

12. Environmental Screening

An environmental screening of the four Short-List Alternatives was performed to identify significant environmental issues that would preclude or complicate the implementation of one or more of the project alternatives, and to compare the alternatives' relative environmental impacts and benefits. A summary of the findings of this environmental screening is presented in Table 12-1. Potential environmental impacts will be evaluated in greater detail during the environmental review phase of the Study. This section summarizes the findings of the environmental screening by environmental impact category.

Table 12-1: Summary of Environmental Screening Findings

| Category | Summary of Findings |
|--|---|
| Land Use & Neighborhood Character | <ul style="list-style-type: none"> All Alternatives: 1 property acquisition (transportation/parking use) in the Village of Mineola and partial right-of-way easements, such as at Roosevelt Field, Nassau Community College; minor changes affecting neighborhood character Alternatives 2 and 3: 1 additional property acquisition (warehouse use) in Uniondale and right-of-way easements at 2nd Street and Voice Road and within the Meadowbrook State Parkway (MSP) right-of-way |
| Consistency with Public Policy and Plans | <ul style="list-style-type: none"> All Alternatives would be consistent with local plans and policies |
| Socioeconomics/ Environmental Justice (EJ) | <ul style="list-style-type: none"> All Alternatives: No disproportionately high and adverse impacts to environmental justice (EJ) populations; may offer mobility benefits to EJ populations |
| Transportation | <ul style="list-style-type: none"> All Alternatives: Improved mobility Alternatives 2A and 3A: Potential for traffic impacts in areas of mixed traffic where congestion already exists, such as at the intersection of Old Country Road and Glen Cove Road |
| Air Quality | <ul style="list-style-type: none"> All Alternatives: May help slow the growth in total vehicle miles traveled (VMT), reducing mobile-source pollutant emissions Alternatives 2 and 3: Modern streetcar vehicles do not generate emissions Alternatives 2A and 3A: Bus rapid transit (BRT)/Premium bus vehicles generate emissions |
| Noise and Vibration | <ul style="list-style-type: none"> All Alternatives: No vibration impacts Alternatives 2 and 3: The bell on the modern streetcar would be a new source of noise Alternatives 2A and 3A: New bus noise would not change the noise environment but may result in more frequent noise events |
| Hazardous Materials | <ul style="list-style-type: none"> All Alternatives: No disturbance to known hazardous materials sites; the maintenance facility would handle any hazardous materials in accordance with all applicable local, state, and federal requirements |
| Open Space and Recreational Resources | <ul style="list-style-type: none"> Alternatives 2 and 3: Easement within the MSP right-of-way required Alternative 2: Additional easement over the MSP required Alternatives 2A and 3A: No impacts to open space and recreational resources |
| Cultural Resources | <ul style="list-style-type: none"> All Alternatives: Village of Mineola station stop located near two individually eligible resources (Nassau Tower/Long Island Rail Road (LIRR) Mineola Station; LIRR Electrical Substation); not anticipated to create an adverse effect Alternatives 2 and 3: Alignment would traverse one historic district (MSP); determination of whether this creates an adverse effect required |
| Section 4(f) | <ul style="list-style-type: none"> Alternatives 2A and 3A: Would not affect Section 4(f) resources Alternatives 2: Would result in use of 2 Section 4(f) resources (Mitchel Field; MSP) Alternative 3: Would result in use of 1 Section 4(f) resource (MSP) |

Table 12-1: Summary of Environmental Screening Findings (Continued)

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|----------------------------|--|
| Floodplains | <ul style="list-style-type: none"> All Alternatives: No impacts |
| Water Quality | <ul style="list-style-type: none"> All Alternatives: Would not cross or approach any New York State Division of Water water body; no impacts to the Nassau-Suffolk Aquifer System anticipated; the access road to the Carle Place Water District's well field must be maintained; new impervious areas would incorporate Nassau County's stormwater best management practices (BMP) |
| Ecology/Endangered Species | <ul style="list-style-type: none"> All Alternatives: Road widening, construction of separate right-of-way, and construction of stations and the vehicle base facility (VBF) may potentially affect threatened and endangered species, such as plant species and the peregrine falcon |
| Visual Resources | <ul style="list-style-type: none"> Alternatives 2 and 3: Potential visual changes as a result of catenary wires, catenary support poles, and the elevated alignment section within the MSP right-of-way; no significant impacts anticipated Alternatives 2A and 3A: No significant impacts anticipated |

Source: Jacobs, 2012.

12.1 Land Use and Neighborhood Character

The majority of the land use in the Study Area comprises commercial businesses (36 percent) and a variety of residential neighborhoods (26 percent). The 11.7 square-mile Study Area contains the largest concentration of commercial uses within Nassau County, including two regional malls, numerous office complexes, and a wide variety of shops, restaurants, and service establishments. Significant areas of residential development are located in neighborhoods in the Village of Mineola, Carle Place, the Village of Garden City, the Town of Hempstead and the Village of Hempstead. The neighborhood character of this residential development generally takes the form of single-family housing; however, a number of garden apartments, townhomes and medium-density, multi-family dwellings can be found throughout the Study Area along major transportation corridors and near existing LIRR stations in the Village of Mineola and the Village of Hempstead. Parks and other recreational uses account for about 15 percent of the land use, much of it in Eisenhower Park. An extensive supply of off-street parking represents approximately 9 percent of the total land cover of the Study Area.

None of the four Short-List Alternatives would require property acquisition that would result in residential displacement. Property acquisition of one multi-parcel location, a transportation/parking use, may be required for a station in downtown Village of Mineola for all four alternatives. Modern streetcar Alternatives 2 and 3 would require property acquisition of one multi-parcel location, a warehouse use, for the VBF in Uniondale. In addition, for all four alternatives, partial easements would be required through existing parking areas and internal roadways at Roosevelt Field, the Nassau Veterans Memorial Coliseum property and Nassau Community College. Alternatives 2 and 3 would require right-of-way easements across undeveloped properties at the proposed connection between the eastern terminus of 2nd Street and Voice Road¹. A right-of-way easement for Alternatives 2 and 3 within the MSP right-of-way may also be required; the extent of the easement will be determined during further engineering studies and the environmental review process. Alternative 2 would require more right-of-way easement within the MSP right-of-way than would Alternative 3 because it crosses over the MSP. Consequently, Alternative 2 would result in more impacts to land use than would the other alternatives as it would require acquisition of two properties and the most right-of-way from the MSP.

¹ This concept will require additional coordination with the Village of Mineola.



All of the alternatives would add a new transportation service with facilities and infrastructure that would change the character of the neighborhoods to some degree. However, these changes would be minor and in targeted locations. Neighborhood character will be a consideration during design of the proposed modern streetcar or BRT/premium bus stations/stops for the Locally Preferred Alternative (LPA); their design will be coordinated with each community through an outreach effort to facilitate context-sensitive design in keeping with neighborhood character. The potential VBF is proposed for locations that can accommodate this type of facility and be integrated into the existing mixed industrial/commercial development of the surrounding neighborhoods. The modern streetcar or BRT/premium bus would travel on tracks or street bed within a dedicated right-of-way for the majority of its route. In most locations, the new right-of-way would be located adjacent to or within existing arterials. An elevated structure would be required within the MSP right-of-way for modern streetcar Alternatives 2 and 3, over Old Country Road and past Roosevelt Field. This structure is not anticipated to present a physical barrier dividing any community, affect access to existing uses, or result in noise or shadow impacts affecting surrounding residential areas or natural recreational areas. The structure would be located in an intensely developed part of the Study Area containing commercial and retail uses and existing arterials. While it would be visible, particularly to drivers on the MSP and visitors to Roosevelt Field, the elevated structure would not be out of place given the scale of development in its vicinity and adjacent areas.

The potential changes resulting with the alternatives would occur almost exclusively within areas of the Study Area that are currently developed with existing commercial/retail and community services. The changes would not be particularly notable in any given community, would not adversely affect access to existing uses, or introduce a change or obstacle that would functionally or culturally divide an existing community. The development of a new transit service that would provide access to existing uses is supportive of existing land use and neighborhood character in the Study Area. Consequently, there would be no significant adverse effects on land use or neighborhood character anticipated with any of the four Short-List Alternatives.

12.2 Consistency with Public Policy and Plans

Recent pertinent studies and analyses identified problems of growing roadway congestion, a limited transit system, slowed population growth and an overall stagnation of economic growth. Additionally, these studies suggested strategies for directing growth to existing downtowns and targeted development areas, including the Study Area, as well as encouraged the use of public transit as a means of supporting growth without further exacerbating traffic congestion.

Recent and current public policies and plans are setting the foundation for a transition of the Study Area's future land use pattern from single-use, automobile-dependent developments to mixed-use, higher-density and transit- and pedestrian-friendly developments that provide linkages to existing and proposed developments and multimodal transit centers. Several municipalities within the Study Area have initiated planning and zoning initiatives to promote this type of development. As noted in Section 3.1, the Village of Hempstead is advancing – through an approved redevelopment plan – a 26-acre, mixed-use, transit-oriented development in its downtown, and the Village of Westbury has redeveloped its downtown. Redevelopment of the Nassau Veterans Memorial Coliseum and the former Mitchel Field are planned in the Town of Hempstead where the Town has adopted a mixed-use zoning district. The County has selected developers for both projects and redevelopment plans are being advanced.



In 2012, the New York State Department of Transportation (NYSDOT) initiated a pedestrian safety program along Hempstead Turnpike consisting of restriping the 235 crosswalks located along the length of the road, widening some crosswalks, installing No Turn On Red restrictions, and increasing pedestrian crossing times at 86 traffic signals. This was initiated in response to 326 pedestrian-vehicle accidents over a 3-year period, including 20 fatalities. The improved pedestrian environment along Hempstead Turnpike is conducive to transit service. Nassau County has initiated similar programs for the portions of Hempstead Turnpike that are owned by the County (called Fulton Street).

All alternatives are supportive of the long-range vision for Nassau County's land use and economic development described in the County's Draft Master Plan, and all would serve major new redevelopment initiatives in the Village of Hempstead and the Town of Hempstead.

While Alternatives 3 and 3A would not serve the Source Mall area, Alternatives 2 and 2A would. Conversely, Alternatives 3 and 3A would provide service to peripheral office parks, but Alternatives 2 and 2A would not.

All Short-List Alternatives can be considered consistent with the mobility goals of locally adopted plans.

12.3 Socioeconomics/Environmental Justice

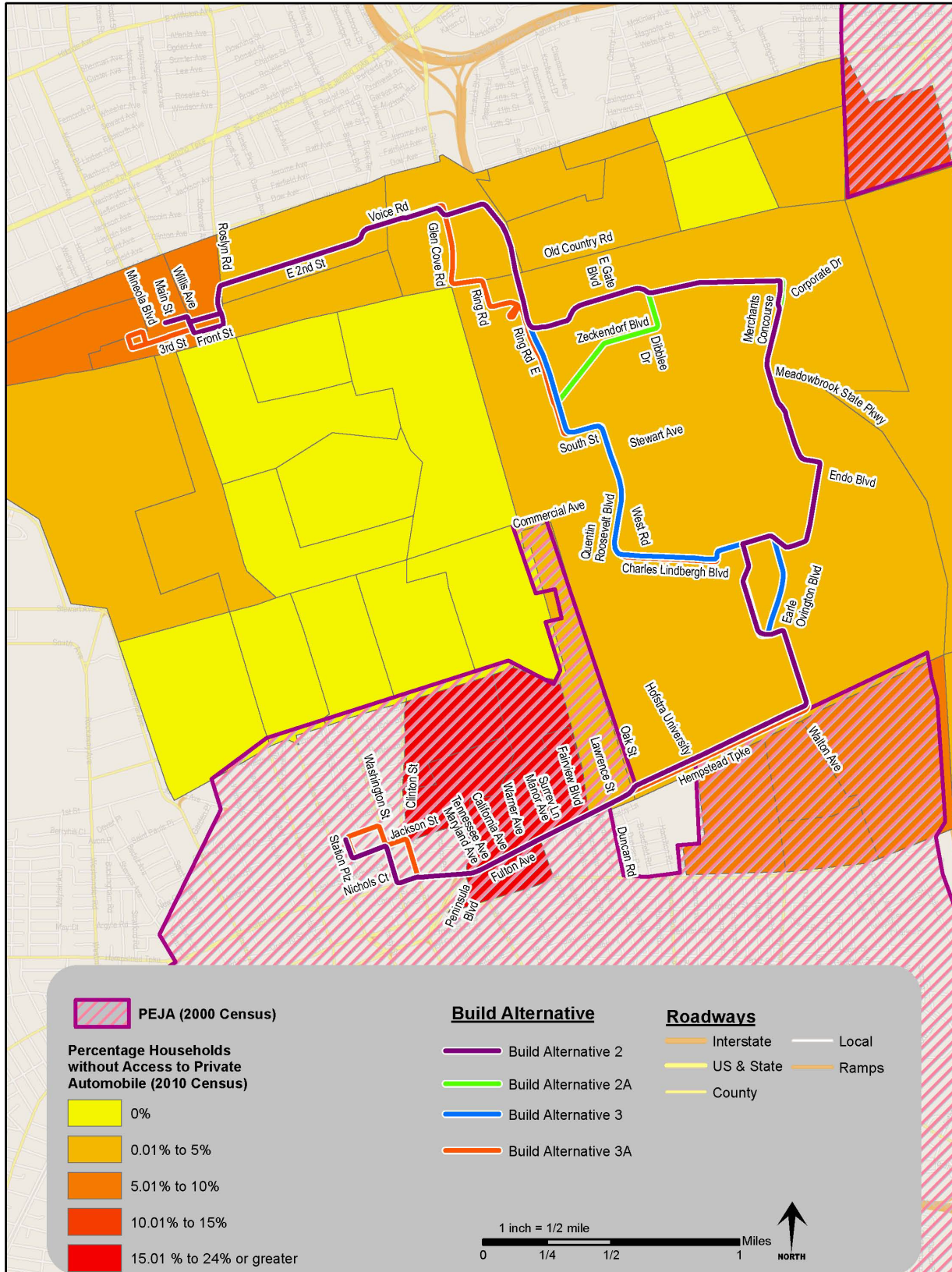
An analysis of New York State Department of Environmental Conservation (NYSDEC) Potential Environmental Justice Areas (PEJAs) and auto-ownership data was performed to map areas of potential Environmental Justice (EJ) concern.² PEJAs consist of U.S. Census block groups of 250 to 500 households each that have populations that meet or exceed statistical thresholds related to minority population and household income. While auto availability is not universally identified as a measure of potential lower-income status, in suburban areas that are typically more auto-dependent than are areas such as Manhattan, lack of access to an automobile is also considered a reliable indicator of economic status, particularly when viewed in terms of other demographic data.

Throughout the Study Area, the percentage of residences without access to an automobile ("zero-auto households") ranges from a low of zero to a high of 25 percent of residences per Census tract. Portions of the Study Area within the Village of Garden City, portions of the Village of Mineola, and portions of the Town of North Hempstead were found to have low percentages of zero-auto households, ranging from 0 percent to 2 percent. Conversely, between 16 percent and 25 percent of households within the tracts constituting the PEJA area in the Village of Hempstead were zero-auto households. Approximately 7 percent of households within the Uniondale portion of the PEJA were also zero-auto households (Figure 12-1).

None of the Short-List Alternatives would result in disproportionately high and adverse impacts to EJ populations. All of the alternatives may offer benefits to EJ populations as they would serve the retail areas and office parks, providing direct access to entry-level and flexible employment opportunities.

² Executive Order 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations*, dated February 11, 1994, directs all federal agencies to ensure that their actions do not have a "disproportionately high and adverse human health or environmental effect on minority populations or low-income populations." Existing socio-economic data were collected and analyzed to inform the Environmental Justice (EJ) impact analysis, in compliance with Executive Order 12898.

Figure 12-1: Potential Environmental Justice Areas and Zero-Auto Households



Source: 2000 U.S. Census; Jacobs, 2012.



12.4 Transportation

The private automobile is the dominant mode of transportation into and around the Study Area, comprising about 90 percent of all Study Area trips. Although there is scheduled bus service within the Study Area, buses account for only 6 to 7 percent of Study Area trips, while other modes, including carpool and taxi, make up the remaining 3 to 4 percent of total trips. There is no direct LIRR service to many parts of the Study Area. The reliance on automobiles is further reinforced by current land use patterns: residential neighborhoods, commercial stores, and other land uses are typically separated by major roads, vast surface parking areas, or areas with little or no transit access.

According to the year 2008 analyses published in the *DGEIS for the Lighthouse at Long Island*, seven of 27 intersections analyzed in the Nassau Hub Study Area and along key feeder routes leading to it operate at overall level of service (LOS) E or F conditions in the weekday AM peak hour and another eight intersections operate at overall LOS D. In the weekday PM peak hour, 11 of the 27 intersections operate at overall LOS E or F and another 10 operate at overall LOS D. In the Saturday midday peak hour, four operate at overall LOS E or F and another eight operate at overall LOS D. Congestion delays at many of these intersections are already severe. Even at overall marginally acceptable LOS D, one or more traffic movements may be operating under congested conditions.

The NYSDEC, which publishes geographic information systems (GIS) data used by Nassau County, identifies several combined bicycle and pedestrian routes through the Study Area. The western route uses Washington Avenue from the southern border of the Study Area, continuing north through the Village of Hempstead, the Village of Garden City, and the Village of Mineola to the northern boundary of the Study Area. Two east-west branches intersect Washington Avenue: Stewart Road connects to Washington Avenue from the west in the Village of Garden City, and Old Country Road connects to Washington Avenue from the west in the Village of Mineola. On the east side of the Study Area, the combined bicycle/pedestrian route travels north-south from the southern border of the Study Area via Earl Ovington Boulevard. In the central part of the Study Area, the route turns west, connecting to Charles Lindbergh Boulevard where the route branches. One branch continues west to Merrick Avenue, which runs north-south along the western edge of Eisenhower Park, providing access to the park. The other branch turns north and uses Perimeter Road and Lifetime Brands Boulevard through the Source Mall to Ellison Avenue to the northern boundary of the Study Area. In addition, NYSDOT recently constructed a bicycle path along Salisbury Park Drive.

The BRT/premium bus Alternatives 2A and 3A would route bus service through the intersection of Old Country Road and Glen Cove Road, the Study Area's most congested intersection. Signal prioritization may improve the efficiency of the BRT/premium bus service but at the expense of additional delays borne by private vehicles. Both modern streetcar Alternatives 2 and 3 would use new dedicated right-of-way to bypass this intersection. All alternatives would experience congestion issues along Hempstead Turnpike as both modes would travel in mixed traffic. Consequently, the BRT/premium-bus mode (Alternatives 2A and 3A) are somewhat less desirable in terms of the potential to exacerbate traffic delay. The modern streetcar mode (Alternatives 2 and 3) would involve fewer interactions between the modern-streetcar vehicle and background traffic, resulting in fewer instances where the modern streetcar could contribute to additional delay.

Alternatives 2 and 2A would provide access to the central concentrated commercial/retail and entertainment portions of the Study Area and to Eisenhower Park. These two alternatives would also



better coordinate with established bicycle and pedestrian trails in this area. Alternatives 3 and 3A would not interact as directly with established bike/pedestrian routes due to their routing.

In terms of transportation, all alternatives would improve mobility and reduce or slow the growth of congestion by providing service to major trip generators. All four alternatives could potentially create minor increases in traffic volumes accessing the proposed new stations; however, the introduction of new transit in the area would increase the number of people moving in, out and through the area at a faster rate than under current conditions, which would be a benefit.

12.5 Air Quality

Nassau County, like much of the New York/New Jersey metropolitan region, has been designated as a non-attainment area for ozone and a maintenance area for particulate matter (PM_{2.5}) and carbon monoxide (CO).³ All four alternatives may help slow the growth in total vehicle miles traveled (VMT) and, consequently, mobile-source pollutant emissions. However, all would also result in some increases in traffic delays associated with signal priority for the transit service. The extent of the effectiveness of each alternative in slowing the growth in VMT, or even reducing VMT, depends on the alternative's vehicle mode and route. The modern streetcar mode (Alternatives 2 and 3) is better in terms of air quality because the vehicles themselves do not generate emissions. The BRT/premium bus vehicles used by Alternatives 2A and 3A generate emissions. Although all four alternatives could potentially create minor increases in traffic volume accessing the proposed stations, leading to some potential air quality degradation, this impact would likely be negated by the benefits of the decrease in traffic from auto users being diverted to the modern streetcar or BRT/premium bus service.

12.6 Noise and Vibration

Noise-sensitive receptors in the Study Area that would be affected by the Short-List Alternatives are located primarily in the Village of Mineola and the Village of Hempstead. All alternatives have the same number of receptors that would be potentially affected, as residential receptors are concentrated within the route segments in the Village of Mineola and the Village of Hempstead that are common to all four alternatives.

The distinction among the alternatives in terms of noise comes from the difference between the sound of the bell associated with the modern streetcar (Alternatives 2 and 3) and engine noise associated with BRT/premium bus (Alternatives 2A and 3A). Neither noise is excessively loud; the consideration related to noise is the frequency of the noise, or how "annoying" the noise is, and whether the alignments would bring the noise close, or in the case of BRT/premium bus, closer to sensitive receptors. In terms of the latter, the alignments for all four alternatives travel within or adjacent to existing roads for the majority of their routes. New right-of-way locations are confined to urbanized areas, non-residential areas, or parking areas associated with existing uses, such as Roosevelt Field and Nassau Community College. None of the alternatives would bring a source of noise closer to a sensitive receptor than existing sources of noise (e.g., traffic on existing streets). The distinction between the vehicle modes results in different types of noise, but the effect is comparable. Bus engine noise is currently audible at receptors on all roads that are proposed to be traversed by Alternatives 2A and 3A. The addition of new bus noise would not change the noise environment of the Study Area, but it may result in more frequent noise events. The bell on the

³ USEPA Green Book Nonattainment Areas for Criteria Pollutants, <http://epa.gov/airquality/greenbook/>, 2014.



modern streetcar would be a new source of noise added to the existing noise environment, which includes engine noise from existing NICE Bus service and other vehicles. The bell is not loud, but it would be frequent, adding to the occurrences of audible noise but not the loudness of the noise environment. Therefore, the BRT/premium bus alternatives (2A and 3A) are potentially less likely to garner community opposition because of the familiarity of the noise generated by the vehicles.

No vibration impacts are anticipated with any of the alternatives because the vehicles proposed are not generators of noticeable vibration and the elevated portions of the alignment for Alternatives 2 and 3 are not located near sensitive receptors.

12.7 Hazardous Materials

The hazardous materials screening analysis used readily available GIS data documenting known contaminated sites and information obtained from regulatory agency databases, including the United States Environmental Protection Agency (USEPA)'s Toxic Release Inventory (TRI); the National Priority List (NPL) of Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) of hazardous waste sites, also known as Superfund sites; and NYSDEC's Environmental Remediation Sites.

Through the database search, 14 known hazardous materials sites were identified in the Nassau Hub Study Area.

Of the 14 identified hazardous materials sites, four are located near Alternatives 2 and 2A and six near Alternatives 3 and 3A. None of these sites is proposed to be disturbed for construction of any of the alternatives. The modern streetcar VBF locations considered for Alternatives 2 and 3 would manage hazardous materials associated with light maintenance and cleaning of the modern streetcar vehicles—detergents and perhaps motor oil and other lubricants. The BRT/premium bus Alternatives 2A and 3A would utilize the existing NICE Bus maintenance facility, which operates under similar provisions. As none of the four alternatives would disturb hazardous materials and all four would require a maintenance facility, which would handle any hazardous materials in accordance with all applicable local, state, and federal requirements, no hazardous materials impacts are anticipated as a result of any of the alternatives.

12.8 Open Space and Recreational Resources

Nassau County's Department of Parks, Recreation, and Museums (DPRM) identifies parks by category: Active Parks, Passive Parks, Recreation, Preserves, and Campgrounds. The DPRM also has jurisdiction over museum properties. Museums are included in this screening assessment because they are open to the public, funded in part by public money, and serve as recreational resources.

One privately managed preserve, the Hempstead Plains Preserve (Francis Purcell Preserve), is located within the boundaries of Nassau Community College within the Study Area. This preserve is owned and managed by the College through the non-profit organization, *Friends of Hempstead Plains Preserve*. The DPRM supports the activities of the Friends of Hempstead Plains Preserve but does not have jurisdiction over the preserve.

Although parkways are not actively used for recreation, the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) has designated all parkways as "parks;" consequently, the MSP must be considered a public open space resource. The MSP's landscaped right-of-way is parkland under the jurisdiction of OPRHP, while the cartway (paved surface) is maintained by NYSDOT. As the right-of-



way and cartway function together, any use of the MSP for an alternative would require approval from both NYSDOT and OPRHP. Modern streetcar Alternatives 2 and 3 would require an easement within the MSP right-of-way for construction of an elevated structure and operation of modern streetcar service on that structure. Additionally, Alternative 2 would require an easement over the MSP. BRT/premium bus Alternatives 2A and 3A would result in no impacts to open space and recreational resources.

12.9 Cultural Resources

The cultural resource screening used readily available data obtained through a review of State and National Registers of Historic Places (NRHP) resource records; the New York State Historic Preservation Office (NYSHPO) Sphinx database; and consultation with NYSHPO personnel.

All four alternatives have the potential to affect two individually eligible resources, and the modern streetcar Alternatives 2 and 3 would potentially affect one historic district. The two individually eligible resources, the Nassau Tower/LIRR Mineola Station and the LIRR Electrical Substation located on Main Street in the Village of Mineola, are located in the vicinity of the Village of Mineola station stop that is common to all alternatives. The proposed improvements associated with the new Village of Mineola station – bus shelter-style waiting areas – would not alter the two historic structures or change their setting; therefore, it is likely that the proposed Village of Mineola station common to all of the alternatives would not have an adverse effect on either historic resource.

Alternatives 2 and 3 propose to construct new right-of-way, including right-of-way on structure, in the undeveloped parkway primarily on the west side of the MSP, which is an historic district. Placement of project elements within the parkway would require review per Section 106⁴ for impacts to historic resources and Section 4(f)⁵ requirements for impacts to both historic resources and parkland. Acquisition of the right-of-way would require New York State legislative approval, per requirements related to parkland alienation, due to the MSP's parkland designation. Alternative 2 may result in a more visible effect on the MSP because the route crosses above the MSP from east to west, perpendicular to the travel lanes of the cartway. As a character-defining feature of the MSP's historic significance is directly related to its viewshed, depending on the historic integrity of the portion of the MSP crossed by Alternative 2, this effect may be considered adverse. Alternative 3 would result in a greater linear distance of effect as the alignment runs within the western boundary of the MSP from Roosevelt Field to South Street.

Consequently, the modern streetcar alternatives (Alternatives 2 and 3) may result in the greatest effects on historic resources as a result of the need for right-of-way within the MSP. The BRT/premium bus alternatives (Alternatives 2A and 3A) may affect the same individually eligible resources but would not affect the MSP.

⁴ Historic resources are protected under federal law through Section 106 of the National Historic Preservation Act of 1966, as amended.

⁵ Section 4(f) of the U.S. Department of Transportation Act of 1966 prohibits the use of publicly owned parks, recreation areas and wildlife and waterfowl refuges, as well as historic sites, whether publicly or privately owned unless 1) there is no feasible and prudent alternative that avoids the use of Section 4(f) properties and 2) the proposed project that would use the Section 4(f) property(ies) incorporates all possible planning to minimize the harm that would result from the use of the property(ies). Section 4(f) applies to all agencies of the US Department of Transportation in their decision-making (e.g., approval, funding) processes for proposed projects.



12.10 Section 4(f)

Section 4(f) requirements were considered in the screening assessment because two public open space resources (the MSP and Mitchel Field) and one historic resource (the MSP) may be affected, the MSP by both Alternatives 2 and 3 and Mitchel Field by Alternative 2. The BRT/premium bus Alternatives 2A and 3A would not affect Section 4(f) resources.

For purposes of the alternatives screening, the assessment of potential Section 4(f) impacts focused on permanent, physical use of Section 4(f) resources, which can be determined at this phase of project planning with more certainty than can constructive use.⁶ The use of the landscaped parkway of the MSP would likely be a more significant Section 4(f) use than would the use of an unused portion of Mitchel Field, as the landscaped right-of-way of the MSP is the actual historic element and park, characteristic of Robert Moses' vision. The Mitchel Field impacts associated with Alternative 2 may comprise a *de minimis* impact, which would permit a minor use of the resource without having to make a finding that there are no feasible and prudent alternatives that would avoid use of the resource. Alternative 2 would affect less linear distance of the MSP compared to Alternative 3, but Alternative 2's crossing of the MSP perpendicular to the cartway may be considered an effect on the visual character or historic integrity of the parkway and may be a constructive use impact. The effect of the crossing (i.e., whether an adverse effect) will be determined through detailed Section 4(f) evaluation and Section 106 consultation during the Nassau Hub Study's environmental review phase.

Section 4(f) requires consideration of any prudent and feasible alternatives to the use of the Section 4(f) resources and prohibits the use of public funds for a project alternative that would result in the use of a Section 4(f) resource if other prudent and feasible alternatives exist. Therefore, the modern streetcar Alternatives 2 and 3 in their current alignments are less viable alternatives than are the BRT/premium bus Alternatives 2A and 3A. A full Section 4(f) evaluation will need to be completed during the Study's environmental review phase to ensure that the proposed transit improvement selected for implementation conforms fully to Section 4(f) requirements.

12.11 Floodplains

One floodplain area has been identified in the Study Area; it is associated with the Hempstead Plains Preserve near the MSP. This area is designated Federal Emergency Management Agency (FEMA) Flood Zone A, which means it is subject to a 1 percent annual chance of inundation (100-year flood zone). The four alternatives' alignments would not pass through or near the flood zone. As no improvements are proposed within the flood zone area, no adverse effect to the floodplain itself and no change to the flood risk for adjacent areas would occur as a result of implementation of any of the four Short-List Alternatives.

12.12 Water Quality

The New York State Division of Water (DOW) maps and monitors water quality in most identified lakes, streams, rivers, estuaries, and coastlines of the Great Lakes and Atlantic Ocean. DOW mapping indicated that identified water resources occur near but not within the Study Area.

⁶ Section 4(f) "use" occurs when a project would permanently incorporate land from a Section 4(f) property; temporarily occupy land from a Section 4(f) property, if certain conditions apply; or have proximity effects (e.g., noise, visual, etc.) that substantially impair the protected features of the property. The latter condition is known as a constructive use.



The Study Area is located over a USEPA-designated Sole Source Aquifer known as the Nassau-Suffolk Aquifer System. The aquifer underlies all of Long Island, providing drinking water within the Study Area, as well as all of Nassau and Suffolk Counties. In addition, the Carle Place Water District operates a well field north of Old County Road adjacent to the east side of the MSP. The well field supplies much of the potable drinking water for the Study Area.

All four Short-List Alternatives are alike in their potential to affect water quality. None of the alternatives would cross or approach any DOW water body. While the routes would cross over the Nassau-Suffolk Aquifer System, construction activities proposed in conjunction with the development of any of the alternatives' infrastructure would not require excavation or dewatering to the extent that the aquifer would be affected. All four alternatives' alignments travel along the eastern boundary of the Carle Place Water District's well field. The access road to the well field must be maintained.

A new right-of-way, whether at-grade or elevated, would constitute new impervious area. Construction design would incorporate Nassau County's stormwater best management practices to ensure that water quality in the Study Area is preserved.

12.13 Ecology/Endangered Species

The U.S. Fish and Wildlife Service (USFWS) identified five threatened and endangered species known to occur within Nassau County; however, most of these species are associated with shoreline habitats and are found in and around the northern and southern shorelines of Long Island. The habitat areas supporting these species do not extend into the Study Area. The exception to this is the Sandplain gerardia, the only plant on the USFWS Threatened and Endangered Species list for the whole of New York State. The Sandplain gerardia is found only at Sayville, the Hempstead Plains Preserve, and Montauk. Hempstead Plains Preserve, the preserved area within the boundary of Nassau Community College, is within the Study Area.

The NYSDEC maps the location of habitat communities of concern, areas known to support a diversity of plants and animals, many of which may be threatened or endangered. The Hempstead Plains Preserve grassland is the only such area identified within the Study Area.

Additionally, the NY State Natural Heritage Program (NHP) provides data on state-listed species of concern. A spring 2012 search for threatened, endangered, or state-concern species identified 20 animal and 94 plant species that may be found within Nassau County. The habitats identified for the listed species were compared to the land cover, land forms, and known geology of the Study Area to determine the likelihood that the species occur in the Study Area.

Most of these species are most likely to be found in the Hempstead Plains Preserve or Eisenhower Park, neither of which would be affected by any alternative. However, some listed species may occur in other locations within the Study Area that may be affected by all of the alternatives, such as several plant species that have been found to inhabit roadway right-of-way and ballasted areas of active and abandoned railroads. The peregrine falcon is the only animal species that may occur in the portions of the Study Area directly affected by all of the alternatives. Peregrine falcons have been known to nest on the facades of high-rise buildings near hunting grounds. Tall structures near open areas, such as near RXR Plaza and Mineola near the Government Center, may be habitat for peregrine falcons.

All four alternatives are alike in that they may require road widening or construction of separate right-of-way and may affect threatened and endangered species that have been found along road and railroad



right-of-way. The development of station sites on presently undeveloped land (including mowed lawn areas) may affect threatened and endangered species that are found in disturbed areas. A detailed habitat and threatened and endangered species survey may need to be completed during the Nassau Hub Study's environmental review phase.

12.14 Visual Resources

The Study Area is generally characterized as densely developed with a mix of historic and modern residential, commercial, and government structures with a roughly gridded street network throughout. The Study Area also includes former military bases, such as Mitchel Air Field, which include open spaces and more recent development. Single-family residential development along with classic downtown landscapes predominate areas on the western side of the Study Area, particularly the Village of Garden City, but these areas are not within the influence area of the four alternatives and would not be affected by them. While the Study Area includes important historic landmarks, such as the Nassau County Courthouse, many of the notable visual features are more modern structures, such as Roosevelt Field, the Source Mall, the museum buildings on Museum Row, Nassau Veterans Memorial Coliseum, and RXR Plaza.

Visual resources for which intrusion in the form of new transit infrastructure may result in notable changes to their viewshed include portions of Nassau Community College, the historic district that previously served as Mitchel Air Field, Eisenhower Park, Hempstead Plains Preserve, and the MSP.

Modern streetcar Alternatives 2 and 3 would be more likely to result in visual impacts in the Study Area than would Alternatives 2A and 3A. This potential effect would be the result of catenary wires, catenary support poles, and the elevated alignment section within the MSP right-of-way, which would be new visual elements in the Study Area. BRT/premium bus Alternatives 2A and 3A would require no new infrastructure that does not already exist in association with other transit service within the Study Area. None of the visual changes with any of the Short-List Alternatives are anticipated to result in significant impact.