's were placed for a ten-day period from June 3, to June 13, 2011 in order to record a full week of traffic data and two full Saturdays. The ATR locations were as follows:

1. Northbound Arthur Kill Road just south of Sharrots Avenue
2. Southbound Arthur Kill Road just north of Sharrots Avenue
3. Northbound Arthur Kill Road just south of South Bridge Street
4. Southbound Arthur Kill Road just north of North Bridge Street
5. Westbound Boscombe Avenue just east of Korean War Veterans Hwy off/on ramp
6. Eastbound Boscombe Avenue just west of Korean War Veterans Hwy off/on ramp
7. Eastbound Veterans Road West just west of N. Bridge Street
8. Westbound Veterans Road West just east of N. Bridge Street
9. Westbound Korean War Veterans Hwy off ramp just south of Veterans Rd West
10. Northbound Tyrellan Avenue just south of Veterans Road West
11. Southbound Tyrellan Avenue just north of Veterans Road West
12. Westbound Mohr Street just east of Tyrellan Avenue
13. Eastbound Mohr Street just west of Tyrellan Avenue
14. Northbound Veterans Road West just south of Englewood Avenue
15. Southbound Veterans Road West just north of Englewood Avenue
16. Westbound Sharrots Ave just east of the northbound West Shore Parkway Service Rd
17. Eastbound Sharrots Ave just west of the northbound West Shore Parkway Service Rd
18. Northbound Bloomingdale Road just south of Sharrots Avenue
19. Southbound Bloomingdale Road just north of Sharrots Avenue
20. Southbound Bloomingdale Road just north of Amboy Avenue
21. Northbound Bloomingdale Road just south of Amboy Avenue
22. Westbound Amboy Road just east of Bloomingdale Road
23. Northbound Page Avenue just south of Richmond Valley Road
24. Southbound Page Avenue just north of Richmond Valley Road

Establish Baseline Conditions

The Existing Conditions (2012) traffic analyses will be prepared. Traffic volume flow maps will be developed for the weekday AM, MD, and PM peak hours and the Saturday Midday peak from the 2011 traffic network created by PHA by applying appropriate growth factors and adding in traffic which may have been added to the network from developments that opened subsequent to the 2011 vehicle counts. The analysis locations will be evaluated using the latest version of the Highway Capacity Manual (HCM) as required by the *CEQR Technical Manual*. Results of the analysis will provide a quantitative assessment of current operations, levels of service (LOS), delay, speeds and volume to capacity (V/C) ratios that will be used to assess the supporting street/highway system performance. Resultant baseline levels of service would be compared to observed field conditions during the peak hours.



Charleston Mixed-Use
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Figure 7
Intersections Proposed to be Analyzed

Future No-Action Conditions

Prior to the analysis of "Action" conditions, a description of future conditions without the project must be established. This will have two components: general background traffic growth and traffic generated by new projects expected to be completed within the same time frame as the proposed mixed use development. . Since the proposed development will be analyzed as a two-phased development, there will be two corresponding No-Action years.

General background growth is the increase in traffic/transit usage which is attributable to changes in people's driving habits or to regional development growth. This increase in study area traffic/transit usage volumes will be estimated using background traffic growth rates for Staten Island presented in the *CEQR Technical Manual*. The other component of future growth will be those trips generated by projects in or near the study area, but unrelated to the proposal. These projects, preliminarily identified in Section 2.4.1 will be confirmed as part of this effort in consultation with the NYCDCP. Their peak hour trip generation, if unavailable, will be estimated and assigned to the local street network.

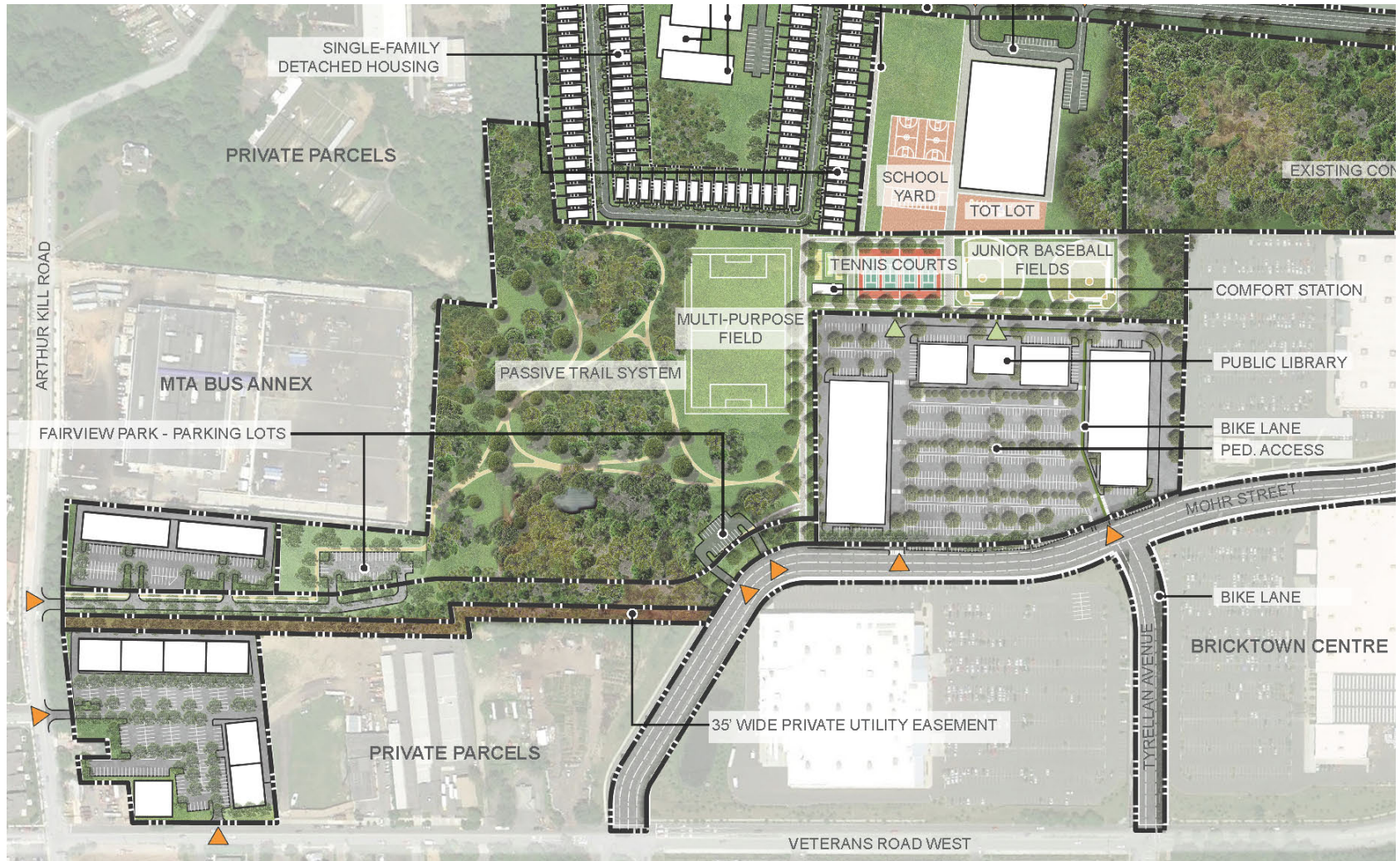
In addition to future traffic demands, the Future No-Action condition will also reflect planned or programmed changes or improvements to the transportation network. These may be mitigation measures recommended as part of the No-Action projects, or improvements already programmed for implementation by NYC Department of Transportation (DOT), NYC Department of Design and Construction (DDC), Metropolitan Transit Authority (MTA) or other agencies. Specifically, it will be determined if the improvements proposed for Arthur Kill Road would be part of the Future No-Action condition.

Future No-Action conditions will be analyzed to determine roadway operating conditions without the development project. Upon completion of the calculation of No-Action traffic volumes, capacity analysis will be repeated.

Future With-Action Conditions

Assumptions documented in the TPF memo will be used to determine travel characteristics and trip assignment patterns of employees, visitors and service vehicles to and from the Project Area for the 2020 build year. As noted in the TPF memo, the traffic assignment pattern for the school is different from the other land uses, since the school would only attract students from within Staten Island, whereas the other uses, particularly destination retail would have more of a regional draw. The "cordon" trip assignment patterns included in the memo will be expanded to bring vehicular trips to the various destinations within the Project Area (parking facilities, school, etc.). Vehicular trips assigned to and from the school and the senior housing units would use Englewood Avenue, while trips generated by the other land uses, under the RWCDs, would use Veterans Road West and Arthur Kill Road. In addition to analyzing the Proposed Action with a new Arthur Kill access road, an alternative access scenario will also be studied for both Build Years, under which the park and Retail Site A would have direct access to the existing privately-owned road known as Mohr Street/Tyrellan Avenue. This scenario is shown in **Figure 8**.

The Proposed Action will be analyzed as two phases. The first Build Year assessment is expected to include Retail Site A, the library, and Fairview Park. The second Build Year assessment would include the senior housing and Retail Site B. Completion of the construction of Englewood Avenue would coin-



Legend

 - Vehicular Access Point



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Figure 8
Alternative
Access Scenario

side with the opening of the second Build Year components, since access to and from the senior housing and the school would be exclusively off of Englewood Avenue.

Once the base travel characteristics have been established and the traffic trip generation and assignment information has been developed, impacts of the Proposed Actions will be assessed, and appropriate mitigation developed for each of the two phases of development.

Traffic Impact Analysis. The future base for evaluating the potential impacts of the proposed Charleston Mixed-Use Development would be the "No-Action" conditions. Potential significant traffic impacts will be identified for development in the first and second Build Years. The determination of where potential significant impacts would occur will be based on the criteria contained in the *CEQR Technical Manual*.

Mitigation of Significant Impacts. Based on the identification of significant impacts, appropriate mitigation measures to ameliorate the project impacts will be identified and evaluated for each phase of development.. These measures typically include:

- Adjustment of signal timing and/or phasing
- Travel lane reconfiguration
- Changes in street geometry/direction
- Parking prohibitions
- Installation of traffic signals
- Intelligent Transportation Systems (ITS)
- Modification of highway access and egress.

The least-costly and most easily implemented solutions will be tested first, and depending on the need for further mitigation, more complex and costly measures will then be considered. Significant traffic impacts will be mitigated in accordance with the guidelines and recommendations published in the *CEQR Technical Manual*.

In identifying and evaluating the effectiveness of traffic mitigation measures, several key factors need to be considered:

- Signal phasing timing modifications must consider the implications on pedestrian crossing times, especially for the elderly and school children;
- Modifications of curbside regulations must consider the implications on on-street parking and the presence of bicycle lanes;
- Proposed mitigation measures need to be coordinated with, and approved by pertinent implementing agencies and/or specific divisions within agencies, such as NYCDOT;
- Traffic signal installation or implementing left-turn phasing as mitigation measures must be accompanied by appropriate warrant analyses to justify such actions.

3.14.2 Parking

Parking demand generated by the proposed land uses within the Project Area would be accommodated on-site in proposed off-street facilities. Therefore, the parking analyses for the first and second Build Years would be focused on on-site parking demand and supply. Parking demand generated by each land use would be estimated and temporal arrival and departure patterns established using standard professional references and/or previously approved factors. Weekday and weekend (Saturday) parking accumulation profiles will be developed to determine if the proposed parking supply would be adequate to accommodate peak parking demands. The analyses would consider factors such as trip linkages and shared parking.

3.14.3 Transit

Based on the conclusions reached in the TPF memo, development under the RWCDs would only generate more than 200 net peak hour bus trips only during the second Build Year weekday AM peak hour. Therefore, this would be the only period for which detailed bus transit analyses will be performed. Bus transit analyses will be performed in accordance with the requirements of the *CEQR Technical Manual*.

3.14.4 Pedestrians

According to the TPF memo, detailed pedestrian analyses would not be warranted during any analysis period. However, the construction of the school by the second Build Year is expected to create pedestrian demand in excess of the 200 trip CEQR threshold in the AM peak hour. Therefore, it is proposed to perform pedestrian analyses at up to two mid-block sidewalk locations on Englewood Avenue in the vicinity of the school during the AM peak hour for the Build condition only. No other pedestrian element is expected to experience more than 200 pedestrian trips and therefore do not warrant detailed analyses. In addition, because a school is part of the Proposed Action, a qualitative safety assessment would be performed at up to four key intersections. Any recommended safety recommendations will be incorporated into the site plan.

3.15 Air Quality

According to CEQR, air quality may be affected by air pollutants produced from two main sources: mobile sources (e.g., motor vehicles); and stationary sources (e.g., building boilers). Additionally, air quality may be impacted from construction activities associated with the various elements of the Charleston Mixed-Use Development program.

3.15.1 Mobile Sources

As per the *CEQR Technical Manual*, projects may result in significant mobile source air quality impacts when they increase or cause a redistribution of traffic, create other mobile sources of pollutants (such as diesel trains, helicopters, etc.), or add new uses near mobile sources (roadways, garages, parking lots, etc.). A project may result in significant adverse air quality impacts from mobile sources and therefore require further analyses, if the project:

- Would result in placement of operable windows, air intakes, balconies, or intake vents generally within 200 feet of an atypical source of vehicular pollutants, such as that described by CEQR;

- Would result in the creation of a fully or partially covered roadway, exacerbate traffic conditions on such a roadway, or would add new uses near such a roadway;
- Would generate peak hour auto traffic or divert existing peak hour traffic resulting in 170 or more auto trips in this area of the city (Staten Island);
- Would generate over posted thresholds of peak hour heavy-duty diesel vehicle traffic trips;
- Would result in new sensitive uses (particularly schools, hospitals, parks and residences) adjacent to large existing parking facilities or parking garage exhaust vents;
- Would result in parking facilities or applications to grant special permit or authorization of parking facilities;
- Would result in a sizable number of other mobile sources of pollution, such as a heliport, new rail-road terminal, or trucking.

Development under both the first and second Build Years of the Proposed Action is expected to generate sufficient trip volumes to cross screening thresholds that require a mobile source air quality analysis, and the EIS would include an analysis of such potential impacts.

Guidance on project level PM_{2.5}, 1-hour SO₂ and NO₂ impact analysis at both the local and national levels is evolving and the NYC Department of Environmental Protection (DEP) has not yet released new mobile source air quality analysis guidelines. This scope presumes the use of the US EPA's *Motor Vehicle Emission Simulator* (MOVES) in the EIS for predicting vehicular emissions factors. If however, MOVES model input files applicable to the project are not available from NYSDEC or NYCDEP, the MOBILE 6 model will be used. Screening and significant impact thresholds for PM_{2.5}, 1-hour SO₂ and NO₂ in use under CEQR at the time when this EIS is prepared will be applied.

Selection of Intersections for Microscale Analysis

Based on the traffic analysis conducted for this project, a screening analysis will be conducted based on current *CEQR Technical Manual* screening thresholds. A list of intersections that trigger a microscale impact analysis will be made. Among these intersections, a ranking will be prepared based on Level of Service ("LOS") condition and approaching volume at each intersection. The top three intersections with the worst case LOS and traffic volume conditions will be selected. These three worst-case intersections will be subject to a further microscale concentration modeling analysis.

Emission Factor Modeling

The most recent vehicular emission factors for CO, PM₁₀ and PM_{2.5}, NO₂ and SO₂ would be predicted using US EPA's MOVES software model. These factors would be used to determine each modeled travel link's emission factors and idling rates. The vehicular emission factors that would be used for this study were established by NYSDOT and NYSDEC based on traffic and roadway characteristics unique for Staten Island.

Carbon Monoxide Modeling Analysis

The CO dispersion analysis would be conducted using US EPA's CAL3QHC model with worst-case meteorological data to estimate 1-hour CO concentrations. 8-hour maximum CO concentrations would be estimated by applying a persistence factor of 0.7 to the 1-hour maximum concentration level.

Background concentrations would be based on the most recent average background levels identified by NYCDEP for Staten Island. For 1-hour NO₂ and SO₂ background levels, consultation with NYCDEP will be made to select monitoring levels at representative sites.

The receptors to be selected around these intersections would mostly include sidewalks since they are typically the locations with the exposure of the highest concentration at congested intersection. The roadway links within a 1,000-foot radius of each modeled intersection would be considered in the model.

Particulates, NO₂, and SO₂ Modeling Analysis

In addition to CO, it is likely that an analysis of particulate matter (PM₁₀ and PM_{2.5}) and NO₂ and SO₂ from mobile sources would be necessary following the screening analysis at the same intersections under the Proposed Action.

In addition to the NYSDOT/NYSDEC-established roadway emissions factors for PM₁₀/PM_{2.5} that include exhaust, break wear, tire wear, and re-entrained road dust emissions, fugitive road dust emissions would be accounted for using the formulae in Chapter 13 of EPA's AP-42 guidance for PM₁₀.

CAL3QHCR dispersion model will be used to predict PM₁₀/PM_{2.5}, NO₂, and SO₂ concentration levels at those selected intersections in association with the most recent 5-year hourly meteorological data collected at Newark Airport.

PM_{2.5} Annual Average Neighborhood-scale Modeling

According to the NYCDEP's current guidance, potential significant adverse PM_{2.5} impacts could occur when the predicted neighborhood-scale ground-level increment is greater than 0.1 µg/m³ on an annual average basis from impact modeling.

If the microscale on-site PM_{2.5} modeling discussed above shows an exceedance of the 0.1 µg/m³ threshold, neighborhood-scale annual average increment modeling would be conducted. The same dispersion model and meteorological data described above would be used to predict annual average levels at the modeled intersections with receptors placed at least 15 meters (50 feet) from the curb line.

Impact Analysis

The predicted microscale worst-case ambient contributions of criteria air pollutants CO, PM₁₀, NO₂, and SO₂ plus the background levels would be compared with the corresponding NAAQS to determine whether a potential significant impact would occur at the selected intersections for both No-Action and With-Action conditions. The assessment of potential significant PM_{2.5} impacts would be conducted based on the incremental impacts (maximum concentrations contributed from vehicular traffic from No-Action to With-Action condition) by comparing the levels against the current NYSDEC- and NYCDEP-established PM_{2.5} thresholds as follows:

- 5 µg/m³ of 24-hour average concentration; and/or,
- 2 µg/m³ of 24-hour average concentration, when applicable; and,
- 0.3 µg/m³ of annual average concentration.

According to the NYCDEP's guidance, if 24-hour average $PM_{2.5}$ concentration increments were predicted to be greater than $5 \mu\text{g}/\text{m}^3$ at a discrete receptor location, a significant adverse air quality impact under operational conditions is predicted. Operational impacts indicate a permanent condition predicted to exist for many years regardless of the frequency of occurrence. If 24-hour average $PM_{2.5}$ concentration increments were predicted to be greater than $2 \mu\text{g}/\text{m}^3$, but no greater than $5 \mu\text{g}/\text{m}^3$, a significant adverse air quality impact is predicted depending upon the frequency, duration, and location of the predicted concentrations. The assessment would disclose the model-predicted frequency, duration, and location of predicted exceedances, if applicable. However, these current significant impact thresholds are expected to be revised and they would become more stringent in upcoming NYCDEP guidance.

If a $PM_{2.5}$ neighborhood-scale impact analysis is required and conducted, the annual average receptor locations would be placed on the neighborhood scale to compare with the NYCDEP's interim neighborhood impact threshold: $0.1 \mu\text{g}/\text{m}^3$ of annual average concentration.

Mitigation Measures

If the exceedances of applicable impact threshold are predicted, mitigation measures would be discussed with the traffic analysis team to determine applicable mitigation plans to minimize vehicular traffic that may contribute to impacts at these studied intersections.

3.15.2 Stationary Sources

According to the *CEQR Technical Manual*, projects may result in stationary source air quality impacts when they would create new stationary sources of pollutants (such as emission stacks for industrial plants or other large institutional uses), introduce certain new uses near existing (or planned) emissions stacks that may affect the use, or introduce structures near such stacks so that the structures may change the dispersion of emissions from the stacks so that surrounding uses are affected. For projects that would use fossil fuels for heating/hot water, ventilation, and air conditioning systems, a screening analysis is required.

A CEQR-defined screening analysis will be conducted for the boiler emissions impact from both phases of the Proposed Action. Based on initial plans for the Project Area, it is expected that no refined microscale impact modeling analysis is required by the Proposed Action.

Potential air quality impacts on the proposed sensitive land uses from existing major stationary facilities within 400-foot radius from the project area will also be conducted using the CEQR-defined screening analysis methodologies. A NYSDEC and NYCDEP permitting source database search will be conducted to determine the number of permitting facilities in the neighborhood within the 400-ft radius of the Project Area's perimeter. A screening impact modeling analysis for existing sources will be conducted and the permitted source impact contribution to the proposed sensitive land use will be compared with the applicable NAAQS and DAR-1 air toxic thresholds, if applicable. No such sources are expected to be identified within the 400-foot radius of the Project Area and no refined microscale impact modeling will be provided.

3.16 Greenhouse Gas (GHG) Emissions

Although the contribution of a proposed project's GHG emissions to global GHG emissions is likely to be considered insignificant when measured against the scale and magnitude of global climate change, certain projects' contribution of GHG emissions may still need to be analyzed to determine their consistency with the city's citywide GHG reduction goal, which is currently the measure by which to analyze a project under CEQR. This goal was developed as part of PlaNYC for the purpose of planning for an increase in population of almost one million residents while achieving significant greenhouse gas reductions, and was codified by the New York City Climate Protection Act (Local Law 22 of 2008). As per CEQR, since the projects are those where the Project Area is under the control by the applicant, a GHG emissions assessment is required., and measures to reduce energy consumption and GHG emissions will be discussed. The approach to GHG emissions analysis will follow the CEQR guidelines below for operational and construction activities. The approach to conducting the GHG emission analysis will be as follows:

- 1) Determine the energy consumption rate for the project (e.g., heating requirement for the new building size under a new development project),
- 2) Forecast the vehicle types and miles travelled to and from the project site,
- 3) Predict total energy consumption related GHG emissions using CEQR-established conversion factors, and
- 4) Predict construction activity associated GHG based on the equipment activity data given the scale of the project.

The elements addressed in the GHG analysis for the first and second Build Years of the Proposed Action will consist of:

Operations Emissions

- Direct Emissions—emissions from on-site boilers used for heat and hot water, on-site electricity generation, industrial processes, and fugitive emissions.
- Indirect Emissions—emissions from purchased electricity and/or steam generated off-site and consumed on-site during a project's operation.

Mobile Source Emissions

- Indirect Mobile Source Emissions—emissions from vehicle trips to or from the Project Area during its operation that are not owned or operated by the applicant.

Construction Emissions

Direct emissions resulting from the operation of construction vehicles and equipment and emissions resulting from the manufacture or transport of construction materials used for the project.

3.17 Noise

The *CEQR Technical Manual* recommends an analysis of three principal types of noise sources: mobile and stationary sources, and construction noise. The Proposed Action would result in new residential, commercial, and community facility uses, and altered traffic conditions and land uses in the study area. Noise, which is a general term used to describe unwanted sound, will likely be affected by

these development changes. The key issues that would be addressed in the noise study evaluation are:

- **Mobile Sources:** The potential for noise from new vehicle trips to impact existing land uses (project-on-existing impacts); and
- **Stationary Sources:** The potential for noise from heavily trafficked roadways or other existing noise generators in the project area to impact future development occupants.

3.17.1 Mobile Sources

Mobile sources are those noise sources that move in relation to a noise-sensitive receptor (principally automobiles, buses, trucks, aircraft, and trains). Each has its own distinctive noise character, and, consequently, an associated set of noise assessment descriptors.

The Proposed Action would not result in impacts pertaining to aircraft or train noise, but increases in vehicular traffic noise from nearby roadways, including Arthur Kill Road, Veterans Road West, and Mohr Street/Tyrellan Avenue would likely require a noise assessment. As such, it is expected that the Proposed Action would require a vehicular noise analysis. A separate analysis would be included for both the first and second Build Year analysis years addressing potential impacts from project-generated increases or decreases in traffic on nearby roadways as well as potential impacts from existing vehicular traffic noise levels.

3.17.2 Stationary Sources

Stationary sources of noise do not move in relation to a noise-sensitive receptor. Typical stationary noise sources of concern for CEQR include machinery or mechanical equipment associated with industrial and manufacturing operations, or building heating, ventilating, and air-conditioning (HVAC) systems. In addition, noise produced by crowds within a defined location, such as children in playgrounds or spectators attending concerts or sporting events and noise produced by announcements using amplification systems, are also considered stationary sources. If a proposed action would cause a stationary source to be operating within 1,500 feet of a receptor (such as residential area or public park), or would introduce a receptor (such as the proposed public school, senior housing or public park), then a detailed analysis is appropriate.

A noise assessment will be performed to characterize existing noise levels at the Project Area and will consider the potential cumulative effects of vehicular traffic and all other ambient noise. The analysis will document existing conditions, and will establish the No-Action and With-Action conditions for both phases of the Proposed Action. AECOM will contact NYCDEP to review the proposed scopes of work and technical approaches, and impact criteria would be identified using the *CEQR Technical Manual*. A noise technical report, documentation of results in the form of tabular calculations and computer runs, and summary text would be produced for the EIS. The analysis methods are summarized below.

Noise Monitoring.

Site surveys will be carried out at a total of five locations around the Project Area to establish existing noise levels. The projected traffic volumes would help identify the worst-case periods of the day for pro-

ject-generated noise. Existing noise levels would be monitored during weekday two peak and one off/peak period using standard field procedures. Typically, noise monitoring includes A-weighted sound levels measured with an ANSI Type I sound level meter, Leq will be used to characterize the existing noise levels and impact thresholds. Traffic classification counts, car passbys and aircraft flyovers during the monitoring period would be recorded. Noise monitoring during each period will be 20 minutes long, unless a specific condition is identified that warrants longer measurements.

Traffic Noise.

An initial screening analysis will be based on locations where traffic is likely to double, as this would generate an increase of at least 3 dBA. Changes in traffic mix, such as adding trucks or buses to the traffic mix may also warrant further analysis. Future noise from traffic can be calculated by converting traffic into passenger car equivalents (PCEs), as described in the *CEQR Technical Manual*, then using logarithmic calculations to compare the PCEs for No-Action and Action Conditions.

Stationary Noise.

For a simple stationary source noise, fundamental acoustical principles can be used to predict potential impacts. It is assumed that sensitive receptors would be constructed as a result of the Proposed Action and that existing major stationary sources are located around the Project Area that could cause potential noise concerns related to on-site sensitive land uses. Noise levels at new receptors will be projected based on existing ambient noise measurements and calculations of future conditions.

Mitigation.

For the new residential construction, recommendations will be made on the minimum exterior to interior attenuation to be provided by the proposed building walls to insure that residents are not subjected to interior noise levels of more than 45 dBA. Permissible noise increases due to project-generated traffic volumes may range up to 3 dBA, depending on the noise levels projected for No-Action Conditions. Mitigation measures for project-generated traffic noise may include rerouting of traffic, limitations on the hours for truck deliveries, and acoustic walls.

3.18 Public Health

Public health is the organized effort to protect and improve the health and well-being of the population through monitoring; assessment and surveillance; health promotion; prevention of disease, injury, disorder, disability and premature death; and reducing inequalities in health status. The goal of the CEQR analysis 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.

According to the guidelines of the *CEQR Technical Manual*, public health concerns for which a public health assessment may be warranted include increased vehicular traffic or emissions from stationary sources resulting in significant adverse air quality impacts; increased exposure to heavy metals and other contaminants in soil/dust resulting in significant adverse hazardous materials or air quality impacts; the presence of contamination from historic spills or releases of substances that might have affected or affect groundwater to be used as a source of drinking water; solid waste management practices that could attract vermin and result in an increase in pest populations; potentially significant ad-

verse impacts to sensitive receptors from noise and odors; and actions for which the potential impact(s) result in an exceedance of accepted federal, state, or local standards

For most proposed projects, a public health analysis is not necessary. Where no significant unmitigated adverse impact is found in other CEQR analysis areas (such as air quality, water quality, hazardous materials, or noise), no public health analysis is warranted. If, however, an unmitigated significant adverse impact is identified, the lead agency may determine that a public health assessment is warranted for that specific technical area. This chapter will summarize the above criteria for public health studies and determine whether significant health impacts are anticipated.

3.19 Neighborhood Character

The key components that help define the neighborhood surrounding the Project Area will be identified. Land use, socioeconomics, urban design, traffic, and noise are generally the components that define neighborhood character. The data used in the technical analyses of these areas for other sections of the environmental document will be extrapolated and summarized to identify how project-generated impacts might affect neighborhood character.

Each phase of the Proposed Action would significantly alter the look and feel of this section of Charleston, although not necessarily in a way that would be considered adverse. The Project Area is a large vacant and undeveloped tract, currently covered by vegetation. The retail development proposed on two sites would be consistent with the surrounding retail and commercial development, but would increase both the intensity of physical development and also the vehicular traffic. On the Project Area's northern edge, new residential and community facility uses (the school) would be introduced along a completed Englewood Avenue. If significant adverse impacts to neighborhood character are identified, mitigation strategies will also be considered.

3.20 Construction

Construction activities, although temporary in nature, can sometimes result in significant adverse impacts. A project's construction activities may affect a number of technical areas, such as air quality, noise, and traffic. Therefore, a construction assessment relies, to a significant extent, on the methodologies and data gathered for other technical analyses areas as described in previous subsections.

Construction duration is often broken down into short-term (less than two years) and long-term (two or more years), for analysis. Where the duration of construction is expected to be short-term, any impacts resulting from such short-term construction generally do not require a detailed assessment. However, there are instances where a potential impact may occur over a short duration, and may be considered significant because it raises a specific concern. In such instances, a targeted assessment of the relevant technical area may be appropriate.

Projects that occur within two years or less would be considered short-term construction projects. This section of the EIS would include a brief discussion of anticipated construction activities in the Project Area. As construction activities resulting from the Proposed Action are expected to span in excess of two years, the effect is considered long term. Quantitative analyses would be performed in those technical areas most likely affected by construction activities (including traffic, air quality, and noise).

A construction impact assessment screening will be performed for each of the study areas in the *CEQR Technical Manual*. The key areas of concern typically related to construction are traffic, air and noise. For these analyses, the discussion will include reviews as follows:

Traffic Impact Assessment

This assessment would consider the number and types of construction vehicles expected to arrive and depart the Project Area during typical peak construction peak hours (early morning and early evening). Typically, construction traffic arrivals occur earlier than the peak commuter traffic peaks, and construction departures occur earlier than the weekday evening peak hour, reflective of a 7 AM to 3 PM construction shift. Peak hour truck trips will be converted to PCEs and added to peak-hour auto trips

Based on the estimated volumes of construction vehicles expected during the peak construction stage, we will qualitatively assess the potential impacts of this additional traffic on the study intersections. Comparison will be made between the volume of traffic projected to arrive and depart the Project Area during peak hours of *operation* versus *construction* traffic volumes to help estimate potential impacts. It is expected that the total level of traffic will fall below the CEQR screening levels so that no detailed analysis will be necessary. However, should these estimated exceed the CEQR screening criteria, detailed analyses during construction will be performed at selected intersections during selected peak hours.

Air Quality

Air quality concerns during construction would most likely be related to vehicles going to and from the Project Area, equipment operated in the Project Area and fugitive dust. Each of these areas will be addressed individually and qualitatively:

- Mobile Sources. As with the traffic assessment, we expect that the mobile source emissions would fall below CEQR screening thresholds
- Site Equipment. It is expected that construction on the various sites will occur over an extended period of time, so that the amount of on-site equipment at any one time would be limited and would operate within constrained hours.
- Fugitive Dust. Dust control measures are required by the DOB and conditions in the Project Area would be closely monitored.

Noise

Noise would be generated by project related traffic and by equipment operating on site. The existing noise context will be established by describing the results of noise measurements performed for Task 3.17. Maximum noise levels for typical construction equipment will also be provided. It is assumed that contractors would be required to adhere to a "Construction Noise Mitigation Plan". The potential for noise impacts within this framework will be discussed qualitatively.

3.21 Mitigation

Where significant adverse project impacts have been identified in tasks 3.2 through 3.20, measures to

mitigate those impacts will be described. These measures will be developed and coordinated with the responsible City/State agencies as necessary, including LPC, NYCDOT, and NYCDEP. Where impacts cannot be mitigated, they will be described as unavoidable adverse impacts.

3.22 Alternatives

The purpose of an alternatives analysis is to examine reasonable and practicable options that avoid or reduce project-related significant adverse impacts while achieving the goals and objectives of the proposed project. The specific alternatives to be analyzed are typically finalized as project impacts become clarified. In addition to the No Action Alternative, the alternatives will likely include a Reduced Impact Alternative, a Lesser Density Alternative, and an alternative that includes additional roadway access options.

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

3.23 Summary EIS Chapters

In accordance with CEQR guidelines, the EIS will include the following three summary chapters, as appropriate to the Proposed Action:

- Unavoidable Adverse Impacts - summarizes any significant adverse impacts that are unavoidable if the Proposed Action is implemented. These impacts would occur despite any mitigation measures employed or when mitigation is not feasible.
- Growth-Inducing Aspects of the Proposed Action - generally refers to "secondary" impacts of a Proposed Action that trigger further development.
- Irreversible and Irrecoverable Commitments of Resources - summarizes the Proposed Action and its impacts in terms of the loss of environmental resources (loss of vegetation, use of fossil fuels and materials for construction, etc.), both in the immediate future and in the long term.

3.24 Executive Summary

The Executive Summary will utilize relevant material from the body of the EIS to describe the Proposed Action, its environmental impacts, measures to mitigate those impacts, and alternatives to the Proposed Action. The executive summary will be written in enough detail to facilitate drafting of a Notice of Completion by the lead agency.

Appendix A

**Transportation Assumptions Memo;
Philip Habib Associates, Inc.**



TRANSPORTATION PLANNING FACTORS MEMO

To: Matt Mason, NYCEDC
From: Seth Wright, Philip Habib & Associates
Date: September 21, 2012
Re: **Preliminary Charleston Redevelopment Transportation Planning Assumptions (#1121A)**

Project Site

The project site (see Figure 1) is located in the Charleston area of Staten Island and is bounded by Veterans Road West to the south and east, Arthur Kill Road to the west and the proposed Englewood Avenue to the north. This area of Staten Island has direct access to the West Shore Expressway and the Korean War Veterans Parkway. The Outerbridge Crossing is also very close to the project site; however, the toll may keep most New Jersey customers from traveling over the bridge to the retail stores.

The proposed project is planned to include approximately 275,000 gross square-foot (gsf) of destination retail, which are divided into two separate areas of Site A and Site B (together they are approx. 16.5 acres), a 15,000 gross square foot library on Site A, 162 senior housing units (9 acres), a 750 student elementary and middle school (7 acres) and a 22 acre park. Figure 1 shows the five development sites. In addition to the five development sites, the proposed project also includes the mapping and construction of a new road leading from Arthur Kill Avenue to Retail Site A and the mapping and construction of Englewood Avenue as a new east-west connection between Arthur Kill Road and Veterans Road West and also to provide access to the proposed school and senior housing sites. Finally, the actions include the mapping of the adjacent privately-owned Mohr Street and Tyrellan Avenue.

Transportation Planning Assumptions & Travel Demand Forecasts

Table 1 shows the transportation planning assumptions used in the forecast for the Proposed Project in the weekday AM, weekday midday, weekday PM, and Saturday midday peak hours. The table provides the daily generation rates, mode choice, as well as hourly and directional patterns. These transportation planning assumptions were based on standard CEQR criteria, standard professional references, Census data and studies that have been used in previous EASs and EISs for projects with similar uses in nearby areas of Staten Island, including the Bricktown Centre FEIS completed in 2002. Based on these demand analysis patterns and the scale of the residential, retail and school components of the project, a Saturday midday analysis is included to complement the weekday AM, midday, and PM peak hours analysis.

Table 2 provides the overall resulting trip generation for the development program for the three weekday peak hours and one weekend peak hour for person trips for each mode of transportation and for vehicles trips for autos, taxis, and trucks.

TABLE 1
Charleston Redevelopment - Preliminary Transportation Demand Assumptions

Land Use:	<u>Senior Housing</u>		<u>Shopping Center A</u>		<u>Shopping Center B</u>		<u>School</u>		<u>Park</u>		<u>Library</u>	
Size/Units:	162 DU		185,000 gsf		90,000 gsf		750 Students 58 Staff		7.5 Acres active space 14.5 Acres passive space		15,000 gsf	
Trip Generation:	(3)		(3)		(3)		(5)		(3)		(11)	
Weekday	8.075		78.2		78.2		2 2		139 44		56.24	
Saturday	9.6		92.5		92.5		0 0		196 62		46.55	
	per DU		per 1,000 sf		per 1,000 sf		per student/staff		per acre active/passive space		per 1,000 sf	
Temporal Distribution:	(3)		(3)		(3)		(7)		(3)		(11)	
AM	10.0%		3.0%		3.0%		50.0% 50.0%		3.0%		7.95%	
MD	5.0%		9.0%		9.0%		0.0% 0.0%		5.0%		15.0%	
PM	11.0%		9.0%		9.0%		2.5% 2.5%		6.0%		12.8%	
SatMD	8.0%		11.0%		11.0%		0.0% 0		6.0%		14.5%	
Modal Splits:	(2)		(4)		(4)		(5)		(10)		(14)	
	AM/MD/PM/SAT		AM/MD/PM/SAT		AM/MD/PM/SAT		Student Staff		AM/MD/PM/SAT		AM/MD/PM/SAT	
Auto	68.5%		95.1%		95.1%		0.0% 83.0%		90.0%		86.3%	
Auto (dropoff)/Taxi	0.0%		1.5%		1.5%		36.0% 0.0%		0.0%		0.3%	
Rail	5.0%		1.2%		1.2%		0.0% 0.0%		0.0%		3.1%	
Bus	21.5%		1.2%		1.2%		4.0% 11.0%		5.0%		6.8%	
Schoolbus	0.0%		0.0%		0.0%		34.0% 0.0%		0.0%		0.0%	
Walk/Bike/Other	5.0%		1.0%		1.0%		26.0% 6.0%		5.0%		3.5%	
	100.0%		100.0%		100.0%		100.0% 100.0%		100.0%		100.0%	
In/Out Splits:	(1)		(4)		(4)		(5)		(10)		(11)	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	36.0%	64.0%	63%	38%	63%	38%	100.0%	0.0%	55.0%	45.0%	71.0%	29.0%
MD	50.0%	50.0%	54%	46%	54%	46%	0.0%	0.0%	50.0%	50.0%	50.0%	50.0%
PM	60.0%	40.0%	52%	48%	52%	48%	0.0%	100.0%	45.0%	55.0%	48.0%	52.0%
Sat MD	50.0%	50.0%	54%	46%	57%	43%	0.0%	0.0%	50.0%	50.0%	53.0%	47.0%
Vehicle Occupancy:	(2)		(4)		(4)		(5)		(10)		(9)	
							Student Staff		Active Passive			
Auto	1.16		1.45		1.45		1.3 1.3		2.5 2.5		1.45	
Taxi	-		1.60		1.60		1.3 1.3		-		1.60	
Truck and School Bus Trip Generation	(3)		(3)		(3)		(6) (8)		(9)		(13)	
							School Bus Truck					
Weekday	0.06		0.35		0.35		30 0.04		0.02		0.32	
Saturday	0.02		0.04		0.04		Students per bus Trucks per seat		0.02		0.32	
	per DU		per 1,000 sf		per 1,000 sf				per acre		per 1,000 sf	
	(3)		(3)		(3)		(6) (8)		(9)		(13)	
AM	12.0%		8.0%		8.0%		100.0% 9.7%		6.0%		9.7%	
MD	9.0%		11.0%		11.0%		0.0% 7.8%		6.0%		7.8%	
PM	2.0%		2.0%		2.0%		100.0% 5.1%		1.0%		5.1%	
Sat MD	9.0%		11.0%		11.0%		0.0% 0.0%		1.0%		0.0%	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM/MD/PM/Sat MD	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

Notes :

- (1) Based on ITE Trip Generation, Land Use 252 (Senior Housing, Attached), 8th Edition.
- (2) Model split and vehicle occupancy data are based on 2006-2010 American Community Survey 5-year estimates.
- (3) 2012 City Environmental Quality Review (CEQR) Technical Manual.
- (4) Gateway Estates II FEIS
- (5) Based on the P.S. 62R FEIS. Trips occurring in 8-9 AM and 5-6 PM. 100% attendance rate assumed in the trip forecast summary.
- (6) Full-sized schoolbus was assumed in this forecast with vehicle occupancy of 30 students
- (7) Riverside Center FEIS
- (8) Hunters Point South FEIS
- (9) Fairview Park EAS
- (10) Fresh Kills FEIS
- (11) Library trip generation rates, In/Out Splits, and Saturday temporal distribution Based on ITE Trip Generation, Land Use 590 (Library), 8th Edition.
- (12) Vehicle Occupancy for the Library assumed to be similar to Destination Retail Site A (the library is located on the same parcel)
- (13) Truck Trips for Library assumed to be similar to that of the school
- (14) Based on 2000 Census Reverse Journey to Work for Staten Island Tract 022600

TABLE 2
Charleston Redevelopment - Preliminary Trip Generation

Land Use:	Senior Housing		Shopping Center Sites A&B (1)				School (2)				Park				Library		Total			
Size/Units:	162	DU	185,000	gsf	90,000	gsf	750	Students	58	Staff	7.5	Acres active space	14.5	Acres passive space	15,000	gsf				
Peak Hour Trips:																				
AM	131		326		158		750		58			31		10		67		1,531		
MD	65		977		475		0		0			52		17		127		1,713		
PM	144		977		475		38		3			63		20		108		1,828		
Sat MD	124		1,412		687		0		0			88		28		101		2,440		
Person Trips:																				
AM	Auto	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	Dropoff/Taxi	32	58	194	116	94	56	0	0	48	0	15	12	5	5	41	17	429	264	
	Rail	0	0	3	2	1	1	270	0	0	0	0	0	0	0	0	0	0	274	3
	Public Bus	2	4	2	2	1	1	0	0	0	0	0	0	0	0	1	1	6	8	
	Schoolbus	10	18	2	2	1	1	30	0	6	0	1	1	0	0	3	1	53	23	
	Walk/Bike/Other	0	0	0	0	0	0	255	0	0	0	0	0	0	0	0	0	0	255	0
	Total	3	4	2	1	1	1	195	0	4	0	1	1	0	0	2	1	208	8	
	Total	47	84	203	123	98	60	750	0	58	0	17	14	5	5	47	20	1,225	306	
MD	Auto	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	Dropoff/Taxi	22	21	498	431	242	210	0	0	0	0	24	24	8	8	55	55	849	749	
	Rail	0	0	8	7	4	3	0	0	0	0	0	0	0	0	0	0	12	10	
	Public Bus	2	2	6	6	3	3	0	0	0	0	0	0	0	0	2	2	13	13	
	Schoolbus	7	7	6	5	3	3	0	0	0	0	1	1	1	0	4	5	22	21	
	Walk/Bike/Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	2	2	5	5	2	2	0	0	0	0	1	1	0	0	2	2	12	12	
	Total	33	32	523	454	254	221	0	0	0	0	26	26	9	8	63	64	908	805	
PM	Auto	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	Dropoff/Taxi	60	39	481	447	234	218	0	0	0	3	25	31	8	10	45	48	853	796	
	Rail	0	0	8	7	4	3	0	14	0	0	0	0	0	0	0	0	12	24	
	Public Bus	4	3	6	6	3	3	0	0	0	0	0	0	0	0	2	2	15	14	
	Schoolbus	19	12	6	6	3	3	0	1	0	0	2	2	0	1	4	4	34	29	
	Walk/Bike/Other	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	13	
	Total	4	3	5	5	2	2	0	10	0	0	1	2	0	1	2	1	14	24	
	Total	87	57	506	471	246	229	0	38	0	3	28	35	8	12	53	55	928	900	
Sat MD	Auto	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	Dropoff/Taxi	43	43	720	623	372	281	0	0	0	0	40	40	13	13	46	41	1,234	1,041	
	Rail	0	0	11	10	6	4	0	0	0	0	0	0	0	0	0	0	17	14	
	Public Bus	3	3	9	8	5	3	0	0	0	0	0	0	0	0	2	1	19	15	
	Schoolbus	13	13	9	8	5	4	0	0	0	0	2	2	0	0	4	3	33	30	
	Walk/Bike/Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	3	3	8	6	4	3	0	0	0	0	2	2	1	1	2	2	20	17	
	Total	62	62	757	655	392	295	0	0	0	0	44	44	14	14	54	47	1,323	1,117	
Vehicle Trips :																				
AM	Auto	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	Dropoff/Taxi	28	50	134	80	65	39	0	0	37	0	6	5	2	2	28	12	300	188	
	Dropoff/Taxi Balanced	0	0	2	1	1	1	208	0	0	0	0	0	0	0	0	0	211	2	
	Truck	0	0	2	2	2	2	208	208	0	0	0	0	0	0	0	0	212	212	
	School Bus	1	1	3	3	1	1	1	1	0	0	0	0	0	0	0	0	6	6	
	Total	0	0	0	0	0	0	9	9	0	0	0	0	0	0	0	0	9	9	
Total	29	51	139	85	68	42	218	218	37	0	6	5	2	2	28	12	527	415		
MD	Auto	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	Dropoff/Taxi	19	18	343	297	167	145	0	0	0	10	10	3	3	38	38	580	511		
	Dropoff/Taxi Balanced	0	0	5	4	3	2	0	0	0	0	0	0	0	0	0	0	8	6	
	Truck	0	0	7	7	4	4	0	0	0	0	0	0	0	0	0	0	11	11	
	Total	0	0	4	4	2	2	1	1	0	0	0	0	0	0	0	0	7	7	
	Total	19	18	354	308	173	151	1	1	0	0	10	10	3	3	38	38	598	529	
PM	Auto	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	Dropoff/Taxi	52	34	332	308	161	150	0	0	2	10	12	3	4	31	33	589	543		
	Dropoff/Taxi Balanced	0	0	5	4	3	2	0	11	0	0	0	0	0	0	0	8	17		
	Truck	0	0	7	7	4	4	11	11	0	0	0	0	0	0	0	22	22		
	Total	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	2	2		
	Total	52	34	340	316	165	154	12	12	0	2	10	12	3	4	31	33	613	567	
Sat MD	Auto	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	Dropoff/Taxi	37	37	497	430	257	194	0	0	0	16	16	5	5	32	28	844	710		
	Dropoff/Taxi Balanced	0	0	7	6	4	3	0	0	0	0	0	0	0	0	0	11	9		
	Truck	0	0	10	10	5	5	0	0	0	0	0	0	0	0	0	15	15		
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	37	37	507	440	262	199	0	0	0	0	16	16	5	5	32	28	859	725	

TABLE 3
Charleston Redevelopment - Preliminary Portal Assignments

AM	*Retail/Library/Senior Housing				**School/Park				Total Volume		Portal Total
	In %	Volume	Out %	Volume	In %	Volume	Out %	Volume	In	Out	In/Out
Portal Assignments	6%	16	6%	11	8%	21	8%	19	37	30	67
Arthur Kill Road South	7%	18	7%	13	9%	24	9%	21	42	34	76
Outerbridge Crossing	5%	5	5%	4	0%	0	0%	0	5	4	9
KWV Parkway	30%	87	30%	62	25%	66	25%	56	153	118	271
W. Shore Expy	22%	59	22%	43	20%	52	20%	44	111	87	198
Bloomingtondale North	16%	43	16%	31	20%	52	20%	44	95	75	170
Bloomingtondale South	8%	21	8%	15	10%	27	10%	23	48	38	86
Page Avenue South	6%	15	6%	11	8%	21	8%	18	36	29	65
	100%	264	100%	190	100%	263	100%	225	527	415	942
MD	*Retail/Senior Housing				**School/Park				Total Volume		Portal Total
Portal Assignments	In %	Volume	Out %	Volume	In %	Volume	Out %	Volume	In	Out	In/Out
Arthur Kill Road South	6%	35	6%	31	8%	1	8%	1	36	32	68
Arthur Kill Road North	7%	41	7%	36	9%	1	9%	1	42	37	79
Outerbridge Crossing	5%	11	5%	10	0%	0	0%	0	11	10	21
KWV Parkway	30%	193	30%	170	25%	4	25%	4	197	174	371
W. Shore Expy	22%	128	22%	113	20%	3	20%	3	131	116	247
Bloomingtondale North	16%	94	16%	83	20%	3	20%	3	97	86	183
Bloomingtondale South	8%	47	8%	41	10%	1	10%	1	48	42	90
Page Avenue South	6%	35	6%	31	8%	1	8%	1	36	32	68
	100%	584	100%	515	100%	14	100%	14	598	529	1127
PM	*Retail/Senior Housing				**School/Park				Total Volume		Portal Total
Portal Assignments	In %	Volume	Out %	Volume	In %	Volume	Out %	Volume	In	Out	In/Out
Arthur Kill Road South	6%	36	6%	33	8%	2	8%	3	38	36	74
Arthur Kill Road North	7%	41	7%	38	9%	2	9%	3	43	41	84
Outerbridge Crossing	5%	12	5%	11	0%	0	0%	0	12	11	23
KWV Parkway	30%	193	30%	176	25%	7	25%	7	200	183	383
W. Shore Expy	22%	129	22%	117	20%	5	20%	6	134	123	257
Bloomingtondale North	16%	94	16%	86	20%	5	20%	6	99	92	191
Bloomingtondale South	8%	47	8%	43	10%	2	10%	3	49	46	95
Page Avenue South	6%	36	6%	33	8%	2	8%	2	38	35	73
	100%	588	100%	537	100%	25	100%	30	613	567	1180
SAT MD	*Retail/Senior Housing				**School/Park				Total Volume		Portal Total
Portal Assignments	In %	Volume	Out %	Volume	In %	Volume	Out %	Volume	In	Out	In/Out
Arthur Kill Road South	6%	50	6%	42	8%	2	8%	2	52	44	96
Arthur Kill Road North	7%	59	7%	49	9%	2	9%	2	61	51	112
Outerbridge Crossing	5%	16	5%	15	0%	0	0%	0	16	15	31
KWV Parkway	30%	277	30%	233	25%	5	25%	5	282	238	520
W. Shore Expy	22%	185	22%	155	20%	4	20%	4	189	159	348
Bloomingtondale North	16%	134	16%	112	20%	4	20%	4	138	116	254
Bloomingtondale South	8%	67	8%	56	10%	2	10%	2	69	58	127
Page Avenue South	6%	50	6%	42	8%	2	8%	2	52	44	96
	100%	838	100%	704	100%	21	100%	21	859	725	1584

*Retail/Senior Housing trip distribution based on Bricktown Centre at Charleston FEIS May 2002 & 2010 census data

** School/Park trip distribution based on area population data from the 2010 census

Traffic

According to the 2012 *CEQR Technical Manual*, a trip generation analysis for a project generally will be appropriate to determine the volume of vehicular trips expected during the peak hours. In most areas of the City, including the project area, if the proposed action is projected to result in fewer than 50 peak hour vehicular trip ends, traffic impacts would be unlikely, and therefore further traffic analysis would not be necessary.

As indicated in Table 2, a travel demand forecast indicates that during a typical weekday and Saturday the development program for the Proposed Project would generate a project increment of approximately 942 vehicle trips per hour (vph) in the weekday AM peak hour, 1,127 vph in the weekday midday peak hour, 1,180 vph in the PM peak hour, and 1,584 vph in the Saturday midday. Since the Proposed Project would generate over 50 vehicle trips during all four peak hours, a detailed analysis of traffic conditions is warranted and will be provided in the EIS.

Proposed Project Access and Circulation

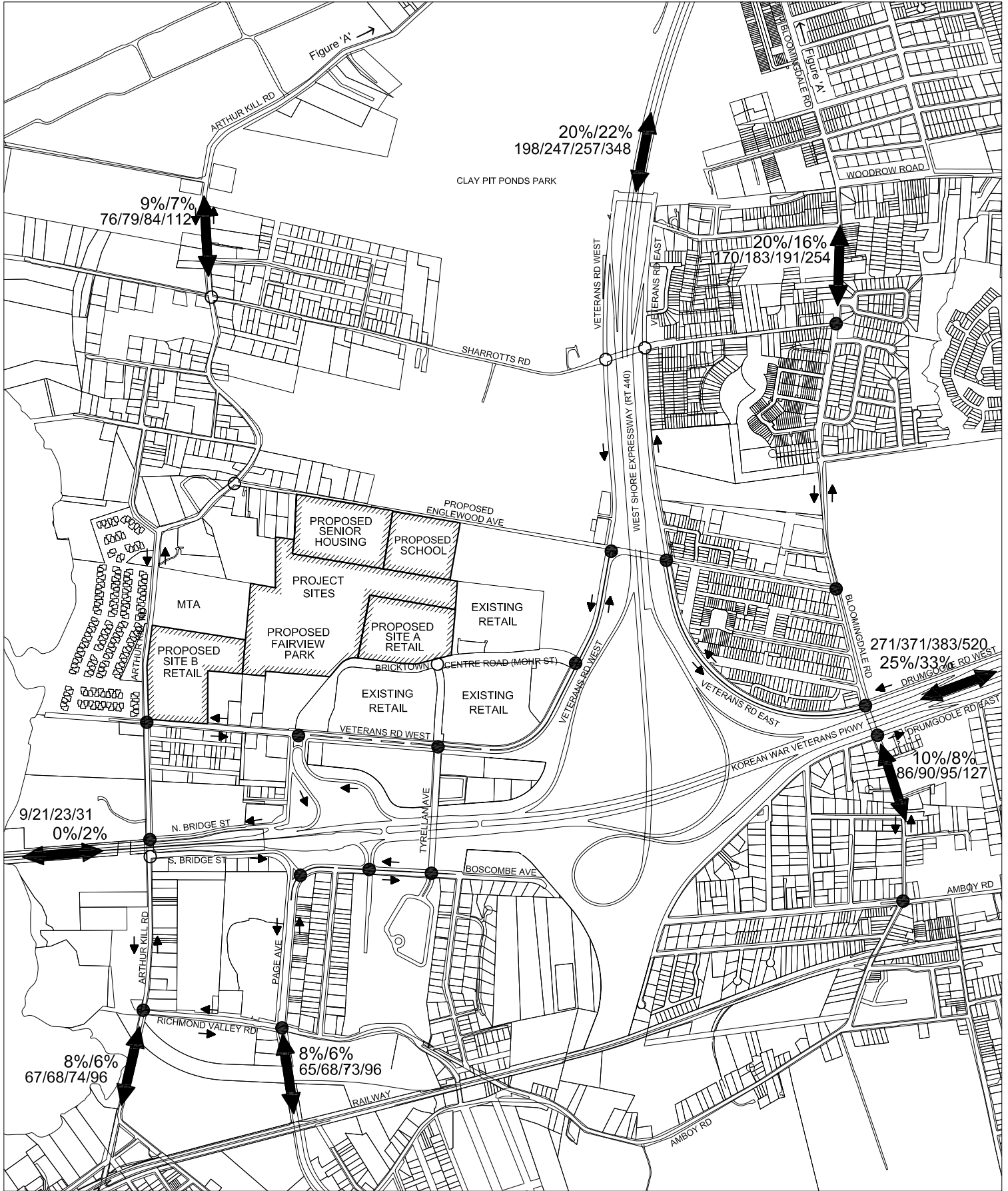
Pedestrian and vehicular access points would be dispersed throughout the proposed project's street frontages. Arthur Kill Road to the west provides access to residential neighborhoods to the north and south of the project site. Veteran's Road West provides access to points east, including Bloomingdale Road, Woodrow Road and the West Shore Expressway Service Road. Veteran's Road West also directly connects to West Shore Expressway and the Korean War Veteran's Parkway for inbound travelers and for outbound travelers in the eastbound direction via Boscombe Avenue.

Traffic Study Area

The vehicle assignment pattern for the proposed project was based on 2010 census population data within a three mile radius. The vehicle trips generated by the school and park were distributed to the local street network based on the population data in this area of Staten Island. As vehicle trips to the retail development would have a slightly wider trip distribution area, 20% of the total retail trips would come from outside the three mile radius and travel to and from the Project Site by way of The West Shore Expressway and the Korean War Veteran's Parkway, as well as a few from the Outerbridge Crossing. Figure 1 shows the assignment percentages for both the school and the retail/senior housing. Based on the trip assignments, Figure 1 also shows that the traffic study area, which is expected to include up to approximately 24 intersections. These study area intersections are located proximate to the project sites and are located along the roadways that would provide access to/from the project site. Project-generated traffic is expected to become rapidly less concentrated with increasing distance from the project site as vehicles disperse through the street/highway grid network. In addition to the traffic assignment of the project increment shown on Table 3, the establishment of Englewood Avenue would affect a limited amount of existing traffic. This re-assignment of traffic would somewhat lower volumes on parallel is expected to be small. This will be determined after the data collection phase that establishes the existing traffic network.

Transit

According to the general thresholds used by the Metropolitan Transportation Authority specified in the *CEQR Technical Manual*, detailed transit analyses are not required if the proposed action is projected to result in less than 200 peak hour rail or bus transit riders, because a proposed development that generates



● Analyzed Intersection XX%/XX% - School-Park/Other Assignments AM/MD/PM/Sat Total Traffic Volumes

such a low number of transit riders is unlikely to create a significant adverse impact on the current transit facilities.

As shown in Table 2, the net hourly rail trips generated by the proposed project would be 14, 26, 29, and 34 in the weekday AM, midday, PM and Saturday midday peak hours, respectively. Rail trips generated by the proposed uses would all be from the Richmond Valley Station of the Staten Island Railway located just over one-half mile to the south. As the number of peak hour rail trips in the AM and PM peak hours generated by the Project would be below 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.

The approximate net hourly public bus trips generated by the proposed project would be 76, 43, 29, and 63 in the weekday AM, midday, PM and Saturday midday peak hours, respectively. The bus trips would be distributed to the S74 and S78 that travels along Arthur Kill Road and directly into the project site. Since the project would generate more than 200 net peak hour bus trips in the AM peak hour a detailed analysis will be warranted.

Pedestrians

Analysis of pedestrian conditions focuses on elements where substantial a number of trips are generated by an action. These elements include sidewalks, street corner areas, and crosswalks. As shown in Table 2, the proposed project would generate pedestrian demand of 230 pedestrian trips in the AM peak hour, 50 pedestrian trips in the midday peak hour, 67 pedestrian trips in the PM peak hour and 71 pedestrian trips in the Saturday midday peak hour (the pedestrian trips also include the railway trips that travel to the site by walking from the train station). With this level of pedestrian trips generated by the proposed project, and the multiple access points into the proposed project site, detailed pedestrian analyses would not be warranted. However, with the proposed project including an elementary school, a traffic safety analysis for the students would be required.

Traffic Data Collection Plan

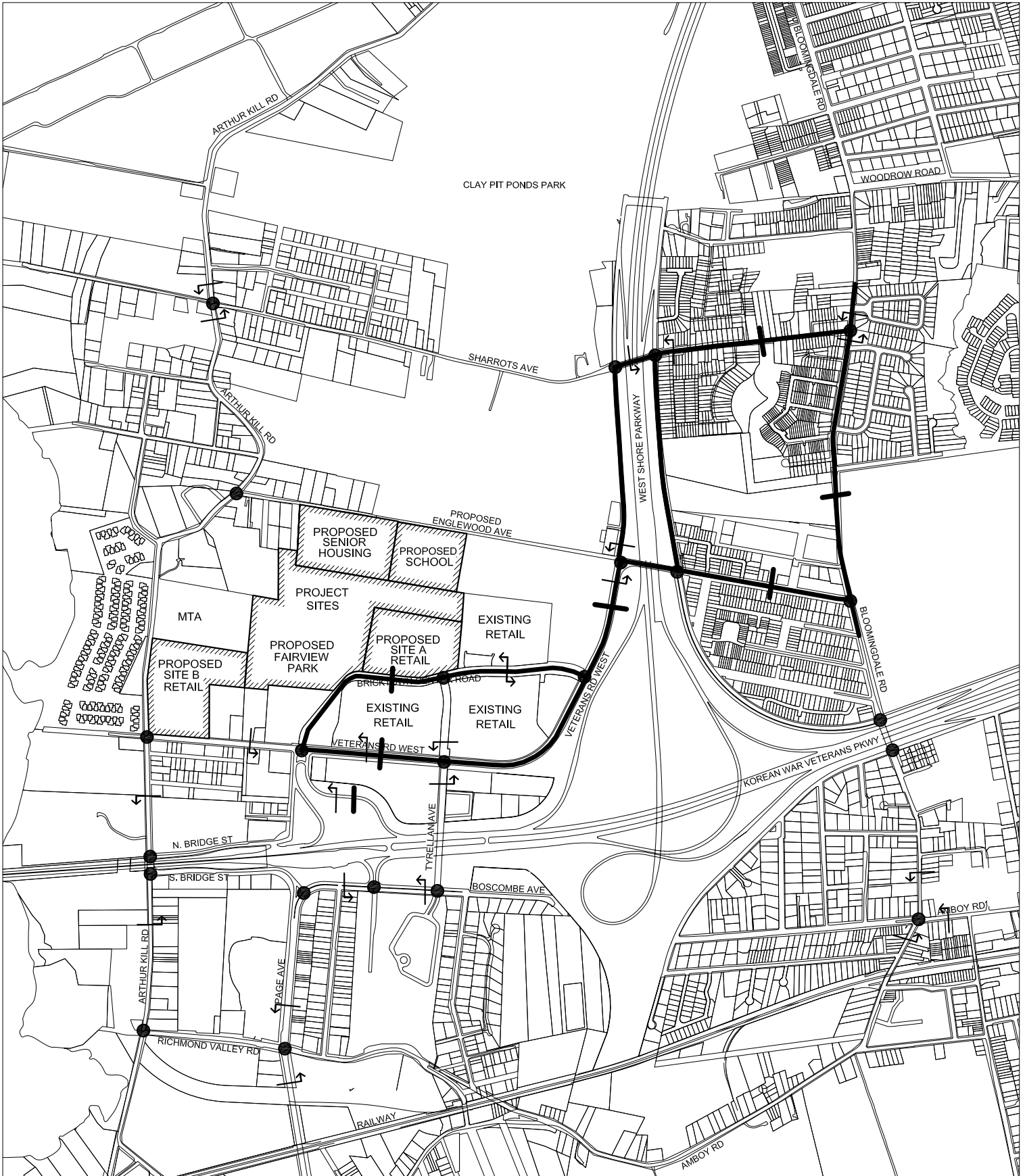
As described above there would be 24 intersections in the vicinity of the proposed project where data would be collected for the Existing Conditions. The study area includes six corridors; Arthur Kill Road, Sharrots Avenue, Veterans Road West, Bloomingdale Road, Boscombe Avenue, and Englewood Avenue. Manual turning movement counts would be collected at each intersection in the study area on Saturday June 4th and Tuesday June 7th. The intersections are listed below:

1. Arthur Kill Road and Sharrots Avenue
2. Arthur Kill Road and Englewood Avenue
3. Arthur Kill Road and Veterans Road West
4. Arthur Kill Road and North Bridge Street
5. Arthur Kill Road and South Bridge Street
6. Arthur Kill Road and Richmond Valley Road
7. Boscombe Avenue and South Bridge Street
8. Boscombe Avenue and Korean War Veterans Highway off/on ramp
9. Boscombe Avenue and Tyrellan Avenue
10. Page Avenue and Richmond Valley Road
11. Veterans Road West and N. Bridge Street
12. Veterans Road West and Tyrellan Avenue
13. Veterans Road West and Bricktown Center Road
14. Veterans Road West and Englewood Road
15. Veterans Road East and Englewood Road

16. Bricktown Center Road and Tyrellan Avenue
17. Sharrots Avenue and Southbound West Shore Parkway Service Road
18. Sharrots Avenue and Northbound West Shore Parkway Service Road
19. Sharrots Avenue and Bloomingdale Road
20. Bloomingdale Road and Arthur Kill Road
21. Bloomingdale Road and Englewood Avenue
22. Bloomingdale Road and Drumgoole Road West
23. Bloomingdale Road and Drumgoole Road East
24. Bloomingdale Road and Amboy Road

A number of Automatic Traffic Recorders (ATR) would be placed for balancing the traffic network and calculate the corridor peak hour factors for analysis. The ATR's are set to be installed on June 3rd to June 13th, 2011 in order to record a full week of traffic data and two full Saturdays. The proposed ATR locations include;

1. Northbound Arthur Kill Road just south of Sharrots Avenue
2. Southbound Arthur Kill Road just north of Sharrots Avenue
3. Northbound Arthur Kill Road just south of South Bridge Street
4. Southbound Arthur Kill Road just north of North Bridge Street
5. Westbound Boscombe Avenue just east of Korean War Veterans Hwy off/on ramp
6. Eastbound Boscombe Avenue just west of Korean War Veterans Hwy off/on ramp
7. Eastbound Veterans Road West just west of N. Bridge Street
8. Westbound Veterans Road West just east of N. Bridge Street
9. Westbound Korean War Veterans Hwy off ramp just south of Veterans Rd West
10. Northbound Tyrellan Avenue just south of Veterans Road West
11. Southbound Tyrellan Avenue just north of Veterans Road West
12. Westbound Mohr Road just east of Tyrellan Avenue
13. Eastbound Mohr Road just west of Tyrellan Avenue
14. Northbound Veterans Road West just south of Englewood Avenue
15. Southbound Veterans Road West just north of Englewood Avenue
16. Westbound Sharrots Ave just east of the northbound West Shore Parkway Service Rd
17. Eastbound Sharrots Ave just west of the northbound West Shore Parkway Service Rd
18. Northbound Bloomingdale Road just south of Sharrots Avenue
19. Southbound Bloomingdale Road just north of Sharrots Avenue
20. Southbound Bloomingdale Road just north of Amboy Avenue
21. Northbound Bloomingdale Road just south of Amboy Avenue
22. Westbound Amboy Road just east of Bloomingdale Road
23. Northbound Page Avenue just south of Richmond Valley Road
24. Southbound Page Avenue just north of Richmond Valley Road



● Analyzed Intersection

↑ ATR Location

— Speed Runs

— Air Quality Vehicle Classification