# 7.0 UNAVOIDABLE ADVERSE IMPACTS

## 7.1 INTRODUCTION

According to the *CEQR Technical Manual*, unavoidable significant adverse impacts are defined as those that meet the following two criteria:

- There are no reasonably practicable mitigation measures to eliminate the Proposed Project's impacts; and
- There are no reasonable alternatives to the Proposed Project that would meet its purpose and need, eliminate its impacts, and not cause other or similar significant adverse impacts.

As described throughout this EIS and summarized in **Chapter 4.0**, "Mitigation Measures," most of the potential significant adverse impacts of the Proposed Project could be avoided or mitigated by implementing a number of measures. However, in a few instances, no practicable mitigation was identified to fully mitigate significant adverse impacts, and there are no reasonable alternatives to the Proposed Project that would meet its purpose and need, eliminate its impacts, and not cause other or similar significant adverse impacts. The following is a summary of the potential for those "Unavoidable Adverse Impacts."

## 7.2 HISTORIC AND CULTURAL RESOURCES

### 7.2.1 Year 2015

As further demonstrated in **Chapter 2.6**, "Historic and Cultural Resources," by the year 2015 the proposed development activities would potentially disturb or destroy portions of the following archaeological site located within the Development Area, identified through prior archaeological survey work. These activities could result in potential adverse impacts to this archaeological resource:

- *Site C4-MCB-1 (NYS Site A08501.002766).* This prehistoric site was located during the Phase IB survey atop a prominent knoll in the east-central portion of the current Project Area. According to project mapping, this site is located in Block 7452, Lot 75, proposed Retail Site "A". The potential resources within this site are considered to be archaeologically significant.

While development of this site would potentially disturb or destroy these resources, as noted in **Chapter 4.0**, "Mitigation Measures," further archaeological investigation will be required to be undertaken in the parkland and on Retail Site "A" (limited to the area identified in the quadrant as C4-MCB-1) prior to construction or any ground disturbing activities. A Scope of Work for archaeological field testing will be prepared and submitted to the New York City Landmarks Preservation Commission ("NYCLPC") for review and approval. Remedial measures, including Phase 1B testing, and if needed as determined by NYCLPC based upon the results of the Phase 1B testing, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and~~/or OPRHP~~, if appropriate, the New York State Office of Parks, Recreation, and Historic Preservation ("OPRHP"), will be required to be undertaken by the developer(s) through provisions in the Contract of Sale, lease or other legally binding agreement between ~~NYC~~ the City and the developer(s). For City properties that may be managed by the NYCEDC, remedial measures, including Phase 1B testing, and if needed as determined by NYCLPC based upon the results of the Phase 1B testing, any necessary Phase 2 and 3 investigations, and continued consultation with NYCLPC and~~/or~~, if appropriate, OPRHP, will be required to be undertaken by the developer(s) through the provisions of a contract for sale or lease, or other legally binding agreement between NYCEDC and the developer(s).

### 7.2.2 Year 2020

Construction of the remainder of the Project Area by the year 2020 has the potential to disturb or destroy portions of one or more historic or prehistoric archaeological site located within the remaining sections of the Project Area, which was identified through prior archaeological survey work. In addition, there are portions of the remainder of the Project Area that possess archaeological potential that have never been surveyed. These resources are noted below:

***Senior Housing Site Area***

- *Fairview Prehistoric Site (NYS Site A08501.002815)*. This prehistoric site was located in 1999 during JMA Phase II excavations at the Balthasar Kreischer Estate Ruins Site. Most of the prehistoric material was recovered from a small, 60-foot-by-40-foot area to the southeast of the main house foundation remains, but prehistoric cultural material was also recovered from test units to the northwest and east of the main house foundation. This prehistoric site may once have covered the entire landform. The limited testing conducted to date suggests that at least portions of the prehistoric site retain sufficient integrity to contribute important archaeological data; the site is considered to be archaeologically significant.

- *Balthasar Kreischer Estate (Fairview) Ruins (NYS Site A08501.002814).* Phase II fieldwork conducted at the Kreischer Estate in 1999 documented 18 features with visible surface remains across the estate ruins. The features included the main house foundation, an extensive complex of foundation remains, intact archaeological features (such as possible cisterns and wells), landscape features (such as summer house/gazebo remains, pond, and driveways), and mid-Late-19$^{th}$ century and Early-20$^{th}$ century sheet middens (ceramic and glass sherds, etc). The site is historically significant in local terms for its association with the Kreischer Brickworks, the establishment of Kreischerville (Charleston), and other 19$^{th}$ century works that were sponsored by the Kreischer family. The site is also significant as an intact archaeological example of a 19$^{th}$ century elite residence and its associated features.

***Englewood Avenue Area***

- *Site A7-MCB-1 (NYS Site A08501.002767)*. This prehistoric site was located during the Phase IB survey on a small, pronounced knoll or hill with a flat summit just south of the proposed route of Englewood Avenue, within the (now) existing conservation area. The site is estimated to cover an area approximately 65 feet by 25 feet. The site is considered to be archaeologically significant. The Proposed Project would include no development component at this site, which lies within the existing Conservation Area. However, completion of Englewood Avenue along the northern boundary of the Conservation Area has the potential to adversely impact this prehistoric site. It is recommended that the site location be fenced off prior to the initiation of construction activity in this area, which could minimize or avoid any impacts to this resource.

- *Block 7494: Lots 8, 90, 95, 97, and 183 - Retail Site "B"*. Completion of Retail Site "B" may disturb or destroy potential archaeological resources. It is possible that early features associated with the tenure of the Shea family (ca.1853-1887) are present on this property. Such features could include wells, cisterns, or privies, in addition to foundation remains of the house itself. It is equally possible that features associated with the tenure of the Beckman family (ca.1887-ca.1917) are present. It is also possible that remains of prehistoric occupation are present on this parcel. Given the number of previously identified prehistoric sites and traces of occupation noted for the southwestern portion of Staten Island, including those located within the Project Area itself, it is quite possible that intact prehistoric resources are located on this parcel.

- *Englewood Avenue Extension and Pedestrian/Bicycle Path*. It is possible that remains of prehistoric occupation are present in this 80-foot wide linear corridor. Given the density of

prehistoric site locations already identified for this portion of Staten Island, including a site located less than 50 feet south of Englewood Avenue on the Project Area itself, it is possible that intact prehistoric resources are present.

***Retail Site "B"***

- *Block 7487, Lot 100 – Retail Site B*. Block 7487, Lot 100 lies in the southwestern portion of the current Project Area. This Block has been impacted by recent development, notably the construction of the MTA Bus Depot that fronts on Arthur Kill Road. The bus annex occupies approximately one third of Block 7487. However, the portion of Block 7487 that lies to the south of the bus depot and north of Block 7494 and the extant sewer line running along the southern block boundary has not been previously surveyed.

- *Retail Site "B" and Proposed Utility/Roadway Corridor*: There are unsurveyed areas of archaeological potential in these sections of the Project Area that may be impacted by development in 2020 or later. A new 50-foot-wide corridor is proposed to potentially provide future utility and/or roadway connections to Bricktown Way from Arthur Kill Road. The corridor runs along the southern boundary of Block 7487, Lot 100, just north of the existing 35-foot-wide sanitary sewer easement that runs from Bricktown Way to Arthur Kill Road. The western half of Block 7487, south of the MTA Bus Annex and north of this sewer easement has not been previously surveyed. It is possible that remains of prehistoric occupation are present on this parcel.

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

## 7.3 NATURAL RESOURCES

### 7.3.1 Year 2015

As further discussed in **Chapter 2.8**, implementation of the Proposed Project by the year 2015 would impact approximately 0.106 acres of wetland habitats. No impacts to NYSDEC regulated wetlands or USACE jurisdictional wetlands would occur (**Table 7-1**).

**Table 7-1**

**Estimated Impacts to Wetland Habitats and Regulated Wetlands ~~Under~~in the 2015 ~~Development~~Analysis Year**

| Wetlands | Impacted Wetlands (acres) |
|---|---|
| Non-regulated Wetland Habitats (isolated wetlands) | *0.~~106~~107* |
| NYSDEC-Regulated Wetlands and USACE Jurisdictional Wetlands * | 0.000 |
| Notes: *~~Awaiting concurrence from the~~The USACE ~~on the wetland delineation. It is assumed the USACE will identify~~has identified wetlands ~~B, C, H, HA, NB,~~ and ~~NW~~NB as jurisdictional. | |

The developments from the 2015 analysis year would remove or alter approximately 20.5 acres of habitat for flora and fauna on site. These habitats are largely successional woodlands and fields. None of the habitats are rare or unique and are common in southern New York State. The Development Area supports a variety of mammals (e.g., mice, voles, raccoons, deer, etc.). Displacement of wildlife in 2015 within the constructed portions of the Development Area ~~would~~could be ~~either temporary or~~ permanent, depending upon the ~~whether~~extent to which the construction would ~~permanently~~ alter the existing landscape and remove sufficient habitat to render the remaining habitat unsuitable for some species. Where habitats would be permanently impacted, motile species would likely relocate to contiguous tracts of land adjacent to or near the Development Area, thereby putting additional pressure on these habitats due to the over population of some species. Once construction is complete, ~~it is anticipated that~~ the fauna utilizing the Development Area would have to adapt to the available habitats. While species already relatively adapted to an urban environment (e.g., squirrels, opossum, deer, etc.). can more easily adapt to these types of change, anthropogenic encroachment and disturbances (e.g., noise, light, etc.) into what is now a low-noise environment would make portions of the Development Area an unattractive habitat to organisms intolerant of urban disturbances (e.g., forest birds better suited to larger continuous wooded areas). Overall, no unavoidable impacts to flora and fauna are ~~project~~projected in 2015.

Development by the year 2015 would impact 538 of the surveyed trees within the Development Area~~.~~, including approximately 208 trees impacted by the development of Fairview Park and 330 that would be impacted on Retail Site "A". **Table 7-2** identifies the number of trees, per species that would be impacted. A portion of these trees, especially those displaced from Fairview Park, would be replaced elsewhere in the Project Area or in other locations within Staten Island. The exact number, location and type of trees involved will be determined in the future as the plans for Fairview Park are finalized.

The Development Area is approximately one ~~forth~~ fourth the size of the Clay Pit Ponds State Park Preserve ("CPPSP") and impacts would result in further encroachment in the preserve. The removal of the habitats within the Development Area may have indirect impacts to the preserve, as they serve as a vegetated buffer to the CPPSPP. In the last century, the development of Staten Island, especially southern Staten Island, has removed large parcels of vegetated land. The removal of additional vegetated areas would further reduce available habitats for species that ~~are~~do not ~~adapted~~easily adapt to disturbed environments (e.g., forest birds).

~~As noted previously,~~The assessment of the ~~full~~ potential for the Proposed Project to result in significant adverse impacts on natural resources in 2020 ~~is not fully understood. The~~was based on a reasonable worst-case development scenario. However, the plans for Englewood Avenue, the senior housing and school sites, and Retail Site "B" are presently conceptual in nature, with future opportunities to minimize or avoid some of the potential impacts noted above. Further site testing, including Phase 1B assessments if warranted, could be performed in the future as plans for these project elements advance further in the

development process. This would confirm the potential resources in these areas and define ways for proposed future developments to minimize or avoid impacts to those resources.

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

**Table 7-2**

**Impacted Surveyed Trees Under the 2015 Development**

| Species | Number |
|---|---|
| Black Oak | 3 |
| Black Locust | 2 |
| Big tooth Aspen | 291 |
| Grey Birch | 3 |
| Unknown* | 38 |
| Pin Oak | 141 |
| Poplar sp. | 1 |
| Post Oak | 1 |
| Quaking Aspen | 3 |
| Red maple | 4 |
| Sassafras | 1 |
| Sweetgum | 2 |
| Swamp White Oak | 2 |
| White oak | 46 |
| **Total** | **538** |

Note: Unknown refers to trees whose location was surveyed by a licensed surveyed but could not be located during the tree survey. Note Hurricane Sandy felled many trees on site, which may account for the inability to locate the trees.

Torrey's ~~Mountain Mint~~mountain mint, an endangered species, ~~occurs~~was identified in ~~one discreet location on~~the proposed parking lot near the southern border of Retail Site "A," in a polygon approximately three feet wide and 100 feet long, located within a bed of a man-made drainage channel. Review of the ~~New York State Natural Heritage Program ("NYSNHP")~~NYNHP website indicates "*There are three existing populations in New York but all of them are small or highly threatened"* and *"A recently discovered population on Staten Island was almost destroyed by the construction of a shopping center*." ~~NYSNHP~~[1] NYNHP conservation and management strategies for the species identify that "open areas need to be maintained without directly damaging existing plants." The shopping center location noted by NYNHP is the Bricktown Centre retail complex located directly south of the Project Area (See **Figure 2.8-12** for existing mountain mint locations). The Bricktown Centre preserved mountain mint area is located approximately 700 feet south of the Retail Site "A" mountain mint and is outside of the Project Area. [2]

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

[2] Internal morphological research recently completed for the Greenbelt Native Plant Nursery suggests that the mountain mint within the Bricktown Centre preserve area, previously considered to be Torrey's mountain mint, may be Whorled mountain mint

However, the proximity of the Retail Site "A" and Bricktown Centre mint colonies suggests they are both part of the larger Charleston site in Staten Island identified by the NYNHP.[3]

The ~~removal~~development of ~~one~~Retail Site "A" would remove a colony of mountain mint from the ~~remaining three sites for this species~~Charleston site, which would be ~~viewed as~~considered a significant adverse impact. However, the Bricktown Centre colony along Veterans Road West within the Charleston site would remain preserved in its protected habitat area. Therefore, the Charleston site mentioned by ~~regulatory agencies. Various~~NYNHP above would be impacted, but will not be removed in its entirety. Proposed mitigation measures for the Retail Site "A" mountain mint removal are ~~proposed~~discussed **in Chapter 4**~~: Mitigation, to identify suitable areas within the western portions of the proposed Fairview Park or other appropriate locations nearby that would provide suitable habitat for this species. That proposal, along with other proposed actions to be developed in consultation with applicable regulatory agencies,~~. These measures would support the continued presence of Torrey's ~~Mountain Mint~~mountain mint in this area

### 7.3.2 Year 2020

As further discussed in **Chapter 2.8**, implementation of developments under the 2020 year analysis on Retail Site "B," the senior housing site and the school site would impact approximately 0.30 acres of unregulated/non-jurisdictional wetland habitats~~, none of which would be determined to be jurisdictional.~~. The development of Englewood Avenue ~~and specifically the segment~~ between CPPSPP and the Conservation Area under the 80-foot wide ~~concept plan~~Proposed Project would impact about 0.07 acres of NYSDEC-regulated wetlands (Wetlands B and C) and USACE jurisdictional wetlands. Also, under the 80-foot width of Englewood Avenue, approximately 0.89 acres of NYSDEC-regulated adjacent area would be impacted (**Table 7-3**). Actions to mitigate the impacts to these regulated and jurisdictional wetlands would ~~review by the two regulatory agencies.~~be reviewed by NYSDEC and USACE during the roadway design and permitting processes. Representatives of the USACE noted during a recent field visit that impacts to these types of jurisdictional forested wetlands should be reduced to the greatest extent practicable and unavoidable impacts would require mitigation.

**Table 7-3**

**Estimated impacts to Wetland Habitats and Regulated Wetlands ~~Under~~in the 2020 ~~Development~~Analysis Year**

| Wetlands | School, Senior Housing, and Retail Site "B" | Englewood Avenue (80 foot Width) |
|---|---|---|
| Non-regulated Wetland Habitats (isolated wetlands) | 0.30 | - |
| NYSDEC-Regulated Wetlands and USACE Jurisdictional Wetlands * | - | 0.07 |
| Notes: * ~~Awaiting concurrence from the~~ USACE ~~on the wetland delineation. It is assumed the USACE would identify~~has identified wetlands ~~B,~~ C~~, H~~ and ~~HA~~NB as jurisdictional. Under the ~~80foot~~80 foot option, the only wetlands to be impacted are Wetlands B and C, which are ~~both~~either NYSDEC-regulated ~~and~~(wetland B) or USACE-jurisdictional ~~wetlands.~~(wetland C). Under the 80-foot width of Englewood Avenue, there are approximately 0.~~89~~90 acres of NYSDEC-regulated Adjacent Areas. | | |

(*Pycnanthemum.verticillatum*), which is also an endangered species. (Kelly/Native Plant Nursery, March 2013). The two plant species are closely related to one another. Accordingly, it is anticipated that similar methodologies would be utilized for preserving, cultivating or propagating either type of mint.

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

Implementation of developments under the 2020 year analysis would ~~bifurcate~~divide or fragment remaining undeveloped habitats within the Development Areas from the CPPSPP and the Conservation Area. Although many of the directly impacted habitats are generally successional habitats that are common to New York State, the proposed uses within the Development Area would have further indirect impacts on the ~~preserve~~CPPSPP and Conservation Area through removal and bifurcation of a large contiguous vegetated buffer area.

Approximately 2,013 of the survey trees would be impacted in 2020 (including those impacted by the year 2015). **Table 7-4** identifies the number of trees, per species that would be impacted under the 2020 year analysis of the remaining development components and the 80-foot wide ~~build option of~~ Englewood Avenue right of way under the Proposed Project.

The construction of Englewood Avenue would result in substantial direct impacts to wildlife that ~~uses~~use the CPPSPP and the Conservation Area~~. The current~~, which together with the Englewood Avenue corridor comprise a large forested parcel with mature trees. Within the footprint of the eastern portion of Englewood Avenue, the existing dirt path ~~that separates~~ between the CPPSPP ~~from~~and the Conservation Area is ~~not an impediment to fauna moving between these areas. Moreover, the canopies of the trees in~~ relatively narrow and the trees on both ~~parcels intermingle in some locations, which~~ sides provide ~~an~~a relatively undisturbed ~~continuous~~ canopy. The ~~preserve~~CPPSPP is a NYSDEC Bird Conservation Area (BCA), and bird species, including listed species that live in the ~~preserve and~~CPPSPP, likely transit to the Conservation Area for usage of the habitat ~~there. Removal of the undisturbed continuous canopy for the new road would result in bifurcating valuable habitat and would have negative~~ a movement that would be restricted by construction of an 80-foot wide roadway, resulting in significant adverse impacts on ~~fauna~~avifauna within the ~~preserve~~CPPSPP and the Conservation Area. Moreover, unlike the Development Area, the forest habitats in the CPPSPP and the Conservation Area have fully developed mature canopies, which have limited the undergrowth of dense vines that are stressing trees within the ~~area.~~Development Area. The ~~opening~~construction of ~~roadway~~Englewood Avenue through this forested area would create an "edge effect" on both sides of the road and would likely contribute to localized increases of dense understory vegetation, which would further impact the value of the habitat on the parcels. ~~The New York State-listed rare red-maple sweetgum swamp habitat is also present within~~Under the ~~Englewood Avenue's build footprint. The implementation of this option would remove approximately 0.26 acres of this habitat type. In addition~~Proposed Project, 319 of the surveyed trees would be impacted ~~under this option~~ (see **Table 7-4**).

~~Cumulatively, construction~~Construction of the ~~entire~~ Proposed Project ~~by the year 2020~~ would remove approximately ~~16.3~~0.4 acres ~~(74 percent)~~ of unregulated/non-jurisdictional wetlands and 50.1 acres of upland habitats due to development by the 2020 analysis year. Taken in whole, the ~~current habitat that could support threatened and endangered bonesets, This~~cumulative impacts of the 2020 development would ~~represent a~~have significant ~~impact to natural resources. Various measures are proposed in Chapter 4: Mitigation, to maintain the existing open field areas~~adverse impacts on the flora and fauna of CPPSPP and the Conservation Area and habitats and threatened and endangered species within the Development Area~~, which along with other potentially~~. Potential actions to ~~be developed in consultation with applicable regulatory agencies would support the presence of bonesets on site and offset the impact of this loss of habitat~~reduce or mitigate these impacts are presented in **Chapter 4.0**: Mitigation Measures.

**Table 7-4**

**Impacted Surveyed Trees Under the 2020 Development**

| Species | Retail Site "B", Senior Housing and School Areas | Englewood Avenue (80 Feet Wide) |
|---|---|---|
| Ash sp. | | 1 |
| Black Cherry | 43 | 6 |
| Black oak | 3 | |
| Black Locust | 171 | |
| Big Tooth Aspen | 143 | 74 |
| Catalpa | 1 | |
| Chestnut Oak | | 1 |
| *Dead trees* | 3 | 1 |
| Eastern Cottonwood | 83 | |
| Elm sp. | 4 | |
| Grey Birch | 2 | |
| Honey locust | 1 | |
| Unknown | 53 | |
| Mockernut Hickory | | 14 |
| Norway maple | 12 | |
| Oak sp. | | 11 |
| Paulownia | 22 | 4 |
| Pin Oak | 273 | 24 |
| Pitch Pine | 11 | |
| Quaking Aspen | 24 | |
| Red Mulberry | 4 | |
| Red maple | 44 | 16 |
| Red oak | 14 | 26 |
| Sassafras | 123 | 18 |
| Silver Maple | 3 | |
| Swamp White Oak | | 4 |
| Sweetgum | | 50 |
| Sycamore | 5 | |
| Tilia | 4 | |
| Tree of Heaven | 79 | |
| White Mulberry | 2 | |
| White Oak | 29 | 69 |
| **Total** | **1,156** | **319** |

Note: Unknown refers to trees whose location was surveyed by a licensed surveyed but could not be located during the tree survey. Note Hurricane Sandy felled many trees on site, which may account for the inability to locate the trees.

~~Listed~~Although no listed fauna species ~~occur~~were observed in the 2007-2008 or 2012 surveys within the Development Area, listed species (e.g. Eastern mud turtle, etc.) have been documented in the CPPSPP and the Conservation Area[4]. Many of these species either move between these two areas, or depend on the contiguous habitats within the Development Area to provide a vegetated buffer from anthropogenic disturbance. The ~~bifurcating~~division or fragmentation of habitats, from the construction of Englewood Avenue, would have a negative effect on wildlife. Although, there were no direct observations of listed species within the roadway's footprint, the adjacent Wetlands B and C and ~~adjacent parcels~~their surroundings provide habitat conditions favorable to listed species that occur within ~~that area. These~~these two natural areas. Portions of these habitats would be impacted and ~~partially~~ removed by the construction of the roadway. A range of possible actions to reduce or mitigate these impacts, as discussed in **Chapter 4**: "Mitigation," would ~~have to~~ be developed in consultation with the involved regulatory agencies (especially NYSDEC and the USACE) as the plans for Englewood Avenue are developed further later in the ~~development process~~design and permitting processes.

## 7.4 TRANSPORTATION

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

### 7.4.1 Year 2015

***Boscombe Avenue/Outerbridge Crossing Ramps:***

- Modify the ~~implementation~~traffic signal hardware to provide for a westbound right-turn overlap phase. As part of this mitigation ~~measures (see **Chapter 4.0**)~~,measure, upgraded traffic signal hardware will be required to accommodate the ~~following~~proposed phasing change. The new hardware will require a more robust and flexible traffic signal controller (ASTC 12) that could accommodate multiple traffic timing and phasing plans, including a protected right-turn arrow for the westbound approach.
- During the weekday midday peak hour, reallocate 21 seconds of green time from the eastbound phase~~,~~ and six seconds of green time from the north-south phase to the east-west phase (27 seconds total).
- During the weekday PM peak hour, reallocate 12 seconds of green time from the eastbound phase and three seconds of green time from the north-south phase to the east-west phase (15 seconds total).
- During the Saturday midday peak hour, reallocate two second of green time from the north-south phase to the east-west phase.

[4] http://nysparks.com/publications/documents/biodiversity/BiodiversityAppendicesSection.pdf

With only the improvements described above in place, potential significant traffic impacts ~~due to the Proposed Project are~~would be projected to remain ~~in 2015:~~for southbound left-turn movements at this intersection during the weekday midday and weekday PM peak hours.

## 7.4.2 Year 2020

***Boscombe Avenue/Outerbridge Crossing Ramps:***

- Modify the traffic signal hardware to provide for a westbound right-turn overlap phase. As part of this mitigation measure, upgraded traffic signal hardware will be required to accommodate the proposed phasing change. The new hardware will require a more robust and flexible traffic signal controller (ASTC 12) that could accommodate multiple traffic timing and phasing plans, including a protected right-turn arrow for the westbound approach.
- During the weekday AM peak hour, reallocate seven seconds of green time from the eastbound phase and two seconds of green time from the north-south phase to the east-west phase (nine seconds total).
- During the weekday midday peak hour, reallocate 23 seconds of green time from the eastbound phase and 10 seconds of green time from the north-south phase to the east-west phase (33 seconds total).
- During the weekday PM peak hour, reallocate 16 seconds of green time from the eastbound phase and three seconds of green time from the north-south phase to the east-west phase (19 seconds total).
- During the Saturday midday peak hour, reallocate three seconds of green time from the southbound phase and add one second to the eastbound phase and two seconds to the east-west phase.

  With only the improvements described above in place, potential significant traffic impacts at this intersection would be projected to remain for:

  - Southbound left-turn movements during the weekday AM, weekday midday, and weekday PM peak hours; and
  - Eastbound left-turn movements during the weekday PM peak hour.

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

- ~~Potential significant traffic impacts are projected to remain for the eastbound left-turn movement,~~During the weekday AM peak hour, reallocate two seconds of green time from the northbound ~~approach, and the southbound through/right-turn lane during~~phase to the east-west phase.
- During the weekday midday peak hour, implement lead-lag phasing on all approaches. Allocate 13 seconds to the eastbound leading phase, 22 seconds to the concurrent east-west phase, and 12 seconds to the lagging westbound phase. Allocate 21 seconds to the northbound leading phase, 10 seconds to the concurrent north-south phase, and 12 seconds to the southbound lagging phase.
- During the weekday PM peak hour, reallocate five seconds of green time from the northbound phase and one second of green time from the southbound phase to the east-west phase (six seconds total).
- During the Saturday midday peak hour, implement lead-lag phasing on all approaches. Allocate eight seconds to the eastbound leading phase, 22 seconds to the concurrent east-west phase, and 10 seconds to the lagging westbound phase. Allocate 23 seconds to the northbound leading phase, 11 seconds to the concurrent north-south phase, and 16 seconds to the southbound lagging phase.
- As part of these mitigation measures, upgraded traffic signal hardware will be required to accommodate the proposed phasing changes. The new hardware will require a more robust and

flexible traffic signal controller (ASTC 12) that could accommodate multiple traffic timing and phasing plans, including protected left-turn arrows for the approaches requiring leading and lagging phases.

With only the improvements described above in place, potential significant traffic impacts at this intersection would be projected to remain for:

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

~~However, the New York State Department of Transportation ("NYSDOT") has announced that it will implement improvements to the southbound on- and off-ramps on the West Shore Expressway ("WSE") between Bloomingdale Road and Englewood Avenue by 2015. By improving the connection between the southbound WSE and its adjacent service road (Veterans Road West), traffic heading south on the WSE could more easily access the major traffic generators along Veterans Road West (including the Bricktown Center). The projected resultant traffic shifts would reduce the volume of traffic added by the Proposed Project to this intersection, potentially reducing or eliminating the unmitigated traffic impacts noted above. The effects of these announced WSE ramp improvements at this and other study area intersection will be analyzed and presented in the FEIS.~~

~~***Boscombe Avenue/Outerbridge Crossing Ramps:***~~

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

### ~~7.4.2 Year 2020~~

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

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

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

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

~~However, as discussed above under Year 2015, improvements to the southbound on- and off-ramps on the WSE are projected to result in traffic shifts that would reduce the volume of traffic added by the Proposed Project to this intersection, potentially reducing or eliminating the unmitigated traffic impacts noted above. The effects of these announced WSE ramp improvements at this and other study area intersection will be analyzed and presented in the FEIS.~~