Transportation Project Report

Draft Design Report/ Environmental Assessment

September 2023

NYS Route 33, Kensington Expressway Project
Project Identification Number (PIN): 5512.52
City of Buffalo
Erie County

New York State of Opportunity. Department of Transportation

U.S. Department of Transportation Federal Highway Administration

DRAFT DESIGN REPORT/

ENVIRONMENTAL ASSESSMENT

For

P.I.N. 5512.52, Kensington Expressway Project

City of Buffalo

Erie County

BY

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

And

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

Submitted pursuant to 42 USC 4332(2)(c). This Environmental Assessment was prepared in consultation with FHWA, has been reviewed for scope and content and is released for comment.

09/11/2023
Date

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9/11/2023
Date

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EXECUTIVE SUMMARY

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration (FHWA), has prepared this Draft Design Report / Environmental Assessment (DDR/EA) for the NYS Route 33, Kensington Expressway Project (the Project) in accordance with the requirements of the Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA), as amended, (40 Code of Federal Regulations [CFR] Parts 1500-1508); the FHWA *Environmental Impact and Related Procedures; Final Rule* (23 CFR 771); the NYSDOT *Procedures for Implementation of the State Environmental Quality Review Act* (SEQRA) (17 New York Codes, Rules and Regulations [NYCRR] Part 15); and the NYSDOT Project Development Manual.

The Project is federally and state funded and is classified as a NEPA Class III action under 23 CFR 771, which requires the preparation of an Environmental Assessment (EA) to determine whether or not the Project will result in significant impacts to the environment. The FHWA and NYSDOT, as joint lead agencies, have advanced the Project through the NEPA EA process in consideration of public and agency comments received about the Project.

The Project is classified as a non-Type II (EA) action under SEQRA, indicating that it has the potential for significant environmental impacts or substantial controversy on environmental grounds. Under 17 NYCRR Part 15, given that a federal DDR/EA has been prepared, the NYSDOT and other State of New York agencies undertaking a discretionary action for the Project have no obligation to prepare an additional EA under SEQRA. Thus, the DDR/EA for the Project has been prepared to comply with both NEPA and SEQRA.

The FHWA and NYSDOT have advanced the Project through the EA process in consideration of public and agency comments received about the Project. Following a public comment period and public hearing, the EA process will conclude with either a Finding of No Significant Impact (FONSI) under NEPA / Determination of No Significant Effect (DONSE) under SEQRA, or a determination that an Environmental Impact Statement (EIS) is required.

S.1 Project Location

The Project is located in the City of Buffalo, Erie County, New York. The term “transportation corridor” is used to describe the sections of NYS Route 33 and Humboldt Parkway being considered for improvements in this Project. The transportation corridor is defined as NYS Route 33 (Kensington Expressway) and Humboldt Parkway between Best Street and Sidney Street (see Figure S-1: Project Location Map).

The Project limits (limits of work) extend along the Kensington Expressway and Humboldt Parkway from approximately High Street (southern limit) to approximately Northland Avenue (northern limit), a total distance of approximately 7,100 feet, and include adjacent areas of proposed disturbance associated with regrading. Five east-west bridges traverse the Kensington Expressway (East Ferry Street, East Utica Street, Northampton Street, Dodge Street and Best Street) within the transportation corridor. Humboldt Parkway, which begins at Northampton Street and extends north beyond the Project limits, is adjacent to the Kensington Expressway on both sides and is part of the Project. As described in Section S.3, the Build Alternative includes the capping of approximately 4,150 feet of the existing NYS Route 33 Kensington Expressway to form a tunnel; the approximate limits of the proposed tunnel are from Dodge Street to Sidney Street.

The Project also includes various City of Buffalo streets adjacent to the Kensington Expressway and Humboldt Parkway (the proposed local street improvements are discussed in Section S.3.2). The bounding street limits of these improvements are generally High Street to the south, Northland Avenue to the north, Fillmore Avenue to the east, and Wohlers Avenue to the west.

The general Study Area for the Project includes a 1,000-foot buffer beyond the north and south ends of the Project limits on the Kensington Expressway and a 500-foot buffer beyond the east and west limits of the local street improvements (see Figure S-2: Study Area). The general Study Area has been expanded from what was presented in the Project Scoping Report (PSR)[1] to account for the proposed local street improvements. The land uses within the general Study Area consist of urban residential neighborhoods generally constructed in the early 1900s. The properties along Humboldt Parkway are primarily residential in nature, including single and multi-family houses. Several places of worship and assembly buildings are present, particularly along the block between East Ferry and East Utica Streets. At the southern terminus of the Humboldt Parkway are Martin Luther King, Jr. Park (MLK Park) and the Buffalo Museum of Science.

S.2 Project Purpose, Objectives, and Need

S.2.1 Project Purpose and Objectives

The purpose of the Project is to reconnect the community surrounding the defined transportation corridor and improve the compatibility of the corridor with the adjacent land uses, while addressing the geometric, infrastructure, and multi-modal needs within the corridor in its current location.

The following objectives have been established to further define the Project purpose:

- Reconnect the surrounding community by creating continuous greenspace to enhance the visual and aesthetic environment of the transportation corridor;
- Maintain the vehicular capacity of the existing transportation corridor;
- Improve vehicular, pedestrian, and bicycle mobility and access in the surrounding community by implementing Complete Street[2] roadway design features; and
- Address identified geometric and infrastructure deficiencies within the transportation corridor.

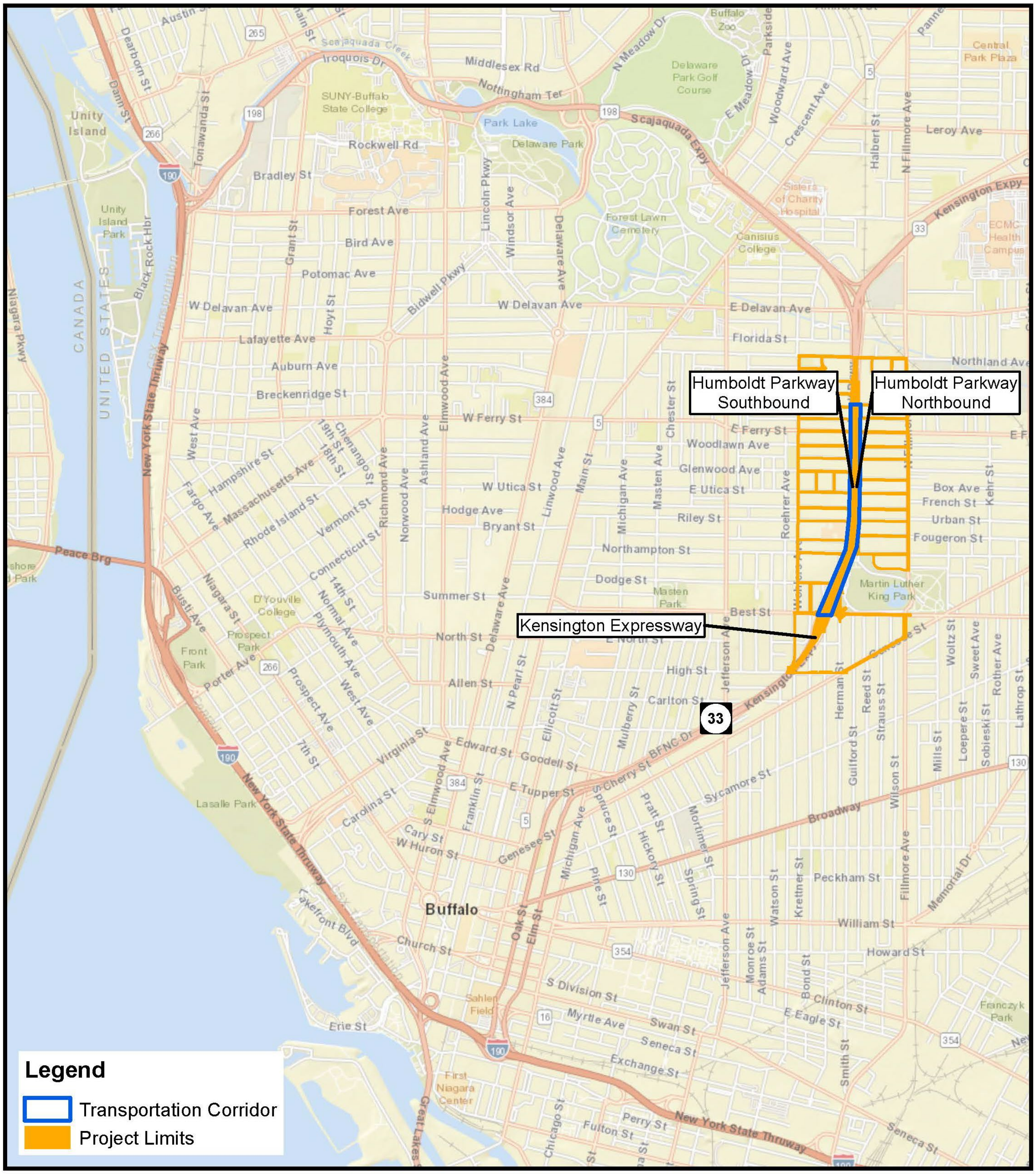
S.2.2 Project Need

The Project needs relate to community connectivity and greenspace, vehicular capacity, multi-modal accommodations and access, and deteriorating infrastructure.

The construction of the Kensington Expressway removed Humboldt Parkway and created a barrier to community connectivity, thereby changing the context of the neighborhood from a cohesive residential community to one divided by a major transportation facility. There is a need to reestablish east-west connections across the transportation corridor to improve community cohesion.

[1] https://kensingtonexpressway.dot.ny.gov/Documents.aspx

[2] According to the U.S. Department of Transportation, “Complete Streets are streets designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are travelling as drivers, pedestrians, bicyclists, or public transportation riders.” See https://www.transportation.gov/mission/health/complete-streets.



N

0 0.75 1.5 Miles

Figure S-1

Project Location Map

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, World Street Map.

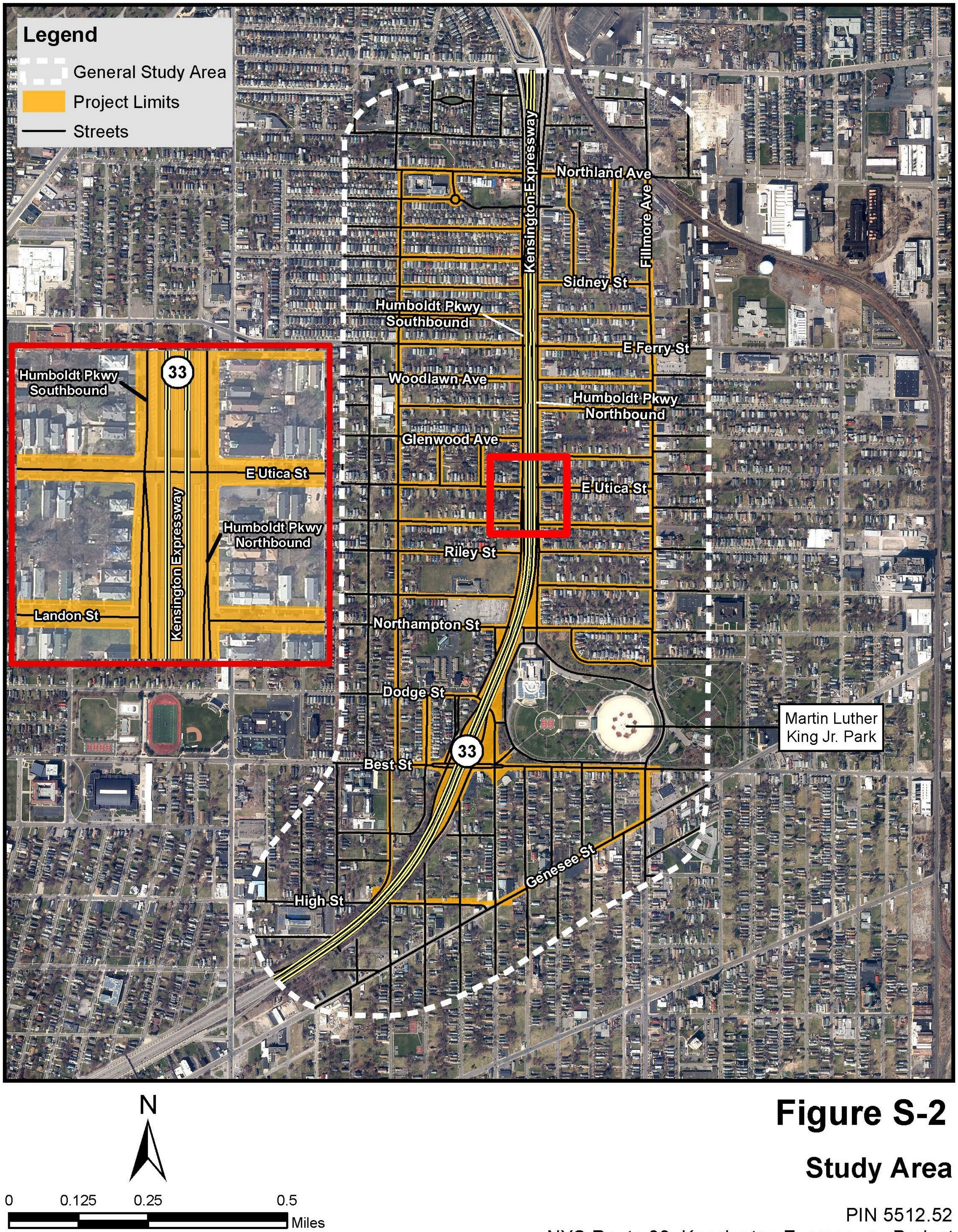


Figure S-2

Study Area

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2010.

The historic Frederick Law Olmsted-designed Humboldt Parkway was an important regional asset and influenced the overall character and setting of the surrounding neighborhoods. The wide, treed median within the center of the original Humboldt Parkway was lined with numerous mature trees. This created a visually cohesive and continuous greenspace and established a park-like setting for the surrounding neighborhoods. The importance of parkland to quality of life was recognized in the original planning of Buffalo's Olmsted Park system (including the Humboldt Parkway). Therefore, there is a need to create continuous greenspace that is not fragmented, is useable by the community for recreation, and is connected to existing park resources.

The segment of the Kensington Expressway between the NYS Thruway (I-90) and the Elm Street-Oak Street arterial functions as a critical link in the regional transportation system with over 75,000 vehicles per day using the facility. The Kensington Expressway provides a direct link to Downtown Buffalo from major routes, such as the Scajaquada Expressway (NYS Route 198) and I-90. The Kensington Expressway is an established commuter route between Downtown Buffalo and the City's northern and eastern neighborhoods as well as the Buffalo Niagara International Airport and many suburban communities. Maintaining the vehicular capacity of the Kensington Expressway is necessary based on traffic operations, access to regional medical facilities, and emergency vehicle response times.

There is a need to upgrade the multi-modal accommodations for vehicles, pedestrians, bicyclists, and transit users along Humboldt Parkway within the defined transportation corridor and on adjacent city streets. These local City of Buffalo streets are exhibiting deficiencies regarding multi-modal accommodation and access. Some of these deficiencies include: gaps in the sidewalk systems with numerous examples of non-compliance with the Americans with Disabilities Act (ADA); lack of crosswalks; lack of defined parking with curb bump-outs; outdated signal systems; and lack of bicycle facilities. The need for multi-modal accommodations and access is also supported by the number of households within the Study Area without access to a vehicle. In the census tracts that intersect the general Study Area, approximately 39% of households (approximately 3,436 households) do not have access to a vehicle.

Finally, the aging infrastructure of Humboldt Parkway and the Kensington Expressway creates several needs. These include:

- The replacement of concrete retaining walls, which have been deteriorating rapidly in the past 5 to 10 years;
- Deck replacements on all five bridges, which have exceeded their 40-year service life;
- The rehabilitation of pavement, which has exceeded its service life on the Kensington Expressway and the Humboldt Parkway;
- Drainage system improvements;
- Traffic signal system improvements;
- Elimination of the partial interchanges at Northampton Street and East Utica Street, which violate driver expectations and may lead to "wrong way" movements on ramps; and
- Updates to shoulder widths to meet current standards.

S.3 Project Alternatives

S.3.1 No Build Alternative

The No Build Alternative assumes no improvements would be made to the corridor other than those planned by others or implemented by routine maintenance. Although the No Build Alternative does not address the identified needs or meet the stated purpose and objectives for the Project, NEPA requires that it be evaluated in the EA to serve as the baseline condition against which the potential effects of the Build Alternative are assessed.

Deficiencies of the existing pavement; bridge structures; and retaining walls, signage, and other related elements would be addressed as part of the NYSDOT's ongoing maintenance program. There would be costs associated with the No Build Alternative in each year that repairs are undertaken. As the facility continues to deteriorate, the level of effort and associated costs would increase and eventually replacement of infrastructure (e.g., bridges, retaining walls, pavement) would be required to maintain safe operations.

S.3.2 Build Alternative

The Build Alternative would cover the depressed section of NYS Route 33 (Kensington Expressway), creating a 4,150-foot-long tunnel between Sidney Street and Dodge Street (see Figures S-3A and S-3B). NYS Route 33 would be regraded north of Sidney Street and south of Dodge Street to bring the expressway back to existing grade.

The proposed tunnel would consist of two independent tubes, each of which would provide three travel lanes in each direction for NYS Route 33, with an 8-foot-wide outside shoulder and 6-foot-wide inside shoulder.

Humboldt Parkway would be reconstructed on a new alignment from Northampton Street to Sidney Street and would be separated by a proposed 90-foot-wide landscaped center median. Humboldt Parkway would be shifted approximately 16 feet further from the adjoining residences, creating additional front yard space compared to the existing condition and No Build Alternative. Humboldt Parkway would include a sidewalk, parking lane, bicycle lane (separated from the parking lane by a 2-foot-wide striped buffer area) and one travel lane in each direction. Humboldt Parkway would also include curb bump outs for traffic calming near intersections.

A minimum of three feet of soil depth would be provided on the tunnel deck and planted with trees (up to 50 feet in height at maturity). The proposed landscaping plan involves rows of four trees at a diagonal in the Humboldt Parkway median, a layout similar to the planting approach used for the historical Olmsted-designed Humboldt Parkway. Tree plantings would also be provided along the outside of Humboldt Parkway between the parking lane and the sidewalk.

The existing bridge structures over NYS Route 33 at East Ferry Street, East Utica Street, Northampton Street, and Dodge Street would be removed; the newly constructed cap over the tunnel would reconnect these streets at-grade and would provide additional new connections at Sidney Street/Butler Avenue, Winslow Avenue, and Riley Street.

Existing signalized intersections would be updated along the reconstructed portion of Humboldt Parkway. The Best Street signalized intersections with the NYS Route 33 ramps would be replaced by a roundabout, and a second roundabout would replace the adjacent signalized intersection between Best Street, Herman Street, and West Parade Avenue. The bridge at Best Street would be replaced with a wider bridge structure to accommodate the roundabouts. The Best Street interchange ramps would be modified, providing two lanes on the NYS Route 33 eastbound and westbound off-ramps. The partial NYS Route 33 interchange between Northampton Street and East Utica Street would be eliminated.

During construction of Humboldt Parkway, traffic using the Parkway, as well as pedestrians, will at times be detoured to utilize adjacent local streets. This will occur in various construction stages throughout the three-to-four-year construction duration. Additionally, these streets would also be used for construction (truck) deliveries. Normal NYSDOT practice is to mitigate the additional usage of local streets by having the contractor perform a single course overlay and related work on the affected streets. This mitigative work includes the following: milling and paving, ADA ramp upgrades, new traffic signals with pedestrian indicators, curb replacements (as needed), sidewalk replacement (as needed), driveway apron replacement (as needed), streetlight replacement (as needed), and landscaping between curbs and sidewalks, including new topsoil and grass seeding and tree planting.

Office of the Governor
KATHY HOCHUL
Governor

NEW YORK STATE OF OPPORTUNITY. Department of Transportation
MARIE THERESE DOMINGUEZ
Commissioner

NYS Route 33, Kensington Expressway Project

Build Alternative - Kensington Reconstruction with a 6-Lane Tunnel for Improved Community Connections, including a Tree-Lined Parkway Setting

0 25 50 100 200 300 400 500 FT.

LEGEND:
- REPLACEMENT BRIDGES
- NEW BRIDGE CONNECTIONS
- DIRECTION OF TRAVEL

Figure S-3A
Build Alternative Plan View

Figure S-3B
Build Alternative Plan View

S.4 Social, Economic, and Environmental Effects

Table S-1 provides a summary of the potential social, economic, and environmental effects of the Build Alternative.

Table S-1: Summary of Effects of the Build Alternative

Topic	Effects	Mitigation
Neighborhood Character and Community Cohesion	Beneficial effects on neighborhood character and community cohesion as a result of improved east-west connectivity for pedestrians, improved aesthetics and visual quality, reduced traffic noise, and increased greenspace. No displacement of any residences, businesses, or community facilities. Temporary effects related to transportation, aesthetics, noise, vibration, and air quality during construction.	None required for permanent/operational effects. Temporary construction effects mitigated through work zone traffic control plans, construction noise mitigation plan, construction vibration mitigation plan, and construction air quality mitigation plan, among others (See Section 4.20)
Social Groups Benefitted or Harmed	Beneficial effects to the elderly, individuals with disabilities, transit-dependent populations, and non-driver populations as a result of improved pedestrian accommodations (including curb ramps, crosswalks, crossing signals), improved east-west connectivity over the tunnel cap to businesses, community facilities, and transit stops. Temporary effects related to transportation, aesthetics, noise, vibration, and air quality during construction.	None required for permanent/ operational effects. Temporary construction effects mitigated through work zone traffic control plans, construction noise mitigation plan, construction vibration mitigation plan, and construction air quality mitigation plan, among others (See Section 4.20)
Environmental Justice	Long-term beneficial effects on environmental justice populations from improved east-west connectivity, greenspace, aesthetics, noise reductions, and pedestrian accommodations, among others. Temporary effects related to transportation, noise, vibration, and air quality mitigated through Project commitments. Overall, no disproportionately high and adverse effects on minority or low-income populations. NYSDOT would implement a local hire program for the construction of this Project.	Temporary construction effects mitigated through work zone traffic control plans, construction noise mitigation plan, construction vibration mitigation plan, and construction air quality mitigation plan, among others (See Section 4.20)
Local and Regional Economies	Short-term benefits from increased employment and spending related to construction. Improved access to businesses for pedestrians, bicyclists, and	None required for permanent/ operational effects. Work zone traffic control plans mitigate temporary

	vehicles. Elimination of partial interchange at East Utica Street will be accommodated by ramp improvements at the nearby Best Street interchange. Potential increases in household wealth, tax revenues, and infill development resulting from potential increases in property values. Temporary changes in traffic, pedestrian routes.	traffic and pedestrian effects during construction.
Cultural Resources	No adverse effects on historic properties based on Section 106 process. Temporary occupancy of small portions of Martin Luther King, Jr. Park and Historic District and Humboldt Parkway Historic District West during construction.	None required for permanent/operational effects. Historic properties are protected by the construction mitigation measures discussed in Section 4.20, including commitments related to blasting, vibration monitoring and pre and post construction building condition surveys.
Parks and Recreational Resources	Beneficial effects from creation of approximately 11 acres of new publicly accessible greenspace. Temporary occupancy of small portions of Martin Luther King, Jr. Park during construction. Park would be maintained during construction.	Temporary occupancy areas of Martin Luther King, Jr. Park would be restored and work at entrances staggered so as not to occur concurrently.
Visual	Beneficial effects from new greenspace and landscaping along tree-lined parkway created on tunnel cap. Temporary effects from views of construction equipment and materials.	None required.
Air Quality	Concentrations of air pollutants such as particulate matter would be well below health-based standards. Concentrations would increase slightly near the tunnel portal exits and decrease along the tunnel cap. Effects near portals are mitigated. Temporary effects during construction due to increased dust, traffic and use of construction equipment.	Operational mitigation measures include tunnel design elements to minimize concentrations in the portal area, installation of SmogStop wall treatments to remove NOx from the air, tunnel washing to control dust, and additional tree plantings around the portal areas (trees have beneficial effects on air quality and health), see Section 4.9. Construction mitigation for air quality includes requirements to use cleaner equipment, a dust control plan and an outdoor ambient air quality monitoring program during construction, see Section 4.20.
Energy and Climate	Negligible decrease of 0.04% regional vehicle miles traveled/greenhouse gas emissions/energy consumption compared to No Build. Energy consumption and emissions from tunnel systems, including lighting and ventilation. Energy consumption and greenhouse gas emissions from	None required, however several air quality-related mitigation commitments, such as requiring lower emitting equipment would also reduce construction-related greenhouse gas emissions.

	construction vehicles and equipment.	
Noise and Vibration	Traffic noise levels would decrease for the majority of receiver locations; decreases range between 1 and 13 dB(A). Out of the 199 modeled receivers, 70 receivers (representing 271 receptors) would receive a perceptible (greater than 3 dB(A)) decrease in traffic noise levels as a result of the Build Alternative. In general, the decreases in noise levels would be most pronounced at receivers adjacent to the new tunnel cap. No receivers would experience a perceptible increase in noise levels. Temporary construction-related noise and vibration effects from use of construction equipment, including vibratory pile driving and blasting.	None required for operational/ permanent effects. A construction noise mitigation plan is described in Section 4.20 includes a noise monitoring program, limits on nighttime work, temporary construction abatement measures, and public information/outreach measures, among others. A construction vibration mitigation plan is described in Section 4.20 includes construction vibration monitoring, nighttime work restrictions, blasting program measures to protect structures, pre-and post-construction surveys of buildings, and public information/outreach measures, among others.
Wetlands	No effects as there are no wetlands in the Study Area.	None required
Surface Waters and Waterways	No effects as the portion of Scajaquada Creek located within the general Study Area is piped underground (the underground section is referred to as the “Scajaquada Drain” in the DDR/EA). No direct change to the Scajaquada Drain within the general Study Area.	None required
Groundwater	No effects as there are no aquifers, drinking water supply wells, or reservoirs in the general Study Area.	None required
Stormwater Management	During construction, best management practices, such as materials management procedures and soil erosion and sediment controls (e.g., installation of straw bales, silt fence), would be implemented. Net reduction in impervious surface area within the Study Area. Overall, the Build Alternative effects on stormwater runoff would be beneficial due to the incorporation of appropriate stormwater management design and reduction in impervious surfaces.	Construction stormwater and erosion control measures.
General Ecology and Wildlife Resources	Approximately 2.2 acres of roadside vegetative cover would be affected; disturbed areas would be replanted per the Project’s landscaping plan. Potential effects to wildlife species would be mitigated through best management practices. The Build Alternative would include the creation of a total of 11	None required

	acres of treed greenspace within the Project limits. In the future under the Build Alternative, the vegetated areas on and adjacent to the tunnel cap would provide habitat for urban wildlife.	
Threatened and Endangered Species	No effects to threatened or endangered species.	None required.
Asbestos and Lead	No removal of lead-based paint would be required. The Build Alternative would disturb asbestos containing materials associated with the bridge structures to be demolished or reconstructed.	The abatement and removal of asbestos containing materials would be conducted in accordance with federal, state, and local regulations.
Hazardous Waste and Contaminated Materials	During construction, a health and safety plan, including dust monitoring, would be implemented for the protection of workers and the surrounding community. Excavated soils would be temporarily stockpiled and characterized for off-site disposal in accordance with federal, state, and local regulations. No permanent effects on hazardous waste and contaminated materials other than construction-related abatement that would remove some existing hazardous waste or contaminated materials.	Special procedures, precautions, and requirements for handling contaminated materials would be identified following NYSDOT specifications and guidelines before construction for the protection of soil and groundwater resources and worker safety. Construction monitoring would be conducted in proximity to the sites with potential contamination resulting from current and/or former site uses (see Section 4.19.3 of the DDR/EA).
Traffic and Transportation	The Build Alternative would provide the same capacity on NYS Route 33 as currently exists, maintaining speeds and travel times similar to the No Build Alternative. The Best Street interchange would be improved, including the provision of two lanes on the off-ramps and construction of two adjacent roundabouts. New roadway connections across the tunnel deck would improve local roadway connectivity. Provision of beneficial pedestrian accommodations, including standard sidewalks, crosswalks/ADA-compliant curb ramps at the crossings of the tunnel cap and along Humboldt Parkway, and sidewalk improvements through the local street improvements area. Provision of improved bicycle accommodations, including reconstruction of the bicycle lanes on Humboldt Parkway and provision for a 10-foot multi-use path crossing of the Best Street	Construction work zone traffic control plans and related public outreach and coordination with emergency service providers.

	bridge over NYS Route 33. Temporary effects to traffic during construction, including local road lane narrowing, lane shifts, and lane closures. At least two lanes in each direction would be maintained during peak hours on the Kensington Expressway and one lane maintained on Humboldt Parkway northbound and southbound. Temporary effects on vehicle traffic and public transit services during construction. Elimination of 43 parking spaces along Humboldt Parkway, which represents a small portion of the available on-street parking supply of approximately 173 spots.	

S.4.1 Permits, Approvals, and Consultations

Anticipated permits and approvals required for the Project are listed below. The expected timetable for Project permitting is available at the Federal Infrastructure Projects permitting dashboard.[3]

- Federal Highway Administration (FHWA)
  - Determination under Section 4(f) of the U.S. Department of Transportation Act of 1966: *Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites* (23 CFR § 774)
  - Determination under Section 106 of the National Historic Preservation Act of 1966 (NHPA Section 106)

- NYS Department of Environmental Conservation (NYSDEC)
  - State Pollutant Discharge Elimination System (SPDES) Permit (ECL Article 17)
  - Water Withdrawal Permit (ECL Article 15, Title 15)[4]

- NYS Office of Parks, Recreation, and Historic Preservation (OPRHP), State Historic Preservation Office (SHPO)
  - Consultation under Section 106 of the National Historic Preservation Act
  - Section 4(f) coordination as official with jurisdiction for historic sites

- City of Buffalo Division of Parks and Recreation
  - Section 4(f) coordination as official with jurisdiction for city-owned parkland.

The Project has also been designed and assessed in consideration of the requirements of New York's Climate Leadership and Community Protection Act (NY CLCPA) (see Section 4.10 of the DDR/EA, Energy, Greenhouse Gasses and Climate Change, for additional information). In addition, NYSDOT has completed a consistency screening assessment of the Project in relation to New York's Smart Growth Public Infrastructure Policy Act (see Appendix A7).

S.5 Project Costs and Schedule

The total project cost is estimated to be approximately $921.827 million. Construction is expected to start in 2024 and continue for three to four years.

Table S-2: Project Cost Estimate

Activity	Build Alternative
Construction Cost	$654,706,000
Contingency/Risk	$65,471,000
Total Construction Cost	**$720,177,000**
Final Design, Field Change, Mobilization, Construction Inspection, and Quality Control	$187,246,000
ROW and Administration	$14,404,000

[3] https://www.permits.performance.gov/permitting-project/dot-projects/ny-route-33-kensington-expressway-project-best-street-sidney-street

[4] A Water Withdrawal Permit may be required during construction based on the contractor's selected means and methods.

Total Project Cost	**$921,827,000**
Inflation Risk (Estimated)	**$114,706,000**

Table S-3: Project Schedule

Activity	Date Occurred/ Tentative
Release of Project Scoping Report	December 2022
Notice of Availability of DDR/EA	September 2023
Public Hearing	September 2023
DDR/EA Comment Period Ends	October 2023
FDR/EA	December 2023
Design Approval	January 2024
Design-Build Procurement	Winter 2023 - Autumn 2024
Right-of-Way Acquisition and Permits	Autumn 2024
Construction Start	Winter 2024
Construction Complete	Winter 2028

S.6 Public Involvement

Public participation is an integral part of the NEPA process. The FHWA and NYSDOT have provided opportunities for meaningful public and agency participation throughout the environmental review process. The FHWA and NYSDOT will continue to provide opportunities for public involvement during final design and construction.

S.6.1 Public Scoping Meeting

A public scoping meeting for the Project was held on Thursday, June 30, 2022 at the Buffalo Museum of Science (1020 Humboldt Parkway, Buffalo, New York) to provide information about the Project; describe the Project development and environmental review processes; and obtain input from attendees. One session was held from 11:00 AM to 2:00 PM and a second session was held from 5:00 PM to 8:00 PM; sessions were held at different times of the day to accommodate varying work schedules and to maximum opportunities for attendance. A total of 227 people attended the meeting, 122 during the morning session and 105 during the evening session. The attendees consisted of community members, elected officials' representatives, business owners, and members of the local media. Approximately two media outlets covered the meeting. The NYSDOT held meetings with state and local elected officials prior to the public scoping meeting.

S.6.2 Public Information Meeting

A public information meeting was held on Tuesday, June 20, 2023, at the Buffalo Museum of Science (1020 Humboldt Parkway, Buffalo, New York) to provide updated information on the Project; describe progress on Project development and environmental review processes; and obtain input from attendees. One session was held from 11:00 AM to 2:00 PM and a second session was held from 5:00 PM to 8:00 PM; sessions were held at different times of the day to accommodate varying work schedules and to maximum opportunities for attendance. A total of 240 people attended the meeting, 126 during the morning session and 114 during the evening session. The attendees consisted of community members, elected officials' representatives, business owners, and members of the local media.

S.6.3 DDR/EA Public Comment Period and Public Hearing

A public hearing for this Project will be held after this DDR/EA is released to the public and during the 45-day DDR/EA public comment period. The public hearing date, time and location will be appropriately noticed using the same methods as used for the June 2022 public scoping meeting and June 2023 public information meeting (e.g., door hanger flyers, emails to individuals on the mailing list, media outreach, social media, newspaper advertisements).

The public hearing will provide opportunities for agencies and the public to submit comments on this DDR/EA verbally and/or in writing. Comments received at the public hearing and during the DDR/EA comment period will be considered and substantive comments responded to, as appropriate, in the Final Design Report/Environmental Assessment (FDR/EA).

S.6.4 Project Website

A Project website (http://kensingtonexpressway.dot.ny.gov) was established to provide information about the Project. The website serves as a source of Project information, including reports, maps, drawings and Project updates. The site also functions as a continuous means for the public to submit comments at any point during the Project. The website will continue to be updated to include announcements of public meetings and provide access to documents.

S.6.5 Mailing List

Lists of contacts, including elected officials, public agency contacts, stakeholders, interested parties, and individuals, have been developed. Opportunities for individuals to be included on the mailing list were provided on the sign-in sheets at the public meetings and on the Project website. These lists have been and will continue to be used to share meeting notices and other communications with the public.

S.6.6 Environmental Justice

As described in Section 4.4, Environmental Justice of the DDR/EA, the Study Area for the Project includes minority and/or low-income communities (refer to Figure 4.4-1 of the DDR/EA). Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* and the subsequent EO 14096 *Revitalizing Our Nation's Commitment to Environmental Justice for All* require federal agencies to provide meaningful opportunities for affected minority and/or low-income communities to participate in a project. The public involvement activities and methods for involving the public in the Project were developed in consideration of these communities.

S.6.7 Limited English Proficiency

In compliance with the federal EO 13166, *Improving Access to Services for Persons with Limited English Proficiency*, and the State of New York EO 26, *Statewide Language Access Policy*, the public involvement activities for the Project were developed to consider those populations with limited English proficiency (LEP), including advertising for public meetings in local Spanish-language newspapers; providing telephonic interpretation services at the public meetings for those individuals with other language needs; and, providing a Spanish-language interpreter at the public meetings. Reasonable efforts were made to provide meaningful access for the LEP populations within the Study Area. The NYSDOT will continue to conduct public involvement activities for the Project in consideration of LEP populations.

S.6.8 Americans with Disabilities Act (ADA)

Public meetings have been and will continue to be held in locations that comply with the Americans with Disabilities Act (ADA) to assure that individuals with disabilities have convenient access to meetings. Public notices announcing public meetings will continue to provide instructions for requesting special accommodations.

S.7 Contact Information

For further information about the Project, please visit the Project website:
https://kensingtonexpressway.dot.ny.gov/ or contact:

Kensington Expressway Project Team
New York State Department of Transportation, Region 5
100 Seneca Street
Buffalo, NY 14203

The deadline for submitting comments on this DDR/EA is October 27, 2023.

CHAPTER 1 – PROJECT DEVELOPMENT

1.1 Project Classification

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration (FHWA), has prepared this Draft Design Report / Environmental Assessment (DDR/EA) for the NYS Route 33, Kensington Expressway Project (hereafter, "the Project") in accordance with the requirements of the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA), as amended, (40 Code of Federal Regulations [CFR] Parts 1500-1508); the FHWA *Environmental Impact and Related Procedures; Final Rule* (23 CFR 771); the NYSDOT *Procedures for Implementation of the State Environmental Quality Review Act* (17 New York Codes, Rules and Regulations [NYCRR] Part 15); and the NYSDOT Project Development Manual. The Project is federally and state funded. The FHWA is the Federal Lead Agency and the NYSDOT is the Joint Lead Agency and Project Sponsor.

The Project is classified as a Class III action under NEPA, which requires the preparation of an Environmental Assessment (EA) to determine whether or not the Project will result in significant impacts to the environment. In addition, the Project is classified as a non-Type II (EA) action under the State Environmental Quality Review Act (SEQRA). Thus, the EA for the Project has been prepared to comply with both NEPA and SEQRA. The FHWA and NYSDOT have advanced the Project through the EA process in consideration of public and agency comments received about the Project.

Following a public comment period and public hearing, the EA process will conclude with either a Finding of No Significant Impact (FONSI) under NEPA / Determination of No Significant Effect (DONSE) under SEQRA, or a determination that an Environmental Impact Statement (EIS) is required.

Table 1.1-1: Environmental Classification Summary			
NEPA Classification:	Class III EA	BY	FHWA
SEQR Type:	Non-Type II (EA)	BY	NYSDOT

1.2 Project Location and Study Area

The Project is located in the City of Buffalo, Erie County, New York. The term "transportation corridor" is used to describe the sections of NYS Route 33 and Humboldt Parkway being studied for improvements under this Project. The transportation corridor is defined as NYS Route 33 (Kensington Expressway) and Humboldt Parkway between Best Street and Sidney Street (see Figure 1.2-1: Project Location Map).

The Project limits (limits of work) extend along the Kensington Expressway and Humboldt Parkway from approximately High Street (southern limit) to approximately Northland Avenue (northern limit), a total distance of approximately 7,100 feet and include areas of proposed disturbance associated with regrading. Five east-west bridges traverse the Kensington Expressway (East Ferry Street, East Utica Street, Northampton Street, Dodge Street and Best Street) within the transportation corridor. Humboldt Parkway, which begins at Northampton Street and extends north beyond the Project limits, is adjacent to the Kensington Expressway on both sides and is part of the Project. As described in Chapter 3 of this DDR/EA, the Build Alternative includes the capping of approximately 4,150 feet of the existing NYS Route 33 Kensington Expressway to form a tunnel; the approximate limits of the proposed tunnel are from Dodge Street to Sidney Street.

The Project also include various City of Buffalo streets adjacent to the Kensington Expressway and Humboldt Parkway (the proposed local street improvements are discussed in Section 3.4.2.17). The bounding street limits of these improvements are generally High Street to the south, Northland Avenue to the north, Fillmore Avenue to the east, and Wohlers Avenue to the west.

The general Study Area for the Project includes a 1,000-foot buffer beyond the north and south ends of the Project limits on the Kensington Expressway and a 500-foot buffer beyond the east and west limits of the local street improvements (see Figure 1.2-2: General Study Area). The general Study Area has been expanded from what was presented in the Project Scoping Report (PSR)[5] to account for the proposed local street improvements. The land uses within the general Study Area consist of urban residential neighborhoods generally constructed in the early 1900s. The properties along Humboldt Parkway are primarily residential in nature, including single and multi-family houses. Several places of worship and assembly buildings are present, particularly along the block between East Ferry and East Utica Streets. At the southern terminus of the Humboldt Parkway are Martin Luther King, Jr. Park (MLK Park) and the Buffalo Museum of Science.

Below is specific information related to the Project's identification and location.

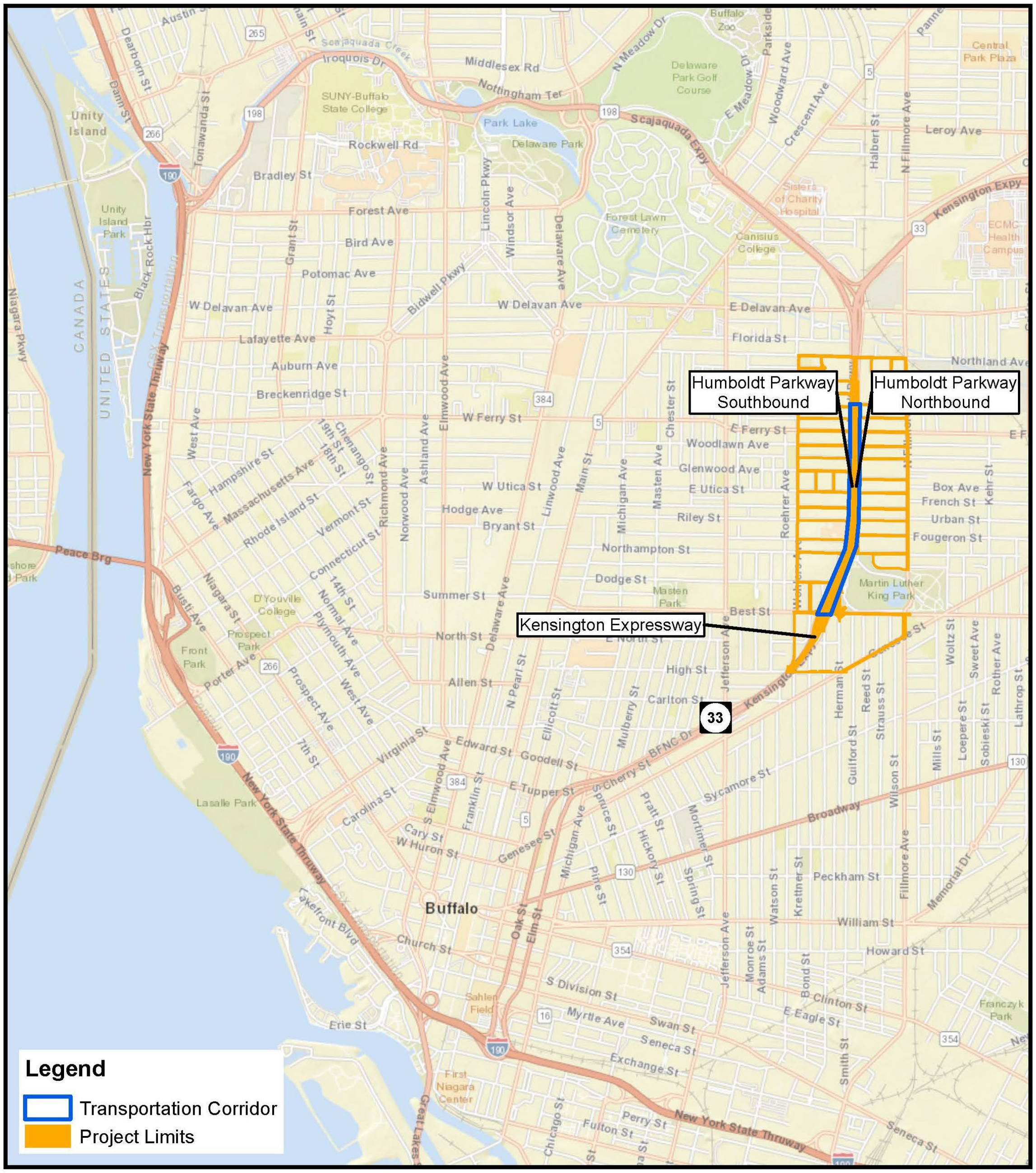
- Route number: NYS Route 33
- Route name: Kensington Expressway
- SH (state highway) number: NYS Route 33
- BIN (Bridge Identification Number) and feature crossed:
  BIN 1022609 – Best Street over NYS Route 33
  BIN 1022610 – Dodge Street over NYS Route 33
  BIN 1022620 – Northampton Street over NYS Route 33
  BIN 1022630 – E. Utica Street over NYS Route 33
  BIN 1022640 – E. Ferry Street over NYS Route 33
- City/Village/Township: Buffalo, New York
- County: Erie
- Length: 1.4 miles
- Reference Markers (RM): NYS Route 33 from RM 33-5301-1023 to RM 33-5301-1038. Highway reference markers are small green signs located approximately every 0.1 mile along state highways to serve as location references. They are used to track crash data and may also be used to track or identify work locations along the highway.

1.3 Project Purpose, Objectives, and Needs

1.3.1 Project Purpose and Objectives

The purpose of the Project is to reconnect the community surrounding the defined transportation corridor and improve the compatibility of the corridor with the adjacent land uses, while addressing the geometric, infrastructure, and multi-modal needs within the corridor in its current location. The transportation corridor is defined as NYS Route 33 (Kensington Expressway) and Humboldt Parkway between Best Street and Sidney Street.

[5] https://kensingtonexpressway.dot.ny.gov/Documents.aspx



N

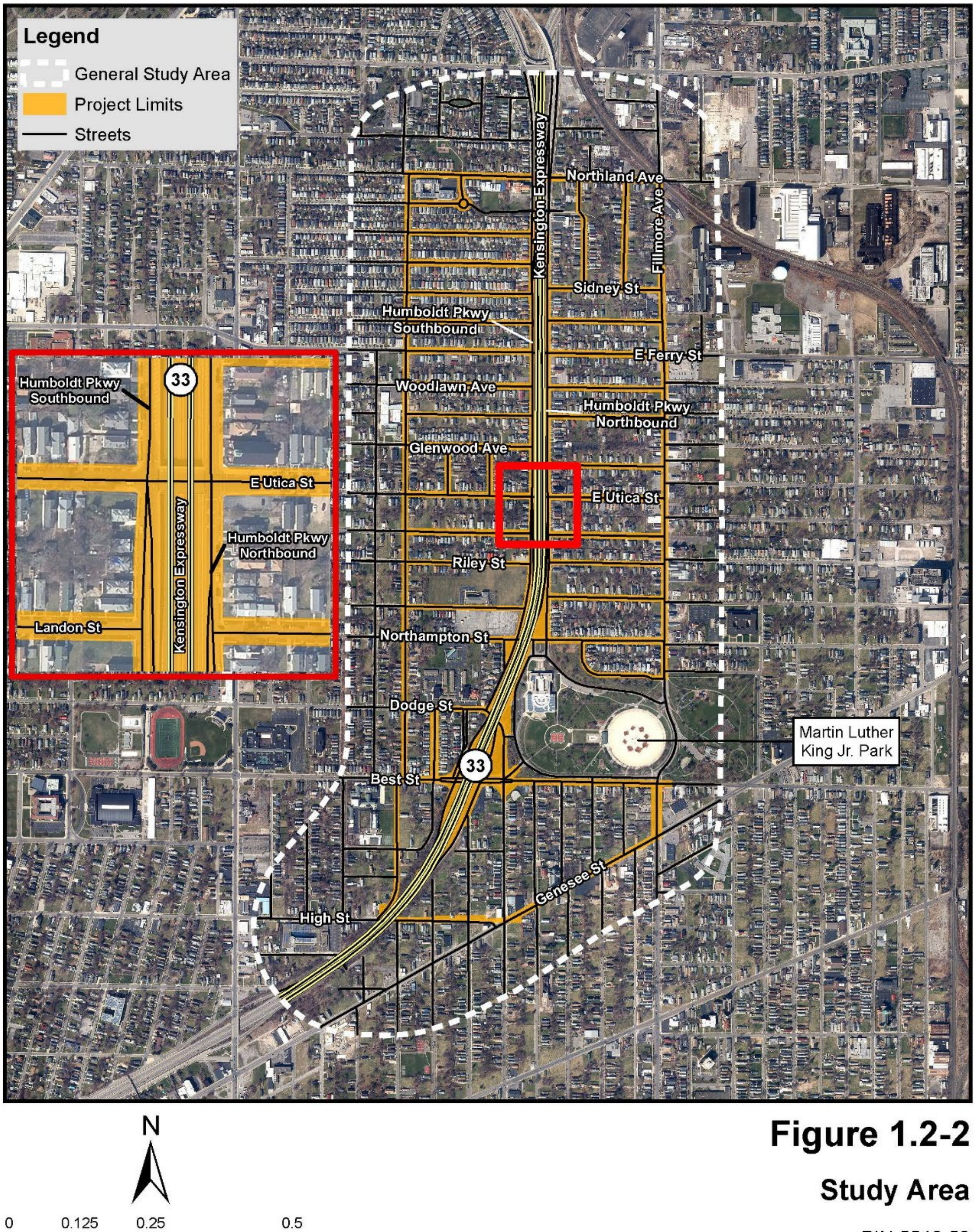
0 0.75 1.5 Miles

Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, World Street Map.

Figure 1.2-1

Project Location Map

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY



Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2010.

Figure 1.2-2

Study Area

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

The following objectives have been established to further refine the Project purpose:

- Reconnect the surrounding community by creating continuous greenspace to enhance the visual and aesthetic environment of the transportation corridor;
- Maintain the vehicular capacity of the existing transportation corridor;
- Improve vehicular, pedestrian, and bicycle mobility and access in the surrounding community by implementing Complete Street roadway design features; and
- Address identified geometric and infrastructure deficiencies within the transportation corridor.

1.3.2 Project Needs

The Project needs relate to community connectivity and greenspace, vehicular capacity, multi-modal accommodations and access, and deteriorating infrastructure. Each of the needs is described below. The Project purpose and objectives, as stated in Section 1.3.1, were developed based on these identified needs within the transportation corridor.

1.3.2.1 Community Connections

The construction of the Kensington Expressway removed Humboldt Parkway and created a barrier to community connectivity, thereby changing the context of the neighborhood from a cohesive residential community to one divided by a major transportation facility. As described in Section 2.1, east-west roadway connections were severed by the expressway construction, resulting in a physical and visual barrier between the east and west sides of the expressway and more circuitous trips to reach community services on either side. For example, to cross the expressway to get from one side of Riley Street to the other (a 200-foot distance in a straight line), a pedestrian would have to travel north along Humboldt Parkway, across East Utica Street, and south on Humboldt Parkway, approximately 0.25 miles (1,320 feet). This additional distance is substantial for walking trips. There is a need to reestablish east-west connections across the transportation corridor to improve community cohesion.

There are only five bridges providing opportunity for east-west crossing of the transportation corridor (Best Street, Dodge Street, Northampton Street, East Utica Street, and East Ferry Street). The limited number of east-west crossings increases the length of east-west vehicle, bicycle and pedestrian trips and decreases the accessibility of community services particularly for households without automobile access. While a vehicle can reach the nearest crossing of Kensington Expressway relatively quickly, for pedestrians the additional distance and travel time associated with the limited number of crossings creates a substantial barrier to east-west mobility. Within the census tracts that intersect the general Study Area, approximately 39% of households do not have access to a vehicle.[6] In addition, the available east-west crossings of the expressway within the transportation corridor do not provide adequate pedestrian and bicyclist accommodations (see Section 1.3.2.4 for further discussion on the availability of bicycle and pedestrian infrastructure). Crossing the expressway is important to daily living activities, such as attending school, attending a place of worship, grocery shopping, visiting a friend or family member, attending a medical appointment, or visiting MLK Park or the Buffalo Museum of Science. There is a need for community members to have improved access to their overall social networks and reduced social isolation. See Section 4.2 for further discussion on the characteristics of the neighborhoods and the amenities available within the vicinity of the Project.

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[6] U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates Detailed Tables, Table B08201 Household Size by Vehicles Available

1.3.2.2 Greenspace

The historic Frederick Law Olmsted-designed Humboldt Parkway was an important regional asset and influenced the overall character and setting of the surrounding neighborhoods. The wide, treed median within the center of the original Humboldt Parkway was lined with numerous mature trees. This created a visually cohesive and continuous greenspace that established a park-like setting for the surrounding neighborhoods. The original treed greenspace within the Humboldt Parkway was minimally interrupted by the traversing east-west local streets, which were needed to provide connectivity between the neighborhoods to the east and west.

The importance of parkland to quality of life was recognized in the original planning of Buffalo's Olmsted Park system (including the Humboldt Parkway). The benefits of greenspace extend far beyond aesthetics and one recent literature summary calls them "critical civic infrastructure that can promote equity for communities."[7] Parks and greenspace have the following potential benefits on urban quality of life:

- **Health benefits** – Convenient access to parkland is associated with greater park usage, and park usage is associated with more physical activity and lower negative health outcomes, such as obesity and type 2 diabetes. Parkland and greenspace are also notable for their benefits on general mental well-being, feeling of social cohesion, and even reductions in the need for mental health services.[8]

- **Environmental benefits** – Trees and vegetation remove air pollution and sequester carbon emissions. A developed tree canopy serves to mitigate the "urban heat island" effect and helps moderate summer temperatures. Greenspaces also play an important role in improving water quality by filtering and absorbing stormwater runoff.[9]

- **Economic benefits** – The health and environmental benefits of parkland noted above have numerous direct economic benefits, such as lower medical treatment costs.[10] In addition, parks have been associated with business and worker attraction, and improved property values.[11]

Therefore, there is a need to create new continuous greenspace that is not fragmented, is useable by the community for recreation, and is connected to existing park resources.

1.3.2.3 Vehicular Capacity

The section of the Kensington Expressway between the NYS Thruway (I-90) and the Elm Street-Oak Street arterial functions as a critical link in the regional transportation system with over 75,000 vehicles per day using the facility. The Kensington Expressway provides a direct link to Downtown Buffalo from major routes, such as the Scajaquada Expressway (NYS Route 198) and I-90. The Kensington Expressway is an established commuter route between Downtown Buffalo and the City's northern and eastern neighborhoods as well as the Buffalo International Airport and many suburban communities. As

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[7] https://www.urban.org/sites/default/files/2022-03/the-health-benefits-of-parks-and-their-economic-impacts_0.pdf
[8] See footnote 3.
[9] See footnote 3.
[10] See footnote 3.
[11] Buffalo Olmsted Parks Conservancy (2008). The Buffalo Olmsted Park System: Plan for the 21st Century

described in further detail below, maintaining the vehicular capacity of the Kensington Expressway is needed based on traffic operations, access to regional medical facilities, and emergency vehicle response times.

Traffic Operations: The need for three lanes in each direction on NYS Route 33 through the defined transportation corridor is supported by the traffic analysis of Concept 7 contained in the PSR (PSR Section 5.2.7 and Appendix C). Reducing the capacity of NYS Route 33, which was analyzed as part of *Concept 7: Kensington Reconstruction with a 4-Lane Tunnel for Improved Community Connections*, would lead to unacceptable break down in westbound traffic flow for the Estimated Time of Completion (ETC)+20 (year 2047) AM peak and unacceptable traffic delays east of the NYS Route 33 / NYS Route 198 interchange. Acceptable traffic flow is achieved with three travel lanes in each direction.

Without the Kensington Expressway, parallel routes serving similar traffic movements to NYS Route 33 (e.g., NYS Route 5/Main Street, NYS Route 62/Bailey Avenue) would require substantial upgrades to provide comparable speed and travel time. These roadways are constrained by residential and commercial development, making major improvements to them impracticable. This further supports the need to maintain the vehicular capacity of the NYS Route 33 corridor in its current location.

Travel Time Reliability: Travel time reliability is important to residents and business operations in the region. When congestion is variable day to day, travelers must incorporate additional time into their trips to ensure that they arrive at their destinations at the desired time. Maintaining the existing capacity of NYS Route 33 is justified to address non-recurring congestion events that cause travel time impacts, such as crashes, emergency vehicles, severe weather events, closures of other routes, construction lane closures, and other lane blocking events such as broken-down vehicles.

Access to Medical Facilities: The Kensington Expressway serves as a direct, uninterrupted throughfare to the Erie County Medical Center (ECMC) on Grider Street, which is a designated Level 1 Adult Trauma Center by the New York State Department of Health. The Kensington Expressway is also a critical access link to the Buffalo Niagara Medical Campus, which is accessed from the Best Street ramps and includes John R. Oishei Children's Hospital and Buffalo General Medical Center, both of which have emergency services. The Roswell Park Comprehensive Cancer Center is located just south of the Buffalo Niagara Medical Campus and can be reached via the Kensington Expressway and Best Street interchange.

1.3.2.4 Multi-Modal Accommodations and Access

There is a need to upgrade the multi-modal accommodations for vehicles, pedestrians, bicyclists, and transit users along Humboldt Parkway within the defined transportation corridor and on adjacent city streets. These local City of Buffalo streets are exhibiting deficiencies with regard to multi-modal accommodation and access. Some of these deficiencies include: gaps in the sidewalk systems with numerous examples of non-compliance with the Americans with Disabilities Act (ADA); lack of crosswalks; lack of defined parking with curb bump-outs; outdated signal systems; and lack of bicycle facilities. These needs are supported by the City of Buffalo's and NYSDOT's "Complete Street" policies. A "Complete Street" is a roadway planned and designed to consider the safe, convenient access and mobility of all roadway users of all ages and abilities, including pedestrians, bicyclists, public transportation riders, and motorists. It includes children, the elderly, and persons with disabilities. Typical "Complete Street" roadway design features include sidewalks, lane striping, bicycle lanes, paved shoulders suitable for use by bicyclists, signage, crosswalks, pedestrian control signals, bus pull-outs, curb cuts, raised crosswalks, ramps and traffic calming measures.

The need for multi-modal accommodations and access is also supported by the number of households in the census tracts that intersect the general Study Area without access to a vehicle. Within the study area of the transportation corridor, approximately 39% of households do not have access to a vehicle (approximately 3,436 households). The Bike Buffalo Niagara Regional Bicycle Master Plan identifies the neighborhoods surrounding the transportation corridor as an area of the "highest equity needs" based on an analysis that considered populations who have been historically disadvantaged or are otherwise considered vulnerable to unsafe, disconnected, or incomplete active transportation facilities. The plan suggests prioritizing the highest equity needs areas for funding of active transportation improvements and that such improvements will help improve access to public health and economic/job opportunities. See Section 2.2.2 for further discussion on transportation plans that pertain to the Study Area.

Pedestrian

Humboldt Parkway and the cross streets in the transportation corridor exhibit a number of sidewalk and crosswalk deficiencies that inhibit safe and accessible use.

Americans with Disabilities Act Accessibility Guidelines (ADAAG) standards require curb ramps in the locations of sidewalk street crossings to enable wheelchair access. Curb ramps are missing for all four pedestrian crossings at the Best Street bridge over NYS Route 33. Similarly, curb ramps are missing on the sidewalks of the bridges over the expressway at East Utica Street and East Ferry Street. Humboldt Parkway lacks crosswalks in key locations, including at the east-west crossings to the bridges over the expressway at East Utica Street and East Ferry Street. Pedestrian crossing signals at signalized intersections are not present, further contributing to pedestrian crossing safety concerns.

The majority of the sidewalks on the bridges within the transportation corridor are narrow (less than five feet). Useable sidewalks are located on the outside edges of Humboldt Parkway only; the curb area along the edge of the depressed expressway is only three feet wide and not intended for pedestrian use. Some curb ramps are in deteriorated condition, such as at the intersection of Humboldt Parkway and Landon Street. Further, intersections lack curb extensions (bump-outs) that typically shorten crosswalk distances and delineate parking. There are no traffic calming measures present.

Bicycle

Humboldt Parkway generally has striped bicycle lanes (northbound and southbound) located in between the travel lane and the on-street parking. There are gaps in the existing Humboldt Parkway bicycle lanes on the west side of the expressway, specifically between East Ferry Street and Brunswick Boulevard and between East Utica Street and Riley Street (in these areas, bicycles need to merge with vehicular traffic). On the east side of the expressway, there is a gap in the Humboldt Parkway bicycle lane between Girard Place and East Utica Street.

The east-west thoroughfares crossing the Kensington Expressway within the defined transportation corridor do not have defined bicycle routes or dedicated space. There is one existing pedestrian/bicycle dedicated crossing of the expressway south of Northland Avenue and three other pedestrian crossing structures between High Street and Elm Street/Oak Street (all of which are located outside the defined transportation corridor).

Local and regional plans note a number of bicycle-related needs in the vicinity of the transportation corridor. The 2020 Regional Bike Buffalo Niagara Master Plan proposes bicycle lanes on Best Street as part of the regional bicycle network. The Buffalo Bicycle Master Plan Update (2016) identifies NYS Route 33 as an “infrastructure barrier” and proposes neighborhood bikeways across the expressway on Northampton and East Utica Streets. Best Street and East Ferry Street are also part of the bicycle network as facilities for experienced riders (shared use of travel lanes with vehicular traffic). Finally, the Buffalo Bicycle Master Plan Update proposes a bicycle route along existing roadways in the MLK Jr. Park area to connect between Best Street and Northampton Street on the east side of the expressway.

Transit

Existing Niagara Frontier Transportation Authority (NFTA) bus routes in the vicinity of the Project include Route 12 Utica (East Utica Street), Route 13 Kensington (East Ferry Street), Route 22 Porter-Best (Best Street), Route 66 Williamsville Express (runs on expressway, no stops in vicinity of the Project), and

Route 81 Eastside Express (travels westbound on East Ferry Street, southbound on Humboldt Parkway and then eastbound on the Kensington Expressway, using the ramp from East Utica Street).

The east-west bus routes in the area generally operate every 20 to 30 minutes during the morning and afternoon commuting periods on weekdays. Evening and weekend service is less frequent (hourly or less). Route 66 operation is commute time focused and weekday only. The Route 81 service connects the University at Buffalo South Campus to downtown and operates in the inbound direction only on weekday mornings.

Bus stops are located on Best Street, and near Humboldt Parkway on East Utica and East Ferry Streets. There are also stops for Route 81 on Humboldt Parkway southbound near Winslow Avenue and East Utica Street. There are no bus stop amenities present at any of the bus stops (e.g., shelters and benches).

1.3.2.5 Infrastructure Deficiencies

The aging infrastructure of Humboldt Parkway and the Kensington Expressway creates the needs described below.

1. **Concrete Retaining Walls:**
   Retaining walls within the Project limits were constructed in 1963 (Michigan Avenue to Northampton Street) and 1970 (Northampton Street to Northland Avenue). These walls have been deteriorating at a rapid rate over the past 5 to 10 years. The prominent distress is in the lower third of the walls where snow and salt accumulate during the winter months. Patching treatments would not sufficiently address the deterioration of the retaining walls. Therefore, the retaining walls need replacement.

2. **Bridge Structures:**
   The overhead bridges at Best Street, Dodge Street, and Northampton Street were built in 1963 and the overhead bridges at East Utica Street and East Ferry Street were built in 1970. All five of the bridges have their original decks, which have exceeded their expected 40-year service life. The bridges all have steel multi-girder superstructures with steel slider bearings and are multi-span simple-span bridges. Girder ends are experiencing section-loss up to 64% due to leaking bridge joints. All the bridges have overextended bearings and the Best Street and Dodge Street bridges have girder ends that are touching between spans. The bridges have pier columns without adequate pier protection and are vulnerable to trucks. Additionally, the bridge at Dodge Street has a vertical clearance of 14 feet and 2 inches and the bridge at Northampton Street has a vertical clearance of 14 feet and 3 inches. Both bridges have had their superstructure steel impacted by vehicles traveling on the Kensington Expressway. All the bridges have partial length cover plates with fatigue sensitive welds. The bridges at Best Street, Dodge Street, and East Utica Street have substantial areas of hollow-sounding concrete and exposed rebar on their substructures. Finally, all bridges have inadequate termination of their bridge barriers or railings and need upgrading to current standards.

   All five bridges need deck replacements in the next 5 to 10 years, which would include the upgrading of bridge barriers or railings. New bearings would also be needed within this timeframe. Replacement of the bearings would require new pedestals and pier widths. The piers need to be replaced with solid piers to accommodate the new bearings and make them less vulnerable to truck collisions. Superstructure steel would also need to be repaired and repainted to address steel section-loss. Bridge joints should be eliminated to stop water from leaking onto the superstructure steel, bearings, and substructure. This could be accomplished through the construction of link slabs. Also, concrete substructures need to be repaired and sealed to prevent further deterioration.

3. **Pavement:**
   This section of the Kensington Expressway was originally constructed in the late 1960s with a typical section consisting of 12 inches of subbase and 8 inches of reinforced concrete. In 1974, a two-course asphalt overlay was installed on the entire surface. Since that time, the corridor has had a series of asphalt mill and overlays, some of the treatments being two-course and some only a single course. In 2013, a single course mill and overlay was installed; however, reflective cracking from the underlying concrete pavement was observed soon after. This behavior indicates that the underlying concrete pavement, which is over 65 years old, has seen the end of its useful life and requires replacement. The most recent treatment was a single course mill and overlay in 2022.

   The Humboldt Parkway pavement, also constructed in the 1960s, is nearing the end of its service life. The City of Buffalo has conducted periodic resurfacing; however, continued preventative maintenance is no longer considered a viable option when considering factors such as age and the degree of surface and subsurface improvements that would compromise the integrity of the pavement.

4. **Drainage Systems:**
   The existing closed drainage system in the Project limits has been constructed in stages over several contracts and is relatively complex given the following: interconnection of the Kensington Expressway and Humboldt Parkway systems; storm and sanitary flows are combined along some stretches of Humboldt Parkway; and an existing pump station is needed to discharge some of the expressway stormwater. Additional details regarding the condition and age of drainage infrastructure are provided in Chapter 2 of this DDR/EA.

5. **Traffic Signal Systems:**
   The existing traffic signals, poles, and controllers are antiquated and in poor condition. There is a lack of pedestrian signal equipment at all locations. The existing traffic signals are estimated to have been constructed in 1963 (Michigan Avenue to Northampton Street) and 1970 (Northampton Street to Northland Avenue).

6. **Partial Interchanges:**
   There is a partial interchange between Northampton Street and East Utica Street which should be eliminated. Partial interchanges are undesirable because they do not allow for all basic interchange movements, which violates driver expectations and may lead to “wrong way” movements on ramps.

7. **Non-Standard Shoulder Widths:**
   Shoulder widths along the Kensington Expressway vary, but the inside shoulders are generally 4 feet wide (2 feet wide, at a minimum) along the concrete median barrier. A 10-foot minimum inside shoulder width is required to meet current standards. To achieve the required minimum inside shoulder widths while maintaining three lanes of traffic on both the northbound and southbound Kensington Expressway, relocation of the retaining walls would be necessary.

1.4 Logical Termini and Independent Utility

In accordance with 23 CFR § 771.111(f), the Kensington Expressway Project:

- Connects logical termini and is of sufficient length to address environmental matters on a broad scope;
- Has independent utility; and,

- Would not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

1.4.1 Logical Termini

Prior to the June 30, 2022 public scoping meeting, the NYSDOT and FHWA identified the northern boundary of the transportation corridor as East Ferry Street. During the scoping comment period, the lead agencies received multiple comments from the public requesting an extension of the corridor limits. Based on the consideration of these comments and in consideration of the technical factors detailed below, the lead agencies extended the transportation corridor approximately 600 feet north to Sidney Street.

In establishing the transportation corridor and proposed tunnel limits, the lead agencies considered the following factors:

- **Presence of depressed highway sections with retaining walls.** The Best Street to Sidney Street segment of NYS Route 33 is depressed and has continuous retaining walls on both sides of the expressway (heights range from 8 feet to 27 feet), except for the east side between Best Street and Dodge Street, where walls are not present. South of Dodge Street, the NYS Route 33 vertical profile transitions to a more gradual cut section (without retaining walls, except at bridges) and eventually to an at-grade profile. North of Sidney Street, the profile also transitions to at-grade. Potentially converting an at-grade highway section to a tunnel would require substantially greater excavation, rock removal costs, and temporary construction effects (e.g., noise, air quality, traffic) compared to capping an existing depressed highway section. Therefore, to maximize the potential community benefit with the available Project funding, the Project focuses on reconnecting the surrounding community in this depressed section of NYS Route 33. The Project would not preclude the advancement of potential future independent projects to increase community connectivity at other sections of NYS Route 33.

- **Opportunities for connectivity with existing parkland and community resources**. Establishing the southern limit of the tunnel at Dodge Street allows for a connection between the potential newly created greenspace and MLK Jr. Park. This connection would provide cohesive greenspace with improved pedestrian accessibility to neighborhoods on the west side of the expressway. Extending the southern limit of the tunnel to Best Street was considered and dismissed based on safety considerations because it is undesirable to have ramp merges inside a tunnel.[12] Therefore, Dodge Street is a logical terminus for the southern tunnel limit.

- **Physical and environmental constraints.** Extending the transportation corridor to the north beyond Sidney Street was investigated. Scajaquada Creek, carried in a 24.5-foot-wide by 14-foot-high concrete arch culvert located five feet below the expressway, crosses NYS Route 33 approximately 650 feet north of Sidney Street. Extending a potential tunnel north of Sidney Street would result in a major conflict with this sizable, buried structure, which extends both upstream and downstream of the expressway. Engineering solutions to resolve this conflict are complex and would result in substantial impact and cost. A second constraint with extending the Project to the north is the NYS Route 33/NYS Route 198 interchange. This complex interchange has roadways and high-volume ramps crossing one another at three different vertical levels (NYS Route 33 mainline, the ramp from NYS Route 198 eastbound to NYS Route 33 eastbound, and

[12] Tunnel design guidelines discourage the introduction of exit and entrance ramps located within a tunnel, per AASHTO, *A Policy on Geometric Design of Highways and Streets,* 7th edition (2018).

the ramp from NYS Route 33 eastbound to NYS Route 198 westbound). Accounting for the differences in ramp elevations while accommodating a tunnel system would require reconfiguring the interchange and would likely require property acquisitions.

For these reasons, Best Street and Sidney Street represent logical termini/rational endpoints for the transportation corridor and Dodge Street to Sidney Street represent logical termini/rational endpoints for the proposed tunnel.

1.4.2 Independent Utility

As a separate, independent action, the NYSDOT was advancing the NYS Route 198 Scajaquada Expressway Corridor Project (PIN 5470.22). The NYSDOT prepared a Final Design Report/Final Environmental Impact Statement; however, a Record of Decision was not issued. The project is currently on hold while the Greater Buffalo-Niagara Regional Transportation Council (GBNRTC) conducts a planning study for the NYS Route 198/Scajaquada Expressway Corridor called the Region Central Initiative.[13]

The Region Central Initiative study area is based on the boundaries of eight neighborhoods surrounding the NYS Route 198 corridor, including Hamlin Park and Delavan Grider. With respect to NYS Route 33, the southern extent of the Region Central Initiative study area is East Ferry Street. The Region Central preferred scenario limits do not overlap with the limits of the Kensington Expressway Project (the Region Central limits end at the Route 33/Route 198 interchange). The Region Central Initiative and the NYS Route 33 Kensington Expressway Project have independent utility and decisions made regarding the NYS Route 33 Kensington Expressway Project will not constrain the consideration of alternatives in the Region Central Initiative study area. The investment to improve community and transportation conditions in the defined transportation corridor will be a reasonable and needed project, regardless of the outcome of the Region Central Initiative.

Although separate, the NYSDOT and FHWA will continue coordination with GBNRTC regarding the Region Central Initiative. GBNRTC has been and will continue to be involved in the environmental review process for the Kensington Expressway Project as a Participating Agency (see Section 4.1.1 of this DDR/EA).

The NYS Route 33 Kensington Expressway Project would not preclude the consideration of potential future projects in other portions of NYS Route 33 (i.e., north of Sidney Street or south of Best Street) or in the NYS Route 198 corridor.

1.5 Project Schedule

The NYSDOT anticipates issuing a Final Design Report/Environmental Assessment (FDR/EA) for the Project in late 2023. Design Approval is scheduled for early 2024. Construction could begin in 2024, pending environmental approvals and funding availability, and would continue for approximately three to four years. Table 1.5-1 provides the anticipated project schedule.

[13] https://www.gbnrtc.org/regioncentral-about

Table 1.5-1: Project Schedule	
Activity	**Date Occurred/ Tentative**
Release of Project Scoping Report	December 2022
Notice of Availability of DDR/EA	September 2023
Public Hearing	September 2023
DDR/EA Comment Period Ends	October 2023
FDR/EA	December 2023
Design Approval	January 2024
Design-Build Procurement	Winter 2023 – Autumn 2024
Right-of-Way Acquisition and Permits	Autumn 2024
Construction Start	Winter 2024
Construction Complete	Winter 2028

1.6 Contact Information

For further information about the Project, please visit the Project website at https://kensingtonexpressway.dot.ny.gov/ or contact:

NYS Route 33, Kensington Expressway Project Team

New York State Department of Transportation, Region 5

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Buffalo, NY 14203

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CHAPTER 2 – PROJECT CONTEXT

This chapter documents the history and existing context of the NYS Route 33 (Kensington Expressway) Project site including the existing conditions, deficiencies, and needs for the transportation corridor and other adjacent local streets.

2.1 Project History

The original Humboldt Parkway was part of a historic system of parks, parkways, and circles designed by Frederick Law Olmsted and Calvert Vaux in the late 19th century. Figure 2.1-1 provides an overview of the historic Olmsted Park and Parkway System in 1896. The Humboldt Parkway was a boulevard with an approximately 86-foot-wide tree-lined median that connected Humboldt Park (now Martin Luther King, Jr. Park) with Delaware Park, creating a park-like neighborhood atmosphere (see Photographs 2.1-1 and 2.1-2). The boulevard served as a focal point for the adjacent neighborhoods, providing a link between the various local streets and nearby recreational attractions, cultural and religious institutions, and local businesses. Photograph 2.1-3 shows a view facing north from MLK Jr. Park towards the Buffalo Museum of Science and the extensive tree canopy of Humboldt Parkway in the background. Remaining parkways from the parkway system, such as Bidwell and Chapin Parkways, provide some present-day context for the character and scale of the Humboldt Parkway (see Photograph 2.1-4).

The origins of the concept for the Kensington Expressway date to the 1946 *Report on New York State Thruway and Arterial Routes for the Buffalo Urban Area*, prepared by the New York State Department of Public Works. Post-war trends, such as increased automobile adoption and suburban development, created traffic congestion issues that the new highway system was intended to resolve. The original planned route for the expressway was from downtown, through the Fruit Belt neighborhood, and terminating at the southern end of Humboldt Parkway. In this plan, Humboldt Parkway was maintained as a traffic thoroughfare and traffic was envisioned continuing northeast on an improved Kensington Avenue. Plans were later refined to include an expressway connection to the airport. Demolition and land clearing began in 1957 and approximately 600 households were displaced and relocated (primarily in the Fruit Belt). Several portions of the Humboldt Parkway were removed during the construction in the 1950s and 1960s; however, the segment between Northampton Street and Northland Avenue was initially maintained and became known as the "Humboldt Hourglass." With the increased traffic spurred by the expressway connections on either end, the Humboldt Parkway area experienced a high number of crashes that the NYSDOT addressed by removing the remaining section of the Humboldt Parkway and replacing it with a below grade (depressed) expressway configuration between 1968 and 1970. Local roadway access was provided by construction of the present-day Humboldt Parkway on either side of the depressed expressway.

The Kensington Expressway severed several local east-west streets and reduced connectivity between the east and west portions of the neighborhoods. Between Best Street and Sidney Street, east-west street connections (between northbound Humboldt Parkway and southbound Humboldt Parkway) that were terminated by the expressway included: Girard Place, Riley Street, Landon Street, Glenwood Avenue, Winslow Avenue, and Woodlawn Avenue. East-west vehicular, pedestrian and bicycle travel across the expressway was provided on five bridges that carry the local street network (East Ferry Street, East Utica Street, Northampton Street, Dodge Street, and Best Street). The limited number of east-west crossings increased the length of east-west pedestrian trips and decreased the accessibility of community services particularly for households without automobile access.

The loss of the wide median with mature trees along the Humboldt Parkway altered the aesthetic character of the neighborhood and substantially reduced greenspace within the corridor. Scattered street trees are present along the Humboldt Parkway sidewalks, but some blocks have few or no trees. The six-lane expressway and concrete retaining walls are the predominant element of the viewshed for residents along the transportation corridor. The Kensington Expressway construction and loss of the historical Humboldt Parkway substantially affected quality of life in adjoining neighborhoods.

In 2009, the NYSDOT initiated a project (PIN 5512.46) to rehabilitate the retaining walls along NYS Route 33, upgrade the railing systems on top of the retaining walls, and install landscape enhancements along Humboldt Parkway bordering the expressway on either side. The original project limits for PIN 5512.46 extended from the Elm-Oak Arterial to NYS Route 198. In May 2009, the scope of PIN 5512.46 was reduced to only include the section of NYS Route 33 between the Elm-Oak Arterial and Best Street, so that the section of NYS Route 33 between Best Street and NYS Route 198 could be evaluated with the goal of advancing a more comprehensive project to address neighborhood concerns – neighborhood connectivity, economic vitality, and environmental concerns.

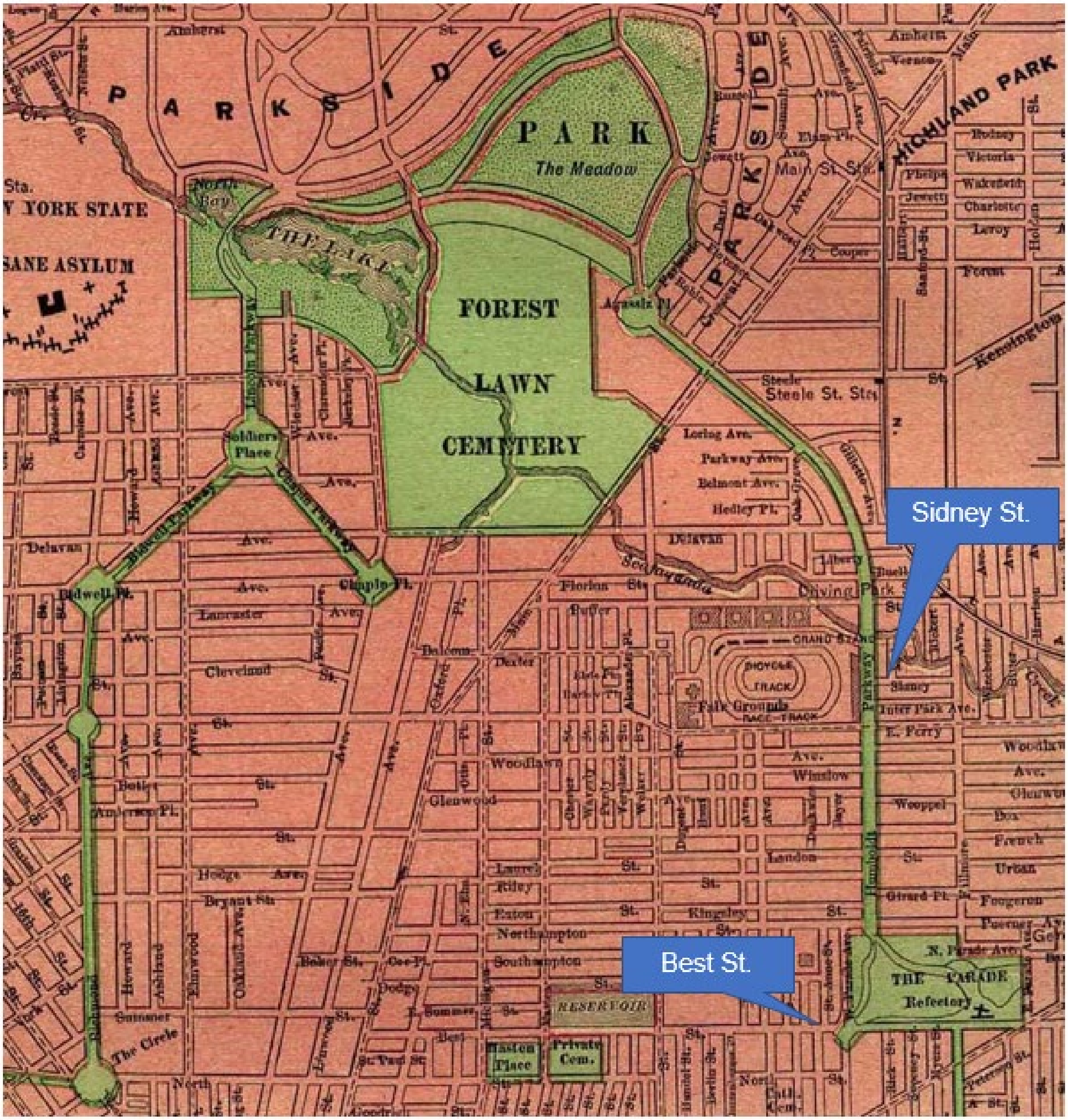
In 2011, the NYSDOT commissioned the *Kensington Expressway Concept Design Study – Evaluation of Project Alternatives*, August 2012 (Concept Design Study). The Concept Design Study examined the engineering attributes of a variety of concepts that would address a set of "goals and objectives" identified in coordination with stakeholders in the community. This Concept Design Study was initiated at the request of stakeholders, including former New York State Senator Antoine Thompson, State Assembly Member Crystal Peoples-Stokes, the Buffalo Olmsted Parks Conservancy, and local officials and community organizations. The Concept Design Study was a planning level study; thus, it did not recommend a "preferred alternative."

Subsequent to the 2012 Concept Design Study, the NYSDOT attended a number of meetings with community stakeholders whereby input was received. The input was primarily in favor of a full enclosure of the expressway, identified as Alternative D in the Concept Design Study.

The NYSDOT began stakeholder outreach for the NYS Route 33, Kensington Expressway Project in 2016 with a stakeholder group meeting. Additional stakeholder meetings were held between 2016 and 2019; topics of discussion included the Project purpose and needs, and conceptual designs for Humboldt Parkway and construction of a tunnel between Best Street and East Ferry Street. The meetings included representatives of the Restore Our Community Coalition (ROCC), an organization dedicated to the revitalization of neighborhoods along the Humboldt Parkway, public officials, and the City of Buffalo, among others.

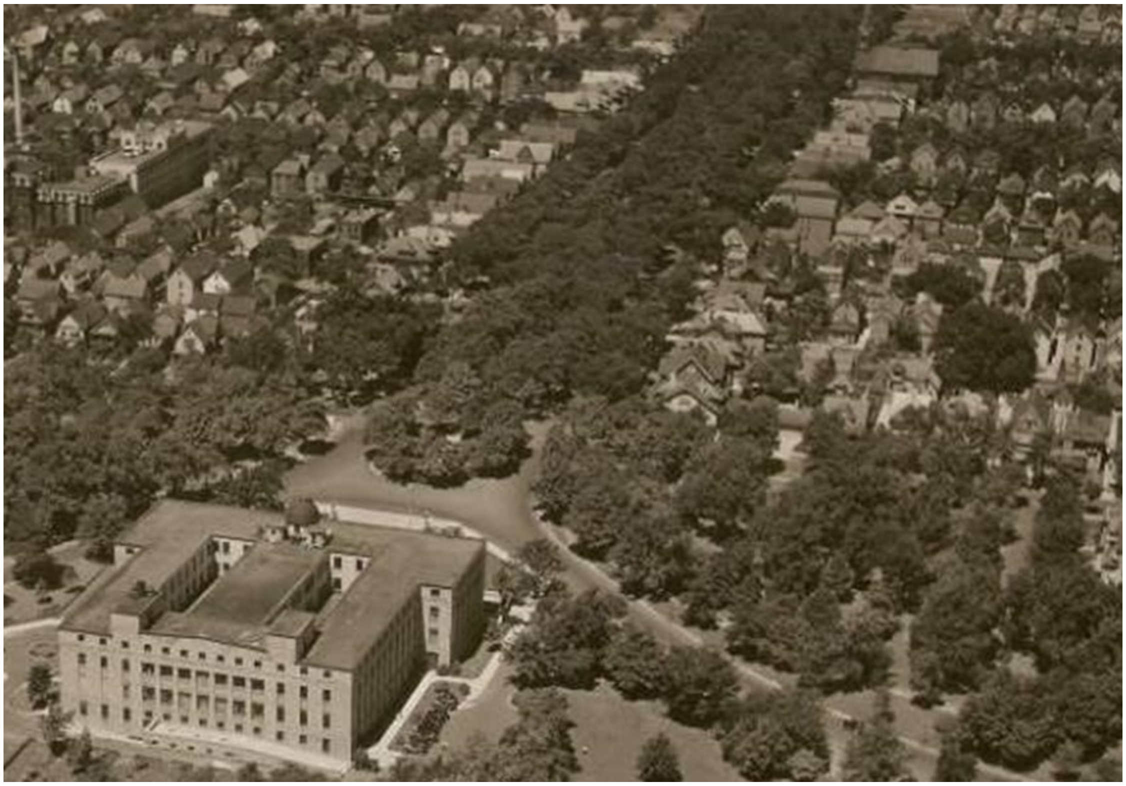
On January 22, 2022, Governor Kathy Hochul announced that the NYSDOT would commence an environmental review to assess concepts for reconnecting the east-west neighborhoods in the City of Buffalo that were divided by the construction of the depressed section of the Kensington Expressway more than six decades ago. The NYSDOT continued developing and considering conceptual designs and evaluating the performance of these concepts, as well as other engineering and environmental considerations. The preliminary design concepts were shared for public input at a Public Scoping Meeting held on June 30, 2022 at the Buffalo Museum of Science, which included multiple methods for the public to provide input on the Project. The Public Scoping Meeting was followed by a 30-day public comment period. Chapter 5 of this DDR/EA provides more detailed information on the public outreach efforts for the Project. Public comments were considered and used to inform the development of the Project Scoping Report (PSR) and this DDR/EA.

The PSR was released to the public on December 20, 2022. The report was prepared to provide an overview and record of the scoping process conducted for the Project and is available at: https://kensingtonexpressway.dot.ny.gov/Documents.aspx. The PSR documented the evaluation of concepts for the Project and identified the reasonable alternatives that were advanced for detailed study in this DDR/EA.

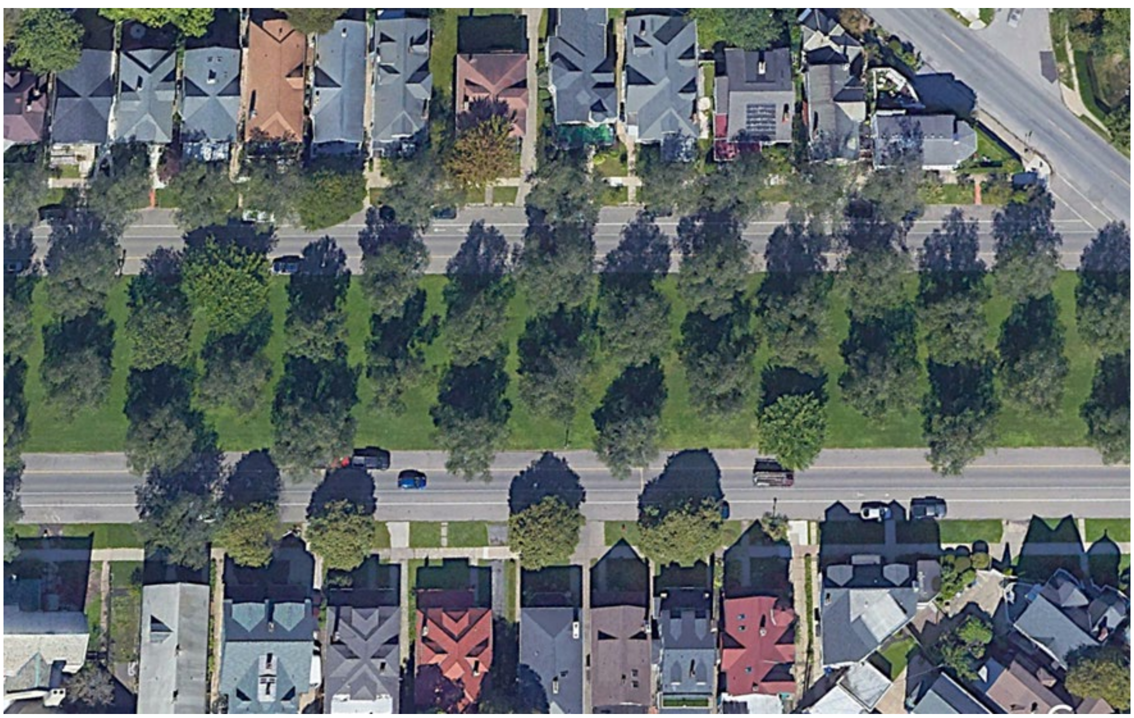

Sidney St.
Best St.
PARKSIDE
PARK
The Meadow
FOREST LAWN CEMETERY
HIGHLAND PARK
THE PARADE
Refectory
Soldiers Place
Chapin Pl.
Bidwell Pl.
Fair Grounds
RESERVOIR
Humboldt Parkway
Delavan
Sidney
Steele St. Sta.

Photograph 2.1-1 Center of Humboldt Parkway (bridle path) at Girard Place (1935)
Source: Buffalo History Museum

Photograph 2.1-2 Humboldt Parkway at Northland Avenue (1953)
Source: Buffalo History Museum



Photograph 2.1-3 Humboldt Parkway aerial view facing north from Buffalo Museum of Science.



Photograph 2.1-4 Present-day Bidwell Parkway.

2.2 Land Use Plans and Transportation Plans

2.2.1 Local Land Use Plans

The following local comprehensive plans and private development plans for the area in the vicinity of the Project were reviewed. A summary of these plans is provided in Appendix D1.

- City of Buffalo Four-Year Strategic Plan (2023-2027): Building an Equitable City (2023)
- Queen City in the 21st Century: Buffalo's Comprehensive Plan (2006)
- City of Buffalo Unified Development Ordinance (The Green Code) (2017)
- One Region Forward (2015)
- Buffalo Parks Master Plan (2021)
- The Buffalo Olmsted Park System: Plan for the 21st Century (2008)
- Buffalo Olmsted Parks Conservancy 2020-2024 Five-Year Plan (2019)
- The Buffalo Housing Opportunity Strategy Plan (2017)

See Section 4.2 for further discussion on land use and zoning within the Study Area.

2.2.2 Transportation Plans

The following transportation plans for the area in the vicinity of the Project were reviewed. A summary of these plans is provided in Appendix D1.

- Bike Buffalo Niagara Regional Bicycle Master Plan (2020)
- The Buffalo Bicycle Master Plan Update (2016)
- NYSDOT Pedestrian Safety Action Plan (2016)
- GBNRTC Moving Forward 2050 (2018)
- GBNRTC Comprehensive Transit-Oriented Development Plan (2018)
- GBNRTC Transportation Improvement Program (2022)
- The Future of Mobility: Remaking Buffalo for the 21st Century (2020)

2.2.3 Transportation Corridor

2.2.3.1 Importance of the Project Route Segment

The section of the Kensington Expressway between the NYS Thruway (I-90) and the Elm-Oak arterial functions as a critical link in the regional transportation system with over 75,000 vehicles per day using the facility. The Kensington Expressway provides a direct link to Downtown Buffalo from major routes, such as the Scajaquada Expressway (NYS Route 198) and the NYS Thruway (I-90). The Kensington Expressway is an established commuter route between Downtown Buffalo and the City's northern and eastern neighborhoods as well as the Buffalo International Airport and many suburban communities. Preliminary traffic analyses during NEPA scoping concluded that reduction in capacity of the Kensington Expressway results in an unacceptable breakdown in traffic operations. Specifically, the traffic analysis of Concept 7 (which involved reducing the capacity to two lanes in each direction) in the Project Scoping Report showed an unacceptable congestion in westbound traffic flow in ETC (Estimated Time of Completion) +20 (year 2047) AM peak and unacceptable traffic delays east of the NYS Route 33 / NYS Route 198 interchange.

The Kensington Expressway serves as a direct, uninterrupted throughfare to the Erie County Medical Center (ECMC) on Grider Street, which is a designated Level 1 Adult Trauma Center by the New York State Department of Health. The Kensington Expressway is also a critical access link to the Buffalo Niagara Medical Campus, which is accessed from the Best Street ramps and includes John R. Oishei

Children's Hospital and Buffalo General Medical Center, both of which have emergency services. Additionally, The Roswell Park Comprehensive Cancer Center is located just south of the Buffalo Niagara Medical Campus and can be reached via the Kensington Expressway and Best Street interchange.

2.2.3.2 Alternate Routes

There are no alternate routes that would be suitable as a detour or replacement for the Kensington Expressway. Parallel routes serving similar traffic movements to NYS Route 33 (e.g., NYS Route 5 Main Street and NYS Route 62 Bailey Avenue) would require substantial upgrades with associated effects to the community to provide comparable speed and travel time. These roadways are constrained by residential and commercial development, making major improvements to them impracticable. This further supports the need to maintain the vehicular capacity of the NYS Route 33 corridor in its current location.

2.3 Reasonably Foreseeable Future Projects

Many of the currently underway developments within and in the vicinity of the Study Area are the result of, or are associated with, the "Buffalo Billion," a $1 billion investment dedicated to the Buffalo area economy by New York State. These projects include:

- **Northland Beltline Redevelopment Project.** The redevelopment of the Northland Beltline corridor in the Delavan-Grider neighborhood is being advanced by the Buffalo Urban Development Corporation in conjunction with Empire State Development, the New York Power Authority, and the City of Buffalo. The project involves the redevelopment of approximately 50 acres of vacant or underutilized land and over 700,000 square feet of industrial buildings, the acquisition of which was funded by Buffalo Billion funds awarded in 2014. The project aims to bring these properties back to productive use and create a manufacturing hub in East Buffalo. The anchor institution of the project is the Northland Workforce Training Center at 683 Northland Avenue, which was completed in 2017 and provides job training and career services in the manufacturing sector.
- **East Side Commercial Districts Projects.** Funded by capital investments from the Buffalo Billion's East Side Corridors Economic Program, the projects that are part of the East Side Commercial Districts provide funding for building renovations in the Jefferson Avenue Commercial District, the MLK Park Business District, the Broadway Fillmore corridor, and the Kensington Bailey corridor. Funds are targeted to "generate wealth for small business owners, combat vacancies, and revitalize commercial corridors."[14] As of 2022, seven projects are under construction, two are in pre-construction, and seven are in the bidding process.
- **Commercial Building Stabilization Fund Projects.** Also funded by investments from the East Side Corridors Economic Program, the Commercial Building Stabilization Fund provides capital investments to "support stabilization of at-risk historic buildings in targeted investment areas."[15] Stabilization includes structural repairs and weatherization and is especially targeted at buildings that are along commercial corridors and have plans for redevelopment. In 2022, twenty projects were selected to move forward with construction.

In addition, the City of Buffalo Parks Department is sponsoring the East Side Trails Feasibility Study which includes consideration of improvements to the Scajaquada Trail shared use path between Fillmore Avenue and Jefferson Avenue.[16] The City expects to complete design and initiate construction within the

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[14] https://eastsideavenues.org/wp-content/uploads/2022/10/UBRI_ESA_21-22_Annual_Report.pdf
[15] See footnote 10.
[16] https://gobikebuffalo.org/project/eastsidetrailconnections/

next 1-2 years. The trail project is not expected to include changes to the existing pedestrian bridge crossing over NYS Route 33.

Within the Study Area, the existing Scajaquada Trail (also known as the Scajaquada Creek Path) runs on an off-road alignment between Donaldson Road to the west and a termination to the east at Fillmore Avenue a short distance north of Sidney Street. As noted in Section 2.4.2.2 of this DDR/EA, the trail crosses over NYS Route 33 on the existing pedestrian bridge south of Northland Avenue.

The City of Buffalo's East Side Trails Feasibility Study is a combination of proposed trail improvements involving the existing off-road Scajaquada Creek Path as well as a sidepath on William Gaiter Parkway and new on and off-road connections to link the two paths to each other and to the North Buffalo Rail Trail.[17] Goals for the East Side Trails project include addressing gaps in connectivity between neighborhoods and parks and greenspaces and improving access, safety, and comfort for East Side residents.

The East Side Trails project study outlines the preferred route[18] and includes the rationale for the selected route(s). Within the Study Area, the preliminary concept of trail improvements involves improving the existing trail to a 10-foot-wide paved shared use path. The trail would pass through a proposed community garden between Rickert Avenue and Fillmore Avenue. It would not include any changes to the pedestrian bridge over the Kensington Expressway.

The potential project is in the feasibility planning stage. Coordination with the City indicates the project could be designed and construction initiated within the next few years.

2.4 Transportation Conditions, Deficiencies and Engineering Considerations

As defined in Chapter 1, the term "transportation corridor" is used to describe the section of NYS Route 33 and Humboldt Parkway being studied for improvements under this Project. The transportation corridor is defined as NYS Route 33 (Kensington Expressway) and Humboldt Parkway between Best Street and Sidney Street. Five east-west bridges traverse the Kensington Expressway (East Ferry Street, East Utica Street, Northampton Street, Dodge Street, and Best Street) within the transportation corridor. Sections 2.4.1 through 2.4.4 (below) describe the transportation conditions, deficiencies, and engineering considerations within the transportation corridor, as well as conditions on adjacent local streets (area bounded by High Street to the south, Northland Avenue to the north, Fillmore Avenue to the east, and Wohlers Avenue to the west).

2.4.1 Operations (Traffic and Safety) & Maintenance

2.4.1.1 Functional Classification and National Highway System (NHS)

Functional classification and NHS data are summarized in Table 2.4-1.

[17] See https://gobikebuffalo.org/project/eastsidetrailconnections/

[18] See https://gobikebuffalo.org/project/eastsidetrailconnections/#draftdesigns

Table 2.4-1: Classification Data

Route(s)	NYS Route 33 Kensington Expressway	Humboldt Parkway (northbound & southbound)
Functional Classification	Urban Principal Arterial Expressway	Urban Local Road
National Highway System (NHS)	Yes	No
Designated Truck Access Route	Yes	No
Qualifying Highway	Yes	No
Within 1 mile of a Qualifying Highway	N/A	Yes
Within the 16 ft vertical clearance network	No[1]	No

[1]There is an approved 16' vertical clearance route through the Buffalo Urban Area and NYS Route 33 is not part of that route; therefore, there is not a requirement for 16' clearance.

Table 2.4-2: Abutting Highway Segment Characteristics

	E. Ferry St.	E. Utica St.	Northampton St.	Dodge St.	Best St.
Owner	City of Buffalo	City of Buffalo	City of Buffalo	City of Buffalo	City of Buffalo
Functional Classification	Urban Minor Arterial	Urban Minor Arterial	Local Street	Local Street	Urban Minor Arterial
Number of Travel Lanes	1 each direction	1 each direction	1 each direction	1 each direction	1 each direction
Traffic Volume (AADT)[1] (Year of Count)	11,666 (2019) calculated Wohlers Ave to NYS Route 33 9,127 (2019) calculated NYS Route 33 to Fillmore Ave	4,151 (2019) calculated Wohlers Ave to NYS Route 33 4,229 (2020) calculated NYS Route 33 to Fillmore Ave	2,223 (2019) calculated Wohlers Ave to Fillmore Ave	2,303 (2019) calculated NYS Route 33 to Wohlers Ave	12,589 (2019) calculated Wohlers Ave to Fillmore Ave
Land Use / Character	Residential	Residential	Residential	Residential	Residential
On-Street Parking	Yes	Yes	Yes	Yes	Yes

[1] AADT refers to Annual Average Daily Traffic.

Local Streets Adjacent to the Transportation Corridor

A majority of the streets are low volume local residential streets (AADT < 800 vehicles per day). Several streets are classified as Urban Minor Arterials and experience slightly higher volumes (AADT between 2,200 and 12,600 vehicles per day). Intersections are typically stop-sign controlled on urban local streets. On the urban minor arterial streets, intersection control includes both stop sign controlled and signalized.

Level of service is considered to be in the A and B range, meaning that traffic flows at or above the posted speed limit with little to no restriction in the traffic stream.

2.4.1.2 Access Control

Access to NYS Route 33 is fully controlled within the transportation corridor. Access to Humboldt Parkway and local streets adjacent to the transportation corridor is uncontrolled. There are numerous driveways that front on Humboldt Parkway throughout the transportation corridor.

2.4.1.3 Traffic Control Devices

Existing traffic control devices on NYS Route 33 include ground-mounted and overhead signage.

Traffic control devices on Humboldt Parkway northbound and southbound include signage and traffic signals. Signals are located at the Humboldt Parkway intersections with East Ferry Street, East Utica Street, and Northampton Street. Traffic signals are also located at the Best Street intersections with NYS Route 33 entrance and exit ramps. Traffic signals are owned and maintained by the City of Buffalo.

The existing traffic signals, poles and controllers are antiquated and in poor condition. There is a lack of pedestrian signal equipment at all locations. The existing traffic signals are estimated to have been constructed in 1963 (Michigan Avenue to Northampton Street) and 1970 (Northampton Street to Northland Avenue) with multi-phase actuated coordination on Best Street and two phase semi-actuated un-coordinated on Humboldt Parkway.

2.4.1.4 Intelligent Transportation Systems (ITS)

There is an ITS system in operation on NYS Route 33 within the transportation corridor. Closed-circuit traffic cameras are located along NYS Route 33 at High Street, Best Street, Northampton Street, and East Ferry Street. The cameras monitor real-time traffic conditions and provide data to the 511 New York system (http://511ny.org) and the Niagara International Transportation Technology Coalition (NITTEC) (http://nittec.org).

There are existing fiber optic communications within the Project limits. From High Street to Northampton Street, the fiber exists on Humboldt Parkway southbound and runs north parallel to NYS Route 33 eastbound. At the Northampton Street bridge, the fiber line crosses along the north side of the structure attached to the underside of the parapet and then runs north along Humboldt Parkway northbound.

2.4.1.5 Speeds and Delay

Speed data are summarized in Table 2.4-3.

Table 2.4-3: Speed Data

	NYS Route 33	Humboldt Parkway
Existing Speed Limit (mph)	55 mph	30 mph
Operating Speed (mph) and Method Used for Measurement	Eastbound: 52.4 (avg. speed) 65.7 (85th percentile speed) Westbound: 51.6 (avg. speed) 64.7 (85th percentile speed)[1]	Not measured
Travel Speed and Delay Runs for Existing Conditions	Completed over 3 days.[2]	Not required since existing LOS is C or better.

[1] Source: NYSDOT Travel Speed Study
[2] See Travel Speed Study in Appendix B1.

A travel time and delay study was conducted throughout NYS Route 33 and interchanges within the transportation corridor. A total of eight loops/paths of travel through the transportation corridor were conducted to obtain representative samples of travel time in different directions. The travel time and delay study was conducted in October 2021, while schools were in session. Measurements were taken during the morning and evening peak hours of commuter traffic, 6:30 AM to 8:30 AM and 4:00 PM to 6:00 PM, respectively. Readings were taken to quantify the time necessary to traverse the transportation corridor and sources of delay were noted. Average peak hour travel times and speeds are summarized in Table 2.4-4. Additional average travel time data can be found in Appendix B1.

Table 2.4-4: Average Travel Time and Speed – Existing Conditions

Roadway Segment	Direction	AM Peak Hour			PM Peak Hour		
		Average Travel Time (min)	Average Trip Speed (mph)	Average Run Speed (mph)	Average Travel Time (mph)	Average Trip Speed (mph)	Average Run Speed (mph)
NYS Route 33: Grider St. to Michigan St.	WB	6.62	50.98	51.69	6.49	52.18	53.03
	EB	5.53	53.57	53.57	6.75	51.16	52.30
Fillmore Ave: Genesee St. to Main St.	NB	11.18	17.66	24.68	15.15	16.47	22.76
	SB	11.55	16.43	22.44	14.83	16.52	21.74
Genesee St: Oak St. to Bailey St.	SWB	10.86	17.83	24.20	16.51	19.25	25.06
	NEB	10.24	18.79	25.08	16.75	19.02	26.90
Jefferson Ave: Genesee St. to Main St.	NB	9.02	18.46	22.76	11.27	17.80	22.55
	SB	8.72	19.09	22.36	11.89	16.56	20.92
Kensington Ave: Bailey St. to Main St.	NEB	8.31	20.13	25.78	10.41	19.99	27.57
	SWB	9.74	17.64	23.89	10.84	18.88	24.04
Main St.: Pearl St. & Goodell St. to Kensington Ave.	EB	15.57	15.74	21.91	15.93	15.62	21.61
	WB	13.63	18.02	22.55	14.69	16.82	23.05

No notable delay along the expressway system was observed during the peak travel time and delay study.

2.4.1.6 Traffic Volumes

Refer to Appendix B4 for traffic volume diagrams. The traffic data was obtained in the year 2021.

2.4.1.6 (1) Existing and Forecast Traffic Volumes

Refer to Tables 2.4-5 and 2.4-6 for a summary of the traffic data for NYS Route 33 and Humboldt Parkway. The traffic count methodology, peak hour, and turning movement volumes for intersections with identified safety issues, all major intersections, and major traffic generator driveways/entrances are discussed in Appendix B2 and Appendix B3. A growth rate of 0.25% per year for NYS Route 33 (Kensington Expressway) and for Humboldt Parkway was used to calculate future traffic volumes.

Table 2.4-5: Traffic Data – Existing Conditions		
	NYS Route 33	**Humboldt Parkway**
Directional Distribution	AM: 32% EB, 68% WB PM: 60% EB, 40% WB	100% (one-way streets)
Peak Hour Factor	N/A	AM: 0.779 NB, 0.952 SB PM: 0.783 NB, 0.908 SB
% Peak Hour Trucks	AM: 14.55% EB, 8.45% WB PM: 9.13% EB, 13.76% WB	AM: 3.85% NB, 5.00% SB PM: 1.28% NB, 2.93% SB
% Daily Trucks	EB: 10.85%; WB: 10.91%; Combined: 10.88%	

Table 2.4-6: Existing and No Build Forecast Traffic Volumes (AADT)[1]			
Ramp	**Existing (2021)**	**ETC[2] (2027)**	**ETC+20 (2047)**
NYS Route 33 WB[3] Off Ramp to Ferry St	8,848	8,981	9,441
NYS Route 33 EB[4] Off Ramp to Best St	1,897	1,925	2,024
NYS Route 33 EB On Ramp from Best St	9,571	9,715	10,213
NYS Route 33 EB Off Ramp to E Utica St	2,915	2,959	3,111
NYS Route 33 WB On Ramp from E Utica St	3,123	3,170	3,332
NYS Route 33 WB Off Ramp to Best St	8,381	8,508	8,943
NYS Route 33 WB On Ramp from Best St	1,874	1,903	2,000
NYS Route 33 EB Off Ramp to Route 198	11,234	11,404	11,988
NYS Route 33 EB On Ramp from E Delavan Ave	10,522	10,681	11,228

[1] AADT – Annual Average Daily Traffic
[2] ETC – Estimated Time of Completion
[3] WB – Westbound
[4] EB – Eastbound

Traffic data were collected for the transportation corridor area at the following locations:

- NYS Route 33;
- Humboldt Parkway; and
- Local intersections bordered by Delavan Avenue, Fillmore Avenue, Genesee Street, and Jefferson Avenue.

Ramps and ramp terminal intersections with local streets were included in the coverage area. Data were also collected for local street intersections within the transportation corridor area of Delavan Avenue, Fillmore Avenue, Genesee Street, and Jefferson Avenue. NYS Route 33 mainline and ramp traffic volumes were developed by a combination of counting programs for this Project in 2021. Continuous 24-hour machine counts and intersection turning movements were obtained throughout the study area, reviewed, and the count data balanced as appropriate.

Continuous 24-hour machine counts were conducted and recorded by 1-hour intervals at 31 interchange ramps and selected mainline locations as shown in Appendix B2. The counts were collected in October 2021. Counts were conducted for 3 consecutive days at each location.

Manual turning movement counts were collected at 62 intersections, including ramp terminal and select local street intersections, within the general Study Area as shown in Appendix B3. The counts were conducted from 6:30 AM to 8:30 AM and 4:00 PM to 6:00 PM in October and November 2021, while local schools were in session. All count data were recorded in 15-minute intervals to allow for identification of one peak hour within each peak commuter period. The counts were adjusted and balanced as appropriate.

Based on a review of the 24-hour continuous machine counts and manual turning movement counts, the hours of peak commuter traffic were found to be 7:00 AM to 8:00 AM and 4:30 PM to 5:30 PM.

2.4.1.6 (2) Forecast No Build Alternative Design Year Traffic Volumes

The Estimated Time of Completion (ETC)+20 design year was selected per HDM Exhibit 5-1B. A growth rate of 0.25% per year was used to calculate future traffic volumes for NYS Route 33 (Kensington Expressway) and Humboldt Parkway.

Future No Build Alternative volumes were generated in cooperation with the Greater Buffalo Niagara Regional Transportation Council and their regional transportation model. Overall, there were negligible differences between year 2027 and 2047 No Build volumes due to a minimal 0.25% annual growth rate.

No Build Alternative ETC+20 information is included in Table 2.4-7. Volume diagrams are available in Appendix B4.

Table 2.4-7: Existing and No Build Forecast Traffic Volumes

	NYS Route 33 (Kensington Expressway)		Humboldt Parkway Northbound		Humboldt Parkway Southbound	
Year	AADT[1]	DHV[2]	AADT	DHV	AADT	DHV
Existing (2022)	77,505	7,743	7,000	---	2,471	---
ETC[3] (2027)	78,478	7,860	7,089	---	2,502	---
ETC+20 (2047)	82,497	8,262	7,452	---	2,630	---

[1] AADT – Annual Average Daily Traffic
[2] DHV – Design Hourly Volume
[3] ETC – Estimated Time of Completion

2.4.1.7 Level of Service and Mobility

Per Chapter 5 of the NYSDOT Highway Design Manual, level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Levels of service are given letter designations, from A to F, with LOS A representing the best operating condition and LOS F the worst.

- LOS A: Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. No delays.
- LOS B: Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. No delays.
- LOS C: Stable traffic flow, but less freedom to select speed, change lanes or pass. Leads to minimal delays.
- LOS D: Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. Leads to minimal delays.
- LOS E: Unstable flow. Speeds change quickly and maneuverability is low. Leads to significant delays.
- LOS F: Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. Leads to considerable delays.

2.4.1.7 (1) Existing Operational and Speed Analysis

A detailed analysis of existing traffic conditions on NYS Route 33 and the local street network, including all intersections in the immediate vicinity of the transportation corridor, is included in the Preliminary Traffic Study in the Project Scoping Report.

Existing travel time and average speed information for NYS Route 33 is provided in Table 2.4-8. Intersection level of service for key signalized intersections along the transportation corridor is provided in Table 2.4-9.

Table 2.4-8: Existing and No Build NYS Route 33 Travel Time and Average Speed

Segment	AM Peak Hour			PM Peak Hour		
	2021	2027	2047	2021	2027	2047
Eastbound – Oak to Delavan – 2.72 miles						
Average Travel Time (minutes)	3.3	3.3	3.4	3.3	3.3	3.4
Average Travel Speed (mph)	50	50	49	49	49	49
Westbound – Suffolk to Michigan – 4.50 miles						
Average Travel Time (minutes)	5.0	5.0	5.0	5.0	5.0	5.0
Average Travel Speed (mph)	54	54	54	54	54	54

Table 2.4-9: Existing and No Build Intersection Level of Service and Delay (sec)

#	Intersection[1]	Control[2]	Dir.	Lanes[3]	AM Peak Hour[4]			PM Peak Hour		
					2021	2027	2047	2021	2027	2047
1	Best Street & EB Ramps	S	EB	LT/T	B (10.4)	D (37.4)	E (60.1)	E (57.5)	E (63.2)	F (86.6)
			WB	T/TR	A (3.9)	A (8.2)	A (9.2)	A (6.6)	A (5.4)	A (8.6)
			NB	LTR	B (19.8)	A (7.1)	A (7.7)	B (19.0)	B (16.5)	C (24.5)
		Overall			A (9.2)	C (22.5)	C (34.2)	C (33.5)	D (35.6)	D (49.4)
2	Best Street & WB Ramps	S	EB	T/TR	B (13.6)	B (13.2)	B (14.7)	B (11.7)	B (10.2)	B (13.6)
			WB	LT/T	A (9.3)	A (9.2)	B (10.1)	A (8.8)	A (7.5)	B (10.7)
			SB	LTR	E (69.7)	F (83.7)	F (85.0)	F (93.3)	F (111.3)	F (119.9)
		Overall			F (203.7)	D (45.4)	D (46.8)	D (42.3)	D (48.4)	D (53.7)
3	Best Street & Herman Street & West Parade Avenue	S	EB	LT/TR	B (10.4)	B (12.1)	B (12.1)	B (10.4)	B (13.9)	B (14.0)
			WB	LT/TR	C (20.8)	C (22.7)	C (21.9)	C (20.8)	C (25.1)	C (22.7)
			NB	LTR	B (12.3)	B (13.0)	B (15.2)	B (16.5)	B (15.2)	B (18.1)
			SB	LTR	A (9.2)	A (9.2)	B (11.3)	B (15.8)	B (13.9)	B (17.0)
		Overall			B (14.5)	B (16.0)	B (16.1)	B (15.4)	B (18.2)	B (17.9)
4	Humboldt Parkway SB & Northampton Street	S	EB	TR	A (4.5)	B (11.8)	B (11.7)	A (4.7)	B (11.4)	B (11.3)
			WB	LT	A (2.9)	B (10.6)	A (9.7)	A (2.9)	A (6.7)	A (6.6)
			SB	LTR	C (24.7)	A (4.5)	A (4.7)	B (16.9)	A (6.8)	A (7.1)
		Overall			B (15.3)	A (7.5)	A (7.4)	B (10.1)	A (8.0)	A (8.1)
5	Humboldt Parkway NB &	S	EB	LT	A (6.7)	B (11.7)	B (11.6)	A (6.2)	B (11.9)	B (11.9)
			WB	TR	A (3.9)	B (11.2)	B (11.2)	A (3.8)	A (9.9)	A (9.7)

	Northampton Street		NB	LTR	B (18.4)	A (4.0)	A (4.0)	B (17.9)	A (5.7)	A (5.9)
		Overall			A (7.1)	B (10.4)	B (10.3)	A (5.9)	B (10.7)	B (10.6)
6	**Humboldt Parkway SB & E Utica Street**	S	EB	TR	A (3.6)	B (10.1)	B (10.2)	A (4.9)	B (12.9)	B (13.0)
			WB	L	A (7.8)	B (10.3)	B (10.5)	A (8.1)	A (9.9)	B (10.1)
				T	B (8.1)	A (9.5)	A (9.5)	A (9.3)	A (9.8)	A (9.8)
			SB	LT/TR	B (13.9)	A (5.2)	A (5.3)	B (18.0)	A (7.7)	A (8.0)
		Overall			B (10.9)	A (7.0)	A (7.2)	B (13.2)	A (9.3)	A (9.5)
7	**Humboldt Parkway NB & E Utica Street**	S	EB	L	A (8.8)	A (9.6)	A (9.5)	A (9.0)	A (10.0)	B (10.0)
				T	A (9.2)	A (9.4)	A (9.3)	A (8.6)	A (8.8)	A (8.7)
			WB	TR	A (8.6)	B (11.7)	B (11.8)	A (7.8)	A (9.2)	A (9.2)
			NB	LT	B (12.1)	A (6.6)	A (6.8)	B (12.6)	A (9.5)	A (9.9)
				R	A (3.5)	A (2.5)	A (2.5)	A (3.3)	A (3.1)	A (3.1)
		Overall			A (10.0)	A (7.9)	A (8.0)	A (9.6)	A (8.8)	A (8.9)
8	**Humboldt Parkway SB & E Ferry Street**	S	EB	TR	B (11.9)	B (18.8)	B (14.1)	B (17.4)	B (18.0)	B (18.7)
			WB	L	A (7.2)	B (11.0)	A (8.7)	B (13.3)	B (13.8)	B (15.9)
				T	A (6.3)	A (8.1)	A (6.6)	A (7.9)	A (8.1)	A (8.3)
			SB	LT	C (28.9)	C (24.6)	C (33.6)	F (93.2)	F (94.4)	F (93.9)
				R	A (3.4)	A (3.0)	A (3.3)	A (3.6)	A (3.6)	A (3.8)
		Overall			B (14.9)	B (15.1)	B (17.2)	D (39.6)	D (40.3)	D (40.4)
9	**Humboldt Parkway NB & E Ferry Street**	S	EB	L	B (19.8)	D (39.6)	C (30.2)	E (62.5)	E (65.8)	F (83.1)
				T	B (11.9)	B (15.7)	B (12.2)	C (20.2)	C (21.3)	C (25.4)
			WB	TR	B (10.7)	B (17.3)	B (12.6)	B (15.0)	B (15.6)	B (16.2)
			NB	LT	B (11.2)	B (12.6)	B (11.4)	B (18.7)	B (19.9)	C (22.1)
				R	A (3.8)	A (4.3)	A (3.8)	A (4.3)	A (4.4)	A (4.6)
		Overall			B (12.8)	B (20.0)	B (15.6)	C (26.2)	C (27.6)	C (32.7)

[1] WB, EB, NB, SB – Westbound, Eastbound, Northbound, and Southbound
[2] S – Signal
[3] L- Left, T – Through, R – Right, LT – Shared Left Through, TR – Shared Through Right, LTR – Shared Left Through Right
[4] A (x.x) – Level of Service (average delay per vehicle in seconds)

2.4.1.7 (2) Future No-Build Design Year Level of Service

A detailed analysis of future No Build Alternative traffic conditions was performed and is included in the Preliminary Traffic Analysis in the Project Scoping Report.

2.4.1.8 Safety Considerations, Crash History and Analysis

A safety analysis was conducted for the NYS Route 33 mainline within the transportation corridor as well as adjacent local surface streets as part of the preliminary Project planning. The analysis considered crashes occurring during a 3-year period from August 1, 2013 to July 31, 2016. An updated safety analysis was performed in August 2022 to evaluate crashes that occurred during the 18-month period of September 1, 2018 to February 29, 2020 (pre-COVID-19). The updated analysis includes the NYS Route 33 mainline between High Street and East Ferry Street and the signalized intersections of Best Street with NYS Route 33 eastbound and westbound ramps and Best Street with West Parade Avenue /

Herman Street. The updated safety analysis was performed to determine if the results and trends from the 2016 analysis remain valid.

The updated safety analysis results have been compared to the 2016 safety analysis results, and the findings are summarized below.

2016 Analysis

The analysis included the following street limits:

- NYS Route 33 – High Street to the pedestrian overpass near Northland Avenue
- Best Street – Norway Park to West Parade Avenue
- Humboldt Parkway Northbound – Northampton Street to Northland Avenue
- Humboldt Parkway Southbound – Northampton Street to Northland Avenue

Approximately 179 crashes occurred within the analysis area during the 36-month period. Of those, 59 occurred on NYS Route 33 and associated ramps. The remainder occurred on the local street network.

The crash rate for the segment of NYS Route 33 mainline was calculated to be 0.44 accidents per million vehicle miles (acc/mvm). This is less than the statewide average accident rate for similar facilities, which is 1.02 acc/mvm.

The MV-104 forms list overpasses and ramps as locations for crashes but often do not provide distances or direction from them. The NYS Route 33 mainline near Best Street had the highest incidence of crashes and the segment north of East Ferry Street was second highest. Eastbound and westbound lanes had approximately the same number of crashes at 25 and 26, respectively. Five crashes occurred on ramps. Crashes occurring in proximity to the signalized intersections with local streets were counted in the local street crashes. Three of the NYS Route 33 mainline crashes did not indicate which direction the vehicles were traveling on the expressway.

One crash resulted in a fatality. The crash occurred when a vehicle traveling the wrong way on Woodlawn Avenue crossed Humboldt Parkway, broke through the guiderail, and ended up on the median barrier in the expressway. Of the remaining crashes, 26 reported injuries and 32 were reported as property damage only.

Fixed object and rear end collisions were the most frequently reported types of crashes, both at 34%. Sideswipes account for 24% of the crashes. There were three right angle crashes and one head-on crash noted.

The number of crashes occurring at each intersection within the transportation corridor is summarized in Table 2.4-10. The intersection of East Ferry Street with Humboldt Parkway accounted for 60 of the 120 crashes reported on the local street network during the study period.

Table 2.4-10: Local Street Crash Totals (2016)

	Number of Crashes	Percentage of Total
Vehicle Crashes at Intersections	111	92.5%
Vehicle Crashes at Non-Intersection	6	5.0%
Pedestrian	2	1.7%
Bicycle	1	0.8%
Total	120	100%

Right angle crashes were the most common intersection crash type with 54 reported during the study period. The East Ferry Street intersections had the highest number of right-angle crashes (36); the East Utica Street intersections had the second highest number of right-angle crashes (8). The second most common crash type was rear end. A summary of intersection crashes, by type, is included in Table 2.4-11.

Table 2.4-11: Local Street Crash Summary (2016) Humboldt Parkway from Best Street to Northland Avenue

Intersection	Signalized	All Types	Left Turn Sideswipe	Rear End	Sideswipe (same)	Left Turn Head-on	Right Angle	Right Turn Sideswipe	Right Turn Head-on	Fixed Object
Best Street at Norway Park	N	3		1			2			
Best Street at NYS 33 WB Ramp	Y	8	2	1	1	2	1			1
Best Street at NYS 33 EB Ramp	Y	2		1				1		
Best Street at W. Parade Ave	Y	3		1			1		1	
Humboldt Pkwy S at Northampton St	Y	6		2			4			
Humboldt Pkwy N at Northampton St	Y	2		2						
Humboldt Pkwy N at Girard Pl	N	2					2			
Humboldt Pkwy S at E Utica St	Y	12		3	3		6			
Humboldt Pkwy N at E Utica St	Y	5		2	1		2			
Humboldt Pkwy S at E Ferry St	Y	31	1	8	5	1	13	1	2	
Humboldt Pkwy N at E Ferry St	Y	29	1	3	2		23			
Humboldt Pkwy S at Goulding Ave	N	2		2						
Humboldt Pkwy S at Butler Ave	N	2								2
Humboldt Pkwy N at Sidney St	N	1		1						
Humboldt Pkwy S at Brunswick Blvd	N	3		3						
Total		120	4	30	12	3	54	2	3	3

Key: Indicates intersection(s) with highest number of crashes
Indicates crash type with highest number of occurrences

Upon review of the collision diagram for East Ferry Street and Humboldt Parkway northbound (Appendix B5), it is evident that the eastbound right-angle collisions with northbound traffic are the most prevalent. This accounts for one third of the crashes at this intersection. Many of the MV-104 reports stated that both drivers claimed to have the green light right-of-way.

Similar data were found for the intersection of Humboldt Parkway southbound at East Utica Street. This intersection had 12 crashes; 6 of those were right angle (3 eastbound and 3 westbound). The southbound side of Humboldt Parkway at Northampton Street also was higher than the northbound side (6 crashes southbound versus 2 crashes northbound).

The Humboldt Parkway intersections with East Ferry Street have the fifth and sixth highest AADT volumes of the intersections studied. They rank first and second for number of crashes per million entering vehicles.

Of the three Best Street intersections studied, the NYS Route 33 westbound exit ramp intersection has the highest rate of crashes relative to traffic. This intersection is atypical in that it has Linden Park connected directly to Best Street immediately adjacent to the NYS Route 33 westbound exit ramp. This street is one-way southbound and left turns onto Best Street are prohibited. No clusters are evident. The crash types were varied.

Calculated intersection crash rates and statewide average crash rates are summarized in Table 2.4-12.

Table 2.4-12: Local Street Intersection Crash Rates (2016) Humboldt Parkway from Best Street to East Delevan Avenue

Intersection	Crash Rate (acc/mev)	Statewide Average Crash Rate (acc/mev)	AADT[1]
Best Street at NYS 33 WB Ramp	0.54	0.50	15,186
Best Street at NYS 33 EB Ramp	0.17	0.50	21,140
Best Street at W. Parade Ave.	0.15	0.50	18,800
Humboldt Pkwy S at Northampton St.	1.33	0.50	4,125
Humboldt Pkwy N at Northampton St.	0.59	0.50	3,075
Humboldt Pkwy S at E Utica St.	1.27	0.50	9,375
Humboldt Pkwy N at E Utica St.	0.52	0.50	8,782
Humboldt Pkwy S at E. Ferry St.	2.04	0.50	13,425
Humboldt Pkwy N at E. Ferry St.	1.78	0.50	14,913

Key:
Indicates intersection(s) with highest crash rates.
Indicates intersection with highest traffic volume.
Indicates intersections with crash rates higher than statewide average

[1] AADT – Annual Average Daily Traffic

The average intersection crash rate for state highways in New York is 0.50 accidents per million entering vehicles (acc/mev). While the study intersections are not on State highways, it is reasonable to use statewide average data in comparison for a four-legged signalized intersection with 1 to 3 lanes. Only two of the signalized intersections studied had crash rates lower than the statewide average. Humboldt Parkway southbound at East Ferry Street had a crash rate that is four times higher than the statewide average. The East Ferry Street and East Utica Street intersections also have higher than average crash rates. The rate for the southbound intersection at Northampton Street would also be considered higher than average.

Linear crash rates were calculated along Humboldt Parkway northbound and southbound (Northampton Street to Northland Avenue). The Humboldt Parkway northbound crash rate was calculated at 9.23 accidents per million vehicle miles (acc/mvm), while the southbound crash rate was calculated at 6.66 acc/mvm. The segment rates include crashes occurring at intersections within the segment limits. The northbound and southbound calculated crash rates are higher than the statewide average for similar facilities of 4.77 acc/mvm.

The analysis indicated that approximately 59% of crashes resulted in injury, which is a higher severity of crashes than would be expected from this type of street.

In conclusion, the findings of the 2016 crash analysis are consistent with those of previous studies conducted by the NYSDOT in the last decade. East Ferry Street and East Utica Street intersections with

Humboldt Parkway remain the areas with the highest crash occurrences. Past recommendations included changing signal timing and equipment and defining travel lanes with striping.

The following measures to improve safety are being considered:

- Restrict left turns at intersections to protective phasing only and add left turn tracking pavement markings for the movements;
- Modern roundabout intersection alternatives to reduce queueing and accident severity;
- Coordinate the timing of the traffic signals according to current traffic conditions to improve the roadway level of service and traffic flow;
- Improved pavement markings and place opposing left turn arrow markings and roadside signs;
- Better defined and/or restricted width of driveway entrance locations;
- Elimination of near corner parking spots that restrict sight distance; and
- Improved intersection sight distance (ISD) as feasible to meet minimum standards at all non-signalized intersections, driveways and for any uncontrolled moves associated with a signalized intersection to ensure that a motorist may safely enter or exit a roadway.

2022 Safety Assessment Update

The safety analysis for NYS Route 33 and the adjacent local streets has been updated to evaluate crashes that occurred during the 18-month period of September 1, 2018 to February 29, 2020 (pre-COVID-19). The updated analysis includes the NYS Route 33 mainline between High Street and East Ferry Street and the signalized intersections of Best Street with NYS Route 33 eastbound and westbound ramps and Best Street with West Parade Street / Herman Street. The updated safety analysis results have been compared to the 2016 safety analysis results for the segment of NYS Route 33 mainline between High Street and East Ferry Street and the three signalized intersections at Best Street only.

The updated safety analysis includes the following segment and intersections within the City of Buffalo:

- NYS Route 33 – High Street to East Ferry Street
- Best Street at Route 33 westbound ramp intersection
- Best Street at Route 33 eastbound ramp intersection
- Best Street at West Parade Street / Herman Street intersection

Tables 2.4-13 and 2.4-14 summarize the crash severity, calculated crash rates, and comparison to statewide average crash rates and summary of the type of crashes for the segment of NYS Route 33 between High Street and East Ferry Street, respectively. Tables 2.4-15 and 2.4-16 summarize the crash severity, calculated crash rates and comparison to statewide average crash rates, and a summary of the type of crashes for each intersection.

As summarized in Table 2.4-13, a total of 40 segment crashes occurred, with 26 (65%) resulting in property damage, 13 (33%) resulting in injury, and 1 (1%) resulting in fatality. The fatality involved a crash where a driver lost control and collided with the median. The crash was attributed to poor weather conditions.

Table 2.4-13: Crash Severity and Crash Rates – Segments (2022)						
Segment	**Number of Crashes**	**PDO**[1]	**Injury**	**Fatality**	**Crash Rate (acc/mvm)**[2]	**Statewide Average Crash Rate (acc/mvm)**[19]
NYS Route 33 Eastbound: High St to E Ferry St	18	14	3	1	0.81	1.34
NYS Route 33 Westbound: E Ferry St to High St	22	12	10	0	0.97	1.34
Total	40	26	13	1		

[1] PDO - Property Damage Only
[2] acc/mvm - Accidents per Million Vehicle Miles

As summarized in Table 2.4-14, the predominant NYS Route 33 segment crash types were sideswipe (15 total crashes) and rear end (14 total crashes).

As summarized in Table 2.4-15, the safety analysis indicated that the intersection of Best Street at NYS Route 33 eastbound ramp experienced a crash rate that is higher than the statewide average. A total of 14 crashes occurred at the three studied intersections, with 10 (71%) resulting in property damage and 4 (29%) resulting in injury. No fatalities were documented. The highest crash rate of 0.69 Acc/MEV was experienced at the Best Street and NYS 33 eastbound ramp intersection.

Table 2.4-14: Crash Type Summary – Segments (2022)									
Intersection	**All Types**	**Left Turn Sideswipe**	**Rear End**	**Sideswipe (same)**	**Left Turn Head-on**	**Right Angle**	**Right Turn Sideswipe**	**Head-on**	**Fixed Object**
NYS Route 33 Eastbound: High St to E Ferry St	18	0	5	7	0	0	0	0	6
NYS Route 33 Westbound: E Ferry St to High St	22	0	9	8	0	0	0	0	5
Total	40	0	14	15	0	0	0	0	11

[19] Statewide Average Crash Rate data from NYSDOT's *Average Accident Rates for State Highways by Facility Type* (Data from September 1, 2017 to August 31, 2019) for Controlled Access Facility, Urban Function Class, Divided, 6 Lanes, All Types. Note that no calculated crash rates exceed the statewide average crash rate.

Table 2.4-15: Crash Severity and Crash Rates – Intersections (2022)						
Intersection	**Number of Crashes**	**PDO**	**Injury**	**Fatality**	**Crash Rate (acc/mev)**	**Statewide Average Crash Rate (acc/mev)[20]**
Best St at NYS 33 WB Ramp	5	3	2	0	0.53	0.56
Best St at NYS 33 EB Ramp	8	6	2	0	0.69	0.56
Best St at W Parade Ave.	1	1	0	0	0.09	0.56
Total	14	10	4	0		

Key: Calculated crash rate exceeds statewide average crash rate
[1] PDO - Property Damage Only
[2] acc/mev - accidents per million entering vehicles

As summarized in Table 2.4-16, the predominant intersection crash type was rear end, with 6 reported during the time period. The second-highest crash type was right angle, with 3 crashes reported during the study time period.

Table 2.4-16: Crash Type Summary – Intersections (2022)										
Intersection	**Signalized**	**All Types**	**Left Turn Sideswipe**	**Rear End**	**Sideswipe (same)**	**Left Turn Head-on**	**Right Angle**	**Right Turn Sideswipe**	**Right Turn Head-on**	**Fixed Object**
Best St at NYS 33 WB Ramp	Y	5	0	2	0	1	1	0	0	1
Best St at NYS 33 EB Ramp	Y	8	0	4	1	0	2	0	0	1
Best St at W Parade Ave.	Y	1	0	0	1	0	0	0	0	0
Total		14	0	6	2	1	3	0	0	2

Comparison of the Updated Safety Review

A comparison of the updated crash data for the segment of NYS Route 33 from High Street to East Ferry Street was performed to determine if the findings of the 2016 safety analysis are still valid. The comparison includes the segment of NYS Route 33 (High Street to East Ferry Street) as well as the Best Street intersections with NYS Route 33 eastbound ramps, NYS Route 33 westbound ramps, and West Parade Avenue / Herman Street. The time period analyzed for the 2016 analysis was August 1, 2013 to July 31, 2016, and the time period analyzed for the 2022 analysis was September 1, 2018 to February 29, 2020 (pre-COVID-19).

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[20] Note: Statewide Average Crash Rate data from NYSDOT's *Average Accident Rates for State Highways by Facility Type* (Data from September 1, 2017, to August 31, 2019) for Urban Function Class, 4 Legged Intersections, Signal 1-4 Lanes, All Types.

Tables 2.4-17 through 2.4-19 compare the crash rate, crash types, and crash severity, respectively, for the segment of NYS Route 33.

Table 2.4-17: Crash Rate Comparison – Segments (2022)			
Segment	**Analysis Year**	**Crash Rate (Acc/MVM)**	**Statewide Average Crash Rate (Acc/MVM)**
NYS Route 33 Eastbound: High St to E Ferry St	2016	0.46	1.02
	2022	0.81	1.34
NYS Route 33 Westbound: E Ferry St to High St	2016	0.47	1.02
	2022	0.97	1.34

The comparison of crash rates indicates that the NYS Route 33 eastbound and westbound crash rates have increased since the 2016 analysis, to a rate of 0.81 and 0.97 Acc/MVM, respectively. However, crash rates are below the statewide average for both analyzed time periods.

Table 2.4-18: Crash Type Comparison – Segments											
Segment	**Analysis Year**	**All Types**	**Left Turn Sideswipe**	**Rear End**	**Sideswipe (same)**	**Left Turn Head-on**	**Right Angle**	**Right Turn Sideswipe**	**Head-on**	**Fixed Object**	**All Types – Average Number of crashes per year**
NYS Route 33 Eastbound: High St to E Ferry St	2016	25	0	10	6	0	2	0	0	7	8.3
	2022	18	0	5	7	0	0	0	0	6	12.0
NYS Route 33 Westbound: E Ferry St to High St	2016	26	0	8	7	0	0	0	1	10	8.7
	2022	22	0	9	8	0	0	0	0	5	14.7
Total	2016	51	0	18	13	0	2	0	1	17	17.0
	2022	40	0	14	15	0	0	0	0	11	26.7

The comparison of crash types indicates that rear end, sideswipe, and fixed object crashes were the predominant types during both analysis periods. The small number of additional crash types documented in the 2016 analysis (right angle and head on) were not present in the updated crash analysis.

Table 2.4-19: Crash Severity Comparison – Segments				
Segment	**Analysis Year**	**Property Damage Only (PDO)**	**Injury**	**Fatality**
NYS Route 33 Eastbound: High St to E Ferry St	2016	15 (60%)	10 (40%)	0
	2022	14 (78%)	3 (17%)	1 (5%)
NYS Route 33 Westbound: E Ferry St to High St	2016	13 (50%)	13 (50%)	0
	2022	12 (55%)	10 (45%)	0

The comparison of crash severity indicates that the percentage of crashes resulting in injury has decreased since the 2016 analysis. The more recent analysis time period included a crash resulting in fatality. The 2016 analysis also had one fatality.

Tables 2.4-20 and 2.4-21 compare the crash rate and crash types, respectively, for the intersections of Best Street with NYS Route 33 westbound ramp, NYS Route 33 eastbound ramp, and West Parade Street / Herman Street.

Table 2.4-20: Crash Rate Comparison – Intersections			
Intersection	**Analysis Year**	**Crash Rate (Acc/MEV)**	**Statewide Average Crash Rate (Acc/MEV)**
Best Street at NYS 33 WB Ramp	2016	0.54	0.50
	2022	0.53	0.56
Best Street at NYS 33 EB Ramp	2016	0.17	0.50
	2022	0.69	0.56
Best Street at W Parade Ave.	2016	0.15	0.50
	2022	0.09	0.56

The comparison of intersection crash rates indicates that the Best Street intersections with NYS Route 33 westbound ramp and West Parade Street / Herman Street have relatively consistent crash rates during the two analysis periods. The crash rate at the Best Street intersection with NYS Route 33 eastbound ramp has increased and is greater than the statewide average during the more recent analysis period.

Table 2.4-21: Crash Type Comparison – Intersections										
Segment	**Analysis Year**	**All Types**	**Left Turn Sideswipe**	**Rear End**	**Sideswipe (same)**	**Left Turn Head-on**	**Right Angle**	**Right Turn Sideswipe**	**Head-on**	**Fixed Object**	**All Types – Average Number of crashes per year**
Best St at NYS Route 33 Westbound Ramp	2016	8	2	1	1	2	1	0	0	1	2.7
	2022	5	0	2	0	1	1	0	0	1	3.3
Best St at NYS Route 33 Eastbound Ramp	2016	2	0	1	0	0	0	1	0	0	0.7
	2022	8	0	4	1	0	2	0	0	1	5.3
Best St at W Parade Ave.	2016	3	0	1	0	0	1	0	1	0	1.0
	2022	1	0	0	1	0	0	0	0	0	0.7
Total	2016	13	2	3	1	2	2	1	1	1	4.3
	2022	14	0	6	2	1	3	0	0	2	9.3

The comparison of intersection crash types indicates that the predominant crash types of rear end and right angle are fairly consistent during the two analysis periods. The average number of crashes per year (all types) has increased at the Best Street intersections with NYS Route 33 eastbound and westbound ramps and has decreased at the Best Street intersection with West Parade Avenue / Herman Street.

The accident summary (TE-213), and collision diagrams (TE-56) are provided in Appendix B5.

2.4.1.9 Existing Police, Fire Protection and Ambulance Access

The Kensington Expressway serves as a direct, uninterrupted throughfare to the Erie County Medical Center (ECMC) on Grider Street, which is a designated Level 1 Adult Trauma Center by the New York State Department of Health. The Kensington Expressway is also a critical access link to the Buffalo Niagara Medical Campus, which is accessed from the Best Street ramps and includes John R. Oishei Children's Hospital and Buffalo General Medical Center, both of which have emergency services. The Roswell Park Comprehensive Cancer Center is located just south of the Buffalo Niagara Medical Campus and can be reached via the Kensington Expressway and Best Street interchange.

The nearest Buffalo Fire Department Station is Station E33, located at 1720 Fillmore Avenue.

The City of Buffalo Police Department C-District is located at 693 East Ferry Street (at East Ferry Street and Fillmore Avenue).

2.4.1.10 Parking Regulations and Parking Related Conditions

2.4.1.10 (1) Humboldt Parkway

Parking is permitted along the outside curb line, though occasionally vehicles are parked along both curbs in the vicinity of several places of worship.

2.4.1.10 (2) NYS Route 33

Parking on NYS Route 33 is prohibited by law within the Project limits.

2.4.1.10 (3) Local Streets Adjacent to Transportation Corridor

In general, the streets range in width from 24 feet to 32 feet. There is sufficient width to allow parking on one side or the other and that is typically the case. There are a variety of parking regulations governing parking on these streets. In some cases, parking signage designates alternate side parking while others may restrict parking locations depending on the time of day and day of the week.

2.4.1.11 Lighting

There is street lighting within the highway limits on both NYS Route 33 and on the local street network. National Grid maintains the lighting on NYS Route 33 and the local street network (except for a section of Fillmore Avenue between North Parade Avenue and East Ferry Street maintained by the City of Buffalo).

On the Kensington Expressway there are two different types of lighting. In the depressed highway section, lighting consists of cobra fixtures, on mast arms, bolted directly to the existing retaining walls. Both north and south of the depressed highway section, lighting consists of cobra fixtures mounted on dual mast arms, attached to aluminum poles that are founded on the median Jersey barrier.

Along the Humboldt Parkway and other local streets adjacent to the transportation corridor, the existing lighting consists of cobra fixtures on various mast arm and pole configurations and styles. Some of the streets have City of Buffalo separate lighting systems consisting of residential davit poles with luminaires or residential poles with davit mast arms and luminaires. Other streets have davit mast arms with luminaires attached to wood utility poles. On streets which have the existing wood utility poles, obvious gaps exist where lighting levels may be very low.

2.4.1.12 Ownership and Maintenance Jurisdiction

NYSDOT operates and maintains NYS Route 33, but the underlying fee ownership of the roadway bed is the City of Buffalo. The City of Buffalo owns and maintains Humboldt Parkway and the local street network.

2.4.2 Multimodal

2.4.2.1 Pedestrians

Pedestrians are not permitted on NYS Route 33 – Kensington Expressway; as such, there are no pedestrian facilities on the expressway.

Humboldt Parkway northbound and Humboldt Parkway southbound each have single sidewalks located on the right side of the road (looking in the direction of travel) in front of existing houses that vary in width from 4 feet to 5 feet. There is a grass strip between the sidewalk and curb line that varies in width from 2 feet to 5 feet. The paved area along the left side of Humboldt Parkway (between the edge of the Kensington Expressway and Humboldt Parkway curbline) is only 3 feet wide and not intended for pedestrian use. In general, there are a number of pedestrian facility deficiencies that inhibit safe and accessible use. These deficiencies include:

- **Sidewalks:** Linear sidewalks along Humboldt Parkway are in fair condition with isolated locations in poor condition. The majority of sidewalks on the bridges within the transportation corridor are narrow (less than 5 feet). Intersecting side streets generally have sidewalks on both sides of the road that are in fair to poor condition.

- **Curb ramps:** Americans with Disabilities Act Accessibility Guidelines (ADAAG) require curb ramps and detectable warning strips in the locations of sidewalk street crossings to enable wheelchair access. Curb ramps are missing for all four pedestrian crossings at the Best Street bridge interchange with NYS Route 33. East Utica Street intersection with Humboldt Parkway northbound and East Utica Street intersection with Humboldt Parkway southbound lack curb ramps on the existing bridge that crosses over NYS Route 33. Likewise, the East Ferry Street intersection with Humboldt Parkway northbound and East Ferry Street intersection with Humboldt Parkway southbound lack curb ramps on the existing bridge that crosses over NYS Route 33. At other side streets intersecting Humboldt Parkway, most of the curb ramps have been retrofitted by the City of Buffalo in an effort to improve ramp slopes and add detectable warning strips. Some curb ramps are in deteriorated condition, such as at the intersection of Humboldt Parkway and Landon Street.
- **Crosswalks:** Humboldt Parkway lacks crosswalks in key locations, including at the east-west crossings to the bridges over the Kensington Expressway at East Utica Street and East Ferry Street. Existing crosswalks are typically standard painted crosswalks and there are no high visibility crosswalks or raised crosswalks. Curb extensions (bump outs) that typically shorten crosswalk distances and delineate parking are not present within the transportation corridor.
- **Signal equipment:** Pedestrian crossing signals at signalized intersections are not present, further contributing to pedestrian crossing safety concerns.
- **Traffic calming:** There are no traffic calming measures present.

The local streets adjacent to the transportation corridor typically have sidewalks on both sides of the street located near the street right-of-way. Sidewalk widths range from 3 feet to 5 feet, with 5 feet being the typical condition. It is evident that the City of Buffalo has invested in the spot repair of sidewalks and handicap ramps to improve accessibility in accordance with ADAAG. However, some of the street corners lack pedestrian ramps or have ramps that appear to be non-compliant with current standards. Several streets have sidewalks in very poor condition with some non-existent sidewalk stretches.

Figures depicting community facilities that would generate pedestrian traffic are provided in Section 4.2 of this DDR/EA. The adjacent land use is primarily residential, with interspersed places of worship, schools, and cultural institutions (MLK Jr. Park and Buffalo Museum of Science).

2.4.2.2 Bicyclists

Bicyclists are prohibited from using NYS Route 33 – Kensington Expressway per Section 1229 of the Vehicle and Traffic Law, which prohibits bicycles on interstates and expressways.

Figure 2.4-1 illustrates the existing bicycle facilities on Humboldt Parkway. Humboldt Parkway northbound and southbound between Northampton Street and Northland Avenue generally have 5-foot bicycle lanes located between the travel lane and on-street parking, with a 2-foot white striped buffer between the on-street parking and the bicycle lane. However, due to space constraints the existing bicycle lanes are not continuous throughout the transportation corridor and several gaps exist where bicycles are directed to share the roadway with motor vehicle traffic. The segments of Humboldt Parkway lacking a dedicated bicycle lane are as follows:

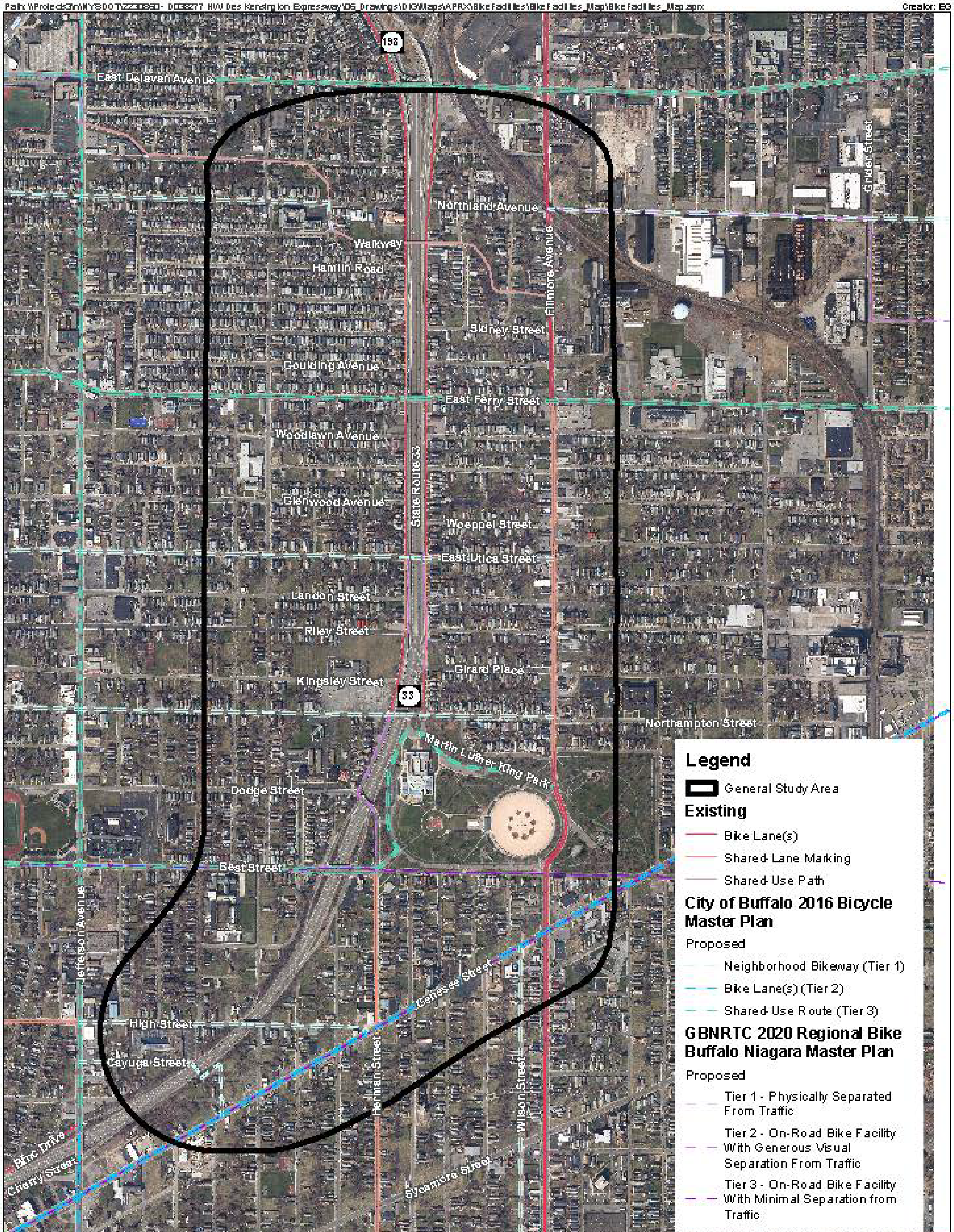
- Humboldt Parkway northbound – between Girard Place and East Utica Street
- Humboldt Parkway southbound – between Hamlin Road and East Ferry Street
- Humboldt Parkway southbound – between East Utica Street and Riley Street

City and regional bicycle infrastructure plans were considered for this Project. Plans included the Bike Buffalo Niagara Regional Bicycle Master Plan (2020) and the Buffalo Bicycle Master Plan Update (2016). See Appendix D1 for a summary of these plans.

The Scajaquada Trail is an off-road asphalt shared use path that crosses the local streets adjacent to the transportation corridor north of Sidney Street and connects with the existing pedestrian bridge south of Northland Avenue. Bicycle lanes are provided on Fillmore Avenue north of East Ferry Street, within MLK Jr. Park and continue south past Genesee Street. The other local streets adjacent to the transportation corridor do not have designated space (striped shoulder, striped bicycle lane, cycle track) that would serve bicycle traffic. Currently, bicycles share the travel lane with motor vehicles.

There are no special bicycle provisions on the bridges over NYS Route 33.

There are no designated New York State bike routes within the Project limits. The nearest state designated bike route is on Main Street (NYS Route 5).



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5512.52 Kensington Expressway Project

Existing and Planned Bike Facilities

Figure 2.4-1

9/6/2023

Sources: Bing Maps, Erie County 2023, GBNRTC 2021, LaBella 2023, NYSGIS Clearinghouse 2021.

0 800 1,600 Feet

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2.4.2.3 Transit

Existing Niagara Frontier Transportation Authority (NFTA) bus routes in the vicinity of the Project include:

- Route 12 “Utica” runs along East Utica Street where it turns northerly on Fillmore Avenue and then easterly along East Ferry Street. There are two bus stops at the intersection of Humboldt Parkway southbound and East Utica Street and two bus stops at the intersection of Humboldt Parkway northbound and East Utica Street.
- Route 13 “Kensington” runs along East Ferry Street. There are two bus stops at the intersection of Humboldt Parkway southbound and East Ferry Street and two bus stops at the intersection of Humboldt Parkway northbound and East Ferry Street.
- Route 22 “Porter-Best” runs along Best Street. On the west side of the Kensington Expressway, bus stops on Best Street are located at Wohlers Avenue and at Sherman Street. On the east side of the Kensington Expressway, there are bus stops along Best Street located at West Parade Avenue and at Herman Street.
- Route 66 “Williamsville Express” runs on the Kensington Expressway with no stops in the vicinity of the Project. Route 66 operation is commuting time focused and weekday only.
- Route 81 “Eastside Express” travels westbound on East Ferry Street, southbound on Humboldt Parkway and then eastbound on the Kensington Expressway, using the ramp from East Utica Street. There are bus stops for Route 81 on Humboldt Parkway southbound near Winslow Avenue and East Utica Street. The Route 81 service connects the University of Buffalo South Campus to downtown and operates in the inbound direction only on weekday mornings.

The east-west bus routes in the area generally operate every 20 to 30 minutes during the morning and afternoon commuting periods on weekdays. Evening and weekend service is less frequent (approximately hourly).

There are no bus stop amenities present at any of the bus stops (e.g., shelters or benches). Coordination with NFTA indicates that no new bus routes are planned in the transportation corridor, but that the agency is interested in improving the efficiency of the existing bus stop configuration and constructing bus shelters. NFTA currently has additional stops on its route(s) to avoid the need for pedestrians to cross the existing roadway bridges over the Kensington Expressway. Similarly, additional bus stops are included on Best Street based on pedestrian safety considerations. NFTA is considering reducing the number of bus stops at these locations if pedestrian accommodations for crossing NYS Route 33 are improved.

2.4.2.4 Airports, Railroad Stations, and Ports

There are no airports, railroad stations or port entrances within or in the immediate vicinity of the Project limits. It is noted that the Buffalo Niagara International Airport is located approximately 6.0 miles to the east of the Project. NYS Route 33 provides direct access to the facility.

2.4.2.5 Access to Recreation Areas (Parks, Trails, Waterways, State Lands)

Martin Luther King Jr. Park and the Buffalo Museum of Science are located at the southeast limit of the Project. The full expressway interchange at Best Street provides direct access to these facilities.

2.4.3 Infrastructure

2.4.3.1 Existing Highway Section

See existing plans (drawings EP-1 through EP-9) in Appendix A1.

2.4.3.2 Geometric Design Elements Not Meeting Minimum Standards

Shoulder widths along the Kensington Expressway vary, but the inside shoulders are generally 4 feet wide (2 feet wide, at a minimum) along the concrete median barrier. A 10-foot minimum inside shoulder width is required to meet current standards. To achieve the required minimum inside shoulder widths while maintaining three lanes of traffic on both the northbound and southbound Kensington Expressway, relocation of the retaining walls would be necessary.

Table 2.4-22: Existing Nonstandard Features

Critical Design Element	Operating Speed (mph)	Standard (from HDM Chapter 7, rural, non-freeway 3R standards)	Existing Condition	Adverse Accident History? (Yes/No)	Remarks
Shoulder Width	60 mph	10 ft	Right: varies Left: 4 ft.	No	Requires relocation of the retaining walls

2.4.3.2 (1) Other Design Parameters

Table 2.4-23: Other Design Parameters

	Kensington Expressway (NYS Route 33)		
	Element	**Criteria**	**Existing Condition**
1	Drainage Design Storm	HDM Chapter 8 Exhibit 8-3: 10 Year storm – Drainage System 50 Year storm for Sag Vertical curves	Unknown
2	Design Vehicle	WB-67 (HDM 5.7.1)	Unknown
3	Acceleration Lane length	800 ft	175 ft
4	Deceleration Lane Length	405 ft	150 ft
	Local Streets and Minor Arterials		
	Element	**Criteria**	**Existing Condition**
1	Drainage Design Storm	HDM Chapter 8 Exhibit 8-3: 5 Year storm – Drainage System 25 Year storm for Sag Vertical curves	Unknown
2	Design Vehicle	WB-67 (HDM 5.7.1)	Unknown
3	Intersection turning radii	30ft min	Varies 10-12ft
4	Setback (snow storage)	4ft	Varies 2-4ft
5	Drainage Pipe size	15” or larger	12” connections to City of Buffalo Combined Sewer

2.4.3.3 Pavement and Shoulder

This section of the Kensington Expressway was originally constructed in the late 1960s with a typical section consisting of 12 inches of subbase and 8 inches of reinforced concrete. In 1974, a two-course asphalt overlay was installed on the entire surface. Since that time, the corridor has had a series of asphalt mill and overlays, some of the treatments being two-course and some only a single course. In 2013, a single course mill and overlay was installed; however, reflective cracking from the underlying concrete pavement was observed soon after. This behavior indicates that the underlying concrete pavement, which is over 65 years old, is at the end of its useful life and requires replacement. The most recent treatment was a single course mill and overlay in 2022.

The Humboldt Parkway pavement (asphalt), also constructed in the 1960s, is nearing the end of its service life. The City of Buffalo has conducted periodic resurfacing; however, continued preventative maintenance is no longer considered a viable option when considering factors such as age and the degree of surface and subsurface improvements that would compromise the integrity of the pavement.

The local streets adjacent to the transportation corridor are residential in nature with transportation infrastructure that date from 1885 to 1922. Since installation of the infrastructure in the 1800s maintenance has been performed as needed by the City of Buffalo. Most local road pavement is generally in poor condition, including potholes, patches, and severe cracking. Most urban arterial pavement is in good condition with minor cracking. It is evident from the lack of curb reveal that many streets have been overlayed in the past. Typical surface distress types include longitudinal and transverse cracking, utility patching, isolated areas of alligator cracking and minor raveling. These streets are candidates for milling and resurfacing.

2.4.3.4 Drainage Systems

The existing closed drainage system in the Project limits has been constructed in stages over several contracts and is relatively complex given the following: interconnection of the Kensington Expressway and Humboldt Parkway systems; storm and sanitary flows are combined along some stretches of Humboldt Parkway; and an existing pump station is used to discharge some of the expressway stormwater.

Within the Project limits, the stormwater system for NYS Route 33, Kensington Expressway, collects stormwater and discharges to three stormwater system discharge points. The first discharge point for the NYS Route 33 is a stormwater trunk that continues south on NYS Route 33 and that discharges into a 96-inch combined sewer that heads south on Michigan Avenue. The stormwater along NYS Route 33 collects in this stormwater system from just north of Riley Street to the southern Project limits. The second discharge point is the combined sewer on East Ferry Street. This discharge point uses an existing pump station located on the southwest quadrant of Humboldt Parkway and East Ferry Street. The stormwater along NYS Route 33 collects in this stormwater system and includes stormwater from north of Riley Street to Butler Avenue. The third discharge point for the NYS Route 33 is the Scajaquada Drain. The Scajaquada Drain is classified as a City of Buffalo stormwater overflow and is a piped underground portion of Scajaquada Creek near the northern Project limit. The stormwater along NYS Route 33 collects in this stormwater system and includes stormwater from north of East Ferry Street to the northern Project limit. All discharge points eventually flow into the Niagara River either through a treatment plant or through stormwater overflow.

The local street (Humboldt Parkway and local streets) stormwater is collected into combined sewer systems owned and maintained by the City of Buffalo Sewer Authority. Generally, all stormwater drainage within the local streets area is collected with inlets and directly connected to combined sewers with laterals. These combined sewers have various discharge points.

The drainage systems along the NYS Route 33 Kensington Expressway can be characterized as typical urban stormwater systems with inlets and underground reinforced concrete pipe systems built when the original expressway was constructed in the 1960s. The drainage along Humboldt Parkway and the expanded local streets area can be characterized as a typical City of Buffalo combined sewer stormwater system, which includes inlets with laterals to the combined sewer system, built as early as the late 1800s. The sewers were typically constructed with vitrified clay tile pipe for diameters less than 24 inches. Larger, trunk sewers (>24-inch diameter) were constructed with brick. Based on the age of the infrastructure, it is anticipated to be in deteriorating condition. A surface inspection of the existing inlets has been completed. Many of the structures are in need of, at minimum, cleaning and/or frame and grate replacement. The existing drainage systems were designed to the standards at the time they were built. The systems are being evaluated for comparison to current design standards.

2.4.3.5 Geotechnical

Based on the Kensington Expressway original record plans for FAC 59-19 and C 68-2, and record soil boring information, the top of rock elevation varies throughout the Project site in both the north-south and east-west directions (top of rock varies from 4 feet to over 25 feet). The depth to rock below the existing NYS Route 33 top of pavement also varies due to the “rolling” roadway profile.

Additional soil borings with rock cores have been scheduled to determine the soil and rock geotechnical engineering properties, as well as to confirm the elevation of the bedrock profile within the Project corridor. The soil boring and rock core report can be found in Appendix A2.

A Ground Penetrating Radar (GPR) investigation has been conducted to confirm rock elevations within the Project limits. The GPR report can be found in Appendix A3.

2.4.3.6 Structures

<u>Bridges</u>

There are five (5) bridges crossing over NYS Route 33 within the Project limits. The overhead bridges at Best Street, Dodge Street, and Northampton Street were built in 1963 and the overhead bridges at East Utica Street and East Ferry Street were built in 1970. All five of the bridges have their original decks, which have exceeded their expected 50-year service life. The bridges all have steel multi-girder superstructures with steel slider bearings and are multi-span, simple-span bridges. Girder ends are experiencing section-losses due to leaking bridge joints. All the bridges have over-extended bearings, and the Best Street and Dodge Street bridges have girder ends that are touching between spans. The bridges have pier columns without adequate pier protection and are vulnerable to trucks. Additionally, the bridge at Dodge Street has a minimum vertical clearance of 14 ft. and 3 in. and the bridge at Northampton Street has a minimum vertical clearance of 14 ft. and 3 in. Both bridges have had their superstructure steel impacted. The Dodge Street Bridge sustained an impact in March 2023 and is currently being repaired. All the bridges have partial length cover plates with fatigue sensitive welds. The bridges at Best Street, Dodge Street, and East Utica Street have substantial areas of map-cracked and hollow-sounding concrete and exposed rebar on their substructures. All bridges have inadequate termination of their bridge barriers or railings and need upgrading to current standards.

Given the age of the bridge decks and exceedance of their service lives, all five bridges would likely need deck replacements in the next 5 to 10 years, which would include the upgrading of bridge barriers or railings. New bearings would also be needed within this timeframe. Replacement of the bearings would require new pedestals and pier cap modifications. The piers need to be replaced with solid piers to accommodate the new bearings and make them less vulnerable to truck collisions. Superstructure steel would also need to be repaired and repainted to address steel section-loss. Bridge joints should be eliminated to stop chloride-laden water from leaking onto the superstructure steel, bearings, and substructure. Also, concrete substructures need to be repaired and sealed to prevent further deterioration.

The existing bridge information is shown in Table 2.4-24:

Table 2.4-24: Existing Bridge Information					
Bridge Identification Number (BIN)	**BIN 1022609**	**BIN 1022610**	**BIN 1022620**	**BIN 1022630**	**BIN 1022640**
Featured Carried	Best Street	Dodge Street	Northampton Street	E. Utica Street	E. Ferry Street
Type of Bridge	Steel - Stringer/Multi-Girder	Steel - Stringer/Multi-Girder	Steel - Stringer/Multi-Girder	Steel - Stringer/Multi-Girder	Steel - Stringer/Multi-Girder
Year Built	1963	1963	1963	1970	1970
Deck Type	Concrete	Concrete	Concrete	Concrete	Concrete
Number of Spans & Length of Each	4 spans 35',58',58',28'	2 spans 71', 74'	2 spans 57', 57'	2 spans 53', 53'	2 spans 53', 53'
Number of Travel Lanes & Lane width	6 – 12’ lanes	2 – 15’ lanes	4 – 12’ lanes	4 – 12’ lanes	4 – 12’ lanes
Parking Lanes	N/A	N/A	N/A	N/A	N/A
Shoulder Width	None	None	None	2’-0”	2’-0”
Sidewalk Width	6’-0” each side	6’-0” each side	8’-0” each side	6’-0” each side	6’-0” each side
Utilities Carried on Bridge	Gas, Police Call, Water Line, Electric, Fire Alarm	None	Gas, Water, Electric	Gas, Electric, Telephone	Gas, Water, Electric
Minimum Vertical Clearance	15’-3” 16’-6”	14’-3” 15’-3”	14’-2” 16’-8”	15’-2” 15’-8”	15’-1” 15’-5”
Inspection	Biennial 10/17/2022 In-Depth 5/15/2023	Biennial 9/16/2022 In-Depth 5/15/2023	Biennial 8/16/2022 In-Depth 5/15/2023	Biennial 8/16/2022 In-Depth 5/15/2023	Biennial 8/16/2022 In-Depth 5/15/2023
NYSDOT Condition Rating[21]	4.661	4.569	5.903	4.764	5.583
Inspection Reports	Refer to Appendix A4.	Refer to Appendix A4.	Refer to Appendix A4.	Refer to Appendix A4.	Refer to Appendix A4.
Restrictions	None	None	None	None	None
Future Conditions	Bridge Replacement	Removed	Removed	Removed	Removed
Waterway	N/A	N/A	N/A	N/A	N/A

[21] For more information, refer to NY Appendix J of the 2017 NYSDOT Bridge Inspection Manual.

History & Deficiencies

Work History: A summary of the work history for each bridge is included with the bridge inspection reports included in Appendix A4.

Vertical Clearances: There is an approved 16-foot vertical clearance route through the Buffalo Urban Area, and NYS Route 33 is not part of that route; therefore, there is not a requirement for 16-foot vertical clearance. The required vertical clearance is 14 feet or the existing vertical clearance, whichever is greater. The existing minimum vertical clearance for the following bridges is noted below:

- BIN 1022609 – Best Street: 15'-9" (WB), 15'-3" (EB)
- BIN 1022610 – Dodge Street: 14'-4" (WB), 14'-3" (EB)
- BIN 1022620 – Northampton Street: 15'-10" (WB), 14'-6" (EB)
- BIN 1022630 – East Utica Street: 15'-4" (WB), 15'-8" (EB)
- BIN 1022640 – East Ferry Street: 15'-2" (WB), 15'-5" (EB)

Inspection

Biennial bridge inspections were performed on all five bridges in 2022. Element specific, in-depth inspections were performed in May 2023. Both the Element specific in-depth inspections and the most recent biennial inspections are included in Appendix A4.

Design Live Load: Bridges 1022609 (Best Street), 1022610 (Dodge Street), and 1022620 (Northampton Street) were designed for a live load capacity of American Association of State Highway and Transportation Officials (AASHTO) 1953 Modified Loading H20-S16-44. Bridges 1022630 (East Utica Street) and 1022640 (East Ferry Street) were designed for a live load capacity of AASHTO 1965 HS20-44.

Future Conditions

The bridges would continue to deteriorate and would require major rehabilitation, or replacement within the next 5 to 10 years.

Waterway

Not applicable. A Coast Guard Checklist is not required for any of the bridges.

2.4.3.6 (2) Retaining Walls

There are eight retaining walls along NYS Route 33 that support the Humboldt Parkway and entrance/exit ramps within the Project limits (refer to retaining wall location plan in Appendix A5) as indicated in Table 2.4-25. With the variability of top of rock elevations along the Kensington Expressway within the Project limits, the existing retaining walls along the depressed highway are founded either on rock or on piles. Below is a general description of the existing retaining walls based on foundation type. All existing retaining walls have horizontal rustications and either a steel railing or concrete "Texas Aesthetic" barrier along the top of the walls.

Table 2.4-25: Existing Retaining Wall Information

Retaining Wall Identification	Year Constructed & Contract No.	Location / Limits / Type
RW1	1970 C68-02	**Location:** Rt. 33 EB, supporting off-ramp to NB Humboldt Parkway, and NB Humboldt Parkway.

Table 2.4-25: Existing Retaining Wall Information		
		Limits: From Girard Place (begin) to 150 ft.± north of Sidney St. (end). **Type:** Reinforced Concrete Cantilever founded on rock.
RW2	1970 C68-02	**Location:** Rt. 33 WB, supporting off-ramp to SB Humboldt Parkway, SB Humboldt Parkway, and on-ramp to Rt. 33 WB. **Limits:** From 100 ft.± north of Riley St. (begin) to 50 ft. south of Brunswick Blvd. (end). **Type:** Reinforced Concrete Cantilever founded on rock.
RW3	1970 C68-02	**Location:** Rt. 33 EB, supporting NB Humboldt Parkway. **Limits:** 200 ft.± south of Girard Place (begin) to Riley St.(end). **Type:** Reinforced Concrete Cantilever founded on steel piles to rock.
RW4	1970 C68-02	**Location:** Rt. 33 WB, supporting SB Humboldt Parkway. **Limits:** 300 ft. ± south of Riley St. (begin) to Riley St. (end). **Type:** Reinforced Concrete Cantilever founded on steel piles rock.
RW8	1963 C59-19	**Location:** Rt. 33 WB off-ramp to Best St. supporting portions of Linden Park and residential properties. **Limits:** 150 ft.± north of Best St. (begin) to Dodge St. Bridge (end). **Type:** Reinforced Concrete Cantilever founded on steel piles and concrete buttresses.
RW9	1963 C59-19	**Location:** Rt. 33 WB, supporting SB Humboldt Parkway. **Limits:** Dodge St. Bridge (begin) to Northampton St. Bridge (end). **Type:** Reinforced Concrete Cantilever founded on steel piles and concrete buttresses.
RW10	1963 C59-19	**Location:** Rt. 33 WB, supporting SB Humboldt Parkway. **Limits:** Northampton St. Bridge (begin) to 300 ft. ± south of Riley St. (end). **Type:** Reinforced Concrete Cantilever founded on steel piles.
RW11	1963 C59-19	**Location:** Rt. 33 EB, supporting Buffalo Museum of Science parking lot and West Drive. **Limits:** 200 ft. north of Dodge St. Bridge (begin) to Northampton St. Bridge (end). **Type:** Reinforced Concrete Cantilever founded on steel piles.

Inspection

Subsequent to the Project Scoping Report, condition inspections were performed on all eight retaining walls in May 2023. All of the retaining walls were found to be in fair condition. Retaining wall inspection reports are located within Appendix A5.

2.4.3.7 Hydraulics of Bridges and Culverts

There are no bridges or culverts over waterways within the Project limits. There are no dams in the vicinity of the Project.

2.4.3.8 Guide Railing, Median Barriers and Impact Attenuators

NYS Route 33 has a concrete median barrier throughout the Project limits. The condition of the concrete median barrier is generally good.

Both Humboldt Parkway northbound the areas with the Texas-style concrete decorative railing, the condition is very good as it was constructed approximately and southbound have both steel railing and Texas-style concrete decorative railing along the expressway side of the road. In the locations with steel railing, the condition is typically in poor condition. In 10 years ago.

Impact attenuators are located in the gore areas of the NYS Route 33 eastbound off ramp to Humboldt Parkway at East Utica Street and the westbound off ramp to East Ferry Street. These impact attenuators are generally in fair condition.

2.4.3.9 Utilities

Kensington Expressway (NYS Route 33) has a storm sewer throughout the Project limits. The pipe size varies from 15 inches to 36 inches in diameter and includes various lateral connections to inlets along its alignment. There is an abandoned storm sewer from East Utica Street to East Ferry Street. Additionally, there is a sanitary sewer line located on the pedestrian bridge, south of Northland Avenue.

Linden Park, located on the west side of NYS Route 33, west of the off-ramp to Best Street, has a 3-inch gas line, a water line, and a stormwater line. West Parade Avenue, located on the east side of NYS Route 33, has a 15-inch combined sewer overflow pipe, a sanitary sewer line, a gas line, and a water line. All east-west local streets abutting NYS Route 33 and Humboldt Parkway have stormwater lines, gas lines, and water lines of varying sizes.

There are 80-inch brick sewer mains on East Ferry Street east and west of the Project limits, which were installed approximately in 1892, and an 84-inch sewer main on the east side of Humboldt Parkway north of East Ferry Street installed approximately in 1967.

A description of the utilities that cross over NYS Route 33 via the bridges can be found in Section 2.4.3.6.

Humboldt Parkway southbound has a gas line, water line, storm sewer, and combined sewer overflow within the right-of-way. The gas line varies in size from 6 inches to 8 inches. The storm sewer is present from Dodge Street to Butler Avenue, with the exception of a one block section from Northampton Street to Kingsley Street where there is no pipe. From Riley Street to Glenwood Avenue, there is one 15-inch combined sewer overflow line. From Glenwood Avenue to East Ferry Street, there is one sanitary sewer line. From East Ferry Street to Hamlin Road, there is one combined sewer overflow line. There is a pump station located between Woodland Avenue and East Ferry Street. A NYSDOT fiber optic line runs within the roadway between East Utica Street and Hamlin Road. An electrical line runs underground along the corridor powering the street lighting system. Additional underground electric lines exist at the signalized intersections to power the traffic signal infrastructure.

Humboldt Parkway northbound also has a gas line, water line, storm sewer, and combined overflow pipes within the right-of-way. The gas line varies in size from 2 inches to 12 inches between Northampton Street and Northland Avenue. The storm sewer runs from Northampton Street to the pedestrian bridge south of Northland Avenue and varies in size from 15 inches to 30 inches. Between Northampton Street and Woeppel Street, there is one 24-inch combined sewer overflow pipe, and from Woeppel Street to the pedestrian bridge south of Northland Avenue, there is one 84-inch sanitary sewer line. An underground electric line runs along the corridor powering the existing street lighting system. Additional electric lines exist at the signalized intersections to power the existing traffic signal infrastructure.

The local streets adjacent to the transportation corridor typically have wood utility poles located within the right-of-way along one side of the street. Overhead utilities consist of electric, telephone, and cable. Lighting fixtures are located on some wood poles depending on the street. Underground utilities within the right-of-way are typically gas, water, and sewer. On most streets, there is a system of inlets located along the curb line to collect stormwater runoff by laterals to the combined sewer. There are locations on Fillmore Avenue with a separate storm system.

Table 2.4-26: Existing Utilities

Owner	Type
Buffalo Sewer Authority	Sanitary Sewer & Storm Sewer
City of Buffalo Water Authority	Water Line
Lightower Fiber Technologies	Fiber Optic
National Fuel Gas – Buffalo - NFG101	Gas Line
National Grid/West/Electric	Electric Line
Spectrum Cable – Buffalo	Cable
Verizon – Buffalo	Telephone Line
City of Buffalo – Fire	Fire Alarm

Table 2.4-27: Existing Utilities

Owner	Type	Location	Length	Condition
Buffalo Sewer Authority	Sanitary Sewer & Storm Sewer	Kensington Expressway	Varies	Condition varies
Buffalo Sewer Authority	Sanitary Sewer & Storm Sewer	Humboldt Parkway	Varies	Condition varies
Buffalo Sewer Authority	Sanitary Sewer & Storm Sewer	Local Streets	Varies	Condition varies
Buffalo Water Authority	Water Line	Kensington Expressway	Varies	Condition varies
Buffalo Water Authority	Water Line	Humboldt Parkway	Varies	Condition unknown
Buffalo Water Authority	Water Line	Local Streets	Varies	Condition unknown
Lightower Fiber Technologies	Fiber Optic	Kensington Expressway	Varies	Condition unknown
Lightower Fiber Technologies	Fiber Optic	Humboldt Parkway	Varies	Condition unknown
Lightower	Fiber Optic	Local Streets	Varies	Condition unknown

Table 2.4-27: Existing Utilities				
Owner	**Type**	**Location**	**Length**	**Condition**
Fiber Technologies				
National Fuel Gas	Gas Line	Kensington Expressway	Varies	Condition unknown
National Fuel Gas	Gas Line	Humboldt Parkway	Varies	Condition unknown
National Fuel Gas	Gas Line	Local Streets	Varies	Condition unknown
National Grid	Electric Line	Kensington Expressway	Varies	Condition unknown
National Grid	Electric Line	Humboldt Parkway	Varies	Condition unknown
National Grid	Electric Line	Local Streets	Varies	Condition unknown
Spectrum	Cable	Kensington Expressway	Varies	Condition unknown
Spectrum	Cable	Humboldt Parkway	Varies	Condition unknown
Spectrum	Cable	Local Streets	Varies	Condition unknown
Verizon	Telephone Line	Kensington Expressway	Varies	Condition unknown
Verizon	Telephone Line	Humboldt Parkway	Varies	Condition unknown
Verizon	Telephone Line	Local Streets	Varies	Condition unknown
NYSDOT	Fiberoptic	Humboldt Parkway, Northampton	Varies	Condition unknown
City of Buffalo – Fire	Cable	Best Street Bridge	Varies	Condition unknown

2.4.3.10 Railroad Facilities

There is a railroad or railroad-owned property partially located within the Project limits. CSX owns and operates two rail lines that travel over the intersection of Fillmore Avenue and Northland Avenue by bridge.

There are no at-grade railroad crossings within one mile of the Project that could impact, or be impacted by, traffic conditions associated with the Project during or after construction.

2.4.4 Potential Enhancement Opportunities

This section identifies potential enhancement opportunities related to the Project.

2.4.4.1 Landscape

The Project is located in a highly constructed urban landscape. Planting adjacent to the site is limited primarily to lawn and yard plantings. The transportation corridor includes no substantial plantings or aesthetic features and currently has little or no landscape value.

2.4.4.1 (1) Terrain

The Project is located in a relatively flat area with little natural topographic change.

2.4.4.1 (2) Unusual Weather Conditions

On occasion, the area receives a high amount of snowfall including “lake effect” snow from Lake Erie. Otherwise, there are no unusual weather conditions within the Project area.

2.4.4.1 (3) Visual Resources

A description of the existing visual environment is provided in Section 4.8, Visual Resources, of this DDR/EA with additional details contained in Appendix D2 (Visual Impact Assessment).

2.4.4.2 Opportunities for Environmental Enhancements

There is potential within the transportation corridor for aesthetic enhancements and landscaping, non-motorized transportation connectivity, increased tree canopy/shade and new recreational greenspace. See Section 3.4.4 in Chapter 3 of this DDR/EA for more information on the proposed environmental and landscape enhancements that are part of the Build Alternative.

The local streets adjacent to the transportation corridor are typically designed to have a snow storage area located between the curb and sidewalk. This snow storage area ranges from 3 feet to 10 feet wide. Most of these streets have trees planted between the sidewalk and curb; however, some streets have inconsistent planting along its length. There appear to be many instances in which trees have uprooted and destroyed sidewalk and curb. There are few if any streetscape amenities, such as benches or kiosks, within the right-of-way.

CHAPTER 3 – ALTERNATIVES

This chapter documents the reasonable range of alternatives for the NYS Route 33 Kensington Expressway Project.

3.1 Concepts Dismissed from Further Consideration

During the project scoping process, the New York State Department of Transportation (NYSDOT) conducted a comprehensive evaluation, in consideration of input from the community and Project stakeholders, to develop and identify reasonable (feasible and practical) alternatives for the Project. A total of 10 concepts[22] were explored and objectively evaluated based on available information, appropriate analyses, and public and agency input.

Of the 10 concepts considered, it was determined that two concepts (Concepts 5 and 6) met the Project purpose and all of the Project objectives. Concepts 5 and 6 were combined for analysis in this DDR/EA as one Build Alternative with different options for landscaping and tunnel ventilation/air treatment. The other 8 concepts were dismissed from further consideration. Those concepts and the reasons for their dismissal are documented in the Project Scoping Report (PSR).[23]

3.2 Description of Project Alternatives

3.2.1 No Build Alternative

The No Build Alternative assumes no improvements would be made to the corridor other than those planned by others or implemented by routine maintenance. Although the No Build Alternative does not address the identified needs or meet the stated purpose and objectives for the Project, the National Environmental Policy Act (NEPA) requires that it be evaluated in the EA to serve as the baseline condition against which the potential effects of the Build Alternative are assessed.

Deficiencies of the existing pavement; bridge structures; and retaining walls, signage, and other related elements would be addressed as part of the NYSDOT's ongoing maintenance program. There would be costs associated with the No Build Alternative in each year that repairs are undertaken. As the facility continues to deteriorate, the level of effort and associated costs would increase and eventually replacement of infrastructure (e.g., bridges, retaining walls, pavement) would be required to maintain safe operations.

3.2.2 Build Alternative

The Build Alternative would cover the depressed section of NYS Route 33, creating a 4,150-foot-long tunnel between Sidney Street and Dodge Street (see Figure 3.2-1a-b). NYS Route 33 would be regraded north of Sidney Street and south of Dodge Street to bring the expressway back to existing grade.

The proposed tunnel would consist of two independent tubes, each of which would provide three travel lanes in each direction for NYS Route 33, with an 8-foot-wide outside shoulder and 6-foot-wide inside shoulder (See Figure 3.2-2).

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[22] The term "concept" refers to a Preliminary Alternative that was evaluated through a screening process during scoping.

[23] https://kensingtonexpressway.dot.ny.gov/Content/files/ScopingReport/Project%20Scoping%20Report.pdf

Humboldt Parkway would be reconstructed on a new alignment from Northampton Street to Sidney Street and would be separated by a proposed 90-foot-wide landscaped center median. Humboldt Parkway would be shifted approximately 16 feet further from the adjoining residences, creating additional front yard space compared to the existing condition and No Build Alternative (see Figure 3.2-3). Humboldt Parkway would include a sidewalk, parking lane, bicycle lane (separated from the parking lane by a 2-ft striped buffer area) and one travel lane in each direction. Humboldt Parkway would also include curb bump outs for traffic calming near intersections.

A minimum of three feet of soil depth would be provided on the tunnel deck and planted with trees (up to 50 feet in height at maturity). The proposed landscaping plan involves rows of four trees at a diagonal in the Humboldt Parkway median, which is a layout similar to the planting approach used for the historical Olmsted-designed Humboldt Parkway (see Figure 3.2-4a-b). Tree plantings would also be provided along the outside of Humboldt Parkway between the parking lane and the sidewalk.

The existing bridge structures over NYS Route 33 at East Ferry Street, East Utica Street, Northampton Street, and Dodge Street would be removed; the newly constructed cap over the tunnel would reconnect these streets at-grade, including additional reconnections at Sidney Street/Butler Avenue, Winslow Avenue, and Riley Street.

Existing signalized intersections would be updated along the reconstructed portion of Humboldt Parkway. The Best Street signalized intersections with the NYS Route 33 ramps would be replaced by a roundabout, and a roundabout would also replace the adjacent signalized intersection between Best Street, Herman Street and West Parade Avenue (see Figure 3.2-5). The bridge at Best Street would be replaced with a wider bridge structure to accommodate the roundabouts. The Best Street interchange ramps would be modified, providing two lanes each on the NYS Route 33 eastbound and westbound off-ramps. The partial NYS Route 33 interchange between Northampton Street and East Utica Street would be eliminated.

Construction of the tunnel would involve lowering the vertical profile of the expressway by up to 20 feet and removal of soil/rock. Figure 3.2-6 compares the existing and proposed vertical profile in relation to the location of bedrock.

A preliminary construction staging plan has been developed to maintain a minimum of two lanes of traffic in each direction on the Kensington Expressway through the four-year construction phase (see Section 3.5 for details of the construction staging).

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KATHY HOCHUL
Governor

NEW YORK STATE OF OPPORTUNITY. Department of Transportation
MARIE THERESE DOMINGUEZ
Commissioner

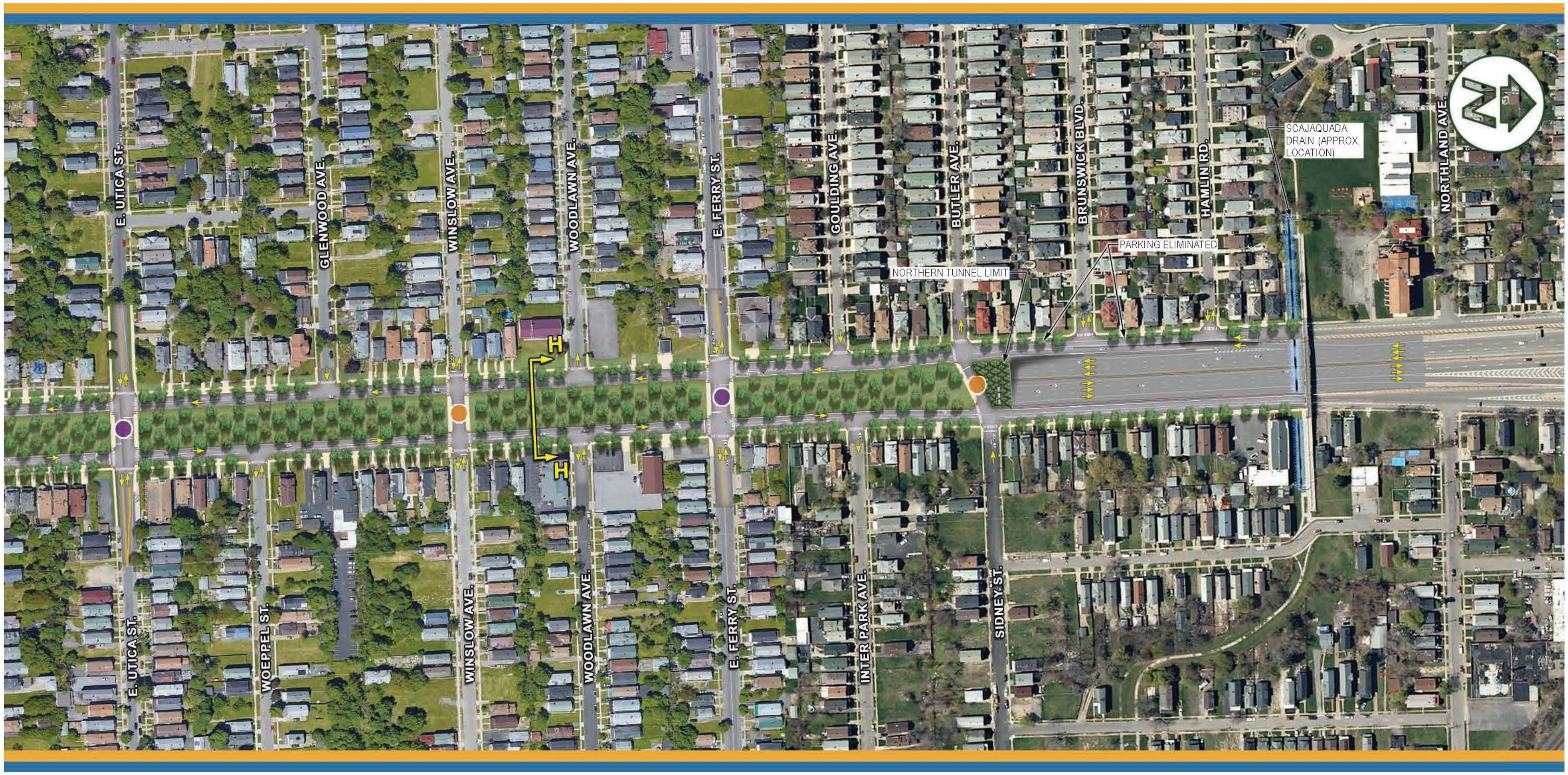
NYS Route 33, Kensington Expressway Project

Build Alternative - Kensington Reconstruction with a 6-Lane Tunnel for Improved Community Connections, including a Tree-Lined Parkway Setting

0 25 50 100 200 300 400 500 FT.

LEGEND:
- REPLACEMENT BRIDGES
- NEW BRIDGE CONNECTIONS
- DIRECTION OF TRAVEL
- SEE RELATED SECTION RENDER

Figure 3.2-1A
Build Alternative Plan View



LEGEND:
- REPLACEMENT BRIDGES
- NEW BRIDGE CONNECTIONS
- DIRECTION OF TRAVEL
- SEE RELATED SECTION RENDERING

NYS Route 33, Kensington Expressway Project

Build Alternative - Kensington Reconstruction with a 6-Lane Tunnel for Improved Community Connections, including a Tree-Lined Parkway Setting

0 25 50 100 200 300 400 500 FT.

U.S. Department of Transportation Federal Highway Administration

Figure 3.2-1B
Build Alternative Plan View

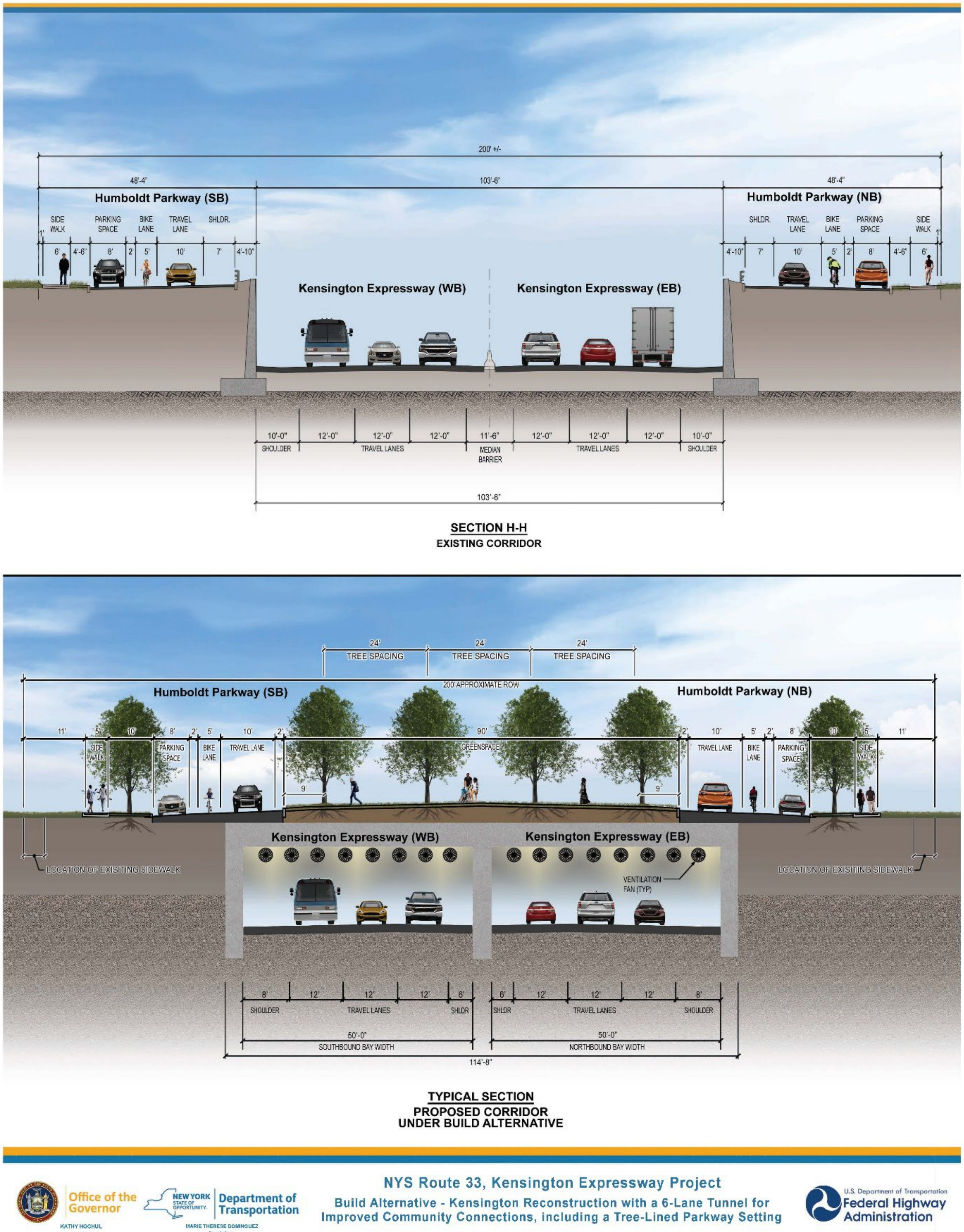


Figure 3.2-2
Build Alternative Section HH

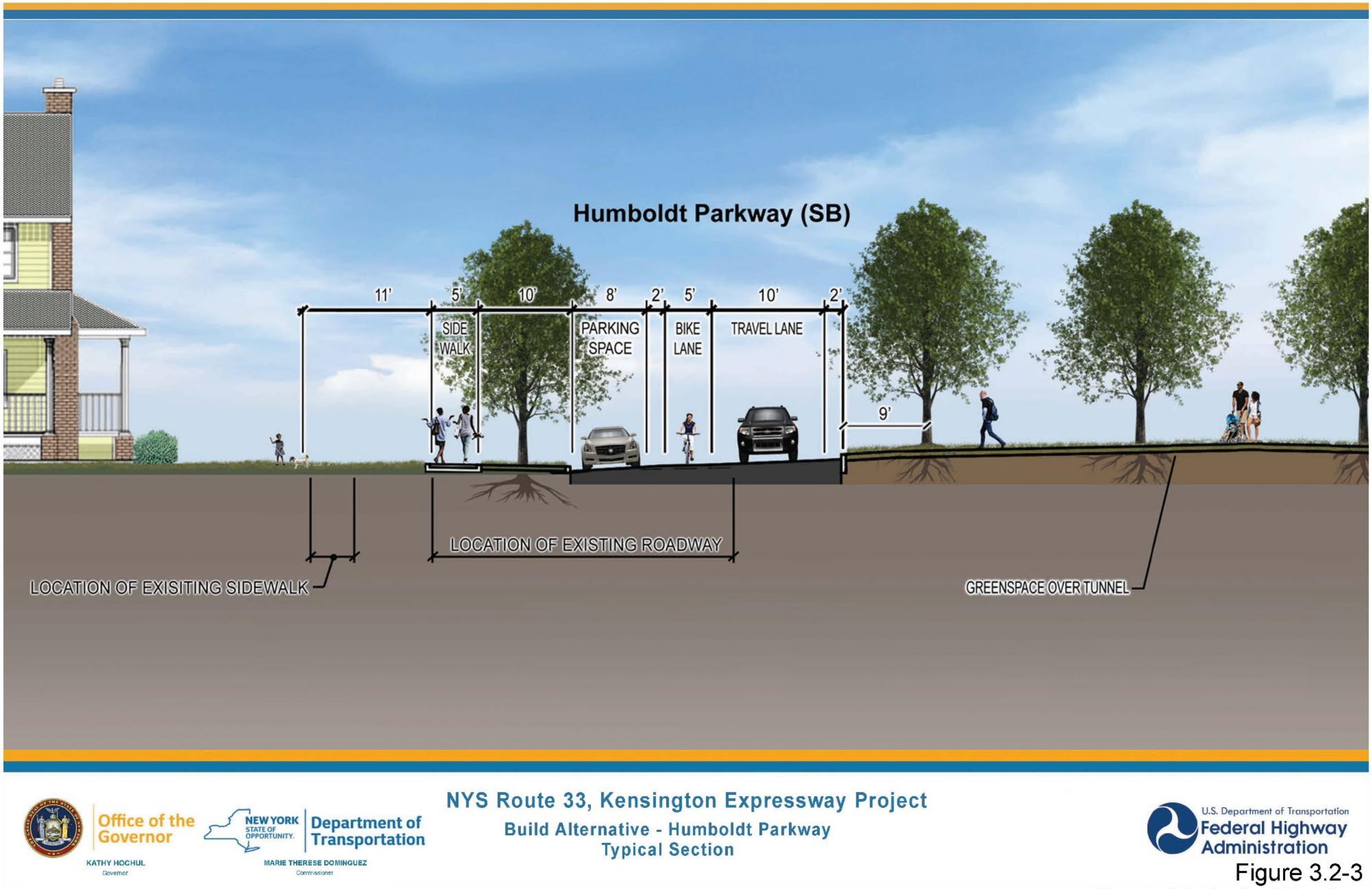


Figure 3.2-3
Humboldt Typical Section

Figure 3.2-3: Humboldt Typical Section

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NYS Route 33, Kensington Expressway Project
Build Alternative - Humboldt Parkway Landscaping Plan
Dodge Street to Woeppel Street

Figure 3.2-4A
Landscaping Plan

U.S. Department of Transportation
Federal Highway Administration

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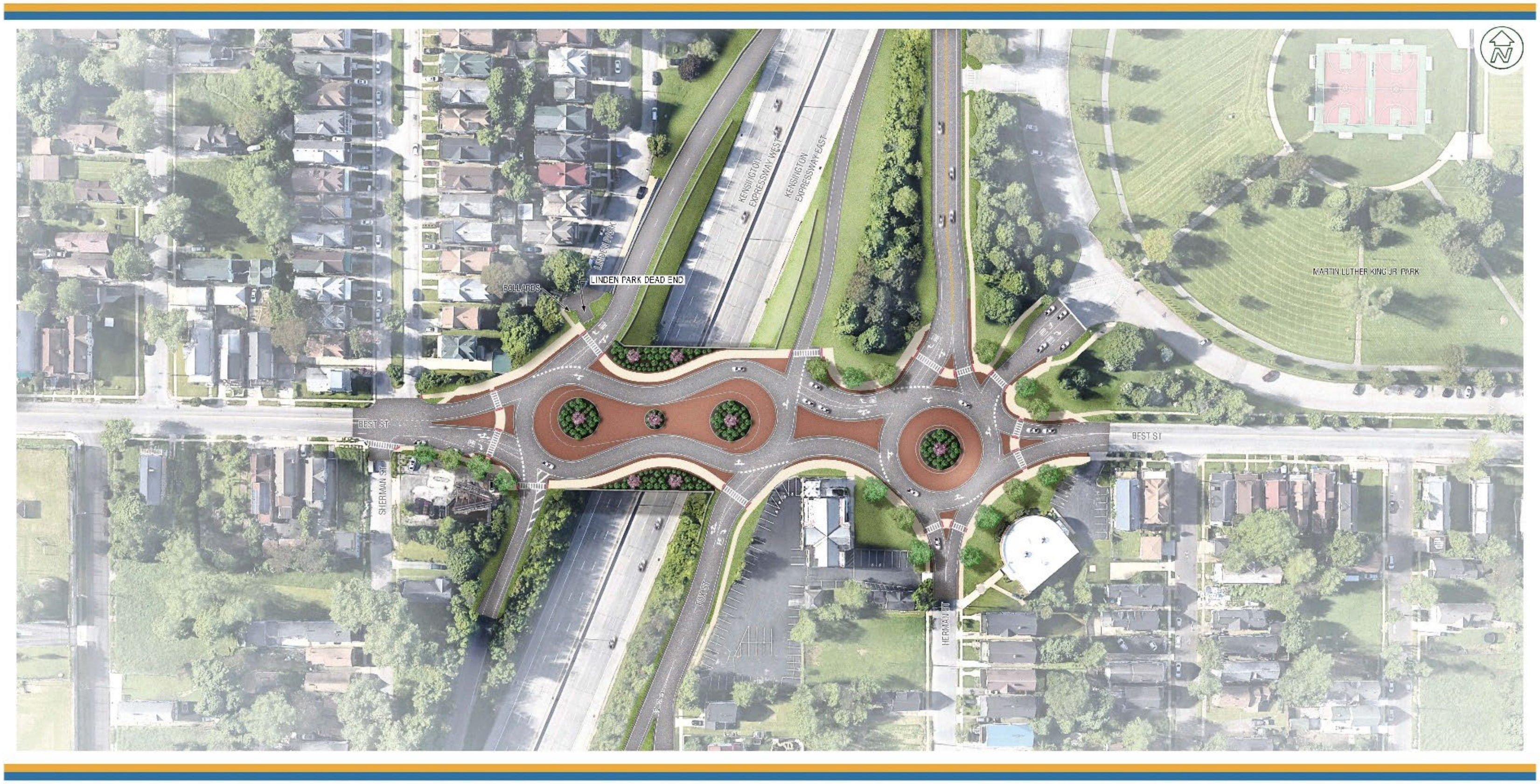
NYS Route 33, Kensington Expressway Project
Build Alternative - Humboldt Parkway Landscaping Plan
Woeppel Street to Hamlin Road

Figure 3.2-4B
Landscaping Plan

U.S. Department of Transportation Federal Highway Administration



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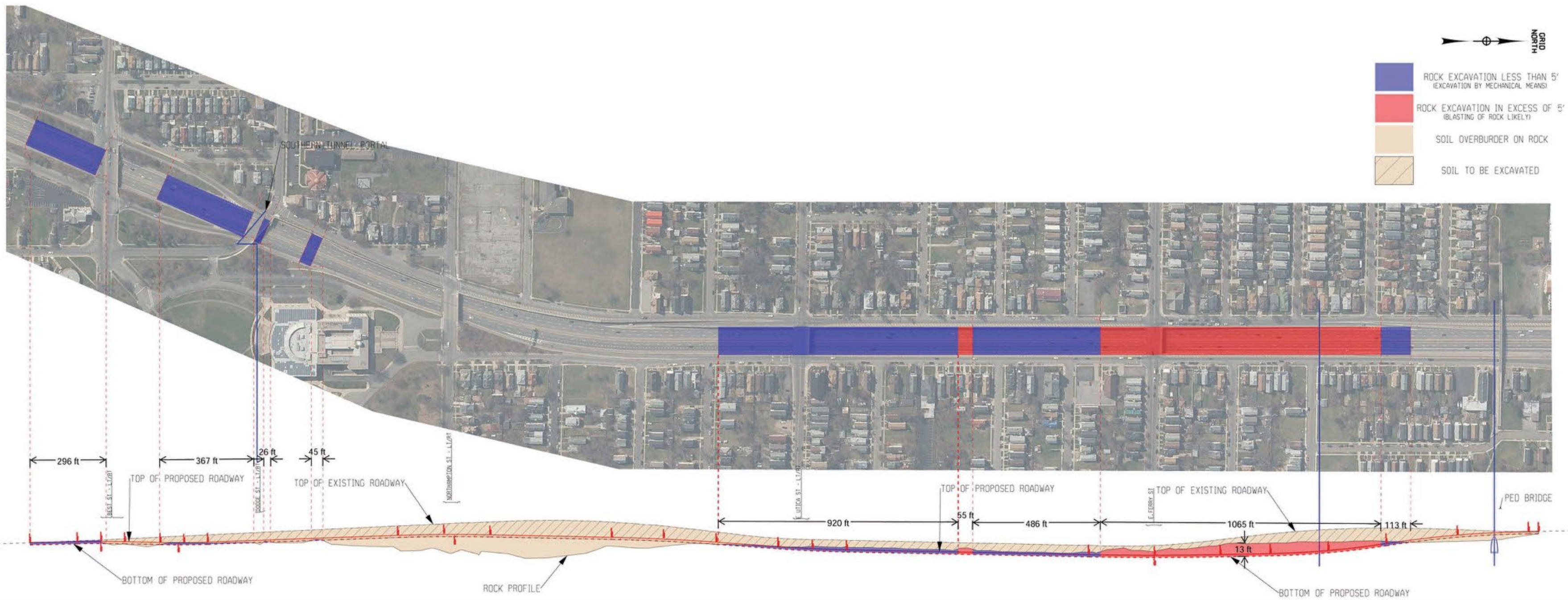
NYS Route 33, Kensington Expressway Project
Build Alternative - Humboldt Parkway Landscaping Plan
Wohlers Avenue to Rich Street

0 30 60 90
ORIGINAL SCALE 1"=30'

Figure 3.2-5
Best Street Roundabouts

U.S. Department of Transportation
Federal Highway Administration



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NYS Route 33, Kensington Expressway Project
Rock Excavation Location (Plan and Profile)
Best St. to East Utica St.

Figure 3.2-6
Rock Excavation

U.S. Department of Transportation Federal Highway Administration

Key elements of the Build Alternative are shown in Table 3.2-1 below. Table 3.2-2 lists the local streets adjacent to the transportation corridor that would receive pavement rehabilitation, sidewalk, curb ramp, lighting and landscaping improvements as part of the Build Alternative.

Table 3.2-1: Key Elements of the Build Alternative

Element	Description
I. Expressway	
Typical Section	The expressway would be maintained at 3 travel lanes (12 feet wide) in each direction. The proposed highway section, including within the tunnel, would provide a 6-foot-wide inside shoulder and 8-foot-wide outside shoulder.
Work Limits	The limits of work are High Street to the south and Northland Avenue to the north. Full depth reconstruction of the expressway would occur within a subset of the limits of work-- approximately 5,700 feet long between a point 400 feet south of Best Street at the south end of the Project to approximately the pedestrian overpass bridge near Hamlin Road. Between the full depth reconstruction area and the limits of work, mill and overlay of existing pavement would occur.
Vertical Alignment	The vertical alignment of the Kensington Expressway (NYS Route 33) within the reconstruction limits will be lowered to accommodate the tunnel cap and Best Street bridge replacement. Starting at the south end of the Project limits, a slight lowering of the profile is proposed under the Best Street bridge to accommodate required clearances and foundation/span designs. The profile would gradually lower by 8 feet at the south tunnel portal at Dodge Street. Throughout the proposed tunnel limits, the profile lowering would vary, from about 8 feet to as much as 20 feet, to accommodate the tunnel cap and appropriate cover and grading overtop. Beyond the north tunnel portal at Sidney Street, the vertical profile would transition from a 20-foot lower area back to existing grade at the reconstruction limits (near the pedestrian overpass bridge).
Horizontal Alignment	The horizontal alignment from High Street (at the southern limit of work) to about the location of the Buffalo Museum of Science would remain unchanged. Northwards from that point, the Kensington Expressway transitions to a 5.7-foot centerline shift towards the east to eliminate undesirable compound curves and to improve construction staging/minimize impacts by allowing the tunnel walls to be located outside the footprint of the existing expressway retaining walls.
Ramps	Ramps A (exit ramp from NYS Route 33 eastbound) and B (entrance ramp to NYS Route 33 westbound), which service Humboldt Parkway would be eliminated. The full interchange at Best Street, including ramps, would be maintained. Remaining ramp grades would be steepened within design guidelines to match mainline grade changes. Best Street off-ramps would provide two lanes.
II. Existing Bridges	
Bridge Removal	The existing bridges at East Ferry Street, East Utica Street,

	Northampton Street and Dodge Street would be removed. City streets that were disconnected by construction of the existing expressway will be reconnected by the proposed expressway cap. These include Sidney Street, East Ferry Street, Winslow Avenue, East Utica Street, Riley Street, Northampton Street, and Dodge Street.
Bridge Reconstruction	The Best Street bridge would be reconstructed. The reconstructed bridge will be approximately 171 feet wide (compared to 91 feet for the existing bridge). The additional width would provide space to accommodate a modern roundabout that will replace the signalized NYS Route 33 ramp intersections. The additional space would also be used for wider sidewalks and landscaping.
III. Humboldt Parkway	
Typical Section	Humboldt Parkway northbound and Humboldt Parkway southbound will be reconstructed between Northampton Street and Sidney Street. Each thoroughfare would have a 10-foot-wide travel lane, 5-foot-wide bicycle lane and an 8-foot-wide parking lane. There will be 2 feet of additional space located between the bicycle lane and the parking lane. There will be a 2-foot curb offset between the travel lane and left curb. Five-foot-wide sidewalks will be provided on the right side of the road where houses are located. A 10-foot-wide separation is proposed between the street and the sidewalk for grass and tree plantings. Curb bump-outs will be located at street corners to delineate recessed parking areas and provide shorter crosswalk distances. A 90-foot-wide landscaped median (new greenspace located over the tunnel) will separate northbound and southbound Humboldt Parkway. South of Northampton Street, Humboldt Parkway northbound and southbound would become a single new thoroughfare that would connect with existing West Parade Avenue, which would also be reconstructed. This will provide a continuous connection to Best Street. New thoroughfares would include a single 10-foot-wide travel lane in each direction, 5-foot-wide bicycle lanes and 2-foot-wide curb offsets. Five-foot-wide sidewalks would be provided on both sides of the road.
Vertical Alignment	The vertical alignment will generally match the existing grades along Humboldt Parkway.
Horizontal Alignment	The reconstructed Humboldt Parkway (northbound and southbound) between Northampton Street and Sidney Street would run parallel, consistent with existing conditions. Northbound Humboldt Parkway would align with the east driveway to the Buffalo Museum of Science. The horizontal separation would typically be 90 feet, which would be similar to the historical condition before the expressway was built. South of Northampton Street, Humboldt Parkway northbound and southbound would become a single new thoroughfare that would connect to existing West Parade Street. This would provide a continuous connection to Best Street.
IV. Best Street	

Overview	Best Street would be reconstructed from approximately Sherman Street to just east of Herman Street, a distance of about 800 feet. Two modern single lane roundabouts are proposed on Best Street to replace three existing signalized intersections. One roundabout would be located at Herman Street, West Parade Street, and West Parade Circle, which is also an entrance to MLK Jr. Park. The other roundabout, located mostly on the new Best Street bridge, would accommodate the expressway entrance and exit ramp intersections with Best Street. Continuous sidewalks would be located on both sides of Best Street. Landscape and streetscape enhancements would be incorporated into the design.
V. Linden Park	
Overview	Linden Park would become a dead-end road near Best Street. All access to the homes on this local street would be from Dodge Street.
VI. Tunnel	
Limits	The tunnel limits would be Dodge Street and Sidney Street, a total length of 4,150 feet.
Typical Section	The tunnel would provide unidirectional traffic on NYS Route 33 in two adjacent corridors (tunnel tubes) separated by a wall, one for eastbound traffic and the other for westbound traffic. Each corridor would have three 12-foot-wide travel lanes, an 8-foot-wide right shoulder and a 6-foot-wide left shoulder for an overall width of 50 feet between walls. Each tunnel tube would maintain a minimum 16 feet of vertical clearance.
Structure Type	A flat concrete slab roof would cover the tunnel, supported by secant pile walls on the exterior and in the center of the tunnel.
Retaining Walls Beyond Portals	Retaining walls would extend beyond the tunnel portals until the profile of the Kensington Expressway ties back into existing grade. At both portals, a 100-foot extension of the central wall would be provided as a safety measure. This central wall extension would minimize the potential for smoke recirculation into the non-incident tube in the event that a fire is detected, and traffic is stopped.
Control Systems	Operation of tunnel systems in normal and emergency modes would be fully automatic, with manual override capability by operators at a human machine interface (HMI) located in a remote-operations control center (OCC) / transportation management center (TMC) within the NYSDOT Region 5 Office.
Intelligent Transportation Systems (ITS)	ITS elements would include barrier arms for lane or tunnel closures, dynamic message signs to warn approaching vehicles in the event of an incident, video surveillance, an acoustic incident detection system and a communications system.
Tunnel Drainage	The drainage system would consist of a slotted channel on the right side of the NYS Route 33 roadway with a subdrain system of pipes to convey flow to three pumphouses. One of the pumphouses is for portal drainage while the other two are for tunnel drainage and include retention tanks for the safe capture of any spilled flammable liquid or fire extinguishing

	water from an incident. The pump houses and retention tanks would be located adjacent to the tunnel in underground vaults within the NYS Route 33 right-of-way.
Lighting	The lighting system would utilize LED type fixtures and consist of: • Overhead lighting: integrated with the tunnel control systems to regulate different lighting stages based on the levels of brightness outside the tunnel. • LED floor guidance lights: utilized to assist drivers to stay in the lane and serve as wayfinding lighting in case of a fire.
Communication & Electrical Rooms	Three underground communication rooms and three underground electrical rooms would be required to accommodate transformers, other electrical equipment and safety systems. An underground electrical supply equipment structure would also be constructed. The tunnel would have emergency backup power (uninterruptible power supply).
Tunnel Safety Systems	Components of the tunnel safety system include: • Ventilation system. Three rows of eight jet fans would be provided with the primary purpose of moving air during periods of heavy congestion, and, in the event of a fire, to control smoke and maintain an acceptable evacuation path. The jet fans would be mounted on the tunnel ceiling and would be automatically controlled based on tunnel air quality conditions (such as a breakdown in traffic flow, which disrupts the piston effect of vehicle movement bringing fresh air into the tunnel). The jet fans would not operate under normal traffic conditions except for monthly testing. • Emergency communications system. • Incident detection (including video surveillance, heat monitoring, smoke monitoring, acoustic monitoring). • Fixed Fire Fighting System (FFFS), providing a high-pressure water mist to limit fire growth, temperatures, and smoke. • Emergency egress provisions, including signage, guidance lights, egress ways, and egress doors. Evacuation would be via roadway shoulders to the portal of the incident tube, or through emergency exits to the adjacent non-incident tube (where traffic would be stopped). • Emergency response plan. An emergency response plan would be prepared during Final Design in close collaboration with emergency services, the City of Buffalo Fire Department, tunnel operators and other stakeholders. Regular training and exercises for emergency responders would be a key component of the plan.
VII. Landscaping and Environmental Enhancements	
Overview	Enhancements along Humboldt Parkway within the transportation corridor would include tree planting; new decorative street lighting; concrete bases for future bus shelters; and stamped colored concrete accents and permanent planters. The center portions of the roundabouts on Best Street would provide an opportunity for artwork or other

	treatments to be determined during final design. Enhancements within the newly created greenspace located in the 90 foot wide median between Humboldt Parkway northbound and southbound would include medium size tree planting in rows arranged similar to the historic Humboldt Parkway layout. Preliminary landscaping plans are provided in Appendix A1 and will continue to be refined in final design in consideration of stakeholder and public input.
VIII. Control of Access	
Overview	Access to NYS Route 33 would remain fully controlled. Partial interchange ramps at East Utica Street would be removed and the Best Street interchange ramps improved. Access to Humboldt Parkway and most other local streets within the transportation corridor would not change. However, access to Linden Park would change since it would not intersect with Best Street.
IX. Operational	
Overview	The Build Alternative would maintain the vehicular capacity of NYS Route 33, Humboldt Parkway, and other local streets while also improving pedestrian and bicycle accommodations. Traffic utilizing the East Utica Street partial interchange ramps that would be removed would be diverted to Best Street with acceptable traffic operations at the proposed roundabouts and ramps to and from NYS Route 33 at Best Street (off-ramp capacity would be increased to two lanes).
X. Right-Of-Way	
Overview	No residential or business displacements are required. There are operational right-of-way impacts between the state and the City of Buffalo necessary to accommodate tunnel systems. There are a total of 53 properties impacted by the project. It is anticipated that there are 6 temporary impacts to MLK Park property. It is anticipated that the pumpstation property on Humboldt Parkway is impacted. It is anticipated there are three properties impacted by roundabout on Best Street and 28 additional possible impacts along local streets where existing or proposed sidewalk is outside of the right-of-way. There are a minimum of 20 properties that will need temporary easements to replace lead water services where water mains need to be upgraded for tunnel fire flow.
XI. Cost	
Overview	The estimated total construction cost of the Build Alternative is $1.07 billion. Construction of the Build Alternative would take approximately three to four years.

Table 3.2-2: Local Street Improvements Adjacent to Transportation Corridor			
Street	**From**	**To**	**Classification**
East of NYS Route 33			
Northland Ave	Humboldt Pkwy	Fillmore Ave	Urban Local
Sidney St	Humboldt Pkwy	Fillmore Ave	Urban Local
Inter Park Ave	Humboldt Pkwy	Fillmore Ave	Urban Local
East Ferry St	Humboldt Pkwy	Fillmore Ave	Urban Minor Arterial
Woodlawn Ave	Humboldt Pkwy	Fillmore Ave	Urban Local
Winslow Ave	Humboldt Pkwy	Fillmore Ave	Urban Local
Woeppel St	Humboldt Pkwy	Fillmore Ave	Urban Local
East Utica St	Humboldt Pkwy	Fillmore Ave	Urban Minor Arterial
Landon St	Humboldt Pkwy	Fillmore Ave	Urban Local
Riley St	Humboldt Pkwy	Fillmore Ave	Urban Local
Girard Pl	Humboldt Pkwy	Fillmore Ave	Urban Local
Northampton St	Humboldt Pkwy	Fillmore Ave	Urban Minor Arterial
Best St	Humboldt Pkwy	Fillmore Ave	Urban Minor Arterial
Lark St	Northland Ave	Sidney St	Urban Local
Rickert Ave	Northland Ave	Sidney St	Urban Local
Fillmore Ave	Northland Ave	Genesee St	Urban Minor Arterial
High St	Johnson St	Genesee St	Urban Local
Genesee St	High St	Fillmore Ave	Urban Minor Arterial
N. Parade Ave	Northampton St	Fillmore Ave	Urban Local
West of NYS Route 33			
Northland Ave	Wohlers Ave	Humboldt Pkwy	Urban Minor Arterial
Donaldson Rd	Wohlers Ave	Northland Ave	Urban Local
Hamlin Rd	Wohlers Ave	Humboldt Pkwy	Urban Local
Brunswick Blvd	Wohlers Ave	Humboldt Pkwy	Urban Local
Butler Ave	Wohlers Ave	Humboldt Pkwy	Urban Local
Goulding Ave	Wohlers Ave	Humboldt Pkwy	Urban Local
East Ferry St	Wohlers Ave	Humboldt Pkwy	Urban Minor Arterial
Woodlawn Ave	Wohlers Ave	Humboldt Pkwy	Urban Local

Winslow Ave	Wohlers Ave	Humboldt Pkwy	Urban Local
Glenwood Ave	Wohlers Ave	Humboldt Pkwy	Urban Local
East Utica St	Wohlers Ave	Humboldt Pkwy	Urban Minor Arterial
Landon St	Wohlers Ave	Humboldt Pkwy	Urban Local
Riley St	Wohlers Ave	Humboldt Pkwy	Urban Local
Kingsley St	Wohlers Ave	Humboldt Pkwy	Urban Local
Northampton St	Wohlers Ave	Humboldt Pkwy	Urban Minor Arterial
Dodge St	Wohlers Ave	Humboldt Pkwy	Urban Minor Arterial
Best St	Wohlers Ave	Linden Park	Urban Minor Arterial
Johnson St	High St	Best St	Urban Local
Norway Park	Best St	Dodge St	Urban Local
Wohlers Ave	Best St	Northland Ave	Urban Local
Celtic Pl	East Utica St	Glenwood Ave	Urban Local
Portage St	East Utica St	Glenwood Ave	Urban Local

3.2.2.1 Consideration of Landscaping Options

As described in the Project Scoping Report, two landscaping options for the newly created greenspace above the tunnel were identified for the Build Alternative: a tree-lined parkway setting option and a Victorian gardens option. Both options have been evaluated during the environmental review/design process, in consideration of stakeholder and public input received. Based on stakeholder group preferences for a tree-lined parkway reminiscent of the historical Humboldt Parkway, public comments received during scoping and the environmental review process, and the environmental benefits of trees compared to gardens (including shade/cooling, habitat value, and carbon sequestration), the tree-lined parkway setting option was selected for the Build Alternative. The Victorian gardens option has been dismissed from further consideration.

3.2.2.2 Consideration of Air Treatment Options

The Project Scoping Report identified that the Build Alternative should consider the necessity and feasibility of providing air treatment of the tunnel exhaust. Based on the air quality analysis results documented in Section 4.9, air treatment is not necessary. Pollutant concentrations under the Build Alternative in the areas near the tunnel portals would remain well below the health-based National Ambient Air Quality Standards and these concentrations would further decline over time as older higher emitting vehicles are retired. In addition, the air quality analysis is based on a number of conservative assumptions documented in Section 4.9 that suggest the impact would be even less than predicted by the modeling due to factors not accounted for in the modeling, such as the increase in sales of electric vehicles due to market forces combined with federal and state policy interventions. Input from the Project's Stakeholder Group also indicated opposition to the above ground infrastructure required for air treatment, specifically mechanical buildings and/or exhaust stacks. In the absence of an adverse air quality impact, the high cost (construction and maintenance), visual impact and property impact/displacements potentially required for air treatment are not warranted.

3.3 Design Criteria for the Build Alternative

3.3.1 Design Standards

The design standards used should be based on the project work type (see PDM Chapter 2, Section 2.2); different standards may apply to different reasonable alternatives. The basis for applying the standards to the project should be stated. Guidance on establishing standards is available in NYSDOT HDM Chapters 2, 4, or 7, and/or the NYSDOT Bridge Manual (BM), Section 2 as applicable.

Evaluation of standard features were based on, but not limited to, the following publications:

- Highway Design Manual (HDM) – NYSDOT
- Bridge Manual – Geometric Design Policy for Bridges – NYSDOT
- A Policy on Geometric Design of Highways and Streets (2018) – AASHTO
- Manual on Uniform Traffic Control Devices for Streets and Highways (2009) – FHWA, with New York State Supplement
- Guide for the Development of Bicycle Facilities (2012) – AASHTO
- Americans With Disabilities Act Accessibility Guidelines (ADAAG)

The tunnel structural and geotechnical design is in accordance with, but not limited to, the following design guides:

- Bridge Manual – NYSDOT
- Load and Resistance Factor Design (LRFD) Bridge Design Specifications – NYSDOT
    - LRFD Bridge Design Specifications – AASHTO
    - LRFD Blue Pages – NYSDOT

The design of the tunnel systems is in accordance with, but not limited to, the following design guides:

- National Electric Code (NFPA 70) – National Fire Protection Association (NFPA)
- Standard for Road Tunnels, Bridges, and Other Limited Access Highways (NFPA 502) – NFPA
- Design of Roadway Facility Lighting (ANSI/IES RP-8-21) – American National Standards Institute (ANSI) / Illuminating Engineering Society (IES)
- Recommended Practice: Lighting Roadway and Parking Facilities (ANSI/IES RP-8-22) – ANSI/IES
- Manual on Uniform Traffic Control Devices (MUTCD) – NYSDOT
    - MUTCD for Streets and Highways – Federal Highway Administration (FHWA)
    - New York State Supplement to the MUTCD for Streets and Highways – NYSDOT
- Variable Message Sign Guidelines – NYSDOT
- Emergency Exit Signs and Marking Systems for Highway Tunnels (Web-Only Document 216) – National Cooperative Highway Research Program (NCHRP)
- Non-Emergency Ventilation in Enclosed Road, Rail, And Mass Transit Facilities (ANSI/ASHRAE Standard 217) – ANSI / American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

For a list of additional tunnel design-specific guidelines consulted, refer to the Safety Concept Technical Memorandum (Appendix A17).

3.3.2 Critical Design Elements

Table 3.3-1A through Table 3.3-1H present the critical design elements for Humboldt Parkway, the Best Street bridge, the NYS Route 33 (including tunnel), ramps, street crossings to be incorporated into the tunnel cover, side streets, and roundabouts.

Table 3.3-1 A: Critical Design Elements for Humboldt Parkway

PIN:	5512.52	**National Highway System (NHS) (Y/N):**	No
Route No. & Name:	Humboldt Parkway	**Functional Classification:**	Urban Local
Project Type:	Reconstruction	**Design Classification:**	Local
% Trucks:	3.85% (Northbound); 5.0% (Southbound)	**Terrain:**	Rolling
ADT[1] (2047):	7,446 (Northbound); 6,576 (Southbound)	**Truck Access Route**	No

	Element	**Standard**	**Existing Condition**	**Proposed Condition**
1	Design Speed	20 mph min. 30 mph max. HDM Section 2.7.4.3 A	30 mph posted	30 mph
2	Lane Width	Travel Lane 10' min. (11' desirable) where bicycle lane provided Travel Lane 13' min. (15' desirable) for shared lane[2] Turn Lane 9' min. (12' desirable) Parking Lane 7' min. (8' desirable) HDM Section 2.7.4.3 B, Exhibit 2-8	10' min. Travel Lane (when bicycle lane exists) 12' min. Shared Lane SB between Northland Ave. and Butler Ave. 5' min Bike SB 5' min Bike NB 10' min. travel 10' min. turn 8' parking	10' min. Travel Lane (when bicycle lane exists) 13' min Shared Lane SB between Goulding Ave. and Butler Ave. 5' min Bike SB 5' min Bike NB 10' travel 11' min. turn 8' parking
3	Shoulder Width	With Curb: Left: 0' min. (1' to 2' desirable) Right: 0' min. HDM Section 2.7.4.3 C, Exhibit 2-8	0' right 6' left	0' right 0' left
4	Horizontal Curve Radius	188' min (@ e= 4.0%)[3] HDM Section 2.7.4.3 D, Exhibit 2-8	919' min.	273' min.
5	Superelevation	4% max. HDM Section 2.7.4.3E, exhibit 2-1b	4% max.	2% max.
6	Stopping Sight Distance (Horizontal and Vertical)	175' min. HDM Section 2.7.4.3 F, Exhibit 2-8	200' min.	445' min NB 423' min SB
7	Maximum Grade	15% max. HDM Section 2.7.4.3 G, Exhibit 2-8	2.8%	2.4%
8	Cross Slope	Travel Lanes: 1.5% min. to 3% max. HDM Section 2.7.4.3 H	2.0% and varies	2.0%
9	Vertical Clearance	14' min.; 14'-6" desirable BM Section 2.3.1, Table 2-2	Unlimited	Unlimited

10	Design Loading Structural Capacity	AASHTO HL-93 Live Load with an Inventory Load Rating (ILR) of 1.2 or greater BM Section 2.5.1	N/A	N/A
11	ADA Compliance	Complies with HDM Chapter 18 and ADAAG HDM Section 2.7.4.3 K	Varies	Complies with HDM Chapter 18 and ADAAG

[1] ADT – Average Daily Traffic
[2] In urban or urban core areas, a 5 ft. min. shoulder/bicycle lane or a 13 ft. min. shared lane should be provided where there is no parallel bicycle facility present. If neither can be provided, a justification is required for the nonstandard lane width. Refer to HDM §2.6.2.1 and Exhibit 2-1a.
[3] e = superelevation

Table 3.3-1 B: Critical Design Elements for Best Street Bridge over NYS Route 33

PIN:	5512.52	**NHS (Y/N):**	No[1]
Route No. & Name:	Best Street Bridge BIN 1022609	**Functional Classification:**	Urban Minor Arterial
Project Type:	Reconstruction	**Design Classification:**	Arterial
% Trucks:	6.38%	**Terrain:**	Rolling
ADT[2] (2047):	19,408	**Truck Access Route**	No

	Element	**Standard**	**Existing Condition**	**Proposed Condition**
1	Design Speed	30mph min. 45mph max. HDM Section 2.7.2.3 A	30 mph posted	35 mph
2	Lane Width	Travel Lane 13’ min. (15’ desirable- see note 4) Turn Lane 11’ min. (12’ desirable) Parking Lane 8’ min. HDM Section 2.7.2.3, Exhibit 2-4	3-12’ lanes each direction (no striping)	Roundabout refer to Table 3.3-1H
3	Shoulder Width	With Curb: Left: 0’ min (1’ to 2’ desirable) Right: 0’ min. (4’ desirable) HDM Section 2.7.2.3, Exhibit 2-4	0’	Roundabout refer to Table 3.3-1H
4	Horizontal Curve Radius	263’ (@ e = 4.0%)[3] HDM Section 2.7.2.3, Exhibit 2-4	Unlimited	Roundabout refer to Table 3.3-1H
5	Superelevation	4% max. HDM Section 2.7.2.3 E, Exhibit 2-1b	N/A	refer to Table 3.3-1H
6	Stopping Sight Distance (Horizontal and Vertical)	220’ min. HDM Section 2.7.2.3, Exhibit 2-4	Unlimited	refer to Table 3.3-1H
7	Maximum Grade	8% max. HDM Section 2.7.2.3 G, Exhibit 2-4	0.5%	refer to Table 3.3-1H
8	Cross Slope	Travel Lanes: 1.5% min. to 3% max. HDM Section 2.7.2.3 H	2.0% and varies	refer to Table 3.3-1H
9	Vertical Clearance Best Street over NYS Route 33	14’-0” or existing (whichever is greater) min.; 14’-6” or existing (whichever is greater) desirable BM Section 2.3.1, Table 2-2	15’-2” (1)	16’-0” (min.)
10	Design Loading Structural Capacity	AASHTO HL-93 Live Load with an Inventory Load Rating (ILR) of 1.2 or greater BM Section 2.5.1	HS-20	HL-93 & ILR Factor ≥ 1.2

11	ADA Compliance	Complies with HDM Chapter 18 and ADAAG HDM Section 2.7.2.3 K	Varies	Complies with HDM Chapter 18 and ADAAG

[1] Actual (field measured) vertical clearance as reported in the 2020 Bridge Inspection.
[2] ADT – Average Daily Traffic
[3] e = superelevation
[4] In urban or urban core areas, a 5 ft. min. shoulder/bicycle lane or a 13 ft. min. shared lane should be provided where there is no parallel bicycle facility present. If neither can be provided, a justification is required for the nonstandard lane width. Refer to HDM §2.6.2.1 and Exhibit 2-1a.

Table 3.3-1 C: Critical Design Elements for NYS Route 33 (Outside of Tunnel)

PIN:	5512.52	**NHS (Y/N):**	Yes
Route No. & Name:	NYS Route 33 Kensington Expressway	**Functional Classification:**	Other Freeways/Expressways (Urban Core)
Project Type:	Reconstruction	**Design Classification:**	Other Freeways
% Trucks:	14.55%	**Terrain:**	Rolling
ADT[1] (2047):	74,504	**Truck Access Route**	Qualifying Highway

	Element	**Standard**	**Existing Condition**	**Proposed Condition**
1	Design Speed	60 mph HDM Section 2.7.1.1 A	55 mph (posted)	60 mph
2	Lane Width	12' min. HDM Section 2.7.1.1 B	12'	12'
3	Shoulder Width	Right: 10' min., 12' desirable when barrier is used Left: 10' min., 12' desirable when barrier is used HDM Section 2.7.1.1 C Exhibit 2-2	Right: varies Left: 4'	Right: 8' and varies* Left: varies 6' to 4' (4' matches existing)*
4	Horizontal Curve Radius	1,333' @ e=6%[3] HDM Section 2.7.1.1 D, Exhibit 2-2	2,280'	2,280'
5	Superelevation	6% max. HDM Section 2.7.1.1 E, Exhibit 2-1b	Normal crown	Normal crown
6	Stopping Sight Distance (Horizontal and Vertical)	570' min. HDM Section 2.7.1.1 F, Exhibit 2-2	450'	635' min
7	Maximum Grade	4% max. HDM Section 2.7.1.1 G Exhibit 2-2	3% max.	3.85% max.
8	Pavement Cross Slope	1.5% to 2.5% HDM Section 2.7.1.1.H	1.5% to 2%	2%
9	Vertical Clearance over NYS Route 33	14'-0" or existing (whichever is greater) min., 14'-6" or existing (whichever is greater) desirable BM Section 2.3.1, Table 2-2	15'-2" For BIN 1022609 16'-2" For BIN 1022650 (Ped Bridge)	16'-0" min. (for BIN 1022609 and tunnel)
10	Structural Capacity	AASHTO HL-93 Live Load with an Inventory Load Rating (ILR) of 1.2 or greater BM Section 2.5.1	HS-20	HL-93 & ILR Factor ≥ 1.2
11	ADA Compliance	N/A	N/A	N/A

[1] Average Daily Traffic
[2] e = superelevation
* Nonstandard Feature

Table 3.3-1 D: Critical Design Elements for NYS Route 33 (Tunnel)				
PIN:	5512.52	**NHS (Y/N):**	Yes	
Route No. & Name:	NYS Route 33 Kensington Expressway	**Functional Classification:**	Other Freeways/Expressways (Urban Core)	
Project Type:	Reconstruction	**Design Classification:**	Other Freeways	
% Trucks:	14.55%	**Terrain:**	Rolling	
ADT[1] (2047):	74,504	**Truck Access Route**	Qualifying Highway	
Element		**Standard**	**Existing Condition**	**Proposed Condition**
1	Design Speed	60 mph. HDM Section 2.7.5.9 & 2.7.1.1 A	N/A	60 mph
2	Lane Width	12' min. HDM Section 2.7.5.9 & 2.7.1.1 B	N/A	12'
3	Shoulder Width	Right: 8' Left: 4' HDM Section 2.7.5.9 & 2.7.1.1 C, Exhibit 2-2	N/A	Right: 8' Left: 6'
4	Horizontal Curve Radius	1,333' @ e=6%[2] HDM Section 2.7.1.1 D, Exhibit 2-2	N/A	2,280'
5	Superelevation	6% max. HDM Section 2.7.1.1 E, Exhibit 2-1b	N/A	4.5%
6	Stopping Sight Distance (Horizontal and Vertical)	570' HDM Section 2.7.1.1 F, Exhibit 2-2	N/A	Eastbound: 524'-10"* Westbound: 561'-5"*
7	Maximum Grade	4% max. HDM Section 2.7.1.1 G, Exhibit 2-3	N/A	3.85%
8	Pavement Cross Slope	1.5% to 2.5% HDM Section 2.7.1.1 H	N/A	2%
9	Vertical Clearance	16' min., 16'-6" desirable HDM Section 2.7.5.9	N/A	16' min.
10	Structural Capacity	AASHTO HL-93 Live Load with an Inventory Load Rating (ILR) of 1.2 or greater HDM Section 2.7.1.1 J BM Section 2.5.1 NYSDOT LRFD Specifications LRFD Road Tunnel Design and Construction Guide Specifications	N/A	HL-93 & ILR Factor ≥ 1.2, applicable to full tunnel length
11	ADA Compliance	N/A	N/A	N/A
12	Raised Safety Walk	3.5 ft min. one side NYSDOT HDM Section 2.7.5.9	N/A	Not provided* (see Note 3)
13	5 ft Separated / Fire Rated Corridor	5 ft Separated / Fire Rated Corridor NYSDOT HDM Section 2.7.5.9	N/A	Fire Rated Corridor Requirement met through use of adjacent/non-incident tunnel for emergency egress with 6 ft. left shoulder (see Technical Memo in Appendix A11)
14	Sidewalk	N/A NYSDOT HDM Section 2.7.5.9	N/A	N/A

Table 3.3-1 D: Critical Design Elements for NYS Route 33 (Tunnel)				
15	Minimum Horizontal Clearance (Wall to Wall)	34.5 ft. NYSDOT HDM Section 2.7.5.9	N/A	50’-0”
16	Emergency Egress	4 ft. min. for shoulder NYSDOT HDM 2.7.5.9 NFPA 502, Chapters 7 and Chapter 11	N/A	6 ft. left shoulder

[1] ADT – Average Daily Traffic
[2] e = superelevation
[3] Raised safety walk not provided. Maintenance and inspection access will be accomplished with vehicle access and lane/shoulder closure- see the Raised Safety Walks and Egress Technical Memo in Appendix A11.
[*] Nonstandard Feature

Table 3.3-1 E: Critical Design Elements for Ramps A, B, C, D, E and F			
PIN:	5512.52	**NHS (Y/N):**	Yes
Route No. & Name:	NY Route 33 Kensington Expressway	**Functional Classification:**	Ramps to NHS Facilities
Project Type:	Reconstruction	**Design Classification:**	Other Freeways
% Trucks:	4% (All Ramps)	**Terrain:**	Rolling
ADT[1] (2047):	Ramp A: 3,173 Ramp B: 9,509 Ramp C: 2,043 Ramp D: 5,424 Ramp E: 9,281 Ramp F: 12,074	**Truck Access Route**	Qualifying Highway

Element		Standard	Existing Condition	Proposed Condition
1	Design Speed	Ramps A, B, C, D, E, & F: (Direct Connect Ramp) 30 mph HDM Section 2.7.5.3 A	Ramp A: 30 mph Ramp B: Not Posted Ramp C: Not Posted Ramp D: 25 mph Ramp E: 25 mph Ramp F: Not Posted (all advisory)	30 mph
2	Lane Width	Ramp A: 19’ Ramp B: 18’ Ramp C: 18’ Ramp D: 18’ Ramp E: 19’ Ramp F: 18’ Case II; HDM Section 2.7.5.2 B, Exhibit 2-9	Ramp A: 20’ Ramp B: 20’ Ramp C: 18’ Ramp D: 18’ Ramp E: 20’ Ramp F: 18’	Ramp A: 20’ Ramp B: 20’ Ramp C: 18’ Ramp D: 18’ Ramp E: 20’ Ramp F: 18’
3	Shoulder Width	Ramps A, B, C, D, E & F: 4 ft min. (Left), 6 ft min. (Right); 2 ft. offset (Curbed) HDM Section 2.7.5.3.C, Exhibit 2-10a	Ramps A, C, D, E & F: 2’ curb offset Ramp B: varies (no curb)	Ramps A, C, D, E & F: 2’ curb offset Ramp B: varies (no curb)

4	Horizontal Curve Radius	Ramps A, B, C, D, E, & F: 214 ft. min. @ 8% e_{max} HDM Section 2.7.5.3 D, Exhibit 2-10a	Ramp A: 580 ft Ramp B: 600 ft Ramp C: 650 ft Ramp D: 750 ft Ramp E: 500 ft Ramp F: 600 ft	Ramp A: 580' Ramp B: N/A Ramp C: 350' Ramp D: 970' Ramp E: 1042' Ramp F: 338'
5	Superelevation	Ramps A, B, C, D, E & F: 4% max. HDM Section 2.7.5.3 E	4% max.	Ramp A: 3.4% Ramp B: N/A Ramp C: 3.4% Ramp D: 2.4% Ramp E: 2.4% Ramp F: 3.4%
6	Stopping Sight Distance (Horizontal and Vertical)	Ramps A, B, C, D, E& F: 200 ft. min. HDM Section 2.7.5.3 G, Exhibit 2-10a	Ramp A: 350' Ramp B: N/A Ramp C: N/A Ramp D: N/A Ramp E: N/A Ramp F: N/A	Ramp A: 350' Ramp B: 312' Ramp C: 358' Ramp D: 970' Ramp E: 1042' Ramp F: 240'
7	Maximum Grade	Ramps A, B, C, D, E & F: 7% HDM Section 2.7.5.3 G, Exhibit 2-10a	Ramp A: 3.0% Ramp B: 1.2% Ramp C: 5.7% Ramp D: 3.6% Ramp E: 4.9% Ramp F: 3.4%	Ramp A: 3.0% Ramp B: 3.25% Ramp C: 5.77% Ramp D:1.14% Ramp E: 5.37% Ramp F: 7.0%
8	Pavement Cross Slope	1.5%- 2.5% HDM Section 2.7.5.3 H	2%	2%
9	Vertical Clearance	14'-6" or existing (whichever is greater) min.,14'-6" or existing (whichever is greater) desirable HDM Section 2.7.5.9 & BM Section 2.3.1, Table 2-2	14'-0" min.	14'-0" min.
10	Structural Capacity	NYSDOT LRFD Specifications AASHTO HL-93 Live Load with an Inventory Load Rating of 1.2 or greater HDM Section 2.7.1.1.J & BM Section 2.5.1	HS-20	HL-93 & ILR Factor ≥ 1.2
11	ADA Compliance	N/A	N/A	N/A

[1] ADT – Average Daily Traffic
Note:
Ramp A: On Ramp from Humboldt Parkway Northbound to Route 198 Westbound
Ramp B: Off Ramp from NYS Route 33 Westbound to Humboldt Parkway Southbound
Ramp C: On Ramp from Best Street to NYS Route 33 Westbound
Ramp D: Off Ramp from NYS Route 33 Eastbound to Best Street
Ramp E: Off Ramp from NYS Route 33 Westbound to Best Street
Ramp F: On Ramp from Best Street to NYS Route 33 Eastbound

Table 3.3-1 F: Critical Design Elements for Dodge Street, Northampton Street, East Utica Street, East Ferry Street, Sidney Street over NYS Route 33

PIN:	5512.52	**NHS (Y/N):**	No
Route No. & Name:	Dodge Street, Northampton Street, East Utica Street, East Ferry Street	**Functional Classification:**	Urban Minor Arterial
Project Type:	Reconstruction	**Design Classification:**	Arterial

% Trucks:	Dodge St.: 1.0% Northampton St.: 3.0% East Utica St.: 14.4% East Ferry St.: 4.0%	**Terrain:**	Rolling	
ADT[1] (2047):	Dodge St.: 2,339 Northampton St.: 2,232 East Utica St.: 4,534 East Ferry St.: 14,077	**Truck Access Route**	No	
Element		**Standard**	**Existing Condition**	**Proposed Condition**
1	Design Speed	30mph min. 45mph max. HDM Section 2.7.2.3 A	30 mph posted	35 mph
2	Lane Width	Travel Lane 13' min. (15' desirable)[2] Turn Lane 11' min. (12' desirable) Parking Lane 8' min. HDM Section 2.7.2.3, Exhibit 2-4	Varies	All (except Sidney): Travel Lane 14' Turn Lane 11' Sidney: Travel Lane 13'
3	Shoulder Width	With Curb: Left: 0' min. (1'-2' desirable) Right: 0' min. (4' desirable) HDM Section 2.7.2.3, Exhibit 2-4	Varies	All (except Sidney): Left 0' Right 0' Sidney: Left 1' Right 4'
4	Horizontal Curve Radius	263' (@ e = 4.0%)[3] HDM Section 2.7.2.3, Exhibit 2-4	Tangent	Tangent
5	Superelevation	4% max. HDM Section 2.7.2.3.E, Exhibit 2-1b	Normal crown	Normal crown
6	Stopping Sight Distance (Horizontal and Vertical)	220' min. HDM Section 2.7.2.3, Exhibit 2-4	>220 ft	>220 feet
7	Maximum Grade	8% max. HDM Section 2.7.2.3 G	varies	Varies, 3.24% max.
8	Cross Slope	Travel Lanes: 1.5% min. to 3% max. HDM Section 2.7.2.3 H	2.0% and varies	2%
9	Vertical Clearance	N/A	N/A	N/A
10	Design Loading Structural Capacity	(Refer to Exhibit 3.2.3.2-D)	HS-20	HL-93 & ILR Factor ≥ 1.2
11	ADA Compliance	Complies with HDM Chapter 18 and ADAAG HDM Section 2.7.2.3 K	Varies	Complies with HDM Chapter 18 and ADAAG

[1] ADT – Average Daily Traffic
[2] In urban or urban core areas, a 5 ft. min. shoulder/bicycle lane or a 13 ft. min. shared lane should be provided where there is no parallel bicycle facility present. If neither can be provided, a justification is required for the nonstandard lane width. Refer to HDM §2.6.2.1 and Exhibit 2-1a.
[3] e = superelevation

Table 3.3-1 G: Critical Design Elements for Riley Street, Winslow Street, Butler Street/Sidney Street over NYS Route 33				
PIN:	5512.52	**NHS (Y/N):**	No	
Route No. & Name:	City Streets	**Functional Classification:**	Urban Local	
Project Type:	Reconstruction	**Design Classification:**	Local	
% Trucks:	2%	**Terrain:**	Rolling	
ADT[1] (2047):	500 ±	**Truck Access Route**	No	
Element		**Standard**	**Existing Condition**	**Proposed Condition**
1	Design Speed	20mph min. 30mph max. HDM Section 2.7.4.3 A	N/A	30mph
2	Lane Width	Travel Lane 13’ min. (15’ desirable)[2] Turn Lane 9’ min. (10’ desirable) Parking Lane 7’ min. (8’ desirable) HDM Section 2.7.4.3, Exhibit 2-8	N/A	Riley & Winslow: Travel Lane 14’ Min Butler/Sidney: Travel Lane 12’ Min
3	Shoulder Width	With Curb: 0’ min. HDM Section 2.7.4.3, Exhibit 2-8	N/A	Riley & Winslow: 0’ min Butler/Sidney: Right Shoulder 5’ min Left Curb Offset 1’ min
4	Horizontal Curve Radius	188’ (@ e = 4.0%)[3] HDM Section 2.7.4.3, Exhibit 2-8	N/A	Riley St 550’ Winslow Ave N/A Butler/Sidney St N/A
5	Superelevation	4% max. HDM Section 2.7.4.3 E	N/A	Normal crown
6	Stopping Sight Distance (Horizontal and Vertical)	175’ min. HDM Section 2.7.4.3, Exhibit 2-8	N/A	Riley St 424’ Winslow Ave 295’ Butler/Sidney St 319’
7	Maximum Grade	15% max. HDM Section 2.7.4.3 G	N/A	Riley St 2.11% max Winslow Ave 2% Butler/Sidney St 2%
8	Cross Slope	Travel Lanes: 1.5% min.- 3% max. HDM Section 2.7.4.3 H	N/A	2%
9	Vertical Clearance	14’ min.; 14’-6” desirable BM Section 2.3.1, Table 2-2	N/A	N/A

10	Design Loading Structural Capacity	AASHTO HL-93 Live Load with an Inventory Load Rating of 1.2 or greater BM Section 2.5.1	N/A	HL-93 & ILR Factor ≥ 1.2
11	ADA Compliance	Complies with HDM Chapter 18 and ADAAG HDM Section 2.7.4.3 K	N/A	Complies with HDM Chapter 18 and ADAAG

[1] ADT – Average Daily Traffic
[2] In urban or urban core areas, a 5 ft. min. shoulder/bicycle lane or a 13 ft. min. shared lane should be provided where there is no parallel bicycle facility present. If neither can be provided, a justification is required for the nonstandard lane width. Refer to HDM §2.6.2.1 and Exhibit 2-1a.
[3] e = superelevation

Table 3.3-1 H: Single-Lane Roundabout Controlling Features (Best / West Parade / Herman)

Element		Parameter[1]	North Leg	West Leg	South Leg	East Leg
1	Design Vehicle	Largest Expected Vehicle (Westbound-67) NYSDOT HDM 5.7.1	WB[8]-40	WB-40	WB-40	WB-40
2	Maximum Entry Speed	20-25 mph[2] NCHRP 672	25 mph	25 mph	25 mph	25 mph
3	Entry Width	12 ft.-23 ft. 17 ft.-21 ft. typical	33 ft Multi-lane	22 ft	18 ft	22 ft
4	Entry Curb Radius	65 ft min., 150 ft max. 90'-100' typical	30 ft	95 ft	94 ft	100 ft
5	Entry Angle	20º min., 60º max. 30º - 40º desirable NYSDOT EI 00-021	60°	57°	45°	45°
6	Entry Angle of Visibility	≥ 75° NCHRP 672 6.7.4[3]	82°	91°	97°	88°
7	Splitter Island Length					
	Approach <45 mph	≥30 ft., ≥50 ft. desirable	50 ft	112 ft	45 ft	59 ft
8	Approach Stopping Sight Distance	197.8 ft. at 30 mph NCHRP 672 6.7.3.1	>200'	>200'	>200'	>200'
9	Circulating Roadway Sight Distance	98 ft. at 18 mph NCHRP 672 6.2.6 and 6.7.3.1	118 ft	118 ft	118 ft	118 ft
10	Intersection Sight Distance	146.8 ft. at 20 mph Conflicting Approach Speed NCHRP 672 6.2.6 and 6.7.3.4	166 ft	180 ft	193 ft	186 ft
11	Sight Distance to Crosswalk	197.8 ft. at 30 mph NCHRP 672 6.7.3[3]	NA	205 ft	210 ft	275 ft
12	Inscribed Circle Diameter	100 ft.-180 ft., 110 ft.-150 ft. typ., single lane	140 ft	140 ft	140 ft	140 ft
13	Circulatory Roadway Lane Width	12 ft.- 23 ft., 16 ft.-20 ft. typical	19 ft	19 ft	19 ft	19 ft
14	Minimum Exit Radius[4]	65 ft. min., 300-800 ft. typical	104 ft	88 ft	126 ft	270 ft
15	ADA Compliance	Meet PROWAG (Public Right of Way Accessibility Guidelines), NYSDOT HDM Chapter 18 & PROWAG	Yes	Yes	Yes	Yes
16	Truck Access Highway or Oversize / Overweight Route	See HDM § 5.7.1	Yes	Yes	Yes	Yes

1. Parameters per NCHRP Report 672, "Roundabouts: An Informational Guide (Second Edition)" and/or Main Office Intersection Design Squad, as applicable.
2. Equation 6-3 on page 6-58 of NCHRP Report 672 incorrectly contains an addition sign (+) as an operator. The

correct operator should be a subtraction sign (-).
3. Section numbers and equations listed in the table above refer to NCHRP Report 672, "Roundabouts: An Informational Guide (Second Edition)"
4. Exit radius is measured along the right curb line at exit.
5. Consult with the Regional Traffic safety and Mobility Office if the highway is designated as a Truck Access Route. A larger design vehicle may be needed.
6. Not typical, desired or preferred, but within the general range of acceptance.
7. Not typical, desired, or preferred and outside the general range of acceptance. These are nonconforming features.
8. WB – Westbound.

3.3.3 Other Design Parameters

Table 3.3-2 A: Other Design Parameters			
Kensington Expressway (NYS Route 33)			
	Element	**Criteria**	**Proposed Condition**
1	Drainage Design Storm	HDM Chapter 8 Exhibit 8-3: 10 Year storm – Drainage System 50 Year storm for Sag Vertical curves	To be designed per criteria.
Local Streets and Minor Arterials			
	Element	**Criteria**	**Proposed Condition**
2	Drainage Design Storm	HDM Chapter 8 Exhibit 8-3: 5 Year storm – Drainage System 25 Year storm for Sag Vertical curves	To be designed per criteria.

Table 3.3-2 B: Other Design Parameters for NYS Route 33 (Tunnel)				
Element		**Standard**	**Existing Condition**	**Proposed Condition**
1	Video Monitoring / CCTV	Required per discretion of Authority Having Jurisdiction (AHJ) NFPA 502, Chapter 7.4.3	N/A	Included in project; design meets the minimum standards
2	Emergency Communication Systems	Required per discretion of AHJ NFPA 502, Chapters 4.5 / 7.5	N/A	Included in project; design meets the minimum standards
3	Fire Pumps	Required per discretion of AHJ NFPA 502, Chapter 10.1 through 10.4	N/A	Included in project; design meets the minimum standards
4	Fixed Fire Fighting System	Required per discretion of AHJ NFPA 502, Chapter 7.9	N/A	Included in project; design meets the minimum standards
5	Design Life	NYSDOT LRFD Article 1.2	N/A	(Chromium Steel Reinforcement for tunnel roof)
6	Operational Importance	NYSDOT LRFD Article 1.3.5	N/A	Critical $\eta_I = 1.05$[1]

Table 3.3-2 B: Other Design Parameters for NYS Route 33 (Tunnel)				
7	Snow Load	76 PSF ASCE-7	N/A	150 PSF within park, treated as live load. 180 PSF within 15 ft. of roadways, treated as live load. 250 PSF, extreme event
8	Tree Loading	-	N/A	60 PSF, treated as dead load of wearing surfaces and utilities
9	Extreme Event: Fire	NFPA 502	N/A	Tunnel structure resilience/fire life safety systems designed for hydrocarbon fire from vehicular accident involving fuel truck

[1] η_I – operational importance factor

Table 3.3-2 C: Other Design Parameters – Design Vehicle		
Location	**Design Vehicle**	**Vehicle Accommodated**
NYS Route 33	WB-67[1] (HDM 5.7.1)	WB-67
Humboldt Parkway	S-Bus 40[2] (HDM 5.7.1)	S-Bus 40

[1] WB-67 – Interstate semitrailer (53' trailer)
[2] S-Bus 40 – Large school bus (84 passengers)

3.4 Engineering Considerations

3.4.1 Operations (Traffic and Safety) & Maintenance

3.4.1.1 Functional Classification and National Highway System (NHS)

The Build Alternative would not change the functional classification of NYS Route 33.

3.4.1.2 Control of Access

Access to NYS Route 33 will remain fully controlled. Changes in access proposed for the Build Alternative include the following:

- Removal of partial interchange at East Utica Street: The existing westbound on ramp to NYS Route 33 and eastbound off ramp from NYS Route 33 would be removed. Traffic from these ramps will access NYS Route 33 from the Best Street interchange.
- Modification of the Best Street interchange: The existing signalized diamond interchange control would be replaced with roundabouts.

3.4.1.3 Traffic Control Devices

Traffic Signals

Six traffic signals are proposed at the following intersections:

1. Northampton Street at Humboldt Parkway (Southbound)
2. Northampton Street at Humboldt Parkway (Northbound)
3. East Utica Street at Humboldt Parkway (Southbound)
4. East Utica Street at Humboldt Parkway (Northbound)
5. East Ferry Street at Humboldt Parkway (Southbound)
6. East Ferry Street at Humboldt Parkway (Northbound)

The three traffic signals on Best Street at the NYS Route 33 westbound ramps, NYS Route 33 eastbound ramps, and Herman Street will be converted to a series of roundabouts. A peanut shaped roundabout combination would control the NYS Route 33 westbound and eastbound interchange ramps with an adjacent third roundabout at Best Street and Herman Street.

Signs

Existing signs will be evaluated and replaced as necessary during final design. New signs will be added where required based on proposed geometric changes or conditions. All signs will be developed to be compliant with the current Manual on Uniform Traffic Control Devices (MUTCD) and NYSDOT Supplement.

3.4.1.4 Intelligent Transportation Systems (ITS)

The existing fiber optic communications network within the project limits will need to be maintained at all times, which would require a temporary connection of the fiber currently supported by the Northampton Street bridge during the removal of the bridge to maintain network connectivity to critical ITS infrastructure.

The existing traffic camera at Best Street will be removed and relocated with the replacement and widening of the Best Street bridge. Within the limits of the tunnel, existing traffic cameras at Northampton Street and East Ferry Street will be removed. A new traffic camera will be installed at the pedestrian bridge between Hamlin Road and Northland Avenue.

The ITS features of the Project are related to tunnel safety, traffic management, and security systems and include the following:

- Barrier gates at tunnel entry portals to close tunnel entrances to traffic in the event of an incident;
- Dynamic Message Signs (DMS) along the approach roadways to the tunnel to alert approaching vehicles of an incident in the tunnel (see Sheet ITS-1 for details of locations);
- Dynamic Message Signs and Lane Control Signs at tunnel entry portals and within the tunnel to alert vehicles of incidents and lane accessibility;
- Video surveillance system to provide video surveillance of traffic flows/conditions, incidents, and unauthorized personnel;
- Acoustic incident detection system to detect incidents inside the tunnel using acoustic sensors; and
- Communications system.

Operation of tunnel systems (lighting, signaling, ventilation, fixed firefighting system, etc.) in normal and emergency modes will be fully automatic, with manual override capability by operators at the regional Transportation Management Center (TMC). Training of TMC operators will be included as part of the emergency response plan that will be prepared during final design.

In case of an incident (e.g., standing vehicle, collision, fire), automatic lane or tunnel closures will be initiated, after a positive alarm sequence that allows operators to react in the case of a false alarm. For the automatic release of fixed firefighting systems (FFFS) in case of a fire, a positive alarm sequence will also be implemented, because an erroneous release could lead to traffic accidents.

Emergency modes of other safety systems, where erroneous release would have no detrimental effect on traffic operation, namely emergency lighting, exit signage and fire ventilation, will be switched on immediately after automatic processing of the incident detection signal, without manual confirmation.

The following control system structure will be provided:

- Each subsystem (e.g., ventilation, lighting, signaling, FFFS, etc.) consisting of instruments, sensors, actuators, and Programmable Logic Controllers (PLCs) will work autonomously;
- Instruments, actuators, and PLCs will be connected to communication rings with communication interfaces. In case of an interruption of a communication line, communication would be automatically switched to the alternative path;
- All subsystems will be connected to the fire alarm system and to an overhead Supervisory Control and Data Acquisition (SCADA) with human machine interface at the TMC;
- Measured values gathered from instrumentation (time averaging, plausibility checks, etc.) will be processed on the PLC, not on the instrument hardware; and
- Fallback modes would automatically compensate for the failure of single components.

Due to the variable closed loop control system in association with the tunnel ventilation and integration of all the incident detection and safety systems with the local TMC, the ITS components of this project are considered high-risk and require full ITS FHWA oversight.

For additional details regarding ITS, refer to the Systems Engineering Review Form (SERF) within Appendix A13. Intelligent Transportation System (ITS) improvements included in the project should be described. Traffic related mobility features such as ramp metering, reversible lanes, truck prohibitions during peak hours, etc. should be described. When federally-funded ITS elements are proposed, FHWA must be provided with a systems engineering analysis report (SEAR).

3.4.1.5 Speeds and Delay

Proposed Speed Limit

The posted speed limit within the Project limits will be 55 mph on NYS Route 33 and 30 mph on local streets. Overall, existing posted speed limits would be retained throughout the project area. Posted advisory speeds for ramps would likely be maintained.

Travel Time Estimates

The VISSIM model was used to estimate travel times and speeds for the No Build and Build Alternatives. Travel time and average speed estimates from VISSIM analysis are provided in Table 3.4-1. The calculated travel times and speeds for the Build Alternative are comparable to the No Build conditions for 2027 and 2047.

The westbound segment limits of NYS Route 33 are from Suffolk Street to Michigan Avenue. The VISSIM model was extended to Suffolk Street to capture the travel time delay and speed impacts due to the NYS Route 33/Route 198 interchange.

Table 3.4-1: Highway Design Year Travel Speeds – No Build and Build Condition								
	2027 AM Peak		2047 PM Peak		2047 AM Peak		2047 PM Peak	
	No Build	Build	No Build	Build	No Build	Build	No Build	Build
Eastbound – Oak Street to East Delavan Avenue – 2.72 miles								
Average Travel Time (minutes)	3.3	3.2	3.3	3.2	3.4	3.2	3.4	3.3
Average Travel Speed (mph)	50	51	49	51	49	51	49	50
Westbound – Suffolk Street to Michigan Avenue – 4.50 miles								
Average Travel Time (minutes)	5.0	5.0	5.0	5.0	5.0	5.1	5.0	5.0
Average Travel Speed (mph)	54	54	54	54	54	53	54	54

3.4.1.6 Traffic Volumes

As seen in Table 3.4-2, under the Build Alternative, the elimination of the ramps at East Utica Street would cause the NYS Route 33 traffic volumes to change slightly from the No Build 2027 and 2047 traffic volumes presented in Chapter 2. Refer to Appendix B4 for NYS Route 33 traffic volumes for the mainline, ramps, and intersections.

Table 3.4-2: Existing and Build Condition Forecast Traffic Volumes (AADT)[1]			
Ramp	Existing (2022)	ETC[2] (2027)	ETC+20 (2047)
NYS Route 33 WB[3] Off Ramp to Ferry St	8,848	9,046	9,509
NYS Route 33 EB[4] Off Ramp to Best St	1,897	5,160	5,424
NYS Route 33 EB On Ramp from Best St	9,571	11,485	12,074
NYS Route 33 EB Off Ramp to East Utica St	2,915	---	---
NYS Route 33 WB On Ramp from East Utica St	3,123	---	---
NYS Route 33 WB Off Ramp to Best St	8,381	8,829	9,281
NYS Route 33 WB On Ramp from Best St	1,874	1,943	2,043
NYS Route 33 EB Off Ramp to Route 198	11,234	10,614	11,157
NYS Route 33 EB On Ramp from E Delavan Ave	10,522	6,745	7,090

[1] AADT – Annual Average Daily Traffic
[2] ETC – Estimated Time of Completion
[3] WB – Westbound
[4] EB – Eastbound

As with the future No Build traffic volumes, future Build volumes were generated in cooperation with the Greater Buffalo Niagara Regional Transportation Council and their regional transportation model. Overall, there were negligible differences between year 2027 and 2047 Build volumes due to a minimal 0.25%

annual growth rate. Similarly, there were negligible differences between the No Build and Build volumes due to maintaining NYS Route 33 with 3-lanes in each direction. See Table 3.4-3 for more detail.

Table 3.4-3: Existing and Build Condition Forecast Traffic Volumes						
	NYS Route 33 (Kensington Expressway)		Humboldt Parkway Northbound		Humboldt Parkway Southbound	
Year	AADT[1]	DHV[2]	AADT	DHV	AADT	DHV
Existing (2022)	77,505	7,743	7,000	---	2,471	---
ETC[3] (2027)	70,874	6,701	7,083	---	6,256	---
ETC+20 (2047)	74,504	7,044	7,446	---	6,576	---

[1] AADT – Annual Average Daily Traffic
[2] DHV – Design Hourly Volume
[3] ETC – Estimated Time of Completion

3.4.1.7 Level of Service and Mobility

In order to properly assess the Build Alternative, VISSIM and Synchro were used to analyze the potential effects to traffic resulting from the Project. VISSIM microsimulation models for the Build Alternative were developed from the calibrated existing conditions and No Build Alternative morning and evening peak hour models on NYS Route 33. Geometric and operational changes were made as necessary to match the Build Alternative as well as operate as predicted with the proposed geometry and capacity. Each microsimulation model was used to generate measures of effectiveness including travel time and density along the roadway system in order to compare the operating conditions under the No Build and Build Alternatives.

Synchro was used to model the Build Alternative conditions along the Project Study Area arterials and intersections. The Study Area was bordered by Delavan Avenue, Fillmore Avenue, Genesee Street, and Jefferson Avenue as shown in Figure 3.4-1. Under the Build Alternative, the signalized conditions within the Study Area would experience only minor operational changes. Pedestrian accommodations would be included with slightly modified timing and phasing at the existing intersections. All signal timings would be designed for the design year, Estimated Time of Completion (ETC)+20 (2047), and maintained through the other analysis years. All Synchro output reports are contained within the Project record and available upon request. Delay was measured within the Study Area and related to Level of Service (LOS) using Highway Capacity Manual (HCM) definitions.

At Project Completion & Design Year

Level of service analyses were completed for the No Build and Build Alternative conditions, 2027 (ETC) and 2047 (ETC+20). Tables summarizing the operational and capacity analyses for the proposed expressway conditions are provided in Appendix C of the Project Scoping Report. Proposed intersection delay and LOS results are shown in Appendices B6 and B7. Results and improvements are also provided below in Table 3.4-4 for 2027 and 2047, respectively.

NYS Route 33

All basic freeway sections are projected to operate at densities and speeds consistent with the No Build Alternative during both the morning and evening peak periods for 2027 (ETC) and 2047 (ETC+20), as shown in Appendix C of the Project Scoping Report.

Signalized Intersection Operations

Proposed intersection and lane group phasing and timing have been optimized to facilitate traffic flow at existing signalized intersections. The signalized intersections are all projected to operate at LOS D or better overall except for the Best Street intersection with the NYS Route 33 westbound ramp in the PM peak hour ETC, which is projected to operate at LOS E and PM ETC+20 at LOS F.

Throughout the Study Area, some lane groups will experience poor level of service (LOS E or worse) in the Build Condition as identified in Table 3.4-4. This poor LOS is due to the operations of coordinated signals, long cycle lengths, accommodation for pedestrian crossing times, and the need to maintain acceptable LOS on higher volume approaches.

For complex projects, presenting the LOS data on diagrams will be much clearer and should be used in those situations where it is appropriate to do so. The traffic flow diagram format can also be used for this purpose.

Normally the level of service objectives should be met throughout the project. However, if the levels of service objectives are not met in certain areas, such as, at specific intersection(s) or at specific merges or diverges on an urban freeway, an explanation of reasons (unacceptable impacts, unaffordable costs, etc.) for not meeting the level of service should be provided.

On some congested urban and suburban projects normally accepted levels of service cannot be achieved and the objective is to reduce hours of congestion. For these projects the capacity improvements should be quantified by showing the number of reduced hours of congestion at levels of service "E" or "F" or by the reduced hours of delay.

For projects that improve capacity, this section should address the project's compliance with the NYSDOT's goal of vehicle hours of delay (VHD) at LOS E eliminated per million dollars of investment.

For low volume roads it is sufficient to state that the project will operate at LOS C or better in the design year.

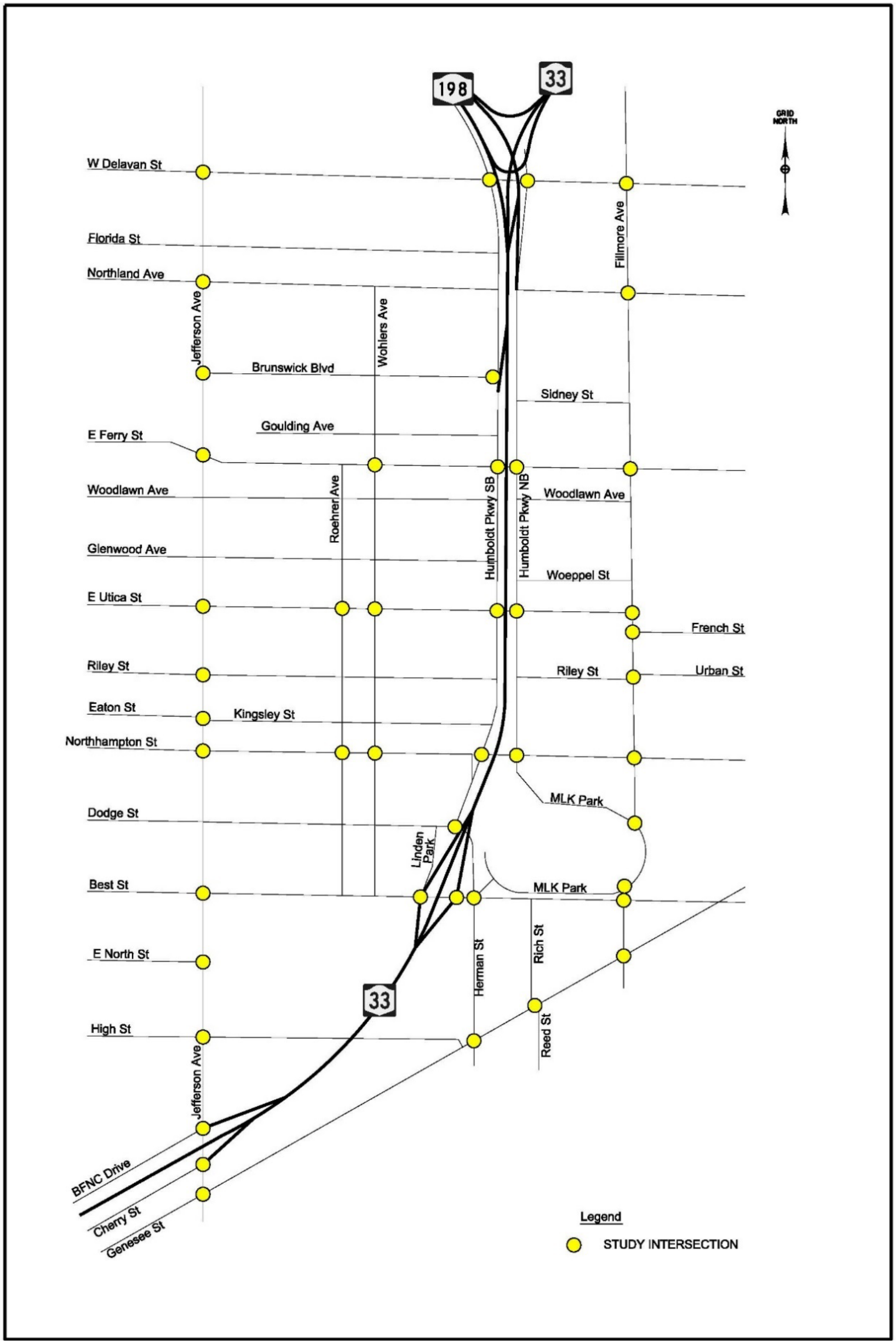
Table 3.4-4: Intersection Levels of Service and Delays (sec) – Build Condition

#	Intersection	Control	Direction	Lanes	AM Peak Hour		PM Peak Hour	
					2027	2047	2027	2047
1	Best Street & Eastbound Ramps	S[1]	Eastbound	L[2]	A (7.4)[3]	A (7.7)	A (7.5)	A (7.5)
				LT/T	A (6.0)	A (6.3)	A (5.9)	A (6.1)
			Westbound	T/TR	D (48.7)	E (67.1)	F (89.6)	E (67.1)
			Northbound	LT	D (37.4)	D (38.0)	D (42.2)	D (36.7)
				R	A (7.7)	A (7.7)	A (7.2)	A (7.5)
		Overall			C (23.6)	C (30.0)	D (38.8)	C (29.7)
2	Best Street & Westbound Ramps	S	Eastbound	T/TR	D (48.3)	D (53.0)	E (79.9)	E (76.3)
			Westbound	L	A (5.6)	A (5.6)	A (6.8)	A (5.3)
				T	A (4.9)	A (5.3)	A (7.3)	A (5.0)
			Southbound	LT	F (81.1)	F (92.9)	F (88.1)	E (76.9)
				R	C (31.8)	A (5.9)	D (41.4)	C (32.7)

		Overall			D (41.2)	D (38.7)	E (58.2)	D (50.2)
3	**Best Street & Herman Street & West Parade Avenue**	S	Eastbound	L	A (7.8)	A (7.5)	A (7.4)	A (7.5)
				T	D (53.5)	E (57.9)	C (28.1)	E (57.9)
				R	A (2.1)	A (1.8)	A (2.1)	A (1.8)
			Westbound	LTR	D (39.2)	D (35.7)	C (34.5)	D (35.7)
			Northbound	LTR	B (16.2)	B (18.5)	B (19.6)	B (18.5)
			Southbound	LT	B (16.2)	B (18.6)	B (19.3)	B (18.6)
				R	A (2.3)	A (3.4)	A (4.5)	A (3.4)
		Overall			D (36.7)	D (37.4)	C (25.4)	D (37.4)
4	**Humboldt Parkway Southbound & Northampton Street**	S	Eastbound	LTR	A (8.3)	B (12.5)	D (46.7)	C (20.3)
			Westbound	LTR	A (5.5)	A (5.7)	A (9.6)	A (6.7)
			Northbound	LTR	A (5.0)	A (4.3)	A (3.9)	A (5.2)
			Southbound	LTR	A (7.9)	A (6.3)	A (6.4)	A (8.8)
		Overall			A (7.8)	A (7.0)	B (16.0)	B (11.1)
5	**Humboldt Parkway Northbound & Northampton Street**	S	Eastbound	LT	B (11.8)	B (11.0)	C (28.1)	B (12.9)
			Westbound	TR	B (10.7)	B (11.1)	C (34.0)	B (14.7)
			Northbound	LTR	A (4.5)	A (3.9)	A (3.3)	A (4.7)
		Overall			B (10.1)	A (9.9)	C (29.5)	B (13.3)
6	**Humboldt Parkway Southbound & East Utica Street**	S	Eastbound	TR	B (10.5)	B (10.4)	B (12.9)	B (10.4)
			Westbound	L	A (9.1)	A (9.1)	A (8.7)	A (9.1)
				T	A (8.4)	A (8.4)	A (8.6)	A (8.4)
			Southbound	LT/TR	A (4.7)	A (4.9)	A (7.3)	A (4.9)
		Overall			A (6.4)	A (6.6)	A (9.0)	A (6.6)
7	**Humboldt Parkway Northbound & East Utica Street**	S	Eastbound	L	B (10.0)	B (10.1)	B (10.2)	B (10.1)
				T	A (9.8)	A (9.8)	A (8.9)	A (9.8)
			Westbound	TR	B (12.1)	B (12.1)	A (9.3)	B (12.1)
			Northbound	LT	A (5.7)	A (5.9)	A (8.4)	A (5.9)
				R	A (2.4)	A (2.4)	A (3.2)	A (2.4)
		Overall			A (8.0)	A (8.1)	A (8.6)	A (8.1)
8	**Humboldt Parkway Southbound & East Ferry Street**	S	Eastbound	TR	B (15.0)	B (15.3)	B (19.1)	B (15.3)
			Westbound	L	A (8.5)	A (8.8)	B (13.6)	A (8.8)
				T	A (6.8)	A (6.8)	A (7.7)	A (6.8)
			Southbound	LT	C (20.6)	C (26.8)	F (87.0)	C (26.8)

				R	A (3.0)	A (3.1)	A (3.2)	A (3.1)
		Overall			B (12.7)	B (15.1)	D (39.0)	B (15.1)
9	**Humboldt Parkway Northbound & East Ferry Street**	S	Eastbound	L	C (25.6)	C (29.9)	E (69.3)	C (29.9)
				T	B (12.7)	B (12.9)	C (25.4)	B (12.9)
			Westbound	TR	B (12.7)	B (12.9)	B (14.5)	B (12.9)
			Northbound	LT	B (10.2)	B (10.4)	B (14.7)	B (10.4)
				R	A (3.7)	A (3.7)	A (3.8)	A (3.7)
		Overall			B (14.6)	B (15.7)	C (28.2)	B (15.7)

[1] S – Signal
[2] L – Left, T – Through, R – Right, LT – Shared Left Through, TR – Shared Through Right, LTR – Shared Left Through Right
[3] A (x.x) – Level of Service (average delay per vehicle in seconds)


198
33
GRID NORTH
W Delavan St
Florida St
Northland Ave
Fillmore Ave
Jefferson Ave
Wohlers Ave
Brunswick Blvd
Sidney St
Goulding Ave
E Ferry St
Woodlawn Ave
Roehrer Ave
Humboldt Pkwy SB
Humboldt Pkwy NB
Woodlawn Ave
Glenwood Ave
Woeppel St
E Utica St
French St
Riley St
Riley St
Urban St
Eaton St
Kingsley St
Northhampton St
MLK Park
Dodge St
Linden Park
Best St
MLK Park
E North St
Herman St
Rich St
33
High St
Reed St
Jefferson Ave
BFNC Drive
Cherry St
Genesee St
Legend
STUDY INTERSECTION

Signalized control was modeled for the Build Alternative ETC+20 diamond interchange on Best Street between the NYS Route 33 westbound and eastbound ramps. Both ramp intersections were evaluated with optimized signalized timings.

There are failing major movements for the Build Alternative ETC+20 Best Street westbound through and through/right lanes. The signalized intersection at Best Street and the NYS Route 33 eastbound ramp is projected to have an overall LOS of D in the PM peak hour, which is close to capacity.

There are failing major movements for the Build Alternative ETC+20 Best Street eastbound through and through/right turn lanes, as well as the NYS Route 33 westbound off ramp left/through lane. The signalized intersection at Best Street and the NYS Route 33 westbound ramp is projected to have an overall LOS D for the AM and LOS D, E and F for PM peak hours.

The closely spaced signalized intersections and spillover vehicle queuing issues create operational deficiencies at the Best Street interchange. The LOS analysis in Table 3.4-4 shows signalized operational results for the intersections at Best Street and the NYS Route 33 ramps.

Based on the operational analysis, signalized interchange control is dismissed from further consideration.

Due to the poor performance of signalized intersections described above, roundabout intersections have been analyzed at Best Street interchange and Herman Street. The proposed roundabout at the Best Street interchanges with NYS Route 33 and Herman Street was analyzed for the ETC+20 (2047) design year. The intersections were analyzed in VISSIM to determine the anticipated LOS and queue lengths of each approach to the proposed roundabouts. Table 3.4-5 shows the results of the VISSIM analysis.

Table 3.4-5: Intersection Level of Service and Delays (sec) – Proposed Best Street Roundabouts (ETC+20)

Intersection	Approach	Movement	AM[1]	Queue	PM	Queue
Best Street & NYS Route 33 eastbound and westbound Ramps	Eastbound	Left/Thru	A (9)	387’	C (22)	836’
		Right	A (5)		B (15)	
	Westbound	Left/Thru	A (4)	214’	A (6)	280’
		Right	A (3)		B (11)	
	Northbound	Left/Thru	A (9)	156’	F (57)	593’
		Right	A (7)		D (26)	
	Southbound	Left/Thru	A (3)	202’	A (3)	234’
		Right	A (4)		A (4)	
	Overall			A (6)		B (16)
Best Street & Herman Street/West Parade Avenue	Eastbound	Left/Thru/Right	A (2)	243’	A (2)	323’
	Westbound	Left/Thru/Right	A (4)	264’	B (12)	697’
	Northbound	Left/Thru/Right	A (5)	68’	A (8)	100’
	Southbound	Left/Thru	A (4)	82’	C (19)	226’
		Right	A (6)		C (17)	
	Overall			A (3)		A (8)

[1] A (x) – Level of Service (average delay per vehicle in seconds)

Traffic operation of the roundabouts proposed along Best Street is projected to be LOS B for overall intersections at the ETC+20 design year. In general, traffic operation would be improved compared to the No Build Alternative during the morning and evening peak hours.

Work Zone Safety & Mobility

A. Work Zone Traffic Control Plan

The Work Zone Traffic Control Plan is described in Section 3.5.

B. Significant Projects (per 23 CFR 630.1010) -

The NYSDOT has determined that the Project is significant per 23 CFR 630.1010, which means a Transportation Management Plan (TMP) will be prepared for the Project consistent with 23 CFR 630.1012. The TMP will consist of:

- A Temporary Traffic Control (TTC) plan
- A Transportation Operations (TO) component
- A Public Information (PI) component

3.4.1.8 Safety Considerations, Crash History and Analysis

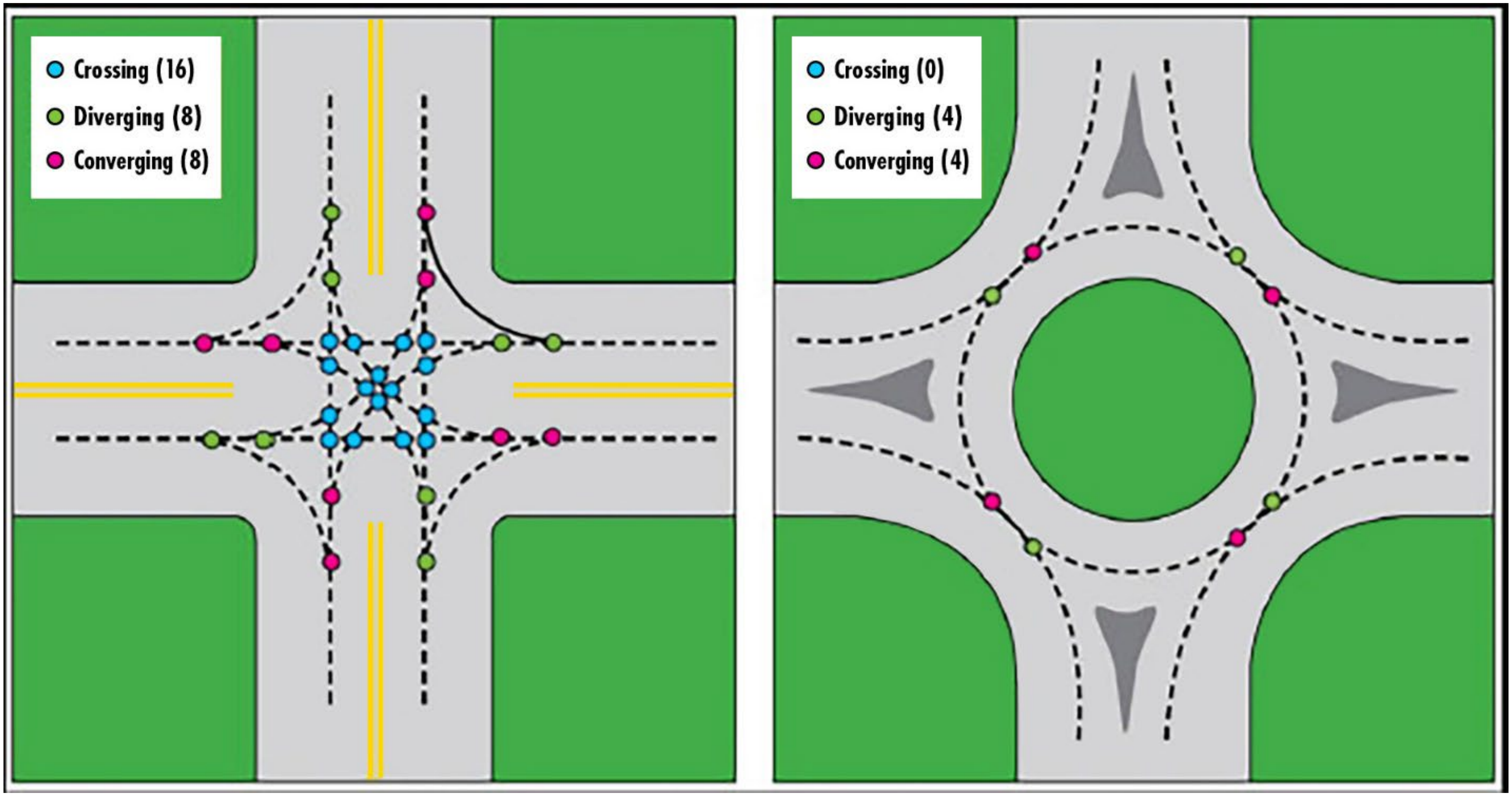
Planned improvements under the Build Alternative would minimize delays and are expected to reduce congestion related crashes within the transportation corridor. Improvements to traffic flow, optimized signal timings and equipment, provision of a new surface course, new pavement markings, defined travel lanes, improved signing, and improvements to pedestrian and bicycle facilities would enhance the safety of all users within the transportation corridor.

The need for guide railing, median barrier, signing, impact attenuators, lighting, variable message signs, pavement friction treatments, etc. would be examined during final design and installed to current standards, as necessary. Both non-traversable roadsides and fixed objects located within the clear zones would be evaluated for compliance with required clear zone criteria as specified in the AASHTO Roadside Design Guide.

As identified in Section 2.4.1.8, Tables 2.4-11 and 2.4-12, the Best Street/NYS Route 33 ramps and Best Street/W. Parade Avenue/Herman Street intersections have a total of 14 crashes. The Best Street/NYS Route 33 EB ramp crash rate of 0.69 Acc/MEV is above the statewide average of 0.56 Acc/MEV. Crash summary reports (TE-213) and collision diagrams (TE-56) are included in Appendix B5.

Modern roundabouts will enhance safety at the Best Street interchange by reducing potential conflict points between vehicles. Roundabouts are proven to reduce the rate of all crashes, but particularly those that cause injuries and fatalities.[24] Figure 3.4-2 presents a diagram of vehicle-vehicle conflict points for a traditional four-leg intersection with left turn lanes and a four-leg roundabout. As the figure shows, the number of vehicle-vehicle conflict points for roundabouts decreases from 32 for four-leg intersections to 8.

[24] FHWA SA-21-042. https://highways.dot.gov/safety/proven-safety-countermeasures/roundabouts


Crossing (16)
Diverging (8)
Converging (8)
Crossing (0)
Diverging (4)
Converging (4)

As Figure 3.4-2 shows, the proposed Best Street roundabouts would reduce vehicular crossing by converting all movements to right turns. Separate turn lanes and signalization could help to reduce, but not eliminate, the number of crossing conflicts at a traditional intersection by separating conflicts in space and time. However, the most severe crashes at signalized intersections typically occur when there is a violation of the traffic control device designed to separate conflicts by time (e.g., a right-angle collision due to running a red light, and vehicle-pedestrian collisions). Therefore, the ability of single-lane roundabouts to reduce conflicts through physical, geometric features has been demonstrated to be more effective than the reliance on driver obedience of traffic control devices.

3.4.1.9 Impacts on Police, Fire Protection and Ambulance Access

Emergency response vehicle access to NYS Route 33 and the arterials within the transportation corridor would remain similar to the existing conditions, with the following exceptions:

- Removal of the ramps at East Utica Street would require emergency access to and from NYS Route 33 at Best Street and Humboldt Parkway; and
- New city street crossings over the tunnel at Riley Street, Winslow Avenue, and Sidney Street/Butler Avenue, which will improve emergency access in these areas.

The Buffalo Fire Department (BFD) has indicated access to the portions of NYS Route 33 that would be located within the proposed tunnel would be within the jurisdiction of Station E33 and Station E21 / Ladder 6 / Rescue 1. In the case of a fire, all tunnel entry portals would be temporarily closed to traffic, which will allow for emergency vehicle access preferably from the clear, non-incident tube, from the exit portal of the incident tunnel (in case of smoke), or from the entry portal when stopped traffic in the tunnel allows for access. The NYSDOT will develop an emergency response plan, containing emergency procedures and access to the permanent tunnel installation, during the final design stage of the Project in collaboration with the BFD, Buffalo Police Department (BPD), and other relevant entities.

Emergency response plans would be developed for each construction phase. During construction, access to the active roadway for emergency services will be maintained. For emergency access purposes, staging would be such that NYS Route 33 would be lowered to final roadway profile without placement of the cap, so that the expressway would operate as it does in the current condition. Once feasible to establish connections to the tunnel safety systems, the tunnel cap will be installed. During construction, east-west crossings will be maintained as follows based on coordination with BFD and construction traffic/ emergency access considerations:

- The Best Street bridge would be replaced in stages to maintain vehicle and pedestrian access.
- Northampton Street and East Ferry St. would be maintained for vehicle and pedestrian movement during construction through the use of temporary bridges.
- Dodge Street and East Utica Street may be closed at times during the construction sequence. Pedestrian-only temporary bridges would be used as appropriate to maintain east-west connectivity during the construction period. Pedestrian crossings would be located at a maximum spacing of 1,300 feet.

A training program in tunnel incident response will be provided for the BFD and other first responders as part of final design.

3.4.1.10 Parking Regulations and Parking Related Issues

Parking along the local roadway network within the Project limits (including Humboldt Parkway) is currently permitted with various time-of-day and day-of-week restrictions. It is expected that 31 on-street parking spots would be removed along Humboldt Parkway due to new curb bump outs which are incorporated into the Project to improve intersection sight distances and to shorten pedestrian street crossings. Additionally, on-street parking (12 spots) on Humboldt Parkway southbound between Hamlin Road and Butler Avenue would be eliminated for the creation of greenspaces and the addition of trees. A parking demand study, included in Appendix A9, was completed for this section of Humboldt Parkway, which identified that parking along these two blocks has very low usage. The on-street parking on Humboldt Parkway is mostly utilized as residential parking and, in these areas, all homes have off-street driveways. No commercial business parking would be impacted. Details of the locations where the Build Alternative would impact parking spaces is provided in Appendix A9.

Of the approximately 173 currently existing parking spaces, the 43 parking spaces that would be eliminated represent a small fraction of the on-street parking available in the Study Area (which is not fully utilized under typical conditions), and their removal is not expected to substantially affect parking ease and convenience.

3.4.1.11 Lighting

Existing roadway lighting on NYS Route 33 in the location of the tunnel limits will be removed and replaced as discussed below.

Tunnel Roadway Lighting

Tunnel roadway lighting would consist of LED strip lighting in the upper corners of each tunnel direction. Near the entrance and exit portals, this lighting would be supplemented by additional LED strip lighting (threshold lighting) over the travel lanes to soften the transition from ambient lighting levels outside of the tunnel to those within the tunnel. To maximize efficiency, the tunnel control system would automatically regulate threshold lighting level based on the levels of brightness outside the tunnel.

LED floor guidance lights would be located in the outside (right) and inside (left) shoulders to assist drivers in staying within the travel lanes and serve as wayfinding lighting in case of a fire.

In the event of a regional power outage, emergency lights, exit signals, and essential signals will remain operational for 90 minutes, via Uninterruptible Power Supply (UPS), to allow for adequate lighting levels for those motorists that might be within, or approaching, the tunnel at the time of the power outage, to reach the tunnel portal.

Lighting Outside of Tunnel

Roadway lighting on NYS Route 33 north and south of the proposed tunnel would be replaced within the Project reconstruction limits. Modern LED cobra style fixtures will be mast arm mounted (dual mast arms) on poles on new concrete median barriers.

Roadway lighting along the Humboldt Parkway and other local streets within the Project reconstruction limits would be replaced with decorative street lighting (LED fixtures with new poles and mast arms) consistent with City of Buffalo standards. The final pole/arm style(s) will be coordinated with the City of Buffalo and would be consistent with the adjacent neighborhoods as appropriate.

3.4.1.12 Ownership and Maintenance Jurisdiction

The NYSDOT would continue ownership and maintenance responsibilities for NYS Route 33 and bridges over NYS Route 33, as well as the proposed tunnel. The City of Buffalo would continue ownership and maintenance of the local streets, including Humboldt Parkway. The long-term ownership and maintenance responsibilities for the new greenspace on the tunnel cap are anticipated to be taken by the City of Buffalo. Details of the greenspace maintenance arrangements would be determined during final design.

3.4.2 Multimodal Considerations

A Complete Streets checklist has been completed for the Project and is included in Appendix A16.

3.4.2.1 Pedestrians

Pedestrians are not permitted on NYS Route 33 – Kensington Expressway and as such, no pedestrian facilities are proposed on the expressway. The Build Alternative does include new, reconstructed, and rehabilitated sidewalks on the local streets within the project limits. Proposed improvements would improve conditions for pedestrians by providing a continuous, ADA compliant sidewalk system. All curb ramps would be ADA accessible. Pedestrian safety and comfort would be improved through the installation of new pedestrian signal equipment at signalized intersections, high visibility cross walks, shortened crossing distances at intersections with curb bump-outs and select sidewalk replacement to eliminate broken slabs and trip hazards.

On Humboldt Parkway, five-foot-wide sidewalks will be provided along the reconstructed northbound and southbound thoroughfares, including ADA accessible curb ramps, pedestrian crossing signals at signalized intersections and curb bump-outs that reduce crossing distances. Sidewalks will be reconstructed on cross streets near the intersections with Humboldt Parkway. Sidewalk crossings over the tunnel cap will be provided on either side of the following streets (pedestrians would also be able to travel in the green space over the tunnel cap): Dodge Street, Northampton Street, Riley Street, East Utica Street, Winslow Avenue, East Ferry Street and Sidney Street/Butler Avenue. Refer to Figures 3.2-1A and 3.2-1B.

On Best Street, a complete sidewalk or multi-use path network will be provided around the Best Street roundabouts.

On local streets adjacent to Humboldt Parkway (where street rehabilitation is proposed), sidewalks will be rehabilitated where warranted. Improvements include: ADA accessible curb ramps, replacement of broken or missing sidewalk sections, removal of trip hazards, and new crosswalk striping.

3.4.2.2 Bicyclists

Bicyclists are not permitted on NYS Route 33 – Kensington Expressway and as such, no bicycle facilities are proposed on the expressway. The Build Alternative does include improvements within the Humboldt Parkway corridor (northbound and southbound) that will extend the existing 5-foot-wide bicycle lane southerly from Northampton Street to Best Street. This connection is in accordance with the GBNRTC's *Bike Buffalo Niagara Regional Bicycle Master Plan* (2020). A number of local side streets will be designated as a "Neighborhood Bikeway" in accordance with the City of Buffalo's *Buffalo Bicycle Master Plan* (2016). Best Street will have a shared multi-use path adjacent to the roundabouts. Appropriate bicycle pavement markings and signage will be installed within the Project limits.

The existing 5-foot-wide bicycle lanes on Humboldt Parkway northbound and southbound will be maintained with the reconstruction of these roadways, including the 2-foot-wide buffer between the bicycle lane and parking lane. Specifically, on Humboldt Parkway southbound, bicycle provisions include a 5-foot-wide bicycle lane with 2-footwide buffer from the northern project limits to Butler Avenue. From Butler Avenue to just north of East Ferry, bicycle provisions include a shared travel lane adjacent to the parking lane. A 5-foot-wide bicycle lane with 2-foot-wide buffer will be provided from just north of East Ferry Street to Northampton Street. On Humboldt Parkway northbound, a 5-foot-wide bicycle lane with 2-foot-wide buffer will be provided from Northampton Street to the northern project limit.

South of Northampton Street, 5-foot-wide bicycle lanes will be provided between the travel lane and curb on the new two-direction roadway between Northampton Street and Dodge Street (Humboldt Parkway Extension) and on West Parade Street from Dodge Street to Best Street. The Humboldt Parkway northbound ramp connection just north of Northampton Street will have a 5-foot-wide bicycle lane between the travel lane and the right curb.

“Neighborhood bikeways” will be established on select local streets within the project limits as identified in the Buffalo Bicycle Master Plan (2016). “Neighborhood bikeways” are typically established on low volume roads and can have traffic calming features designed to slow traffic for safer bicycle travel. The following streets will be designated as “Neighborhood Bikeways” within the project limits: East Utica Street, Northampton Street, Northland Avenue, Donaldson Road, and High Street. Improvements will include shared-use pavement markings and signage. There will be no changes to the existing curb-to-curb street width or existing parking that may be utilizing the street. Traffic calming features, if any, will be determined during final design.

3.4.2.3 Transit

There are five existing transit routes that travel through the project limits. Four of the five routes will not be affected by the construction of the Build Alternative. However, the Route 81 “Eastside Express” currently utilizes the westbound on ramp at East Utica Street which will be removed as part of the Project. Following construction of the Build Alternative, NYS Route 33 Kensington Expressway westbound would be accessed from the nearby Best Street interchange to maintain the Route 81 bus route. NYSDOT has initiated coordination with the Niagara Frontier Transportation Authority (NFTA) and this coordination will continue through final design and construction.

With regard to bus stop locations, NFTA is currently planning to maintain bus stops at the intersections of East Ferry Street and East Utica Street with Humboldt Parkway (northbound and southbound). Similarly, bus stops on either side of the Best Street bridge over the Kensington Expressway will be maintained. For each of these east-west streets, bus stops are located on both sides of the Kensington Expressway to avoid requiring transit users to cross over the highway. NFTA is considering reducing the number of stops at each intersection from four to two based on the improvements to east-west pedestrian connectivity and safety provided by the Project.[25] The existing bus stops at Best Street would be relocated within walkable distance to account for proposed roundabouts in coordination with NFTA.

The Project will include the installation of concrete pads for future bus stops in coordination with the NFTA. Bus stop amenities such as shelters or benches will be independent and separate from this Project and will be at the discretion of the NFTA.

3.4.2.4 Airports, Railroad Stations, and Ports

There are no airports or port facilities within the Project limits or affected by the Project.

There is a railroad or railroad-owned property within the Project limits. The Build Alternative is not anticipated to affect this bridge. See Section 3.4.3.11 for more detail.

[25] March 27, 2023 email from NFTA documenting preliminary bus stop consolidation and improvement considerations.

3.4.2.5 Access to Recreation Areas (Parks, Trails, Waterways, and State Lands)

No changes in access to existing recreation areas are proposed. The roadway and sidewalks at the entrance near the southwest corner of Martin Luther King Jr. Park will be reconstructed as part of the proposed Best Street/Herman Street/West Parade Avenue roundabout. Sidewalk curb ramp replacement will also occur along Best Street and Northampton Street within the park.

3.4.3 Infrastructure

3.4.3.1 Proposed Highway Section

Refer to Appendix A1 for a typical section.

Right of Way (ROW)

There are proposed ROW acquisitions required for the Build Alternative. Preliminary anticipated property impacts are listed in Table 3.4-6 below pending final right-of-way files and design progress.

Table 3.4-6: Anticipated Right-of-Way Acquisitions Build Alternative

Tax Map No.	Type of Acquisition	Estimated Acquisition Area	Parcel Size (acres)	Percentage of Acquisition
100.16-1-1	TE	0.0141	53.1145	1.5%
	TE	0.0255		
	TE	0.014		
	TE	0.1807		
	TE	0.0174		
	TE	0.5571		
100.35-4-999[2]	TE Pump Station removal	0.0251	0.0251	100%
100.67-3-23[1]	FEE	0.0036	0.0036	100%
100.67-3-24[1]	FEE	0.0157	0.0157	100%
100.83-5-4	Fee	0.0029	0.5936	0.5%
100.75-4-30.1	Fee	0.003	0.4348	0.7%
100.83-4-3	Fee	0.0029	0.2385	0.5%
100.83-4-2	Fee	0.0083	0.1611	5.2%
100.83-4-1	Fee	0.0082	0.1351	6.1%
100.75-4-38	Fee	0.0007	0.0823	0.9%
100.75-5-23.11	Fee	0.0032	0.9241	0.3%
100.75-5-23.2	Fee	0.0049	0.5169	0.9%
100.83-3-1.1	Fee	0.0059	0.5169	0.7%
100.76-1-30	Fee	0.003	0.4994	0.6%
100.76-6-1	Fee	0.003	0.0781	3.8%

Table 3.4-6: Anticipated Right-of-Way Acquisitions Build Alternative				
Tax Map No.	Type of Acquisition	Estimated Acquisition Area	Parcel Size (acres)	Percentage of Acquisition
100.76-6-2.1	Fee	0.003	0.7157	0.4%
100.76-1-26	Fee	0.003	0.0859	3.5%
100.76-2-30	Fee	0.003	0.0818	3.7%
100.76-6-21.1	Fee	0.003	0.5905	0.5%
100.76-2-23.1	Fee	0.003	0.1512	2.0%
100.76-3-12.11	Fee	0.003	0.1223	1.3%
100.76-6-45	Fee	0.002	0.076	2.6%
100.36-3-16	Fee	0.0026	0.0839	3.1%
100.36-4-32	Fee	0.0004	0.0788	0.5%
100.36-5-34	Fee	0.0046	0.0784	5.9%
100.36-6-19.12	Fee	0.0046	0.5226	0.9%
100.44-1-29	Fee	0.0048	0.3477	1.4%
100.52-2-15	Fee	0.0103	0.0903	11.4%
100.60-3-8	Fee	0.0012	0.2832	0.4%
100.67-3-25.1	Fee	0.0035	0.0992	2.7%
100.67-3-28.11	TE	0.0147	0.0341	43.1%
89.82-4-42	Fee	0.0017	0.0864	2.0%
100.75-4-1.11	Fee	0.0044	0.4844	0.9%
100.59-2-16.1	TE Water Service replacement	0.0035	0.075	4.7%
100.59-2-15	TE Water Service replacement	0.0035	0.0543	6.4%
100.59-2-14	TE Water Service replacement	0.0035	0.0871	4.0%
100.59-2-23	TE Water Service replacement	0.0035	0.1313	2.7%
100.59-2-12	TE Water Service replacement	0.0035	0.1607	2.2%
100.59-2-11	TE Water Service replacement	0.0035	0.1706	2.1%
100.59-2-10	TE Water Service replacement	0.0035	0.2251	1.6%
100.59-2-9	TE Water Service replacement	0.0035	0.2167	1.6%

Table 3.4-6: Anticipated Right-of-Way Acquisitions Build Alternative				
Tax Map No.	Type of Acquisition	Estimated Acquisition Area	Parcel Size (acres)	Percentage of Acquisition
100.59-2-8	TE Water Service replacement	0.0035	0.2128	1.6%
100.59-2-7	TE Water Service replacement	0.0035	0.2108	1.7%
100.59-2-4	TE Water Service replacement	0.0035	0.1206	2.9%
100.59-2-3	TE Water Service replacement	0.0035	0.1264	2.8%
100.51-1-38	TE Water Service replacement	0.0035	0.1286	2.7%
100.51-1-37	TE Water Service replacement	0.0035	0.1403	2.5%
100.51-1-36	TE Water Service replacement	0.0035	0.1818	1.9%
100.51-1-35	TE Water Service replacement	0.0035	0.1288	2.7%
100.51-1-34	TE Water Service replacement	0.0035	0.1092	3.2%
100.51-1-33	TE Water Service replacement	0.0035	0.1184	3.0%
100.51-1-32.2	TE Water Service replacement	0.0035	0.0972	3.6%
100.43-3-13	TE Water Service replacement	0.0034	0.1713	2.0%

Notes:
1. There are two parcels 100.67-3-23 (0.0036 acres) and 100.67-3-24 (0.0157 acres) that are small properties that will be acquired in full to accommodate grading associated with the roundabout construction. These unoccupied properties are currently owned by the City of Buffalo.
2. In addition, parcel 100.35-4-999 noted above will require a TE of the full parcel to remove the existing pump station. This property is owned by the City of Buffalo Sewer Authority.

Curb

Six-inch near vertical faced granite curb will be provided on both sides of the local roads and arterials within the Project limits (including the local street rehabilitation areas). Six-inch mountable concrete curb will be provided at the Best Street roundabouts and at select locations where existing mountable curb is impacted.

Table 3.4-7: Curb Locations and Type	
Location	Type
NYS Route 33	None

Kensington Expressway	
Humboldt Parkway (one-way)	Near Vertical Face (NVF) - Stone curb
Humboldt Parkway (two-way)	NVF - Stone curb
Ramp B	None
Ramp C	NVF - Stone curb
Ramp D	NVF - Stone curb
Ramp E	NVF - Stone curb
Ramp F	NVF - Stone curb
Other Local Roads	NVF - Stone curb
Best Street roundabout	NVF - Stone curb Roundabout (RD) - Stone curb

Note:
Ramp B: Off Ramp from NYS Route 33 Westbound to Humboldt Parkway Southbound
Ramp C: On Ramp from Best Street to NYS Route 33 Westbound
Ramp D: Off Ramp from NYS Route 33 Eastbound to Best Street
Ramp E: Off Ramp from NYS Route 33 Westbound to Best Street
Ramp F: On Ramp from Best Street to NYS Route 33 Eastbound

Grades

The proposed maximum grade on NYS Route 33 within the Project Limits will be 3.9%. The grade does not warrant a climbing lane. The proposed maximum grade on the local streets and arterials will be 2.7%. The grade does not warrant a climbing lane.

Table 3.4-8: Maximum Grade of Ramps

Location	Maximum Grade
Ramp B	5.0%
Ramp C	5.8%
Ramp D	5.1%
Ramp E	5.4%
Ramp F	7.0%

Note:
Ramp B: Off Ramp from NYS Route 33 Westbound to Humboldt Parkway Southbound
Ramp C: On Ramp from Best Street to NYS Route 33 Westbound
Ramp D: Off Ramp from NYS Route 33 Eastbound to Best Street
Ramp E: Off Ramp from NYS Route 33 Westbound to Best Street
Ramp F: On Ramp from Best Street to NYS Route 33 Eastbound

Intersection Geometry and Conditions

Proposed changes in intersection geometry are shown in the Best Street and Humboldt Parkway general plans (Appendix A1).

Roadside Elements

(a) Snow Storage, Sidewalks, Utility Strips, Bikeways, Bus Stops –

Snow storage along Humboldt Parkway between the parking lane and the sidewalk will be increased to approximately 10 feet in the typical section.

Existing bicycle lanes along Humboldt Parkway will be maintained along the reconstructed roadway.

The Build Alternative would provide a concrete base at locations requested by NFTA to support NFTA's future construction of bus shelters.

(b) Driveways – NYS Route 33 is access controlled. Driveways along Humboldt Parkway will be extended to match with the new horizontal alignment of the roadway.

(c) Clear Zone - The clear zone would vary based on the different functional classifications of roadways that are present within the Study Area. Where fixed objects or other hazards within the clear zone could not be mitigated, the roadside would be protected by concrete barrier or guiderail.

3.4.3.2 Special Geometric Design Elements

<u>Nonstandard Features</u>

Critical design elements that do not meet standard values are identified as nonstandard features. To identify nonstandard features, the proposed geometry was reviewed and compared to applicable design standards (see HDM Exhibit 2-15) for critical design elements. The following non-standard features are proposed as part of the Build Alternative.

- Left shoulders on the Kensington Expressway (non-tunnel) sections
  - Standard: 10'
  - Proposed design: varies from 6' to 4' (4' matches existing)
- Right shoulders on the Kensington Expressway (non-tunnel) sections
  - Standard: 10'
  - Proposed design: varies from 10' to 8'
- Minimum stopping sight distance on NYS Route 33 (tunnel)
  - Standard: 570'
  - Proposed design:
    - Eastbound 525'
    - Westbound 562'
- Omission of raised safety walks within the tunnel cross section.

For Nonstandard Feature Justifications refer to Appendix A6.

For additional information regarding the omission of the raised safety walk refer to Technical Memorandum: Raised Safety Walks and Egress within Appendix A11.

<u>Non-conforming Features</u>

In addition to critical design elements, other design elements with established values or parameters must be considered. Elements that vary from established values are identified as non-conforming features. The following non-conforming features are proposed as part of the Build Alternative:

- Intersection turning radii
  - Standard urban street: 30 ft. minimum
  - Existing local road street corners are 10 ft.
  - Existing and proposed southwest corner 2 ft. (railroad bridge pier dictates the curb radius)
- Acceleration lane
  - EB on Ramp to NYS Route 33 EB

        - Standard
            - Acceleration Length (La) = 800 ft
            - Gap Acceptance Length (Lg) = 300 ft
            - Use longest length of La or Lg
        - Existing = 175 ft.
        - Proposed Lg of 300 ft. is used to avoid additional right-of-way cost of extending the acceleration lane into the proposed tunnel and construction of a wider tunnel.
- Setback (snow storage)
    - Standard: 4 ft.
    - Some existing and proposed local roads have less than 4 ft.
- Drainage pipe size
    - Standard 15 ft. or larger
    - Existing 12 ft. drainage connection to combined sewer
    - Proposed on Humboldt Parkway and other local roads would need to use City of Buffalo catch basins and curb boxes that are designed for 12” pipes
- Roundabout
    - Roundabout entry curb radii (Best Street/Herman Street/West Parade Street roundabout)
        - Standard: 65’ minimum
        - Proposed North Leg: 30’
        - Proposed South Leg: 50’
        - Proposed East Leg: 25’
    - Roundabout sight distance to crosswalk
        - Standard: 197.8’
    - Proposed West Leg: 98’
    - Proposed South Leg: 80’
    - Proposed East Leg: 41’

The Build Alternative has various non-conforming features for certain characteristics of the roundabout. There is the opportunity to refine some of these features during detailed design. The current values depicted in the criteria table indicate an acceptable best fit for the various elements.

3.4.3.3 Pavement and Shoulder

The following roadways are proposed to be removed under the Build Alternative:

- NYS Route 33 westbound on-ramp at East Utica Street.
- NYS Route 33 eastbound off-ramp at East Utica Street.
- Humboldt Parkway southbound from Northampton Street to West Parade Avenue.

The following roadway changes are proposed with the Project:

- Linden Park would become a dead-end road near Best Street (turnaround added).
- The east end of Dodge Street would be realigned (over tunnel) to form a tee intersection into West Parade Avenue.
- Two-lane roadway (Humboldt Parkway) proposed, over tunnel, from Dodge Street to Northampton Street.
- Humboldt Parkway, northbound and southbound, will be shifted about 16 feet away from the adjacent homes, creating wider (10 feet) tree/lawn spaces and in general increasing greenspace between Humboldt Parkway and the properties.
- Best Street between Herman Street and Norway Park would be reconfigured with roundabouts. A single lane roundabout is proposed at Herman Street/Best Street/West Parade Circle/West Parade Avenue, while a peanut shaped roundabout is proposed over NYS Route 33 to accommodate the on and off ramps of the expressway.

- The eastbound and westbound off-ramps at Best Street will be reconstructed with two lanes in each direction to accommodate traffic volumes and turning movement entries into the roundabouts on Best Street.

The following new roadway connections are proposed with the Project:

- New roadway connections over the NYS Route 33 tunnel at:
  - Riley Street (two-way traffic)
  - Winslow Avenue (two-way traffic)
  - Sidney Street to Butler Avenue (one-way westbound)
- Slip ramp from Northampton Street to Humboldt Parkway northbound.

Refer to the Project plans in Appendix A1 for details on above changes.

Kensington Expressway (Mainline)

Full depth reconstruction of Kensington Expressway (NYS Route 33) is proposed from about Fox Street at the south end of the Project limits to approximately the pedestrian overpass bridge near Hamlin Road at the north end of the Project limits. Milling and overlaying of the expressway, as necessary, to rehabilitate the existing pavement and shoulder conditions is expected for several hundred feet beyond these full depth reconstruction limits. Within the mill and overlay areas, the lane and shoulder widths would remain unchanged.

Horizontal Alignment

The horizontal alignment of the Kensington Expressway (NYS Route 33) over the reconstruction limits would undergo geometric changes. The southern portion of the Project limits would remain unchanged to about the location of the Buffalo Museum of Science where an existing compound curve begins. From that point to the north, the Project would transition NYS Route 33 to a 5.7-foot centerline shift towards the east to accomplish two separate goals:

- **Goal 1:** The horizontal shift allows for the replacement of two undesirable (compound) curves that exist between the Buffalo Museum of Science and Riley Street with a more desirable single curve at an appropriate radius of 2,860 feet. If the alignment were not shifted, the compound curve would need to remain, or the new appropriate singular curve (2,860-foot radii) would cause ROW impacts on the west side of the expressway.
- **Goal 2:** The horizontal shift allows the proposed tunnel walls and foundations to fall outside the footprint of the existing depressed expressway retaining walls to improve construction staging in the densely residential northern portion of the Project. The staging improvements would substantially reduce construction effects along the Humboldt Parkway, reduce the overall staging duration, and lower the costs to construct the Project.

Vertical Alignment

The vertical alignment of the Kensington Expressway (NYS Route 33) over the reconstruction limits will be lowered to accommodate the tunnel cap and Best Street bridge replacement. Starting at the south end of the Project, a slight lowering of the profile is proposed under the Best Street bridge to accommodate required clearances and foundation/span designs. The profile would gradually lower to an 8-foot cut at the south tunnel portal at Dodge Street. Throughout the proposed tunnel limits, the profile lowering would vary, from about 8 feet to as much as 20 feet, to accommodate the tunnel cap and appropriate cover and grading overtop. Beyond the north tunnel portal at Sidney Street, the vertical profile would transition from a deep cut of 20 feet back to existing grade at the reconstruction limits (near the pedestrian overpass bridge).

Expressway Ramps

The major changes to the expressway ramps are described above in this section. The ramps retained with the Project will maintain the approximate existing horizontal geometry with some minor changes to curve radii design to current standards. The profiles of the ramps will be adjusted (slightly steeper), within design standards, to accommodate the deeper NYS Route 33 profile changes. Further, the NYS Route 33 westbound off-ramp to Best Street and eastbound on-ramp from Best Street will be within the tunnel from the south portal to where they meet up and merge with the mainline. Approximately 540 feet of the Best Street westbound off-ramp will be within the tunnel. Approximately 580 feet of the Best Street eastbound on-ramp will be within the tunnel.

Local Streets (Rehabilitation Areas)

All local streets within the local street rehabilitation areas will maintain existing horizontal and vertical alignments (see Section 3.4.3.12 for additional information on the scope of improvements to local streets).

Pavement Sections

The final pavement sections for full depth reconstruction of roadways and shoulders are designed in accordance with the NYSDOT Comprehensive Pavement Design Manual (CPDM). The flexible pavement designs would utilize the Equivalent Single Axle Loading (ESAL) procedure outlined in the CPDM. The design life of the pavement is a 50-year service life, with a surface life of 20 years. The pavement sections proposed with the Project are summarized in Table 3.4-9, and ESAL based calculations can be found in Appendix A10. Proposed treatment for mill and overlay of local street rehabilitation areas can also be found in Table 3.4-9.

Table 3.4-9: Pavement Section Summary Table

Facility	Select Granular Subgrade	Gravel	Asphalt Base Course	Asphalt Binder Course	Trueing and Leveling Course	Asphalt Top Course
NYS Route 33 (mainline)	12"	12"	6"	2.5"	N/A	1.5"
NYS Route 33 (ramps)	0	12"	4"	2.5"	N/A	1.5"
Humboldt Parkway	0	12"	4"	2.5"	N/A	1.5"
City Streets (reconstruction)	0	12"	3"	2.5"	N/A	1.5"
City Streets (Mill / Overlay)	0	0	0	0	1"	1.5"

3.4.3.4 Drainage Systems

It is anticipated that the stormwater collected will be less than the existing stormwater. This is due to the cap over the NYS Route 33 being vegetated and having enough soil to infiltrate the stormwater that would have otherwise runoff.

Tunnel Drainage Systems

Due to the tunnel cap, there will be no direct stormwater demand on NYS Route 33 within the tunnel limits.

The tunnel drainage system will capture firefighting waters or water used to wash the structure during routine maintenance. To accommodate the large water flows of these situations and quickly drain hazardous spills, slot drains will be included along the full length of each tunnel at the low point in the cross section in the outside shoulder.

This drainage system will be constructed entirely of noncombustible materials to accommodate the potential spill of a flammable liquid transport tank. A slot drain allows for continuous draining along the full length of the tunnel to avoid potential ponding of spilled flammable liquids.

All tunnel drainage will be collected in a retention tank that is large enough to hold fire extinguishing water, spilled flammable liquid, and dedicated power, pump and control systems. The pump room will include space for redundant pumping equipment, a settlement compartment, and oil separator. Once water flows through the settlement compartments and oil separator, it would be pumped into the existing stormwater system, while hazardous liquids (whether those used to extinguish electric vehicle fires or spills) would be pumped to trucks and taken to a hazardous material treatment facility for proper disposal.

The tunnel roadway level will be below the groundwater table for the full length of the tunnel. Although the secant piles would be embedded into the bedrock of the exterior walls, providing cutoff, minimal groundwater penetration below the tunnel roadway slab is anticipated. A subdrainage system, consisting of a network of slotted pipes within a layer of crushed stone below the tunnel roadway slab, will be included. This drainage system will be piped to a pumphouse specifically dedicated for groundwater collection and collection of stormwaters in proximity of the north portal (see following section) and discharge into the stormwater system.

For discussion of NYS Route 33 stormwater drainage capture at or near the vicinity of the tunnel portals, see the following section. Any storm waters from NYS Route 33 that may find their way past these portal collection points and into the tunnel would be collected in the tunnel drainage system. Stormwater collected by the tunnel drainage system would be pumped into the existing stormwater system after flowing through the drainage system settlement compartments and oil separator.

The drainage of water permeating through the park areas above the tunnel, and not absorbed by vegetation, will be collected in a prefabricated drainage layer. This drainage layer will be placed above the sloped tunnel protection layer on top of the tunnel roof slab and will thus direct water off the tunnel roof. This drained water will flow to the backfill soils placed along the periphery of the tunnel and eventually percolate to the existing groundwater level and dissipate laterally away from the tunnel. The tunnel's secant pile construction will provide effective hydraulic isolation from the surrounding groundwater and in particular any periodic increases in the surrounding groundwater level due to heavy precipitation events.

NYS Route 33 (Kensington Expressway) Stormwater

Within the Project limits the stormwater system for NYS Route 33, Kensington Expressway currently collects stormwater and discharges to three stormwater system discharge points. One discharge point for the NYS Route 33 is a stormwater trunk that continues south on NYS Route 33 and that discharges into a 96-inch combined sewer that heads south on Michigan Avenue. Under the Build Alternative, the stormwater along NYS Route 33 prior to the southern tunnel portal would continue to collect in this stormwater system to the southern Project limits. A portion of this system impacted by the building of the tunnel will be relocated within the Humboldt Parkway roadway. The portion impacted by building the tunnel will be relocated along Humboldt Parkway and will no longer receive drainage from NYS Route 33 in the area of the tunnel.

The second discharge point is the combined sewer on East Ferry Street. This discharge point uses an existing pump station located on the southwest quadrant of Humboldt Parkway and East Ferry Street. Under the Build Alternative, this system will be relocated to Humboldt Parkway and will require a new pump station in a similar location to the existing pump station. The new pump station is proposed to be adjacent to the tunnel underground. This discharge point would receive the stormwater collected at the northern tunnel portal entrance and would use a new proposed underground pump station. A portion of the drainage system on the east side of the tunnel will be redirected to an 84-inch tunnel (drainage conduit) within the Humboldt Parkway.

The third discharge point for the NYS Route 33 is the Scajaquada Drain. The stormwater along NYS Route 33 north of the pedestrian bridge to the northern Project limit collects in this stormwater system. Under the Build Alternative, this system will be modified as needed to accommodate the change in grade of the proposed roadway but will outlet in the same location.

Local Street Proposed Stormwater

Within the disturbed area along Humboldt Parkway above the tunnel section, the stormwater will be collected into a separate stormwater system that will discharge to one of the three discharge points that the existing NYS Route 33 discharges to and/or into the combined sewer system at locations where the existing Humboldt Parkway inlets discharge. Within the local roads project limits the drainage work would be limited to cleaning, repairs, and adjustments. The inlets will continue to discharge with laterals to the combined sewer system.

3.4.3.5 Tunnel Features

Tunnel Design Overview and Space Proofing

The proposed tunnel will provide unidirectional traffic in two adjacent corridors, one for eastbound traffic and the other for westbound traffic. The total tunnel length will be approximately 4150 feet. Each corridor will have three 12-foot lanes, an 8-foot right shoulder and a 6-foot left shoulder for an overall width of 50 feet between walls. The 6-foot left shoulder will serve as means of emergency egress.

Each tunnel tube will maintain a minimum 16-foot vertical clearance from top of roadway to the lowest element over the roadway, whether that be a structure or appurtenance. Appurtenances include tunnel ventilation (jet fans), sprinkler system, lighting, roadway signs, ITS equipment and utility ducts.

There will be a single center wall separating the two directions of traffic, and there will be two exterior retaining walls, one on each side, generally in similar locations to the existing retaining walls along the NYS Route 33.

The tunnel roof will accommodate a minimum three foot depth of special organic soil to support growth of trees of a similar species as the original parkway. In addition, there will be approximately 6-inch of depth provided for a drainage layer, waterproofing, and insulation over the tunnel cap. Insulation boards will be provided between the organic soil and the tunnel roof slab to provide a level of protection from extreme cold air temperatures that will occur in the tunnel during winter months.

In jet fan locations, the roof slab will be raised 6 inches to allow for adequate clearance for connection of jet fans and their supports. The depth of cover over the roof at jet fan locations would be 3’-6” total, to include 3’-0” of soil and 6” for drainage and insulation. Where practical, special attention will be given to having these locations coincide with cross-street locations to minimize the impact of shallower soil cover in the planted areas.

The tunnel roof will continue to carry existing cross streets at Dodge, Northampton, East Utica, and East Ferry Streets. Additional cross streets will be established at Riley Street, Winslow Avenue, and Sidney Street.

Additionally, the proposed alignment of the northbound and southbound Humboldt Parkway will be shifted inward by 11.5 feet from their current locations. A portion of these roadways will be over the proposed tunnel.

Tunnel Walls and Slabs

The proposed tunnel construction requires that the vertical roadway profile be lowered by 0 feet at the tie-ins to about 20 feet in the deepest sections. The tunnel walls will support not only earth and water pressures but also considerable vertical load from the roof slab and overlying park and roadways. In addition, limiting groundwater flow beneath the tunnel will be essential for preventing the need for constant water pumping.

Interlocking secant piles embedded into bedrock would be used for the lower portions of the tunnel walls. These secant pile walls would be extended above existing grade to the roof slab seat with conventional cast-in-place (CIP) wall construction. The secant pile walls would provide an effective groundwater cutoff barrier to limit the amount of water that can seep into the tunnel's subdrain system. Limiting this seepage reduces sump pumping and long-term maintenance costs.

For watertightness, the CIP wall sections, and the base slab will have an exterior membrane waterproofing system of a material that is inert with respect to hydrocarbon exposure. For the watertightness of the secant pile sections, the joints between each secant pile pair would be filled with a hydrophilic butyl-bentonite material and cast within a finish wall facing to match the CIP wall above for a uniform appearance. The invert slabs would be keyed and sealed into the tunnel walls for watertightness. As a precautionary, long-term measure, the invert slab will be sized to resist the anticipated water pressure should the sub drainage system eventually fail.

The center wall will be extended 100 feet beyond the portals at each end of the tunnel to provide separation of airflows between entrance and exit portals. This is of particular importance in case of a fire, where the center wall extension would reduce smoke recirculation into the non-incident tube. This dividing wall would be of similar height to the center wall within the tunnel or would maintain the same top of wall elevation as the center wall at the portal.

To minimize the cost of constructing tall exterior walls, they would be braced by the tunnel roof acting as a strut between the exterior tunnel walls. Connections between the roof and the walls would be similar to integral abutment construction, creating a rigid frame structure. The walls will additionally be designed to span an unbraced length of 20 feet, allowing for future roof slab replacement in segments along the length of the tunnel without necessitating additional bracing of the retaining walls. Conservatively for greater structure durability, the roof slab design omits increased structural capacity due to induced compressive forces from strut action.

Temporary support of excavation (SOE) used for the construction of the east and west walls would remain effective until the completion of the adjoining eastbound and westbound roof structures. This allows the secant pile walls to rely on the tunnel roof acting as a strut between the exterior walls, effectively bracing the walls. The SOE may need to remain in use for several years during construction, so its key support components, walers, anchor plates and hardware would be galvanized for extended life.

Structural solutions will use the following material properties:

- 3,000 PSI for cast-in-place concrete 28-day compressive strength;
- 8,000 PSI for precast concrete 28-day compressive strength (prestressed solutions not considered due to variable loading conditions leading to time dependent parameters that would be difficult to predict);
- 60 KSI for epoxy-coated reinforcement steel yield strength; and
- 100 KSI (75 KSI with use of couplers) for chromium steel reinforcement steel yield strength.

To achieve a 75+ year design life for the tunnel structure, chromium steel reinforcement and high performance internally curing concrete (HPIC) will be used for the roof slab. Additionally, a three (3) inch minimum clear cover will be provided for reinforcement within the walls and slabs. Epoxy coated reinforcement will be used in the center and exterior retaining walls as well as the bottom slab.

Structural concrete components (roof slab and walls) will include additional allowance to code-specified clear cover to steel elements to accommodate sacrificial concrete for increased fire resistance.

The roof solution would include one of the following options:

- A CIP reinforced concrete slab;
- A series of precast reinforced concrete panels;
- A CIP concrete slab with a series of structural steel filler beams; or
- Precast concrete units with structural steel filler beams.

All roof slab solutions would be made continuous over the center wall in a two-span configuration over the eastbound and westbound NYS Route 33 to avoid a joint at the center wall that would introduce long term durability concerns. The flat roof slab design solution allows for uniform 3'-6" soil depth and flexibility to plant trees at any location within the park areas.

The limited soil depth above the tunnel roof slab will not permit the use of standard traffic signal and light pole foundations for such appurtenances along the Humboldt Parkway. Project-specific details will be established for connection of these elements directly to the roof slab while allowing for future maintenance repairs or replacements of the appurtenances. These project-specific details will require City of Buffalo review and approval, which will occur in development of details in final design.

The existing cross street bridges carry various utilities that will need to be accommodated by the proposed structure. Utilities would be accommodated within the slab itself. Alternatively, these utilities will be accommodated within the tunnel, meaning they would need to be coordinated with tunnel ventilation equipment, fire suppression system, lighting, and associated utility runs. Based on coordination with the Buffalo Water Authority, waterlines under the proposed tunnel would not be acceptable. Instead, replacement waterlines will be insulated and placed over the tunnel roof slab (buried), embedded within the roof slab, or supported along the underside of the roof slab.

For further detail on tunnel wall and slab design progression, refer to the Tunnel Structure Type Technical Memorandum (Appendix A12).

<u>Tunnel Mechanical and Electrical Rooms</u>

Based on coordination with National Grid and the power demands required to support tunnel operations, power will be supplied to the project site via two separate utility feeders that originate from a common National Grid terminal substation. Each service feeder will terminate in a dedicated, partially underground, NYSDOT electrical substation. Each NYSDOT electrical substation will be approximately 22 feet wide by 75 feet long. Both NYSDOT substations will be located near the southern limits of the project, just north of Best Street and between West Parade Avenue and the NYS Route 33 Eastbound on ramp. At the NYSDOT substations, each National Grid supplied 23kV utility service will be converted to 4.16kV voltage for distribution to the tunnel electrical rooms. For further detail on tunnel power supply, refer to the Electrical Technical Memorandum (Appendix A14).

Like the electrical configuration at National Grid's terminal substation, NYSDOT's substations will operate in a closed bus-tie configuration which is inherently reliable. If one of the utility feeders is disrupted, such as for maintenance, electrical power will continue to be delivered via the other utility feeder.

In the event of a regional power outage, such as may be caused by an outage of the National Grid terminal substation or simultaneous interruption of the two services from National Grid, an Uninterruptible

Power Supply (UPS) will be provided to ensure that all safety-related control systems, fire alarm system, emergency lighting and wayfinding lighting are never interrupted longer than 0.5 seconds; as required by NFPA 502. The UPS will be sized to provide 90 minutes of full operation for each of the below noted sub-systems and then will have adequate power to put these sub-systems in a safe state for full power loss. The UPS will also be sized with an additional 15% of overbuild to account for battery degradation over the life of UPS. 90 minutes not only meets NFPA requirements but also is judged to be sufficient time to clear and close the tunnel in a safe and orderly manner. After detection of a power outage, traffic approaching the tunnel would be alerted to take alternate routes and the tunnel would be closed via use of barrier gates. The following sub-systems would be connected to UPS:

- Floor guidance lighting and emergency tunnel lighting to provide sufficient lighting to reach the tunnel portal;
- Communication systems;
- Fire detection systems;
- CCTV;
- Public address system; and
- VMS signs, lane control signals, and barrier gates to allow for diverting of approaching traffic and closure of the tunnel.

The following technical rooms will be required along the length of the tunnel:

- Three electrical rooms with transformers and switchgear: one near the south portal, one near the middle of the tunnel, and one near the north portal, each approximately 20 feet wide by 50 feet long and 8.5 feet high.
- Three communication rooms: one near the south portal, one near the middle of the tunnel, and one near the north portal, each approximately 20 feet wide by 20 feet long and 8.5 feet high.
- A pumphouse for fixed firefighting system (FFFS) pumps near the middle of the tunnel, approximately 20 feet wide by 75 feet long and 8.5 feet high.
- A pumphouse for tunnel drainage collection at the low point near the north end of the tunnel, approximately 20 feet wide by 50 feet long and 20 feet high.
- A pumphouse for groundwater drainage and capture of stormwater at the north portal: near the low point and in proximity to the north end of the tunnel, approximately 20 feet wide by 10 feet long, 8.5 feet high.

The above noted technical rooms will be placed below ground, under the Humboldt Parkway, and alongside the tunnel. Electrical rooms will be equipped with fire/smoke detectors and will be connected to the fire alarm system. Adequate heating, ventilation, and air conditioning (HVAC) systems will be provided, with grates for air intake and exhaust at the local street level.

Maintenance access points to technical rooms will generally be from within the tunnel through use of exterior shoulder closures, both for routine maintenance needs as well as to accommodate equipment delivery. Per coordination with the Buffalo Fire Department, an access point from the surface level will be provided to the technical rooms near the middle of the tunnel for access to the Fire Alarm Control Pane (FACP). Additionally, this access would accommodate frequent maintenance access to the mist system pumps for weekly maintenance and testing needs. Access to the surface at city street level will be by stairway contained within an enclosure. Maintenance staff would clear snow from the access point after winter storms, so the access door remains accessible and functional.

Tunnel Ventilation

A tunnel ventilation system will be provided in the form of a longitudinal ventilation system consisting of jet fans. Three rows of jet fans will be provided in each tunnel: one near the south portal, one near the middle of the tunnel, and one near the north portal.

The mechanical ventilation system in each tunnel tube would consist of:

- 3 rows of 8 jet fans;
- 4 anemometers;
- 8 visibility / smoke detectors;
- 2 air quality sensors;
- Variable frequency drive (VFD) for each fan; and
- Programmable Logic Controllers (PLCs).

Given the low emission rates of current-day vehicles, the jet fans will not likely be in operation under normal flowing traffic conditions. Moving vehicles will generate a piston effect that will pull in air from the entrance portal and push air out of the exit portal, creating sufficient air flow within the tunnel to dilute emissions to acceptable levels in accordance with Occupational Safety and Health Administration (OSHA) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards in the tunnel and National Ambient Air Quality Standards (NAAQS) outside the tunnel portals. Future emissions are anticipated to reduce, with an expected increase in the percentage of electric vehicles.

Air quality within the tunnel will be monitored via air quality sensors. If required based on air quality readings in cases such as heavy traffic congestion, the ventilation system would automatically operate to dilute pollutant concentrations to meet OSHA and ASHRAE standards within the tunnel and NAAQS standards outside of the tunnel by increasing fresh air drawn into the tunnel. The tunnel and tunnel systems would be designed to reduce the potential for increased concentrations of pollutants such as PM2.5, PM10, and CO at receptors near the portal jet. Measures to achieve this outcome might include increased use of the longitudinal ventilation system to draw more fresh air into the tunnel from the entrance portals and further dilute and disperse pollutants in the jet at the exit portal or via openings in the tunnel roof slab in proximity to the tunnel portals to allow for some air from within the tunnel to exhaust through the roof slab prior to reaching the end portals. Such openings would be hooded in such a way to permit air flow, even when the ground may be covered in snow, while not allowing light or the elements (rain, snow, ice, etc.) to enter the tunnel to mitigate potential safety concerns. Additionally, sound attenuating materials on such hoods would be considered. Air exiting such openings would be directed via the use of louvers. Such openings will be placed within approximately fifty (50) feet of the end portal, within a protected area enclosed by decorative fencing.

In case of a fire, the longitudinal air flow rate within the incident tube would be maintained in the direction of traffic, avoiding flow reversal, but kept at low magnitudes to enable smoke stratification and escape of motorists downstream of the fire. For that, an active feedback flow control based on precise and reliable in-tunnel flow measurement will be required. Additionally, jet fans in close proximity to the fire would be switched off to minimize smoke spread.

The main purpose of the ventilation system would be to control smoke propagation during a fire incident. In such a case, ventilation in the non-incident tunnel would be reversed quickly to avoid smoke spreading into the non-incident tube from the portal. Additionally, ventilation would be used to create an overpressure in the non-incident tube to avoid smoke spreading into the non-incident tube through open egress cross passages in the center wall.

Flow reversal in the non-incident tube to prevent smoke entry cannot be achieved during ongoing moving traffic. Stopping approaching traffic from entering the tunnel after a confirmed fire alarm is essential. See Section 3.4.1.4, Intelligent Transportation Systems (ITS) for measures that will be implemented to divert approaching traffic and prevent traffic from entering the tunnel.

The ventilation system would be designed to achieve an adequate flow velocity for one-sided smoke removal with one row out of operation, considering the thermal effects of a suppressed heavy goods vehicle (HGV) fire against adverse wind conditions. According to practical experience, with this design approach, the dynamic flow control requirements can also be achieved. This would be validated with a dynamic simulation in final design development.

Tunnel Emergency Systems and Emergency Response Plan

Emergency communication systems will include the following:

- Radio communication compatible with the Buffalo Fire Department (BFD) radio systems;
- A Public Address System based on a Synchronized Longitudinal Announcement Speaker System (SLASS) to provide instructions to drivers in case of a fire; and
- Cell phone repetition antennae.

The following proven incident detection devices will be included:

- Linear Heat Detection cable for fire detection;
- Smoke detectors / visibility sensors for fire detection;
- Acoustic incident detection for vehicular crash detection; and
- CCTV for detection of standing vehicles, pedestrians, and objects on the roadway.

All structural elements and overhead equipment in the tunnel will be capable of maintaining capacity under exposure to 842°F for a minimum of 120 minutes. Structural fire protection will be provided and will consider accidental fire from an accident involving a fuel truck and hydrocarbon fires. To facilitate future maintenance and inspection, fire resistant panels are not considered. The following will be provided:

- Sacrificial concrete cover beyond minimum structural clear cover requirements and use of polymeric fibers to minimize spalling during a fire;
- Intumescent coating (can also function as corrosion protection) of exposed structural steel; and,
- Water mist fixed firefighting system (FFFS), which reduces temperatures on the structure to allow for more time for firefighters to extinguish fires, including hydrocarbon fires. FFFS flow is estimated to be 1150 gallons per minute (gpm).

Standpipes will be provided and will serve as fire hose stations along the length of the tunnel, such that all locations along the roadway are within 150 feet of a hose valve. Fire hydrants will be located at each tunnel portal. The fire department connection (5-inch Stroz connection) would be located within 50' of the fire hydrant. Due to climatic conditions in the project area, freezing protection measures will be applied to water supply and standpipes. Standpipe capacity is estimated at 1000 gpm, or four (4), 250 gpm hose valves flowing simultaneously.

A water reservoir or break tank, serving the FFFS, is required to augment the city water supply and eliminate pressure fluctuations. The estimated water storage capacity is 75,000 gallons, equal to FFFS flow for 60 minutes.

The fire water capacity, as well as the drainage storage, consider Electric Vehicle (EV) fires. The estimated drainage storage volume is 129,000 gallons, equal to FFFS (75,000 gallons) and standpipe flow for 60 minutes (54,000 gallons).

Portable fire extinguisher hose connections will be provided along the roadway in approved wall cabinets, spaced at approximately 275 feet and located opposite to emergency egress doors in the center wall.

The FFFS consists of:

- Technical room with pumps and associated equipment;
- Water utility connection;
- Break tank;
- Valves;
- Pumps (2 + 1 standby);

- Main pipes in each tunnel tube;
- 62 section valves in each tube;
- Secondary pipes; and,
- High pressure nozzles.

An emergency response plan would be prepared during final design in close collaboration with emergency services, Buffalo Fire Department, tunnel operators and other relevant entities.

Accessibility, response times and means of firefighting of the Buffalo Fire Department (BFD) have been considered for the concept and design of FLS systems.

An initial training of the Buffalo Fire Department and other first responders will be included in final design. Regular training and exercises of emergency responders is essential and initial training would include training of Buffalo Fire Department staff to provide future trainings that would be conducted twice a year.

Emergency Egress

Emergency egress in tunnels is a crucial safety element for tunnel users and responders. If an incident occurs, such as a fire, the affected patrons move out of the danger zone to safe areas. The following evacuation measures will be included:

- Signage;
- Emergency and guidance lights; and
- Egress ways (interior/left shoulder) and egress doors.

The primary path of egress is the incident tunnel tube as soon as the traffic has stopped. The zone upstream of the fire is maintained free of smoke, and even downstream of the fire smoke stratification is maintained up to a certain distance by the operating fire ventilation with flow control. However, if people are trapped further downstream in the smoke, emergency exits to the adjacent tube provide means of egress. The traffic in the non-incident tube must be stopped simultaneously with the incident tube. A sequence of alerts via VMS signs on the approach roadways and at the tunnel portals would alert approaching drivers of the closure of the tunnel, and barrier gates at the entrance portals would be closed to physically prevent vehicles from entering the tunnel. Vehicles already present within the tunnel at the time of the incident detection and tunnel closure will have left the tunnel within a few minutes, except the vehicles blocked by the incident location or during traffic congestion. While vehicles are still driving in the tunnel, evacuees would use the left shoulder for egress. Once there is no more traffic movement in the tunnel, the whole width of the tunnel could be used for egress.

Emergency exits are the tunnel portals and cross passages between the incident and non-incident tubes. There will be 14 cross passages through the center wall, spaced at approximately 275 feet. Each cross passage will be equipped with a fire-resistant sliding door with a minimum clear width of 4 feet. The emergency exit doors would be easily opened under all conditions, with a door opening force not to exceed 50 pounds. The maintenance and durability of emergency exits will be considered in selection of door assemblies in final design. Emergency exits would be appropriately signalized with exit signs visible even in a smoke-filled environment. Emergency exit signage will be included on either side of an emergency exit door at 82-foot intervals. In the event of power outage, emergency lighting and guidance lights will be electrified by a UPS and will remain operational for 90 minutes.

Tunnel Inspection, Testing and Maintenance

Inspection, Testing and Maintenance (ITM) of Tunnel Systems will be integrated into an Asset Management Plan (AMP) that will be developed in final design. Specific life cycles of different structures, systems and equipment are the basis for a life cycle maintenance and refurbishment program.

An ITM plan will be developed in final design and in accordance with Federal and local code requirements. Tunnel condition inspection will follow the typical inspection cycle for bridges, with 24-month inspection cycles. Tunnel equipment performance specification requirements will be such as to require designs that reduce inspection, maintenance and testing intervals to a maximum of once per year. Hands on access to equipment and structure would be via shoulder and/or lane closure to allow safe access to inspectors to all elements.

To verify quality and reliability of tunnel equipment, all safety-related equipment and systems will be thoroughly tested prior to acceptance. Testing would include realistic hot smoke tests to test fire life safety (FLS) systems.

3.4.3.6 Geotechnical

A consideration specific to this Project relates to blasting of bedrock. Refer to Section 3.4.3.5 for discussions of tunnel geotechnical design features.

Rock Removal

The Project would involve the removal of a substantial quantity of bedrock to achieve the final lowered NYS Route 33 (Kensington Expressway) roadway profile through the proposed tunnel. This removal will be in proximity to residences, other structures, utilities, and adjacent traffic. The most efficient means of rock removal is by blasting; however, there may be instances where mechanical removal methods may be required. Since these non-blasting methods are not as efficient as blasting, they will be used where rock removal is near delicate structures or utilities or where the required rock removal depth is minimal and blasting is not feasible. Where used, blasting will be conducted in a safe and efficient manner with the application of controlled blasting techniques.

There is an approximately 1,600-foot length of the Project in which rock elevations are such that rock removal is not anticipated. This area extends from approximately 300 feet north of Dodge Street to approximately Landon Street. For the remainder of the proposed tunnel length, rock removal will be required as follows:

- At the southern limits of the proposed tunnel and to the southern roadway profile tie in point, the rock elevation is generally below the proposed final tunnel roadway profile. Limited rock removal may be required at the southern limits of the Project, over a length of approximately 1,250 feet from approximately 300 feet south of the Best Street bridge to approximately 300 feet north of the Dodge Street bridge, and it is anticipated that this removal would be by mechanical methods.
- From approximately Landon Street to approximately Woodlawn Avenue (an approximate length of 1,400 feet), the depth of rock removal is anticipated to be less than 5 feet, so mechanical removal methods will likely be employed in this area.
- From approximately Woodlawn Avenue to approximately 300 feet north of the northern portal (an approximate length of 1,250 feet), the rock elevations are higher than the proposed tunnel profile. It is anticipated that rock removal will be by blasting methods in this area.

Blasting will be performed in accordance with NYSDOT's Geotechnical Engineering Manual GEM-22: Procedure for Blasting. The design of controlled blasting starts with a review of the adjoining receptors and determination of the noise and vibration levels acceptable for these receptors. With the noise and vibration criteria established, a series of test blasts will be conducted to develop the site-specific relationship relating distance and explosive charge weights, an attenuation relationship. This relationship will take the form of maximum allowable charge weight, in pounds, per delay for a given standoff distance. With the use of electronic delays, the initiation of the blast in each hole can be timed to an accuracy of a few microseconds. During both test and production blasting, instrumentation will be used to measure noise and vibration near structures proximate to the blasting and these data will be used to verify and update the attenuation relationship.

Construction commitments for blasting specifically and mitigating other construction vibration effects are described in detail in Section 4.20. These commitments include a public outreach program to inform the public about blasting activities, a public outreach liaison hired by the contractor, vibration monitoring, and pre-and post-construction building condition surveys, among other measures.

Mechanical splitting methods will be used where predicted blast induced vibrations cannot be reduced to below acceptable levels or in areas of limited (less than approximately 5 feet) rock removal, where removal by blasting is not feasible. With these methods, a pattern of closely spaced holes is drilled. The rock may be split using a hoe ram or mechanical wedges. With exception of the hoe ram, the noise and vibration generated is governed by the drilling of the holes. Although hoe ram excavation will not generate substantial vibration, it will generate noise, which will be monitored and may require potential shielding to meet noise criteria.

All rock removal for the Project will be performed in accordance with NYSDOT *Standard Specification* Section 203 – Excavation and Embankment, and more specifically, Section 203-3.02.A, Rock Removal, which covers requirements for both mechanical removal methods and blasting.

For additional discussion on noise and vibration impacts of rock removal activities, see Section 4.20 (Construction Effects). For further detailed information regarding blasting best practices, refer to the Rock Removal Technical Memorandum (Appendix A15).

3.4.3.7 Other Structures

Bridges

The Build Alternative would replace the existing Best Street bridge over NYS Route 33 (BIN 1022609). The existing bridge was originally constructed in 1963 under contract FAC 59-19 and is a four-span steel multi-girder bridge with a composite concrete deck. The bridge has an overall length of approximately 179 feet and is 92 feet wide with six traffic and ramp lanes. The bridge abutments are conventional concrete abutments that are supported on bearing piles to rock, and the bridge piers are supported on spread footings founded directly on bedrock. The existing bridge is proposed to be replaced due to its current condition and need to have improved functionality required by the Build Alternative.

The Build Alternative replacement bridge is proposed to be a two-span steel multi-girder bridge with a composite concrete deck that is approximately 118 feet long and 171 feet wide. Each span of the bridge will be approximately 59 feet and will be supported on conventional cantilever reinforced concrete abutments and a centrally positioned reinforced concrete pier located within the median of NYS Route 33. The abutments and pier will be supported on spread footings bearing directly on bedrock. The proposed bridge would be substantially wider than the existing bridge and is due to the close proximity to a proposed roundabout and street improvements at each end of the bridge that are associated with entrance and exit ramps to and from NYS Route 33. Additionally, the increased width will enable staged construction to accommodate traffic during construction. Refer to Appendix A1 for conceptual plans for the proposed Best Street bridge.

Table 3.4-10: Structure Data

	Existing Structure	Proposed Structure
BIN	1022609	1022609
Feature Carried/Crossed	Best Street	Best Street
Type of Bridge	Steel Multi-Girder with Composite Concrete Deck	Steel Multi-Girder with Composite Concrete Deck
Number and Length of Spans	4 Simple Spans: 35’, 58’, 58, 28’	2 Continuous Spans 59’, 59’

Lane Width(s)	3 – 12' Lanes	2 – 19' Lanes (part of roundabout)
Shoulder Width(s)	N/A	N/A
Sidewalk(s)	2 at 5'-0"	Multi-use path at 10'-0"
Utilities Carried	19 Electrical Conduits (in sidewalk), 8" Gas, 10" Water	Electrical Conduits (number and size to be determined), 8" Gas, 10" Water
Horizontal Clearance(s)	49.3'	49.3'
Vertical Clearance(s)	15'-9"	In Excess of 16'
State Condition Rating	4.661	7.000

Note: Under the Build Alternative, the following bridges will be removed. These streets will be reestablished by incorporating the crossings onto the proposed tunnel structure.

- Dodge Street over NYS Route 33 (BIN 1022610)
- Northampton Street over NYS Route 33 (BIN 1022620)
- East Utica Street over NYS Route 33 (BIN 1022630)
- East Ferry Street over NYS Route 33 (BIN 1022640)

History & Deficiencies – Included as an appendix to the Bridge Inspection Reports in Appendix A4.

Inspection – Refer to Appendix A4 for Bridge Inspection Reports

Restrictions – None

Waterway – Not applicable as the bridge is not over a waterway.

A Coast Guard Checklist is not required.

Retaining Walls

New retaining walls will be required in portions of the Project to retain embankments and support portions of the Humboldt Parkway, both northbound and southbound, beyond the tunnel portals. Additional retaining walls are required to retain embankments along several on and off ramps within the Project limits. Retaining walls are proposed at the following locations:

- Westbound NYS Route 33 from Ramp B to north tunnel portal;
- Eastbound NYS Route 33 from north tunnel portal to approximately 600 ft. north of north portal;
- Ramp B: Offramp from NYS Route 33 westbound to Humboldt Parkway southbound;
- Ramp C: Onramp from Best Street to NYS Route 33 westbound;
- Ramp D: Offramp from NYS Route 33 eastbound to Best Street; and
- Ramp E: Offramp from NYS Route 33 westbound to Best Street (two required – one along mainline and one along ramp from south portal); and
- Ramp F: Onramp from Best Street to NYS Route 33 eastbound (two required – one along mainline and one along ramp to south portal).

The final composition of the retaining walls, including the type and foundation, will be determined in final design.

3.4.3.8 Hydraulics of Bridges and Culverts

There are no bridges or culverts over waterways within the Project limits.

There are no dams in the vicinity of the Project that would be affected.

3.4.3.9 Guide Railing, Median Barriers and Impact Attenuators

All guiderail within the Project limits, including bridge railing, will be evaluated during final design for conformance to design standards.

Table 3.4-11: Proposed Location of Guide Railing, Median Barriers, and Impact

Type	Location	Side	Length (ft)
Median Barrier	Mainline NYS Route 33	Median	2,000±
Half Section Barrier	Mainline NYS Route 33	Left & Right	2,000±
Impact Attenuator	Mainline NYS Route 33	Right	NYS Route 33 Eastbound at Best St. Off-Ramp
Impact Attenuator	Mainline NYS Route 33	Right	NYS Route 33 Westbound at Best St. Off-Ramp

3.4.3.10 Utilities

Potential effects of the Build Alternative on existing utilities are shown in Table 3.4-12. In addition to the affected utilities noted in Table 3.4-12, the tunnel facilities will require additional services such as water and electrical.

Table 3.4-12: Utilities

Owner	Type	Location/Side	Length	Condition/Conflict
NYSDOT	Storm Sewer (15” diameter to 36” diameter)	Kensington Expressway	Varies	Condition varies; complete drainage system replacement due to tunnel.
Buffalo Sewer Authority	Combined Sanitary Sewer overflow	Kensington Expressway	Varies	Condition varies; combined sewer connections replaced where required.
Buffalo Sewer Authority	Storm Sewer (84” tunnel, 12” dia. to 30” dia.)	Humboldt Parkway	Varies	Condition varies; complete drainage system replacement where it is impacted by the tunnel and curb realignments. The 84” is expected to remain where possible.
Buffalo Sewer Authority	Combined Sanitary Sewer (10” dia. to 45” dia.)	Humboldt Parkway	Varies	Condition varies; sewer replacement where it is impacted by tunnel construction.
Buffalo Sewer Authority	Storm Sewer (84” tunnel East Ferry, 12” dia.)	Local Streets (Fillmore, East Ferry)	Varies	Condition varies; spot relocation of catch basins at new curb extension locations may be necessary. The 84” is expected to remain where possible.

Table 3.4-12: Utilities				
Owner	**Type**	**Location/Side**	**Length**	**Condition/Conflict**
Buffalo Sewer Authority	Combine Sewer	Local Streets	Varies	Condition varies; spot relocation of catch basins at new curb extension locations may be necessary.
Buffalo Water Authority	Water Line (Crossings occur at Best, Northampton, Landon, East Utica, East Ferry, Northland)	Kensington Expressway	Varies	Condition varies (age varies from 1887 to 1969); replacement of various waterlines crossing the Kensington Expressway due to tunnel construction.
Buffalo Water Authority	Water Line	Humboldt Parkway	Varies	Condition unknown (age varies from 1888 to 2003); relocation of hydrants from existing to proposed curb lines; service valve boxes may be affected by curb realignment and sidewalk removal. Relocation of portion of waterlines along Humboldt Parkway needed for tunnel fire service in these locations lead services will be replaced.
Buffalo Water Authority	Water Line	Local Streets	Varies	Condition unknown (age varies 1883-2003); relocation of hydrants from existing to proposed curb lines and those in conflict with curb ramp work, service valve boxes may be affected due to sidewalk work.
Lightower Fiber Technologies	Fiber Optic	Kensington Expressway	Varies	Locations and condition unknown; no currently known conflicts.
Lightower Fiber Technologies	Fiber Optic	Humboldt Parkway	Varies	Locations and condition unknown; no currently known conflicts.
Lightower Fiber Technologies	Fiber Optic	Local Streets (Best and Wohlers; East Ferry to Northland)	Varies	Condition unknown; possible conflict with substation location.
National Fuel Gas	Gas Line	Kensington Expressway	Varies	Replacement of various gas lines crossing the Kensington Expressway due to tunnel

Table 3.4-12: Utilities				
Owner	**Type**	**Location/Side**	**Length**	**Condition/Conflict**
				construction.
National Fuel Gas	Gas Line	Humboldt Parkway	Varies	Condition unknown; conflicts with tree locations.
National Fuel Gas	Gas Line	Local Streets	Varies	Condition unknown; no currently known conflicts.
National Grid	Electric Line	Kensington Expressway	Varies	Condition unknown; replacement of street lighting system due to tunnel.
National Grid	Electric Line	Humboldt Parkway	Varies	Condition unknown; modifications to existing street lighting system due to curb realignments.
National Grid	Electric Line	Local Streets	Varies	Condition unknown; no currently known conflicts.
Spectrum	Cable	Kensington Expressway	Varies	Condition unknown; no currently known conflicts.
Spectrum	Cable	Humboldt Parkway	Varies	Condition unknown; no currently known conflicts.
Spectrum	Cable	Local Streets	Varies	Condition unknown; no currently known conflicts.
Verizon	Telephone Line	Kensington Expressway (At Best, East Utica)	Varies	Condition unknown; Best Street Bridge replacement and roundabout conflict, East Utica conflict.
Verizon	Telephone Line	Humboldt Parkway	Varies	Condition unknown; no currently known conflicts.
Verizon	Telephone Line	Local Streets	Varies	Condition unknown; no currently known conflicts.
NYSDOT	Fiber Optic ITS	Humboldt Parkway	Varies	Condition unknown, in conflict with proposed mechanical rooms.

3.4.3.11 Railroad Facilities

There is a railroad or railroad-owned property within the Project limits. CSX owns and operates two rail lines that cross the intersection of Fillmore Avenue and Northland Avenue by bridge within the local street rehabilitation work limits. The Build Alternative is not anticipated to affect this bridge.

Table 3.4-13: Existing Railroad Tracks					
Owner	**Location**	**Crossing**	**Side**	**Length**	**Condition**
CSX	BIN 7707950 Fillmore Avenue and Northland Avenue Intersection	Yes		175’	5-span bridge built 1910. Last inspected October 5, 1978

3.4.3.12 Local Street Rehabilitation

During construction of Humboldt Parkway, traffic using the Parkway, as well as pedestrians, will at times be detoured to utilize adjacent local streets. This will occur in various construction stages throughout the three-to-four-year construction duration. Additionally, these streets would also be used for construction (truck) deliveries. Normal NYSDOT practice is to mitigate the additional usage of local streets by having the contractor perform a single course overlay and related work on the affected streets. This mitigative work is limited to the affected local street segments listed in Table 3.2-2 and includes the following:

- Milling and paving
- ADA ramp upgrades
- New traffic signals with pedestrian indicators
- Curb replacements (as needed)
- Sidewalk replacement (as needed)
- Driveway apron replacement (as needed)
- Replace street lighting (as needed)
- Landscaping between curb and sidewalk
    - New topsoil and grass seeding
    - Trees

3.4.4 Landscape and Environmental Enhancements

3.4.4.1 Landscape Development and Other Aesthetics Improvements

Tree Removals and New Plantings

A small number of tree removals would take place as a result of roadway realignments near the Buffalo Museum of Science, including West Parade Avenue, Dodge Street, and Northampton Street, as well as reconstruction of the Humboldt Parkway both in the northbound and southbound snow storage/tree lawn areas. Trees lost to construction activities would be replaced with new trees. Trees would be added along both the east and west sides of the Humboldt Parkway in the snow storage/tree lawn areas. Some trees and shrubs, mostly those that are growing wild (not planted) would be removed as part of the construction of new on- and off-ramps along NYS Route 33. New landscaping would be installed, where appropriate, to re-establish the landscape when lost to construction.

The central median would be a 90-foot-wide cover for the tunnel over NYS Route 33 and, as such, would create a soil regime shallower than what is typical within the Study Area but sufficient to support the trees and other vegetation proposed. The median would be planted with 4 rows of medium-sized trees arranged in four alternating rows; a pattern very similar to that originally planted over 100 years ago. The design for planting of the original parkway median was by renowned landscape architect Frederick Law Olmsted. Original plans for the parkway and MLK Jr. Park (formerly Humboldt Park or The Parade Grounds) were consulted for design of landscaping of the median; areas west of the park and in the vicinity of Best Street at the bridge over NYS Route 33 (Kensington Expressway); and the entrance to MLK Jr. Park. Historical photos were also consulted to help re-establish the landscaped and treed beauty of the parkway.

Soil Depth and Tree Root Systems

Based on a literature review, a minimum soil depth of 3 feet would be needed to support the growth and health of small and medium sized trees (up to 50 feet in height at maturity). The landscaping plans found in Appendix A1 involve the use of trees that have a lateral (spreading) or oblique root system such as honey locust, planetree, linden varieties, yellowwood, hackberry, and smaller varieties of red, silver and sugar maple. The landscaping plans avoid the use of large shade trees (e.g., height of up 100 feet or more), deep rooted tree species, and those that tend to have a tap root, such as white oak, hickory, sweet gum, tupelo, hornbeam, and walnut.

Lateral root systems obtain their stability from tree weight and root spread. About 80 percent of tree species and most popular “urban” trees have lateral root systems. Trees with lateral or oblique root systems grow horizontally, and 80 percent of the tree’s roots are in the top 18-24 inches of soil. The trees on the tunnel cap are not at a greater risk of blow down during high winds compared to trees planted in normal ground because of the concentration of lateral root systems in the top layer of soil. Trees that have been avoided, especially near paved areas, are those that by their nature grow lateral root systems too close to the surface, such as Norway maple, willow, pin oak, cottonwood, American elm, and sweet gum. Those are more likely to affect nearby sidewalks, curbs, and other roadway systems.

Soil Volume

Soil volume is important to calculate to ensure trees will have enough soil to survive. Soil volume requirements were calculated based on 1.5 to 2.0 cubic feet of loam soil per square foot of tree canopy area, defined by Urban (2016) as the area within the mature diameter of the tree’s canopy spread.[26]

For example, referencing Michael Dirr’s “Manual of Woody Landscape Plants” (2009) and tree spread, a hackberry tree has an average mature canopy spread of 50 ft., which is typical of most medium sized trees. The area of the canopy is 1,964 square feet; therefore, the volume of soil needed is 2,945 to 3,928 cubic feet.

Allowing for a tree spacing of 50 ft. on center with a soil area of 25 ft. x 50 ft., based roughly on a 90-foot-wide Humboldt Parkway median configuration with 4 rows of trees and 25 ft. between rows, a 3.0 ft. depth of soil would provide each tree with 3,375 cubic feet (22.5’ x 50’ x 3.0’) of usable soil per tree, meeting the recommendations of Urban (2016).[27]

Recommended Soil Texture

Both top and subsoil would be a sandy loam soil with 50-80% medium and coarse sand (<25% fine sand), 5-20% clay, 5-35% silt. The soil would have approximately 5-8% organic content. Soil density needs to be high enough to avoid settling, yet low enough to allow root growth. Topsoil would have a density of 1.0 to 1.4 g/cc and subsoil 1.2 to 1.5 g/cc.

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[26] Urban, James. (2016, Jan. 5) “Urban Design and Tree Planting Species.” *The Field.* American Society of Landscape Architects. https://thefield.asla.org/2016/01/05/urban-design-and-tree-planting-spaces/
[27] See footnote 20.

Tree Selection

Tree selection was based on the City of Buffalo preferred street tree planting list and a NYSDOT tree planting list used for the New York City area projects. In addition, the Buffalo Olmsted Parks Conservancy (BOPC) was consulted on preferred tree species and their recommendations were considered. Certain tree species that may have otherwise been recommended were dismissed based on the BOPC's experience with particular tree species/varieties. For example, a European elm variety known as 'Christine Buisman' was planted many years ago on several other parkways in the Buffalo parkway system for the purpose of reestablishing the American elm appearance of the original Olmsted plan. This tree, however, is not desired by the BOPC due to its shape and stature, which is unlike the American elm (*Ulmus americana*) in many respects.

Tree species were selected based on their root systems, and their ultimate (mature) size, growth habit, and ability to thrive in harsh urban conditions. Tree species selected are shown in the plant list included on the Landscape Plans found in Appendix A1. Tree selection will continue to be evaluated during final design.

Ground Cover

All areas of the Project not otherwise paved or planted with trees or shrubs would be seeded to establish lawn. A durable mix of grass varieties such as rye grass, bluegrass, and fescue varieties would be used along with the requisite amounts of fertilizer and protective mulch cover. The intent of the variety of species is to ensure a stand of durable groundcover capable of withstanding drought, wet conditions, sun, and shade because all of these conditions would be present in various locations within a Project of this size.

At each tunnel portal, shrubs will be planted in the median to prevent people from approaching the air vents and from approaching the railing above the portals. Shrubs will be durable species and varieties suitable for the climate and harsh urban conditions including rugosa rose, fragrant sumac, and silky dogwood.

All plantings will be accompanied by recommendations for initial establishment and subsequent maintenance requirements. See Section 3.4.1.12 regarding maintenance jurisdiction.

3.4.5 Miscellaneous

3.4.5.1 NYS Smart Growth Public Infrastructure Policy Act (SGPIPA)

Pursuant to ECL Article 6, this Project is compliant with the New York State Smart Growth Public Infrastructure Policy Act (SGPIPA).

To the extent practicable, this Project has met the relevant criteria as described in ECL § 6-0107. The Smart Growth Screening Tool was used to assess the Project's consistency and alignment with relevant Smart Growth criteria; the tool was completed in June 2023 and reflects the current Project scope. The Smart Growth Screening Tool is included in Appendix A7.

3.5 Construction Means and Methods

3.5.1 Construction Means and Methods

This section describes the preliminary means and methods to construct the Build Alternative, which were developed for the purpose of assessing potential construction-related environmental effects and development of measures to mitigate adverse effects. The construction means and methods presented in this section are based on the current level of engineering design for the Build Alternative, discussions with construction specialists, and experience on similar projects. The techniques, phasing, and schedules that would be implemented during the construction of the Project could vary to some degree from those presented here; however, the process described below presents the most likely scenario for construction of the Project. Substantial deviations from this anticipated approach would necessitate a NEPA Reevaluation, which would reevaluate the approach to determine if previous effects and mitigation commitments remain valid, or if additional measures are warranted.

3.5.1.1 Construction Staging Areas

Construction of the Build Alternative would entail a wide range of construction activities throughout the project limits of disturbance, requiring space to complete these numerous tasks. During construction, the contractor would likely establish temporary areas, such as laydown areas, storage areas, and staging areas, for various purposes. For purposes of this discussion, these potential types of sites are referred to as “staging areas.” Unassembled construction equipment would be delivered to and assembled within these staging areas, and space to service and maintain the equipment would also be necessary throughout the duration of construction. Miscellaneous bridge and wall components would be delivered to and stored within the staging areas until they are ready to be used in the construction, and larger bridge elements would be prepared and/or further assembled in the areas until they are ready for placement.

The contractor would be responsible for identifying construction staging areas. Since most construction activities and associated disturbance would likely occur within the NYSDOT operational right-of-way, the contractor would be subject to NYSDOT’s standard requirements, specifications, and policies. The contractor could seek additional sites outside of the NYSDOT right-of-way for staging areas and the contractor would be responsible to follow other applicable city, county, state or federal regulations and policies. In these instances, the contractor would be subject to city, county, and state land use regulations and would be fully responsible for obtaining any necessary permits and environmental approvals for each site. Deliveries of materials, equipment, and supplies would be made by road and would be subject to load and dimension limits for the affected roadways. The contractor would be required to prepare a delivery plan that addresses the potential effects on roadways, the means and methods of coordination, and any required permitting for the delivery of oversized loads.

3.5.1.2 Office/Administrative and Support Space

Office space would be required for construction administration, inspection, and engineering staff. The contractor could opt for interconnected trailers adjacent to the construction site or rent office space in the Buffalo area. The contractor would be required to provided off-street parking for employees.

3.5.1.3 Disposal and Borrow Sites

The contractor would identify disposal and borrow sites (where material has been excavated for use in another location), which would most likely be outside of the project limits of disturbance. Use of disposal and borrow sites would be subject to standard NYSDOT specifications and policies, as well as city, county, and state environmental regulations, zoning laws, and permit requirements. Due to the high cost of disposal and borrow, the contractor generally would seek to phase earthwork tasks to reuse material to the greatest extent practical.

3.5.1.4 Concrete Batch Plant

Depending on the amount of cast-in-place concrete that the contractor plans to use, one or more concrete batch plants would provide the concrete needed to construct the tunnel walls and slabs. Typically, a batch plant would occupy approximately three acres of land. The location(s) of the plant would be close enough to the construction site to allow the concrete to be poured in place before curing initially sets, which occurs within 90 minutes after the concrete is mixed. Given these requirements and the urban nature of the Project Area, the batch plant(s) likely would be located outside of the Project Area, although a local concrete provider could be used if available. The Contractor would be responsible for securing any needed permits, as well as any necessary environmental review, to locate the batch plant(s).

3.5.1.5 New Tunnel Construction

The construction sequence for the new tunnel construction is assumed to take the form of several tasks that would occur sequentially and simultaneously along the corridor, which would include:

- Construction of temporary support of excavation (SOE) walls;
- Retaining wall demolition;
- Bridge demolition;
- Construction of new retaining and tunnel walls;
- Removal of overburden;
- Removal of rock by mechanical means;
- Removal of rock by blasting;
- Erection of tunnel roof sections;
- Reconstruction of Humboldt Parkway (bot northbound and southbound); and
- Landscaping and environmental enhancements.

It is assumed that the construction of the new tunnel would generally be progressed in the manner outlined below.

1. Eastbound Kensington Expressway:

It is anticipated that the eastbound Kensington Expressway would be constructed beginning at the northern limits of the existing/proposed east retaining wall approximately 580 feet north of Sidney Street, and progressing to the south, to the proposed southern tunnel portal at Dodge Street. This process would be conducted sequentially, typically moving in 250-foot to 300-foot segments with the following anticipated effort (refer to Construction Stages 1 – 4 in Appendix A8):

A. Retaining wall removal and construction of new east retaining and tunnel walls
   i. Construct SOE walls behind existing east retaining wall:
      - SOE walls are required to be installed prior to the removal of the east retaining wall.
      - SOE walls would begin at approximately 580 feet north of Sidney Street.
      - The SOE walls would be installed behind the existing east retaining wall to support the proposed northbound Humboldt Parkway. Installation of the SOE walls are anticipated to be performed from the northbound Humboldt Parkway (top-down construction).
      - Installation of the SOE walls could involve drilled soldier-pile and lag walls. The soldier piles would be installed first.

   ii. Removal of existing retaining walls
      - Removal of the east retaining wall would be advanced after the installation of approximately 250 feet to 300 feet of SOE wall as noted in 1.A.i. and would progress from north to south.
      - This work is anticipated to be performed from the eastbound expressway.
      - As the existing retaining walls are removed, lagging for the soldier-pile and lag wall and installation of tie-back supports for the wall would be installed.

   iii. New retaining and east tunnel walls

- Construction of the new retaining and tunnel walls is anticipated to consist of installing secant walls (drilled concrete caissons or drilled shafts that are placed adjacently to form a wall).
- Installation of the new east retaining wall and east tunnel wall is anticipated to begin after the removal of the east retaining wall has progressed to the next 250-foot to 300-foot segment.

This process, as outlined in steps 1.A.i through 1.A.iii, is assumed to progress sequentially and simultaneously, extending from the limits of the proposed east retaining wall approximately 580 feet north of Sidney Street and extend to the proposed tunnel portal at Dodge Street.

B. Bridge demolition

i. Bridge demolition is assumed to be independent of the construction of the east tunnel and retaining walls (see 1.A) but is anticipated to occur in advance of the existing east retaining wall demolition and new retaining wall construction.

ii. It is anticipated that the bridges would be removed at different times and the area affected would be approximately 100 feet on each side of the bridge by 30 feet beyond each bridge approach.

iii. Removal:
  - Deck removal could be accomplished in two ways:
    - Breaking up the deck and dropping the concrete debris into trucks below, leaving the superstructure steel in place (likely using two excavators). Personnel operating jackhammers could be required.
      - Use mounted impact hammers (hoe rams) to break up the concrete deck, working from one end to the other (or from the center pier to the abutments). Debris would fall into dump trucks or bins below the bridge.
    - Saw-cutting the deck and lifting the deck off in panels. The deck would be sawcut into panels where they would be lifted off with an excavator and then deposited into dump trucks for disposal at the bridge approaches.
  - Superstructure steel removal is anticipated to be accomplished using a crane to lift off girders onto trailers for removal off-site. Personnel with cutting torches and manlifts would likely be necessary.
  - Pier and abutment removal:
    - Pier removal is anticipated to occur during construction of the tunnel center wall as noted in steps 1.C.i (refer to 1.C for Center Tunnel Wall Construction).
    - The abutments would be removed (as necessary) using mounted impact hammers on excavators working from within the expressway. Debris would be collected with front end loaders and deposited into dump trucks for removal off-site. This work would likely be coordinated with steps 1.A.ii and 1.A.iii along the east wall and 2.A for west tunnel wall construction.

C. Center tunnel wall construction:

i. It is assumed that the construction of the center tunnel wall would be progressed from the northern project limits, approximately 580 feet north of Sidney Street, and progressing to the south, to the proposed southern tunnel portal at Dodge Street. This process would be conducted sequentially, typically moving in 250-foot to 300-foot segments in a similar fashion as the construction of the east tunnel wall.

ii. It is assumed that the tunnel center wall would begin after the completion of the east retaining and tunnel walls, depending on work zone traffic control (WZTC) phasing (see 1.A.).

D. Soil overburden removal (eastbound):

i. Soil overburden removal is assumed to begin after a portion of the tunnel center wall has been constructed, working from the northern project limits, approximately 580 feet north of Sidney Street, and progressing to the south, to the proposed southern tunnel portal at Dodge Street.

ii. Removal of the overburden within the Kensington Expressway would require removal of the concrete pavement. This work could require concrete saws and would require excavators and mounted impact hammers (hoe rams) to break up the concrete. Excavators and front-end loaders would place the concrete debris into dump trucks for removal off-site.

iii. After concrete pavement is removed, the remaining overburden would be removed with excavators and potentially dozers, and front-end loaders would place the soil into dump trucks for removal off-site.

E. Rock removal (by mechanical means):

i. This work is anticipated to occur after removal of existing retaining walls and overburden soils.

ii. It is assumed that rock removal utilizing mechanical means (i.e., mounted impact hammers or excavator mounted rock mills) would be used where the maximum depth of rock removal is 5 feet. or less.

iii. The proposed limits of mechanical rock removal are shown in blue on the rock removal graphic in Appendix A8.

iv. Mounted impact hammers (hoe rams) or mounted rock mills would break up the existing rock, while excavators or front-end loaders would load dump for removal off-site.

F. Rock removal (by blasting):

i. This work is anticipated to occur after removal of the existing retaining walls and overburden soils and in conjunction with 1.E.

ii. It is assumed that rock removal by blasting would be utilized where the depth of rock removal is more than 5 feet.

iii. Limits of rock removal by blasting are shown in red on the rock removal graphic in Appendix A8.

iv. Pneumatic tools, rock drills (potentially excavator mounted) would drill a pattern of holes in the rock to strategically break up the rock in a safe manner. Once holes are drilled, charges would be loaded into the holes, and blast mats would be installed with excavators (blast mats are used to contain the blast/debris and dust). This would be performed sequentially along the length of the project limits for each stage.

v. After the blasting occurs, excavators or front-end loaders would load dump trucks for removal off-site.

G. Construction of eastbound road surface

i. It is assumed that the eastbound Kensington Expressway roadway will be composed of a 2.5 ft. thick reinforced concrete slab on top of a 1 ft. gravel base, with underdrains to minimize the potential for buoyancy of the slab. This slab will not only provide the driving surface of the expressway but will also brace the walls of the tunnel structure. This stage of construction will occur after the removal of soil overburden (1.D) and rock removal (1.E and 1.F) establishes the bottom of the slab and gravel base section. It is anticipated that dump trucks and bulldozers will place the 1 ft. thick compacted gravel base. Following the installation of the gravel base, formwork would be constructed for concrete pavers to finish off the concrete to the roadway final grade. The slabs would likely be constructed in 50 ft. segments requiring approximately 20 concrete trucks to deliver the concrete for each segment.

H. Erect roof over eastbound Kensington Expressway

It is assumed that the erection of the tunnel roof over the Kensington Expressway eastbound would take place after construction of the Kensington Expressway westbound tunnel is complete and operational. Refer to Section 2.F for further detail.

2. Westbound Kensington Expressway:

It is anticipated that the westbound Kensington Expressway would be constructed in a similar fashion as the eastbound Kensington Expressway, beginning at the northern project limits approximately 580 feet north of Sidney Street, and progressing to the south, to the proposed southern tunnel portal at Dodge Street. This process would be conducted sequentially, typically moving in 250-foot to 300-foot segments with the following anticipated effort (refer to Construction Stages 5 & 6 in Appendix A8):

A. Retaining wall removal and construction of new west retaining and tunnel walls

Tunnel walls would be constructed in front of the existing west retaining walls. The existing pavement and overburden would need to be removed in front of the west retaining walls to facilitate construction of the new west tunnel wall (existing west walls used as SOE as practicable).

B. Soil overburden removal (westbound)

Same as 1.D.i through 1.D.iii.

C. Rock removal (by mechanical means) westbound

Same as 1.E.i through 1.E.iv.

D. Rock removal (by blasting) westbound

Same as 1.F.i through 1.F.v.

E. Construction of westbound road surface

Same as 1.G.

F. Erect roof over westbound Kensington Expressway
Upon completion of the construction of the Kensington Expressway westbound road surface, the tunnel roof would be installed. At this point in time, egress portals through the center tunnel wall would be complete, providing emergency egress to users should an emergency event take place. The tunnel roof is anticipated to be composed of prefabricated composite steel and reinforced concrete panels. The tunnel roof panels would be erected with a crane and then soil placed on top of the panels after appropriate waterproofing measures are installed, as well as all mechanical, ventilation, fire, and electrical equipment (refer Construction Stage 6 in Appendix A8).

3. Complete tunnel construction
After completion of the roof, waterproofing, utility relocations and soil placement, construction of the Humboldt Parkway northbound would be performed (refer to Construction Stages 7 and 8 in Appendix A8).

3.5.1.6 Best Street Bridge Construction

The construction sequence for the Best Street bridge, and associated roundabouts, is assumed to take place in advance of the construction of the tunnel structure. It is anticipated that the proposed bridge would be constructed utilizing staged construction due to the high traffic volumes present and in proximity to the on and off-ramps to Kensington Expressway (NYS Route 33). It is also anticipated that traffic on Best Street would be staged such that vehicular traffic would be maintained throughout construction, providing one through lane of traffic in each direction, along with left-turn lanes in each direction to allow access to the Kensington Expressway. Pedestrian accommodations would also be maintained, as the existing Best Street bridge is essentially two “twin” bridges, a south and a north bridge.

It is anticipated that the proposed bridge would be constructed in four stages:

- Stage 1 - Remove a portion of the north side of the Best Street bridge and construct northern portion of the proposed bridge:
    - Traffic and pedestrian facilities would be positioned such that the existing south bridge would provide one eastbound through lane on Best Street, an eastbound left-turn lane to NYS Route 33 eastbound and a westbound left-turn lane to the Kensington Expressway (NYS Route 33) westbound. A single through lane for westbound traffic on Best Street on the southern portion of the north bridge would be provided. Temporary shoring would be required at the pier locations to support the portion of the existing north bridge superstructure maintaining traffic.
    - A portion of the existing north bridge would be removed, and the northern portion of the proposed bridge would be constructed.

- Stage 2 - Remove and construct the southern portion of the Best Street bridge:
    - Traffic and pedestrian facilities would be positioned such that the existing south bridge would provide one eastbound through lane on Best Street. The existing north bridge would provide an eastbound left-turn lane to the Kensington Expressway (NYS Route 33) eastbound. The newly constructed north portion of the proposed bridge would provide a westbound left-turn lane to NYS Route 33 westbound and a single through lane for westbound traffic. Shoring would be required at the pier locations to support the portions of the existing north and south bridges to maintain traffic.
    - A portion of the existing south bridge would be removed, and the southern portion of the proposed bridge would be constructed.

- Stage 3 - Remove and construct center portion of the Best Street bridge:
    - Traffic and pedestrian facilities would be positioned such that all traffic and pedestrians would utilize the completed portions of the proposed bridge. The remaining portions of the existing bridges would be removed, and the remaining portion of the proposed bridge would be constructed.

- Stage 4 – Construct final roadway configuration.
    - This stage would construct the final roadway configuration and landscape features proposed on the new bridge, as well as the roundabout east of the proposed bridge.

3.5.1.7 Local Street Rehabilitation

The majority of local street rehabilitation work would be completed in the last year of construction to allow for the final mill and overlay to repair any normal wear and tear caused by construction truck traffic and detours. There would be minor and temporary impacts to traffic during local street work (parking limitations, single-lane operations, sidewalk detours etc.).

3.5.2 Work Zone and Safety Mobility

During all construction stages, a minimum of two lanes in each direction would be provided on the Kensington Expressway during the peak hours. One travel lane in each direction would be provided during the peak hours on Humboldt Parkway. There may be times when the closure of a lane is required, however these would be limited to off-peak hours.

As discussed in the description of the new tunnel construction in Section 3.5.1.5, it is anticipated that the proposed tunnel would be constructed in several phases that would require eight stages of construction. Each construction stage would begin at the northern limit of the tunnel and progress south to the southern tunnel limit. The following discussion outlines the work zone measures necessary to facilitate the construction of the tunnel (refer to WZTC Sections in Appendix A8).

- Stage 1:
  In Stage 1, the focus of the work would be along the NYS Route 33 east retaining walls and Humboldt Parkway northbound. In this stage, temporary SOE walls would be installed behind the east retaining walls. This would require a portion of the Humboldt Parkway northbound to be closed to provide a work zone for the installation of the SOE walls. It is anticipated that this work would be performed sequentially, in 200-foot to 300-foot sections, beginning from the northern project limit and advancing to the south. Humboldt Parkway northbound would be temporarily reduced to one lane (parking lane will be closed) in these locations while the work is being performed. During this stage of construction, traffic on NYS Route 33 westbound and eastbound, and Humboldt Parkway southbound would not be affected.

- Stage 2:
  Stage 2 would involve construction of the new east tunnel wall. This work would begin at the north project limit and advance to the south, in sections of 200 feet to 300 feet. This work would remove the existing east retaining wall and earth backfill and construct the new east tunnel wall. During this stage of the work, work zones would be required on the NYS Route 33 eastbound (right lane and right shoulder) and on the northbound Humboldt Parkway. Traffic on the NYS Route 33 westbound and southbound Humboldt Parkway would not be affected.

- Stage 3:
  Stage 3 would involve construction of the center tunnel wall. This work would begin at the north project limit and advance to the south, in sections of 200 feet to 300 feet. This work would remove

the existing NYS Route 33 median barrier and the existing bridge piers at the East Ferry, East Utica, Northampton, and Dodge Street bridges. As the work advances, the tunnel center wall would be constructed. A work zone would be required that would close the left lane of both NYS Route 33 eastbound and westbound to facilitate construction, in which two through lanes in each direction would be provided on NYS Route 33. The work zone along Humboldt Parkway northbound would remain from Stage 2. Humboldt Parkway southbound would not be affected.

- Stage 4:
  Stage 4 would involve construction of the roadway for the NYS Route 33 eastbound tunnel. The work in this stage would include removal of the existing pavement and soil overburden, and excavation (both soil and rock), and construction of the new roadway surface for the eastbound tunnel. Eastbound traffic on NYS Route 33 would be shifted to the westbound side of the expressway to perform the work. In this stage, two lanes of through traffic in each direction would be provided but would be located on the NYS Route 33 westbound side of the expressway. The work zone along the northbound Humboldt Parkway would remain from Stage 2. Southbound Humboldt Parkway would not be affected.

- Stage 5:
  Stage 5 would involve construction of the west tunnel wall. This work would begin at the north project limit and advance to the south, in sections of 200 feet to 300 feet. The work would include construction of the westbound tunnel wall in front of the existing west retaining walls and would require a work zone to complete the work in this stage. All traffic on NYS Route 33 eastbound and westbound would be detoured to the newly constructed roadway that was completed in Stage 4, providing two through lanes in each direction for NYS Route 33. The work zone along the northbound Humboldt Parkway would remain from Stage 2. Southbound Humboldt Parkway would not be affected.

- Stage 6:
  Stage 6 would involve construction of the roadway and erecting of the roof for the westbound tunnel. This work would begin at the north project limit and advance to the south, in sections of 200 feet to 300 feet. The work in this stage would include removal of the existing pavement and soil overburden, and excavation (both soil and rock), and construction of the new roadway surface for the westbound tunnel. In addition to this work, the westbound tunnel roof would be erected, and mechanical, electrical, ventilation and fire protection facilities would be installed. A portion of the westbound tunnel roof would be covered with earth fill at this time as well. Traffic on NYS Route 33 would remain as described in Stage 5 with two through lanes in each direction for NYS Route 33. A work zone (left lane closure) would likely be required along the southbound Humboldt Parkway to facilitate the soil backfilling of the tunnel roof over the westbound tunnel.

- Stage 7:
  Stage 7 would involve the completion of the construction of the eastbound tunnel. This work would begin at the north project limit and advance to the south, in sections of 200 feet to 300 feet. During this stage, the eastbound tunnel roof would be erected; the mechanical, electrical, ventilation and fire protection facilities would be installed; and earth fill would be placed over the tunnel. Traffic on NYS Route 33 would temporarily move to the westbound tunnel to complete the work in the eastbound tunnel, with two through lanes in each direction for NYS Route 33. A work zone (left lane closure) would likely be required along the northbound Humboldt Parkway to facilitate the soil backfilling of the tunnel roof over the eastbound tunnel.

- Stage 8:
  In Stage 8, the tunnel construction would be complete and traffic on NYS Route 33 would be reestablished to three through lanes in each direction. The work in this stage would be to perform

the reconstruction of the Humboldt Parkway, reestablish the East Ferry, East Utica, Winslow, Riley, Northampton and Dodge Street crossings, and final landscaping of the tunnel roof. Work zones would be required to construct the realigned Humboldt Parkway and associated intersections.

3.6 Project Schedule and Costs

3.6.1 Schedule

Refer to Table 1-2 for the Project schedule.

3.6.2 Construction Cost

Refer to Table 3.6-1 for the Project construction cost.

Table 3.6-1: Build Alternative Estimated Construction Cost		
Description		**Cost**
Kensington Expressway		
Earthwork		$12,461,539
Pavement & Subbase		$3,234,972
Milling		$88,857
Drainage		$1,000,000
Median Barrier		$955,859
Signs & Pavement Markings		$217,245
Humboldt Parkway & Best Street		
Earthwork		$2,462,434
Pavement and Subbase		$6,174,101
Milling		$24,652
Sidewalks, Driveways and Curb Ramps		$4,171,842
Signs & Pavement Markings		$256,542
Traffic Signals (6 intersections)		$1,500,000
Pedestrian Lighting		$2,729,683
Misc. Utilities (Water/Sewer/ITS)		$5,000,000
Landscaping		$598,120
Demolition of Existing Retaining Wall and Bridges		$40,716,107
Tunnel Structure		$365,726,846
MEP Building Structures		$11,480,205
Tunnel ITS		$5,750,230
Tunnel Electrical and Lighting		$35,368,564
Best St. Bridge		$15,545,000
Ventilation and Fire/Life Safety		$8,577,025
Retaining Walls Beyond Tunnel		$16,000,000
Additional Local Street Rehabilitation (1R)		$48,489,654
Survey		$15,000,000
Work Zone Traffic Control		$20,000,000
Miscellaneous/Incidentals	10%	$31,176,474
Subtotal (2023 $)		**$654,706,00**
Contingency/Risk	10%	$65,471,000
Subtotal (2023 $)		**$720,177,000**
Final Design, Field Change, Mobilization, Construction Inspection and QC	26%	$187,246,000
ROW and Administration	2%	$14,404,000
Total Project Cost		**$921,827,000**
Cost Data Year and Midpoint of Construction Year	*2023*	*2028*
Inflation/Escalation to Midpoint of Construction	3%	$114,706,000

3.6.3 Maintenance Cost

Build Alternative Tunnel Yearly Inspection, Testing, and Maintenance (ITM) Costs

Tunnel Systems	$	2,500,000
Tunnel Structure	$	2,450,000
Total Yearly ITM Cost	$	4,950,000

Yearly Operating Costs	$	100,000

CHAPTER 4 – SOCIAL, ECONOMIC, AND ENVIRONMENTAL CONSIDERATIONS

4.1 Introduction

This chapter documents the assessment of social, economic, and environmental effects (beneficial and adverse) resulting from implementation of the Build Alternative. For each topic in this chapter, the following are described: the Study Area and methodology used for the assessment; existing conditions (affected environment); and potential effects resulting from implementation of the Build Alternative. Measures to avoid, minimize, or otherwise mitigate potential adverse effects are described for each topic area, as appropriate.

The No Build Alternative serves as the baseline condition against which the potential effects of the Build Alternative are evaluated. The No Build Alternative assumes no improvements as part of this Project. As such, existing conditions largely represent the No Build Alternative. However, for some topics that are based on traffic analysis data for specific future analysis years, such as air quality, the No Build Alternative was assessed, as identified in the relevant sections in this chapter.

The assessment of potential effects of the Build Alternative includes permanent/operational effects and construction/temporary effects. Permanent/operational effects would occur once the construction of the Project is complete and the Project is operational. Construction/temporary effects would occur while the Project is being constructed and would cease once construction is complete. Some construction effects would occur throughout the duration of the construction period, and others would be specific to certain construction activities or construction zones.

The general Study Area for the Project is described in Section 1.2. For some topics, a topic-specific study area was developed. The rationale for the topic-specific study area is provided in the relevant sections.

4.1.1 Agency Coordination

Cooperating and Participating Agencies are responsible for identifying, as early as practicable, any issues of concern regarding a Project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval.

4.1.1.1 Cooperating Agencies

According to CEQ regulations (40 CFR § 1508.1), "Cooperating Agency" means any Federal agency (and a State, Tribal, or local agency with agreement of the lead agency) other than a lead agency that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or reasonable alternative).

The following agencies are Cooperating Agencies for the Project:

- U.S. Environmental Protection Agency (USEPA)
- New York State Office of Parks, Recreation, and Historic Preservation (NYS OPRHP) – State Historic Preservation Office (SHPO)
- New York State Department of Environmental Conservation (NYSDEC)

The FHWA and NYSDOT have been coordinating with the Cooperating Agencies throughout this Project.

4.1.1.2 Participating Agencies

As defined in 23 CFR 771.107, a "Participating Agency" is a Federal, State, local or federally recognized Indian Tribal governmental unit that may have an interest in a proposed project and has accepted an invitation to be a participating agency or, in the case of a Federal agency, has not declined the invitation in accordance with 23 U.S.C. 139(d)(3). The standard for Participating Agency status is more encompassing than the standard for Cooperating Agency status. Therefore, Cooperating Agencies are, by definition, Participating Agencies, but not all Participating Agencies are Cooperating Agencies.

The following agencies/parties were invited to serve as Participating Agencies for the Project:

- Erie County Department of Environment and Planning
- City of Buffalo (Office of Strategic Planning and Department of Public Works)
- Greater Buffalo Niagara RegionalTransportation Council (GBNRTC)
- New York State Thruway Authority (NYSTA)
- Niagara Frontier Transportation Authority(NFTA)
- Seneca Nation of Indians[28]
- Tonawanda Seneca Nation
- Seneca Cayuga Tribe of Oklahoma
- Tuscarora Nation

Meetings have been held with Cooperating Agencies and Participating Agencies throughout the environmental review process to update them on the status of the Project and discuss other topics as appropriate. In addition, topic-specific meetings have been held with the applicable Cooperating Agencies and Participating Agencies as needed, including regularly scheduled meetings with the USEPA and NYSDEC to discuss the air quality analysis for the Project.

In addition to the Cooperating and Participating Agencies, numerous other agencies and entities such as the Buffalo Olmsted Parks Conservancy, the Buffalo Museum of Science, and the Buffalo Fire Department have been asked to provide technical information and input throughout the development of the Project.

4.1.2 Anticipated Permits and Approvals

Anticipated permits and approvals for the Project are listed below. The expected timetable for Project permitting is available at the Federal Infrastructure Projects permitting dashboard.[29]

- Federal Highway Administration (FHWA)
  - Determination under Section 4(f) of the U.S. Department of Transportation Act of 1966: *Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites* (23 CFR § 774)
  - Determination under Section 106 of the National Historic Preservation Act of 1966 (NHPA Section 106)

- NYS Department of Environmental Conservation (NYSDEC)
  - State Pollutant Discharge Elimination System (SPDES) Permit (ECL Article 17)
  - Water Withdrawal Permit (ECL Article 15, Title 15)[30]

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[28] In a correspondence dated March 24, 2022, the Seneca Nation of Indians declined their role to become a Participating Agency for the Project.
[29] https://www.permits.performance.gov/permitting-project/dot-projects/ny-route-33-kensington-expressway-project-best-street-sidney-street

- NYS Office of Parks, Recreation, and Historic Preservation (OPRHP), State Historic Preservation Office (SHPO)
  - Consultation under Section 106 of the National Historic Preservation Act
  - Section 4(f) coordination as official with jurisdiction for historic sites

- City of Buffalo Division of Parks and Recreation
  - Section 4(f) coordination as official with jurisdiction for city-owned parkland

The Project has also been designed and assessed in consideration of the requirements of New York's Climate Leadership and Community Protection Act (NY CLCPA) (see Section 4.10, Energy and Climate Change, for additional information). In addition, NYSDOT has completed a consistency screening assessment of the Project in relation to New York's Smart Growth Public Infrastructure Policy Act (see Appendix A7).

4.1.3 Topics Dismissed from Further Evaluation

This section documents the topics that were dismissed from further evaluation based on the resource not being present in the Study Area.

4.1.3.1 Farmlands

The Study Area is characterized as an urban environment and does not have any active farmland. Undeveloped land in the Study Area is comprised of highway rights-of-way, vacant lots, residential lawns, and urban parks. The Study Area is located in a U.S. Census designated urban area[31]; therefore, the Farmland Protection Policy Act does not apply (7 CFR 658.2(a)). There are no New York State Department of Agriculture and Markets Agricultural Districts in the Study Area.[32] Based on this information, the Project has no potential to affect farmlands.

4.1.3.2 Floodplains

The Project is not located within the 1% annual chance floodplain (100-year floodplain) or 500-year mapped floodplain per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Erie County, New York, Panels 36029C0211H, 36029C0212H and 36029C0213H dated 6/7/2019. Based on this information, the Project has no potential to affect floodplains.

4.1.3.3 Coastal Resources

The Project is not located within the state or federally designated Coastal Area, according to the New York State Department of State (NYSDOS) Coastal Boundary Map and is not within the limits of the City of Buffalo Local Waterfront Revitalization Program.[33] The Study Area is not within a special management area. Additionally, the Project is not within a coastal erosion hazard area or a coastal barrier resource system.[34] Based on this information, the Project has no potential to affect coastal resources.

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[30] A Water Withdrawal Permit may be required during construction based on the contractor's selected means and methods.
[31] https://www2.census.gov/geo/maps/DC2020/UA20/UA_2020_WallMap.pdf
[32] https://www3.erie.gov/agriculture/sites/www3.erie.gov.agriculture/files/uploads/AgDistrictsCurrentThru10.6.21.png
[33] https://dos.ny.gov/system/files/documents/2021/06/buffalolwrp.pdf
[34] https://www.dec.ny.gov/lands/86541.html and https://www.fws.gov/node/266091

4.1.3.4 Wild and Scenic Rivers

There are no NYSDEC designated wild, scenic or recreational rivers within or adjacent to the Study Area.[35] The Project does not involve a national wild and scenic river as shown by the Nationwide Rivers Inventory List of National Wild and Scenic Rivers.[36] Based on this information, the Project has no potential to affect wild and scenic rivers.

4.1.3.5 Navigable Waters

As defined by New York State Navigation Law[37] and described on the NYSDEC website[38], a navigable-in-fact waterway is a waterway suitable for trade, travel, or transport in its natural state and with its ordinary volume of water. This includes lakes, rivers and other waterways and water bodies on which water vessels with a capacity of one or more persons are operated or can be operated notwithstanding interruptions to navigation by artificial structures, shallows, rapids, or other obstructions or by seasonal variations in capacity to support navigation. Scajaquada Creek is piped underground within the Study Area and as a result is not navigable by the State's definition (including the use of recreational watercraft).

Scajaquada Creek is also not considered navigable by Federal definition in the Study Area since it is not subject to tidal influence nor used to transport substantial interstate or foreign commerce.[39] Scajaquada Creek is only considered navigable by the U.S. Army Corp of Engineers between the Niagara River and 130 feet downstream of Niagara Street.[40] Based on this information, the Project has no potential to affect navigable waters.

4.1.3.6 Critical Environmental Areas

According to the listing of Critical Environmental Areas maintained by NYSDEC[41], the Project does not involve work in or near a Critical Environmental Area. Based on this information, the Project has no potential to affect Critical Environmental Areas.

4.2 Neighborhood Character and Community Cohesion

4.2.1 Study Area and Methodology

The general Study Area for the Project (as described in Chapter 1) was used for the assessment of effects on neighborhood character and community cohesion. Demographic data for the Study Area were assessed using census data combined for all 2010 census tracts that are within or intersect the general Study Area (see Figure 4.2-1). As shown in Figure 4.2-1, the census tract boundaries changed between the years 2010 and 2020; specifically, year 2010 tract 35 was divided into tracts 35.01 and 35.02 for year 2020 and year 2010 tract 27.02 was divided into tracts 27.03 and 27.04 for year 2020. To compare year 2010 to year 2020 data for these tracts, the 2020 data for the divided tracts was summed.

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[35] https://www.dec.ny.gov/permits/32739.html
[36] https://nps.maps.arcgis.com/apps/MapJournal/index.html?appid=ba6debd907c7431ea765071e9502d5ac#
[37] New York State Navigation Law, Chapter 37 of the Consolidated Laws, Article 1, Section 2
[38] https://www.dec.ny.gov/outdoor/118441.html
[39] 33CFR Part 329 – Definition of Navigable Waters of the US
[40] https://www.lrb.usace.army.mil/Portals/45/docs/regulatory/Section10NavigableWaterways/waterwayNY.pdf
[41] https://www.dec.ny.gov/permits/6184.html

The assessment of effects on neighborhood and community cohesion was conducted based upon a review of available planning documents, aerial imagery, and GIS mapping layers. Demographic data from the U.S. Census Bureau American Community Survey (2007-2011 and 2017-2021) were used to evaluate the demographics within the Study Area, including population trends, housing tenure and occupancy rates, and household income. Census data for Erie County and the City of Buffalo were also obtained to provide a comparison to the Study Area. A field visit of the Study Area was conducted in March 2023 to verify the location of community facilities.

4.2.2 Existing Conditions

This section describes the existing neighborhoods, land use, zoning, and community facilities in the Study Area. For a summary of relevant local and regional land use and transportation plans, refer to Section 2.2 of this DDR/EA.

4.2.2.1 Neighborhood and Community Cohesion

Neighborhoods in the Study Area

The Study Area is located in the City of Buffalo mainly within four neighborhoods, the bounds of which are defined by the City of Buffalo's Office of Strategic Planning, Division of Planning & Zoning.[42] See Figure 4.2-2 for the boundaries of the neighborhoods that intersect the Study Area. These neighborhoods are:

- **Hamlin Park.** Hamlin Park is bounded by Jefferson Avenue to the west, Main Street to the northwest, Kensington Avenue to the north, a railroad corridor and the Kensington Expressway to the east, and East Ferry Street to the south. Hamlin Park was named after Cicero Hamlin, one of the most influential and well-known breeders of racehorses in the early 20th century. Hamlin Park was originally Hamlin's Driving Park, a premier horse racetrack. Throughout the 1920s, Hamlin Park expanded rapidly as German and Jewish immigrants moved to the neighborhood. Post-World War II, the German and Jewish families began to move to the suburbs and middle-class African Americans took their places in the neighborhood. Only a few years after this shift had begun, construction began on the Kensington Expressway, removing the Humboldt Parkway and affecting the quality of life for Hamlin Park's residents. Despite the expressway, Hamlin Park remains one of the most stable middle-class African American neighborhoods in Buffalo, thanks in part to the influential Hamlin Park Community & Taxpayers Association (HPCTA)[43], a community advocacy group made up of residents and businesses.[44] In 2013, Hamlin Park was designated a Historic District on the National Register of Historic Places[45] (see Section 4.6, Historic and Cultural Resources of this DDR/EA).

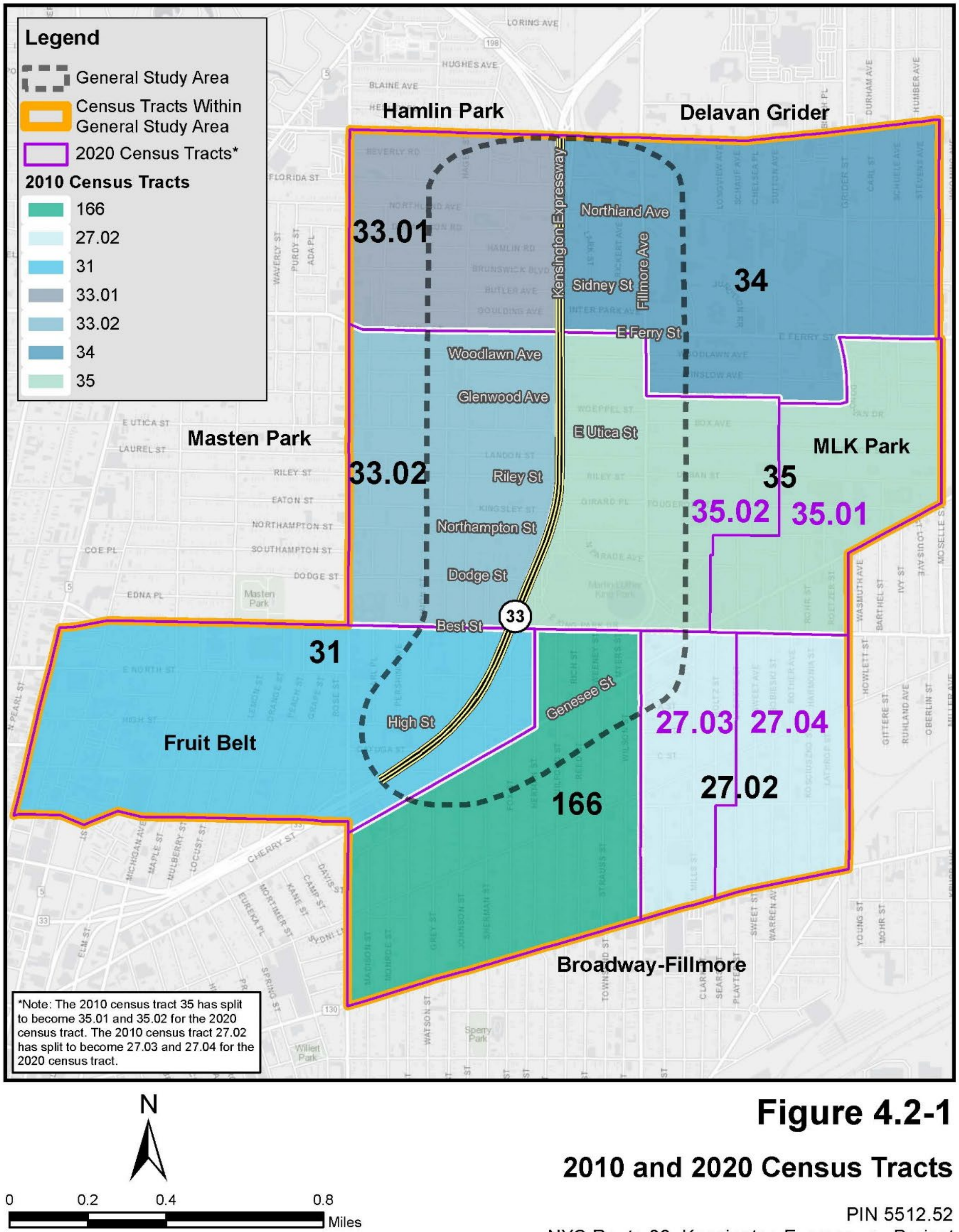
- **Masten Park.** Masten Park is bounded by Main Street to the west, Jefferson Avenue and East Ferry Street to the north, Humboldt Parkway (southbound) to the east, and Best Street to the south. Masten Park is named for Masten Place, a small park designed by Frederick Law Olmsted in 1887. Masten Place was short-lived, however, as the City of Buffalo built a high school on the property in 1895.[46] The current Masten Park, bounded by Masten Avenue, Dodge Street, Best Street, and Jefferson Avenue, was originally a farm. In 1937, a sports stadium was constructed at the site (Civic Stadium, renamed as War Memorial Stadium in 1961), a $3 million, 46,000-seat

[42] https://www.buffalony.gov/1402/Neighborhood-Planning
[43] https://www.buffaloah.com/h/hamln/hamlin.html
[44] https://www.hamlinparkneighborhood.org/
[45] https://www.nps.gov/subjects/nationalregister/database-research.htm#table
[46] https://www.olmstedinbuffalo.com/masten-place/

Works Progress Administration project. By 1987, War Memorial Stadium had fallen into disrepair. That year, it was demolished and replaced by Johnnie B. Wiley Pavilion, a sports stadium that hosts high school sports games and youth recreational sports programs. Much like other Buffalo neighborhoods, the area experienced an influx of African American residents after the migration of white families to the suburbs throughout the 1950s and 1960s. Today, the neighborhood faces difficulties surrounding vacant lots and absentee landlords, poor infrastructure, a lack of schools and community facilities, and public safety issues, among others. A request for proposals for infill development on several vacant lots on Laurel Avenue was issued in 2021. The neighborhood is home to several community assets, including the Michigan Street African American Heritage Corridor, the African American Cultural Center, the Frank E. Merriweather Library, and the Beverly Gray Business Exchange Center, among others.[47]

- **Delavan-Grider.** This neighborhood is named for the intersection of East Delavan Avenue and Grider Street, both important thoroughfares for East Buffalo. The Delavan-Grider neighborhood is bounded by Humboldt Parkway (northbound) to the west, NYS Route 33 to the north, William Gaiter Parkway/East Delavan Avenue and Moselle Street to the east, and East Ferry Street to the south. In the early 1820s, Daniel Grider, a German Pennsylvanian, came to East Buffalo by wagon and purchased a farm. He built a home on the property across from where the Erie County Medical Center is currently sited.[48] The area was also home to the Buffalo Belt Line Railroad, a 16-mile loop that was a forerunner to modern-day freight and passenger railroads.[49] When the current-day CSX Railroad was built through Buffalo, Grider's farm was subdivided into residential lots and streets. Much of the Delavan-Grider area is industrial or commercial, particularly on the eastern edge surrounding the CSX Railroad. Of note is the Northland Workforce Training Center, located at 683 Northland Avenue in the former Clearing Niagara Plant, an advanced manufacturing workforce training center.[50] Like many Buffalo neighborhoods, the area was once occupied by German and other European immigrants before their shift to the suburbs post-World War II; today, African Americans make up over 87% of the population.[51] Today, the neighborhood faces difficulties with vacant lots, a lack of a commercial corridor to generate revenue, neighborhood aesthetics, and access to community services such as parks, schools, and libraries.[52] The Delavan-Grider Community Center is located at 877 East Delavan Avenue and provides space for community group meetings, and programs for all ages. The Community Center serves as an anchor in the neighborhood.[53]

[47] https://www.buffalony.gov/DocumentCenter/View/9476/MastenPark
[48] https://buffalostreets.com/2015/02/23/farm-some-land-on-the-east-side-get-a-street-named-after-you/
[49] https://www.buffalourbandevelopment.com/documents/NorthlandNeighborhoodStrategyDRAFT.pdf
[50] https://northlandwtc.org/about/
[51] See Environmental Justice section (Section 4.4 of this DDR/EA).
[52] https://www.buffalourbandevelopment.com/documents/NorthlandNeighborhoodStrategyDRAFT.pdf
[53] www.delavangridercommunitycenter.com



Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2010.

Figure 4.2-1

2010 and 2020 Census Tracts

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

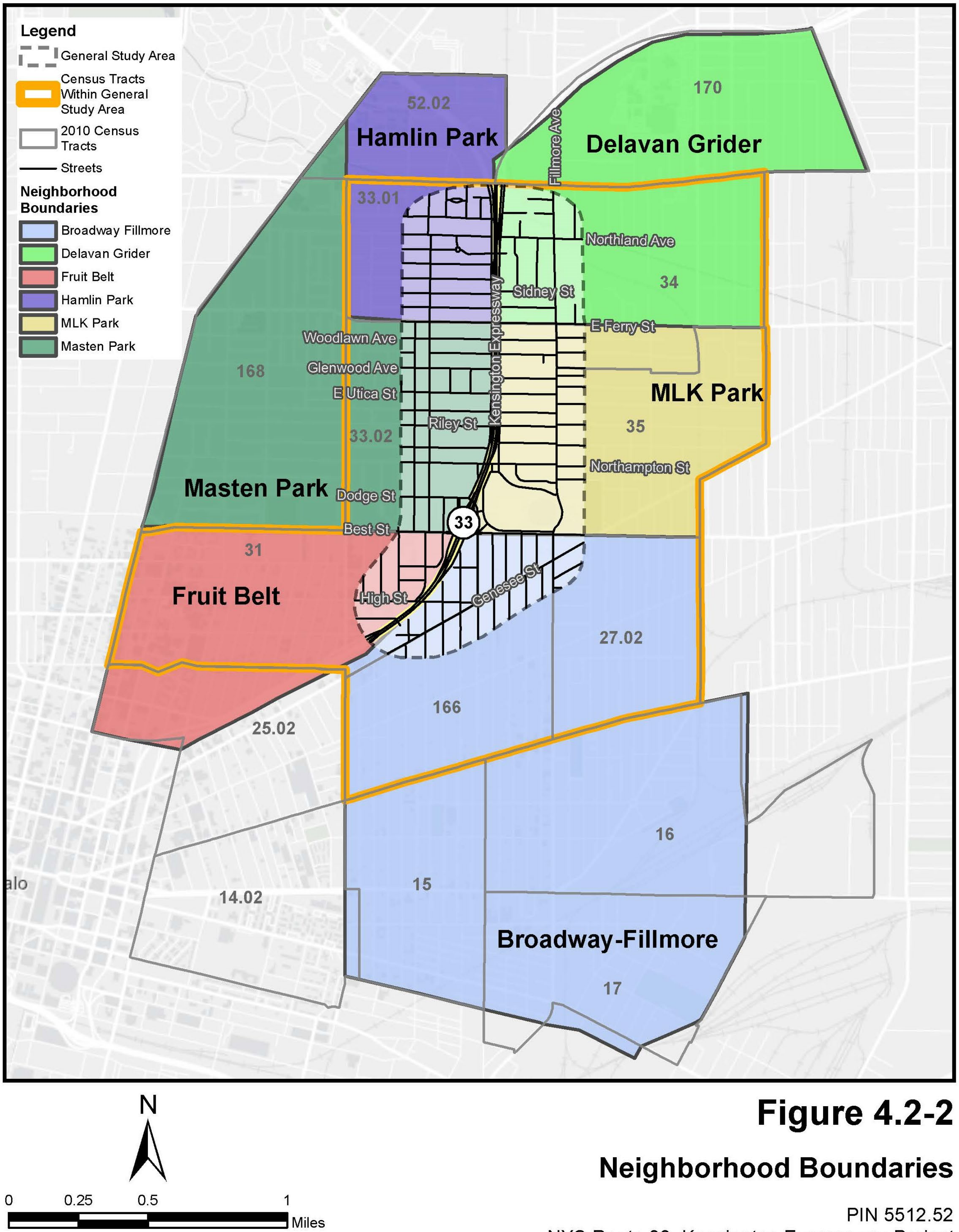
- **MLK Park.** Named for MLK Jr. Park (the park) located in the southwest portion of the neighborhood, the MLK Park neighborhood is bounded by Humboldt Parkway (northbound) to the west, East Ferry Street to the north, Moselle Street, Genesee Street, and a railroad corridor to the east, and Best Street to the south. MLK Jr. Park was originally named The Parade by Frederick Law Olmsted and Calvert Vaux. It was renamed Humboldt Park after Alexander von Humboldt (famed German geographer) in 1896, then dedicated to Dr. Martin Luther King, Jr. in 1977. The German American population that resided in the area directly surrounding Humboldt Park in the early 20th century was able to influence the park's development to suit their more contemporary desires, including the building of a greenhouse, a garden, a shelter house, and the basin pool, which remains the largest of its kind in the nation. Much like Hamlin Park, the neighborhood saw precipitous decline in the post-World War II era. Since the 1950s, African Americans from other parts of the city and country moved to the neighborhood.[54] Since 1976, the MLK Park neighborhood has been home to Buffalo's annual Juneteenth Festival and local community organizations have advocated for improvements to the park and neighborhood for decades.[55] The City of Buffalo, with the guidance of the Buffalo Olmsted Parks Conservancy, has invested nearly $12 million into the park in the past decade.[56] The area struggles with vacant lots, needed infrastructure and aesthetic improvements, low demand in the housing market and low-quality homes, and high unemployment rates.[57]

The southern end of the Study Area lies within small segments of two neighborhoods:

- **Fruit Belt.** The Fruit Belt is bounded by Main Street to the west, Best Street to the north, Cherry Street to the east, and East Tupper Street to the south. The area was settled by German immigrants who were encouraged to farm the area. These farmers planted orchards along the streets that they named after fruits, flowers, and trees, thus giving the neighborhood its name. In 1951, the Urban Renewal Plan for the City of Buffalo called for the demolition of a large portion of the Ellicott District, leaving nearly 2,000 mostly African American families displaced. The Fruit Belt became the destination for many of these displaced families, making it one of the most prominent African American neighborhoods in the city. The Fruit Belt community is supported by the Fruit Belt Homeowners and Tenant Council, the Fruit Belt Community Land Trust, and several other strong community organizations.[58]

- **Broadway-Fillmore.** The Broadway-Fillmore neighborhood is bounded by the Kensington Expressway and Jefferson Avenue to the west, Best Street/Walden Avenue to the north, a CSX railroad line, Broadway, and approximately Milburn Street and Hannah Street to the east, and East Eagle Street and New Babcock Street to the south. Also sometimes referred to as Polonia, Broadway-Fillmore was the settling point for thousands of Polish immigrants between the 1850s and 1920s. Broadway-Fillmore was and continues to be known for its historic and architecturally notable churches. Many of the Polish residents of Broadway-Fillmore were part of the movement to the suburbs. Today, it is one of the City's main population centers for African Americans and for immigrants coming to Buffalo from across the globe.[59]

[54] https://www.buffalorising.com/2020/01/the-three-phases-of-martin-luther-king-park/
[55] https://buffalohistory.org/remembering-buffalos-first-juneteenth-festival/
[56] https://www.buffalony.gov/1402/Neighborhood-Planning
[57] See Environmental Justice section (Section 4.4 of this DDR/EA)
[58] https://fruitbelt-clt.org/history-of-the-fruit-belt/
[59] https://buffaloah.com/h/pol/hist/#History



Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2020.

Figure 4.2-2

Neighborhood Boundaries

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See Table 4.2-1 below for selected characteristics on each of the Buffalo neighborhoods described above.

Table 4.2-1: Selected Neighborhood Characteristics, 2021					
Neighborhood	**Total Population**	**Median Age**	**Median Income**	**Poverty Rate**	**% Minority Population**
Hamlin Park	6,349	31.8	$44,030	43.9%	79.4%
Masten Park	7,110	34.4	$33,287	55.0%	91.9%
Delavan-Grider	6,134	39.6	$31,926	54.4%	91.3%
MLK Park	3,170	38.6	$24,309	66.1%	87.4%
Fruit Belt	4,941	47.6	$23,144	58.8%	82.8%
Broadway-Fillmore	13,208	35.2	$24,910	68.0%	71.1%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (2017-2021)
Note: Census tracts were used as a proxy for neighborhood boundaries due to the availability of demographic data. Several census tracts utilized for this table are outside of the Study Area. Census tracts utilized for each neighborhood analysis are as follows: Hamlin Park – 33.01, 52.02; Masten Park – 33.02, 168.01, 168.02; Delavan-Grider – 34, 170; MLK Park – 35.01, 35.02; Fruit Belt – 14.04, 25.02, 31; Broadway-Fillmore – 15, 16.01, 16.02, 17, 27.03, 27.04, 166.

Population

In 2021, there were 21,744 people living in the Study Area, an increase from 2011 of just under 5 percent. This trend is similar to the slight increase in population of both the City of Buffalo (4.6 percent) and Erie County (3.3 percent) in the same timeframe. Table 4.2-2 shows the population change in the Study Area, the City of Buffalo, and Erie County.

Table 4.2-2: Population Change			
Area	**Total Population**		**% Change**
	ACS 2011	**ACS 2021**	
CT 27.03*	3,123	3,346	7.1%
CT 31	2,265	2,397	5.8%
CT 33.01	3,548	3,702	4.3%
CT 33.02	3,193	3,017	-5.5%
CT 34	2,784	3,312	19.0%
CT 35**	2,939	3,170	7.8%
CT 166	2,864	2,800	-2.2%
Study Area Total	20,716	21,744	5.0%
City of Buffalo	263,914	276,011	4.6%
Erie County	919,714	949,715	3.3%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (2007-2011), American Community Survey 5-Year Estimates (2017-2021)
*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.

Age Distribution

Table 4.2-3 shows the age distribution of all residents in the Study Area, the City of Buffalo, and Erie County and the percent change between 2011 and 2021. Between 2011 and 2021, the Study Area had an increase in population of all age groups. The number of school-age children increased by 4.8 percent, working age adults increased by 4.9 percent, and the elderly (age 65 and over) increased by 5.3 percent. The City of Buffalo and Erie County both experienced decreases in the number of school-age children but saw increases in the number of working age adults and the elderly.

Table 4.2-3: Age Distribution in the Study Area

	School Age (Under 18)			Working Age (18-64)			65 and Over		
Area	**2011**	**2021**	**% Change**	**2011**	**2021**	**% Change**	**2011**	**2021**	**% Change**
CT 27.03*	1,263	1,332	5.5%	1,665	1,724	3.5%	195	290	48.7%
CT 31	467	531	13.7%	1,458	1,434	-1.6%	340	432	27.1%
CT 33.01	932	644	-30.9%	1,881	2,138	13.7%	735	920	25.2%
CT 33.02	674	770	14.2%	1,565	1,508	-3.6%	954	739	-22.5%
CT 34	640	913	42.7%	1,749	2,022	15.6%	395	377	-4.6%
CT 35**	704	952	35.2%	1,760	1,707	-3.0%	475	511	7.6%
CT 166	816	618	-24.3%	1,694	1,821	7.5%	354	361	2.0%
Study Area Total	5,496	5,760	4.8%	11,772	12,354	4.9%	3,448	3,630	5.3%
City of Buffalo	63,248	62,038	-1.9%	169,710	178,246	5.0%	30,956	35,727	15.4%
Erie County	201,419	193,734	-3.8%	574,136	585,468	2.0%	144,159	170,513	18.3%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (2007-2011), American Community Survey 5-Year Estimates (2017-2021)
*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.

Housing Unit Typology, Occupancy Status, and Tenure

The homes in the Study Area were generally constructed between 1888 and 1935, with a smaller number dating to the 1800 – 1887 timeframe. See Figure 4.2-3 for an illustration of the age of buildings in the Study Area. The oldest homes are largely evenly distributed within the Study Area. Aside from the oldest homes in the area, which are typically larger and designed in the American Foursquare or Colonial Revival styles, most homes are in the industrial vernacular style of the time, colloquially known as "Buffalo Doubles." Typically, these homes are one-and-a-half to two-and-a half floors and may contain two dwelling units. The "Buffalo Doubles" housing typology makes up more than a third of existing homes in the City of Buffalo.[60]

Buffalo has the oldest housing stock of any major city in America, with over 64 percent of housing units built prior to 1940.[61] The age and condition of the housing stock may be a factor in the observed vacancy

[60] https://buffaloah.com/a/archsty/indver/stein/
[61] https://makecommunities.com/this-old-housing-stock/

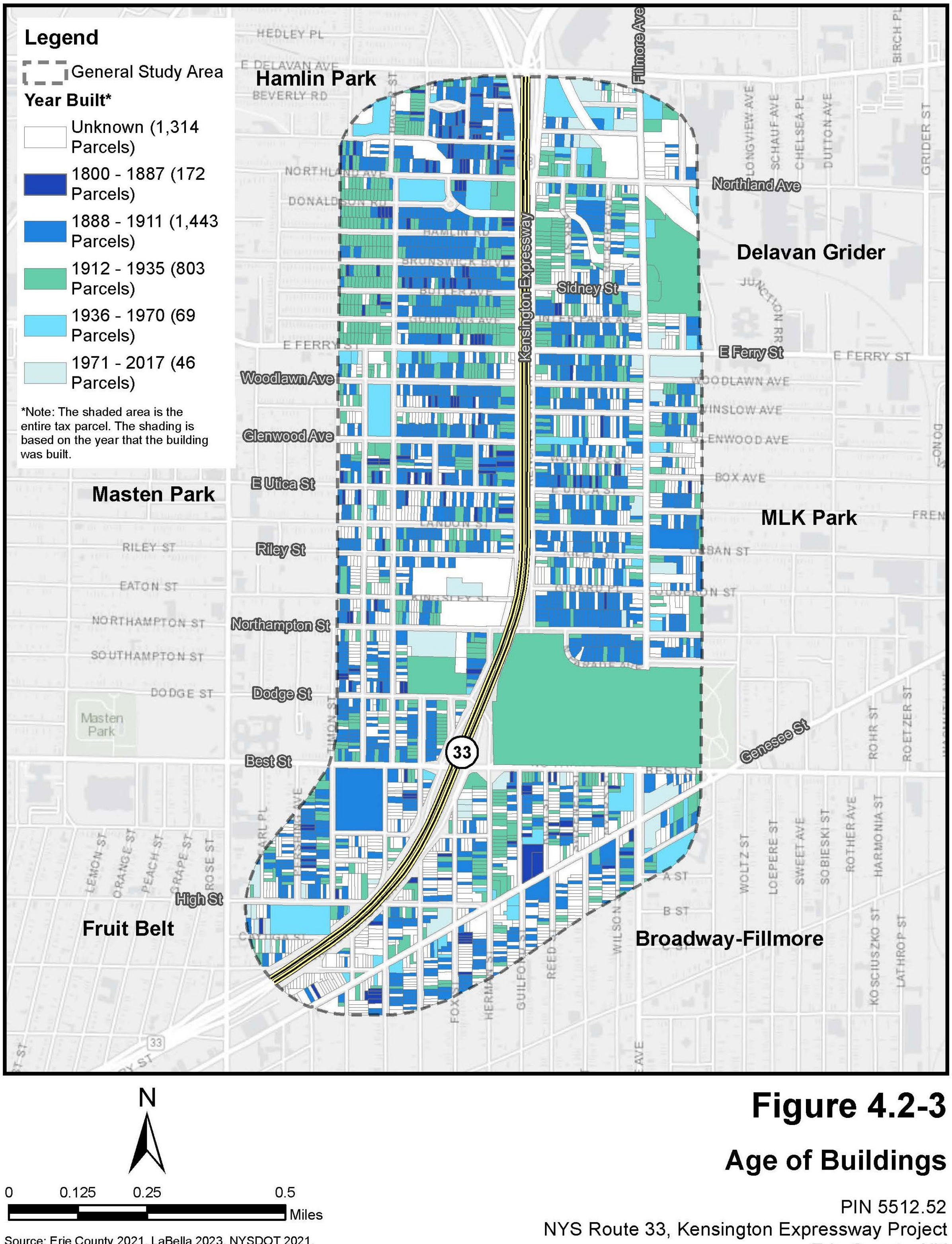
rates in the Study Area. According to the 2021 American Community Survey (ACS) 5-Year Estimates (2017-2021), 18.4 percent of all housing units within the Study Area are vacant. In census tracts 33.02 and 35 (Masten Park and MLK Park neighborhoods, respectively), the vacancy rate is highest, at 32.1 and 24.3 percent, respectively. Between 2011 and 2021, the Study Area lost approximately 11.9 percent of all housing units. Census tract 33.02 (Masten Park neighborhood) lost the greatest percentage of housing units of all census tracts (18.5 percent) between 2011 and 2021.

In the Study Area, just over half of housing units are renter-occupied, much like the rest of the City of Buffalo (57.3 percent renter-occupied). The City of Buffalo's number of housing units decreased by approximately 1 percent between 2011 and 2021. Table 4.2-4 shows the change in housing unit characteristics in the Study Area, the City of Buffalo, and Erie County between 2011 and 2021.

Table 4.2-4: Housing Characteristics in the Study Area

Census Tract	Housing Units		% Change	% Vacant	% Owner Occupied	% Renter Occupied
	ACS 2011	ACS 2021				
CT 27.03*	1,746	1,290	-26.1%	17.2%	38.2%	61.8%
CT 31	1,483	1,425	-3.9%	15.3%	33.8%	66.2%
CT 33.01	1,869	1,992	6.6%	11.6%	61.5%	38.5%
CT 33.02	2,107	1,717	-18.5%	32.1%	43.0%	57.0%
CT 34	1,692	1,565	-7.5%	15.7%	41.3%	58.7%
CT 35**	2,181	1,837	-15.8%	24.3%	43.1%	56.9%
CT 166	1,705	1,436	-15.8%	11.4%	58.3%	41.7%
Study Area Total	12,783	11,262	-11.9%	18.4%	46.7%	53.3%
City of Buffalo	137,954	136,664	-0.9%	13.6%	42.7%	57.3%
Erie County	420,164	436,986	4.0%	7.8%	65.2%	34.8%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (2007-2011), American Community Survey 5-Year Estimates (2017-2021)
*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.



Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022.

Figure 4.2-3

Age of Buildings

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Households & Household Size

The total number of households in the Study Area increased by 3.8 percent between 2011 and 2021. CT 33.02 experienced substantial loss in its number of households (22.3 percent), while CTs 31, 33.01, and 166 experienced substantial growth (19.3, 24.9, and 12.2 percent, respectively). The City of Buffalo and Erie County experienced moderate growth as well (4.2 and 6.2 percent, respectively), aligning with the moderate growth in population for these two municipalities over the same timeframe. The average household size in the Study Area stayed the same at 2.3 individuals between 2011 and 2021. CTs 27.03, 33.02, 34, and 35 saw increases in their average household size, while CTs 31, 33.01, and 166 saw slight decreases in household size. The City of Buffalo saw a slight increase in household size, while Erie County saw a slight decrease. Table 4.2-5 shows the number of households and average household size for the Study Area, the City of Buffalo, and Erie County.

Table 4.2-5: Households and Household Size

Area	Households			Household Size	
	ACS 2011	ACS 2021	% Change	ACS 2011	ACS 2021
CT 27.03*	1,097	1,068	-2.6%	2.8	3.1
CT 31	1,012	1,207	19.3%	2.1	2.0
CT 33.01	1,411	1,762	24.9%	2.4	2.0
CT 33.02	1,501	1,166	-22.3%	2.0	2.4
CT 34	1,248	1,320	5.8%	2.2	2.5
CT 35**	1,446	1,391	-3.8%	2.0	2.3
CT 166	1,134	1,272	12.2%	2.5	2.2
Study Area Total	8,849	9,186	3.8%	2.3	2.3
City of Buffalo	113,359	118,071	4.2%	2.2	2.3
Erie County	379,478	403,064	6.2%	2.4	2.3

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (2007-2011), American Community Survey 5-Year Estimates (2017-2021)
*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.

Median Household Income

In 2021, median household income of the Study Area ($28,716) was approximately 68% of that of the City of Buffalo ($42,186) and approximately 46% of that of Erie County ($62,578). Table 4.2-6 shows the median household income for the Study Area, the City of Buffalo, and Erie County.

Table 4.2-6: Median Household Income

Area	2021 ACS
CT 27.03*	$20,771
CT 31	$27,112
CT 33.01	$44,069
CT 33.02	$27,586
CT 34	$28,333
CT 35**	$23,075
CT 166	$30,065
Study Area	$28,716
City of Buffalo	$42,186
Erie County	$62,578

Source: American Community Survey 5-Year Estimates (2017-2021)

*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.

Community Cohesion

Community character consists of the attributes, including social and economic characteristics, and assets that make a community unique and that establish a sense of place for its residents. Community cohesion is the degree to which residents have a “sense of belonging” to their neighborhood, a level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually because of continued association over time [62]. Neighborhood and community cohesion considers the demographic, natural, and built features that contribute to a resident’s attachment to their neighbors, local businesses, and institutions within the community.

The construction of the Kensington Expressway removed the original Humboldt Parkway and created a barrier to community connectivity, thereby changing the context of the neighborhood from a cohesive residential area within the City of Buffalo to one divided by a major transportation facility.

The physical barrier created by the Kensington Expressway makes it more difficult to access local businesses and community services and to interact with neighbors located on the opposite side of the facility. Presently, between Northland Avenue and High Street, vehicles, cyclists, and pedestrians may only cross the Kensington Expressway at six locations (East Ferry Street, East Utica Street, Northampton Street, Best Street, Dodge Street, and High Street). Between Northland Avenue and High Street, the distance from one crossing to the next ranges from approximately 720 feet to 1,520 feet. To the north of East Ferry Street, the closest crossing is East Delavan Avenue, approximately 2,650 feet away.

Refer to Section 1.2 (Project Purpose, Objectives, and Needs) and Section 2.1 (Project History) of this DDR/EA for more information on existing community cohesion needs and the barrier created by the Kensington Expressway.

4.2.2.2 Land Use and Zoning

The Study Area is characterized by predominantly residential land use, as well as several commercial and mixed-use strips, community services such as places of worship, and vacant land (see Figure 4.2-4). Fillmore Avenue and Genesee Street represent the two commercial districts in the Study Area and include businesses such as hair salons, auto repair shops, convenience stores, liquor stores, restaurants, and ethnic food stores.

The largest land use in the Study Area is residential. The neighborhoods in the Study Area are densely populated by homes one and a half to two and a half stories high. Homes along Humboldt Parkway (both northbound and southbound) are generally larger and of more intricate design; they represent examples of homes built by the most affluent members of the community at the time of the neighborhood’s initial development. In addition to residential land use, there is a high concentration of vacant properties throughout the entirety of the Study Area, except for the Hamlin Park neighborhood. Most vacant properties were formerly residential, though vacancies are also prevalent on streets within commercial zones.

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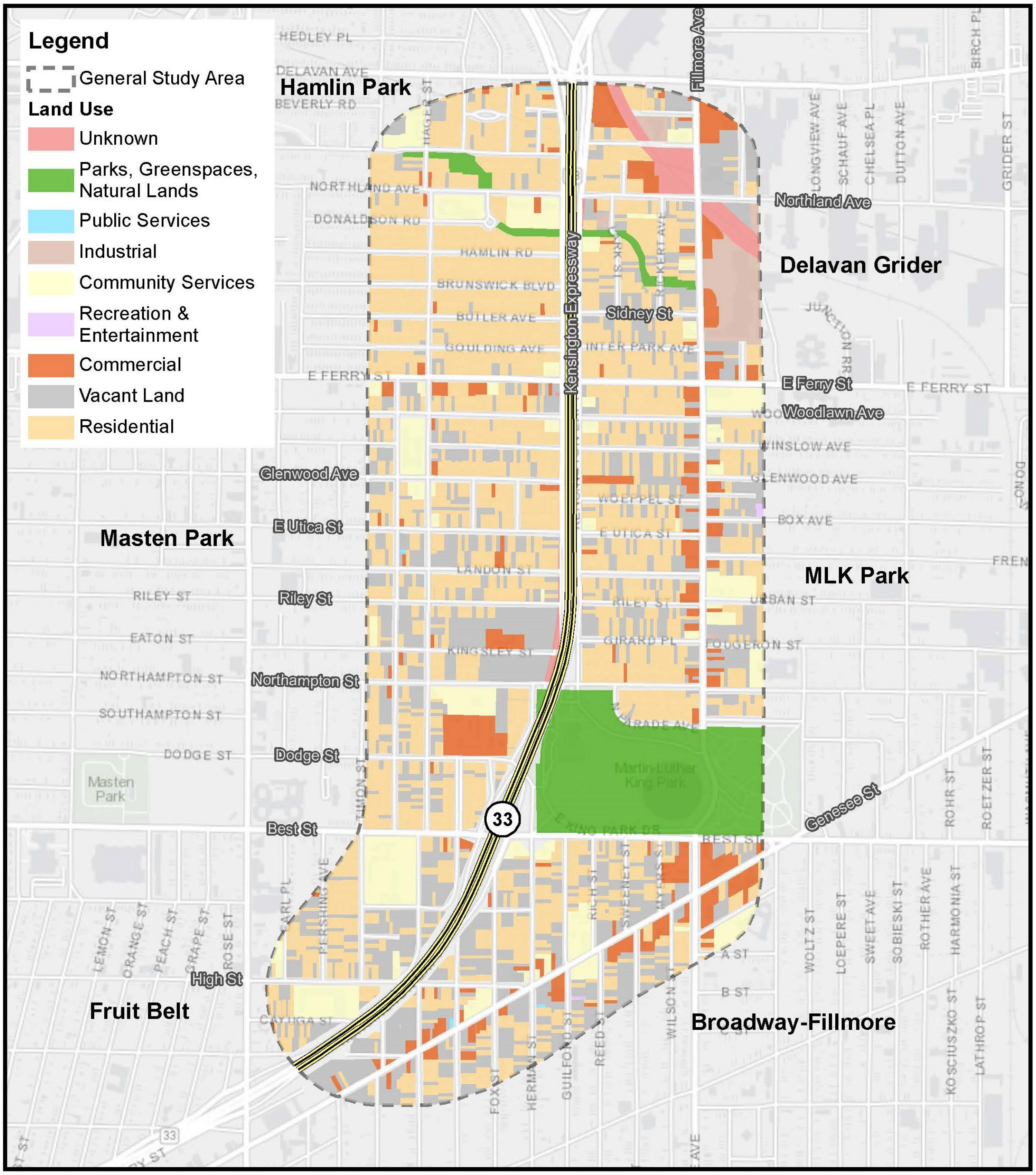
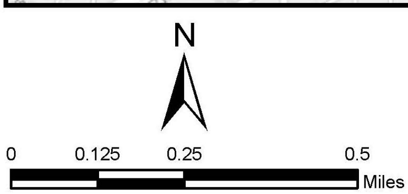
[62] https://dot.ca.gov/-/media/dot-media/district-12/documents/3-3communityimpacts-a11y.pdf.

The Kensington Expressway is a prominent feature within the Study Area, which provides a disconnect between communities east and west of the facility (see Section 1.2 of this DDR/EA, Project Purpose, Objectives, and Needs).

As part of the City of Buffalo's 2017 Unified Development Ordinance, also known as the Green Code, the City published a zoning map intended to guide development across the city. [63] The Study Area is primarily zoned residential (see Figure 4.2-5). Several arterial streets, including Fillmore Avenue, East Ferry Street, and Genesee Street, are zoned for mixed-use centers and mixed-use edges. Several parcels at the northern and southern limits of the Study Area are zoned flex commercial. Four parcels immediately adjacent to the Kensington Expressway on its west side are zoned residential campus; this includes the Gethsemane Manor Apartments (for those aged 62+) and St. Martin's Village (for low- and moderate-income individuals and families), as well as two currently vacant properties at 600 Northampton Street and 563 Riley Street. A small number of parcels in the northeast portion of the Study Area within the Delavan-Grider neighborhood are adjacent to the rail corridor and are zoned heavy or light industrial.

[63] https://www.buffalony.gov/DocumentCenter/View/6105/Citywide_Zoning_Map_January2017?bidId=





Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022.

Figure 4.2-4

Land Use

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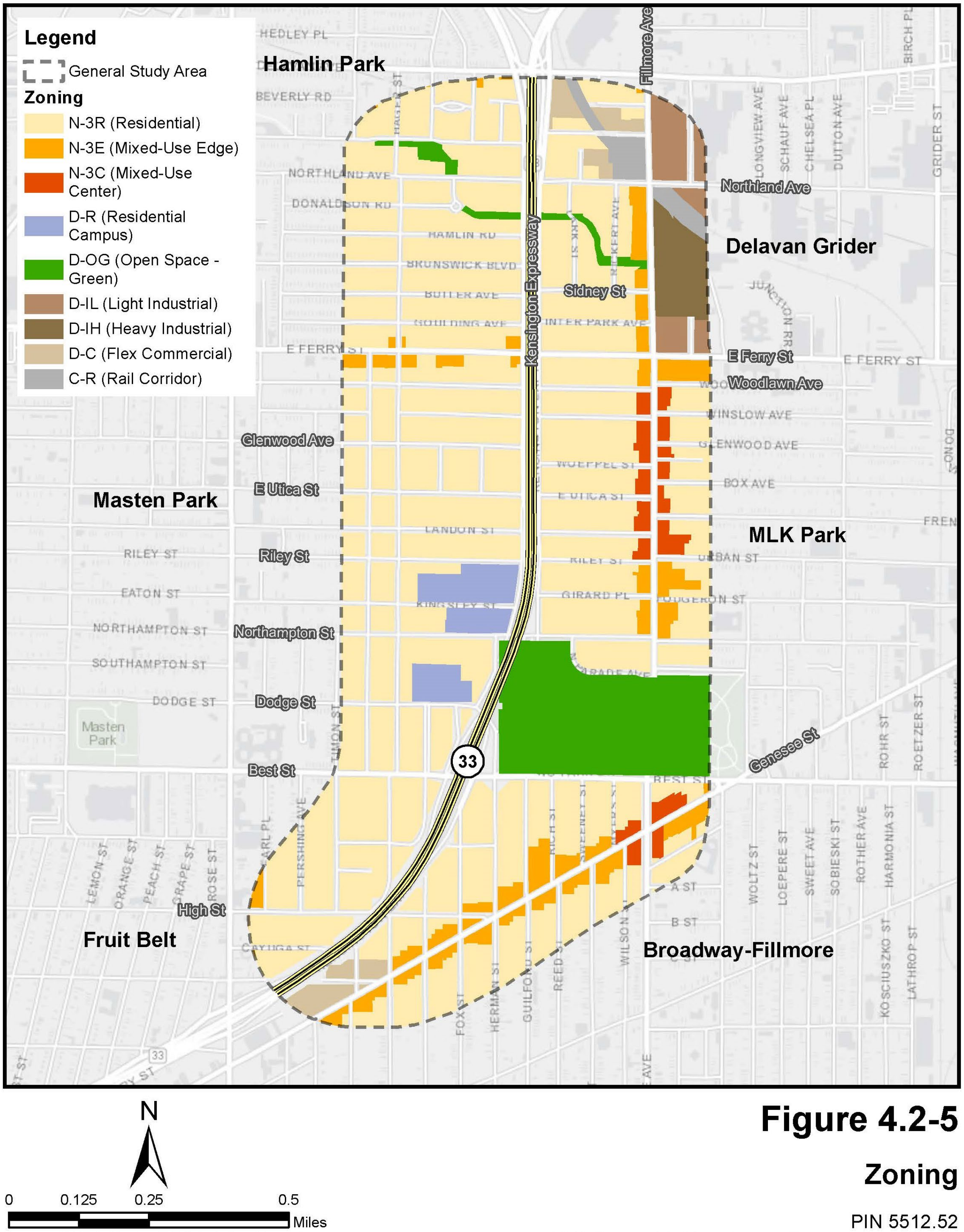

Source: CUGIR 2023, City Of Buffalo Office of Strategic Planning 2021, Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2020.

Figure 4.2-5

Zoning

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4.2.2.3 Community Facilities (including Schools and Places of Worship)

See Figures 4.2-6, 4.2-7, and 4.2-8 for overview maps of community facilities within the Study Area. Each type of community facility is described below.

See Section 4.7 of this DDR/EA for an overview on the parks and recreational resources within the Study Area.

Schools and Civic Institutions

The Study Area is located within the Buffalo Public School District. The district served over 33,000 students in the 2019-2020 school year and employs over 3,250 full-time teachers. Within the Study Area, there are 6 Buffalo Public Schools, 5 of which are elementary/middle schools (up to 8^{th} grade). Table 4.2-7 shows the schools and educational facilities located within the Study Area.

Table 4.2-7: Schools and Civic Institutions in the Study Area

# On Figure 4.2-6	Name	Address	Description
Hamlin Park			
1	Hamlin Park Community School (Claude & Ouida Clapp Academy, PS 74)	126 Donaldson Rd	Pre-K to 8th grade Buffalo Public School.
Masten Park			
2	PS 53 Community School	329 Roehrer Avenue	Pre-K to 8th grade Buffalo Public School.
MLK Park			
3	Dr. Charles R. Drew Science Magnet School, PS 59	1 Martin Luther King Jr. Park	Buffalo Public magnet school for grades 3-8 that is both physically and programmatically linked to the Buffalo Museum of Science.
4	East Community High School, PS 309	820 Northampton Street	9th-12th grade Buffalo Public high school.
5	Buffalo Museum of Science	1020 Humboldt Parkway	Local natural history museum with family-friendly interactive programming located within MLK Jr. Park.
Fruit Belt			
6	Madinatul Uloom	485 Best Street	Private Islamic boarding school for students K-11^{th} grade
7	PS 48 \ PS 196 \ Math Science and Technology Preparatory School Annex	482 High Street	Buffalo Public School housing both PS 48 (Pre-K-6th grade) and PS 196, serving as an annex to the Math, Science, and Technology Preparatory School (grades 7-8). Both occupy the former PS 39 Dr. Martin Luther King, Jr. Multicultural Institute.
Broadway-Fillmore			
8	Dr. Charles R. Drew Science Magnet School Annex	50 A Street	Local annex to the Science Magnet School in the former PS 90 building (just south of MLK Jr. Park), home to the school's Pre-K-2nd grade classrooms.

Places of Worship

There are 28 places of worship within the Study Area. These places of worship are predominantly of the Christian faith and represent a variety of denominations. Most churches include parking and have sidewalk access. Churches and religious institutions are important cultural and architectural resources in the City of Buffalo, especially East Buffalo. Table 4.2-8 shows the places of worship located within the Study Area.

Table 4.2-8: Places of Worship within the Study Area

# on Figure 4.2-7	Name	Address	Description
Hamlin Park			
1	Tabernacle of Praise	319 Northland Avenue	Christian Ministry
Delavan-Grider			
2	Evening Star Church of God in Christ	1552 Fillmore Avenue	Pentecostal Church
3	Faith Missionary Baptist Church	626 Humboldt Parkway	Baptist Church
Masten Park			
4	Jerusalem Missionary Baptist Church	465 Glenwood Avenue	Baptist Church
5	White Rock Baptist Church	480 East Utica Street	Baptist Church
6	St. Paul Missionary Baptist Church	160 Kingsley Street	Baptist Church
7	St. Martin de Porres Church	555 Northampton Street	Finishing construction in 2000, this parish was the first new Roman Catholic Church built in Buffalo in 50 years.
8	Walls Memorial AME Zion Church	455 Glenwood Avenue	African Methodist Episcopal Zion Church
9	Genesis Community Church	105 Kingsley Street	Community Church
10	God's Way of Life Restoration, Deliverance, and Healing Center	491 East Ferry Street	Christian Ministry
11	Tried Stone Baptist Church	559 Woodlawn Avenue	Baptist Church
MLK Park			
12	The Blood Covenant Church	1322 Fillmore Avenue	Covenant Church
13	New Asia Missionary Baptist Church	692 East Utica Street	Evangelical Church
14	Humboldt Parkway Baptist Church	790 Humboldt Parkway	Historic Baptist Church
15	Memorial Missionary Baptist Church	770 Humboldt Parkway	Historic Baptist Church
16	FellowshipWorld Church	878 Humboldt Parkway	Christian Ministry
17	True Way Fellowship Ministry	1280 Fillmore	Pentecostal Church

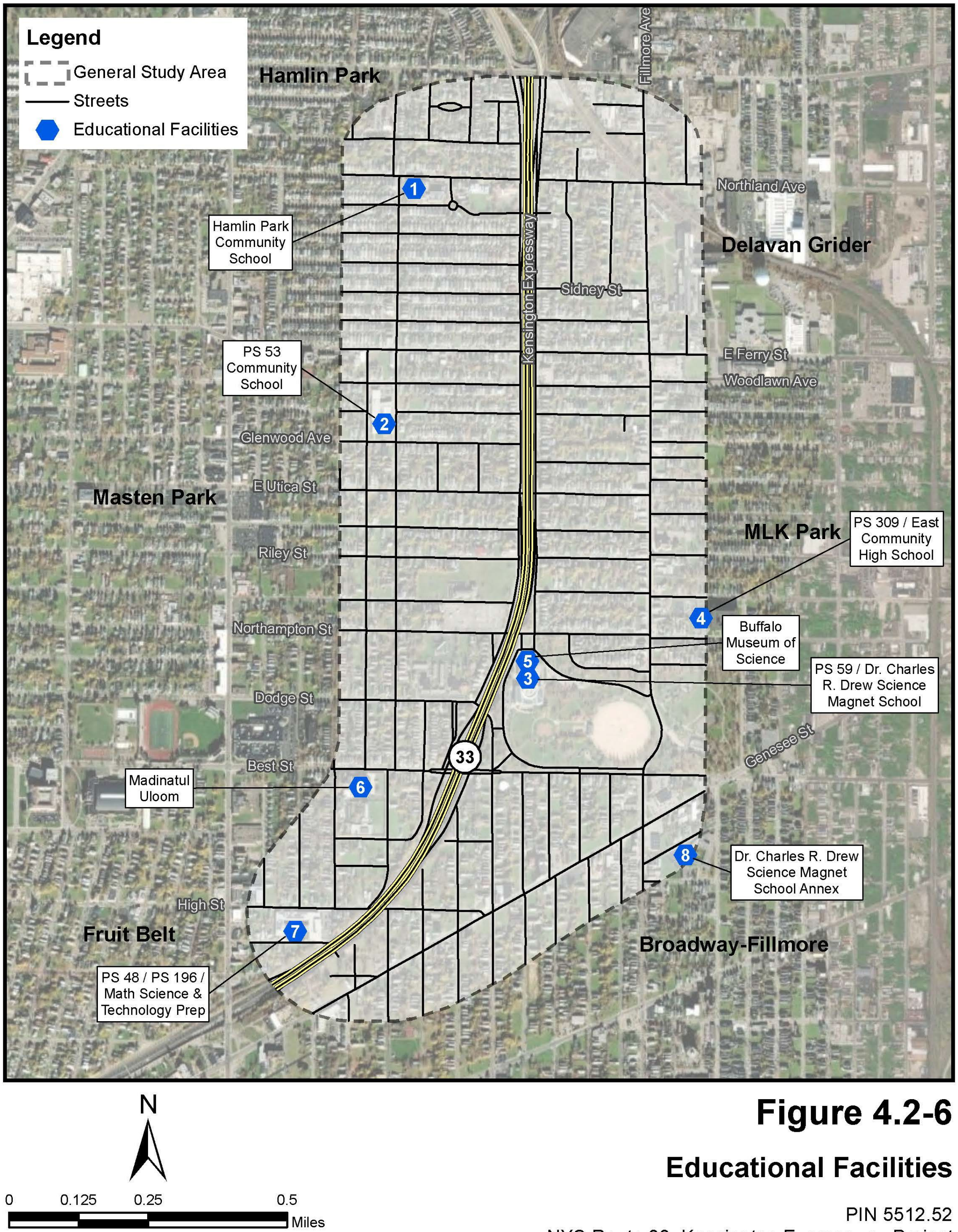
Table 4.2-8: Places of Worship within the Study Area			
# on Figure 4.2-7	**Name**	**Address**	**Description**
		Avenue	
18	Hopewell Baptist Church	1301 Fillmore Avenue	Baptist Church
19	Antioch Baptist Church	1327 Fillmore Avenue	Historic Baptist Church
20	New Direction Christian Fellowship	1449 Fillmore Avenue	Missional Church
21	Greater Apostolic House of Prayer	1455 Fillmore Avenue	Historic Apostolic Church
22	Bread of Life Revival Ministries	799 Northampton Street	Christian Ministry
Fruit Belt			
23	Church of God Tabernacle	526 High Street	Pentecostal Church
Broadway-Fillmore			
24	New Beginnings Church of God in Christ	828 Genesee Street	Pentecostal Church
25	The Renewal Church	887 Genesee Street	Christian Ministry
26	Young Tabernacle Holiness Church	623 Best Street	Apostolic Church
27	Metropolitan United Methodist	657 Best Street	United Methodist Church
28	Ruach Healing Temple	773 Genesee Street	Christian Ministry

Social Services, Healthcare Centers, and Public Safety

Within the Study Area, there are three social services offices, two community centers, one healthcare center, and two public safety stations. Table 4.2-9 shows the health, social and government institutions located within the Study Area.

Table 4.2-9: Social Services, Healthcare Centers, and Public Safety within the Study Area

# on Figure 4.2-8	Name	Address	Category	Description
Hamlin Park				
1	Boys and Girls Clubs of Buffalo Masten Clubhouse	397 Northland Avenue	Social services	After school program for disadvantaged youths located in the Hamlin Park neighborhood.
Delavan-Grider				
2	Buffalo Fire Station E33	1720 Fillmore Avenue	Public safety	Local Buffalo Fire Department substation providing public safety services to the community
Masten Park				
3	Buffalo Urban League Preventative Services Program	590 Riley Street	Social services	Case planning and referral services for families at risk of foster care placement
4	Community Action Organization of WNY Housing Development Office	564 Dodge Street #400	Social services	Provides programs such as rental and mortgage assistance, apartment searches, and home repair
MLK Park				
5	Community Action Organization Masten Resource Center	1423 Fillmore Avenue	Community center	Community outreach center offering programs supporting neighborhoods, block clubs, and small businesses
6	Buffalo Police Department C- District	693 East Ferry Street	Public safety	Local police station providing law enforcement services to the Delavan-Grider and MLK Park neighborhoods
Broadway-Fillmore				
7	Catholic Charities WIC Genesee Office	930 Genesee Street	Social services	Catholic Charities outreach center for WIC Federal Nutrition Program
8	King Urban Life Center	938 Genesee Street	Community center	Community center occupying a historic former church that offers after school and family programs
9	Catholic Charities Monsignor Carr Institute	20 Rich Street	Healthcare center	Offers nonsectarian psychiatric and social work services



Source: CUGIR 2023, Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2020.

Figure 4.2-6

Educational Facilities

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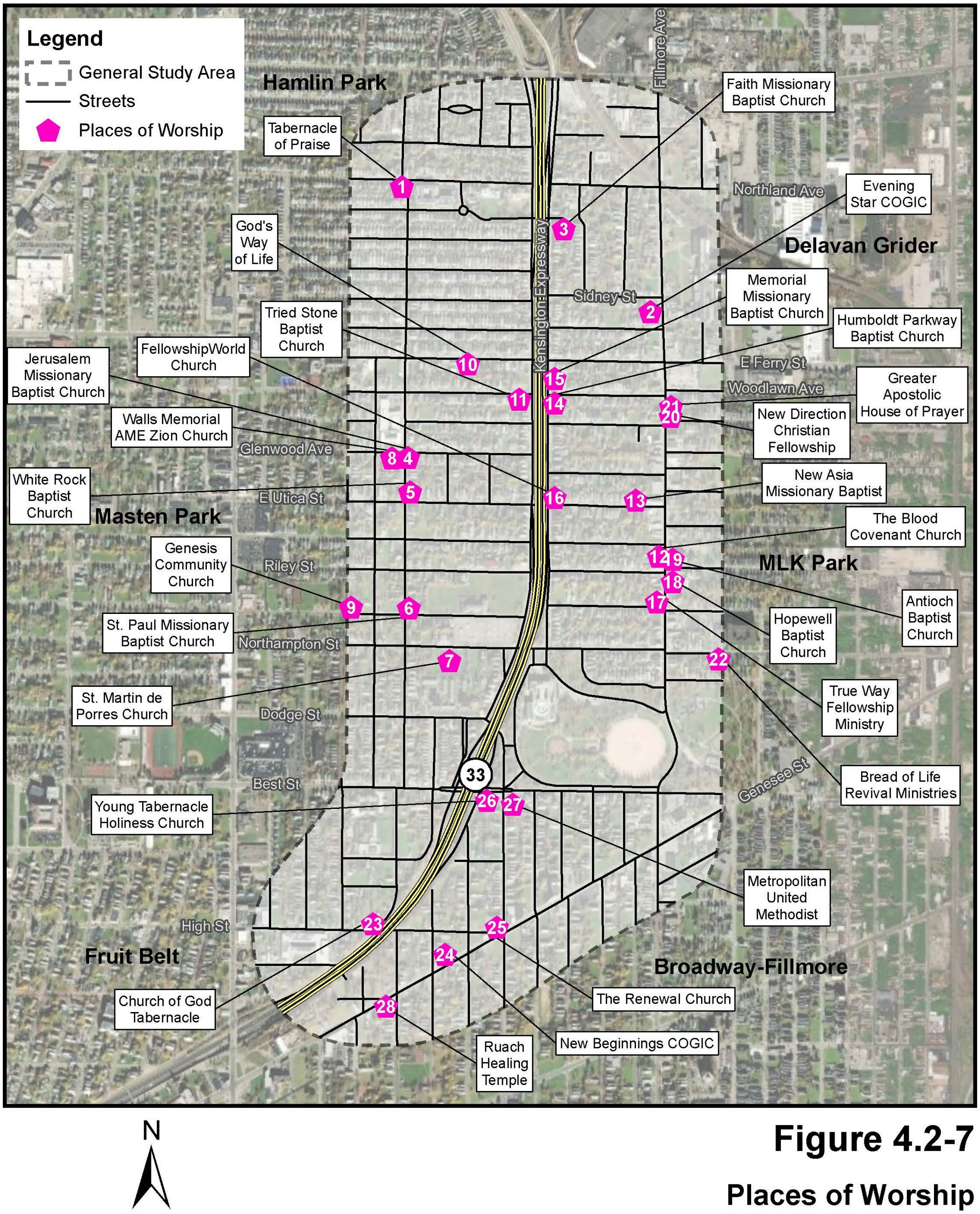

Source: CUGIR 2023, Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2020.

Figure 4.2-7

Places of Worship

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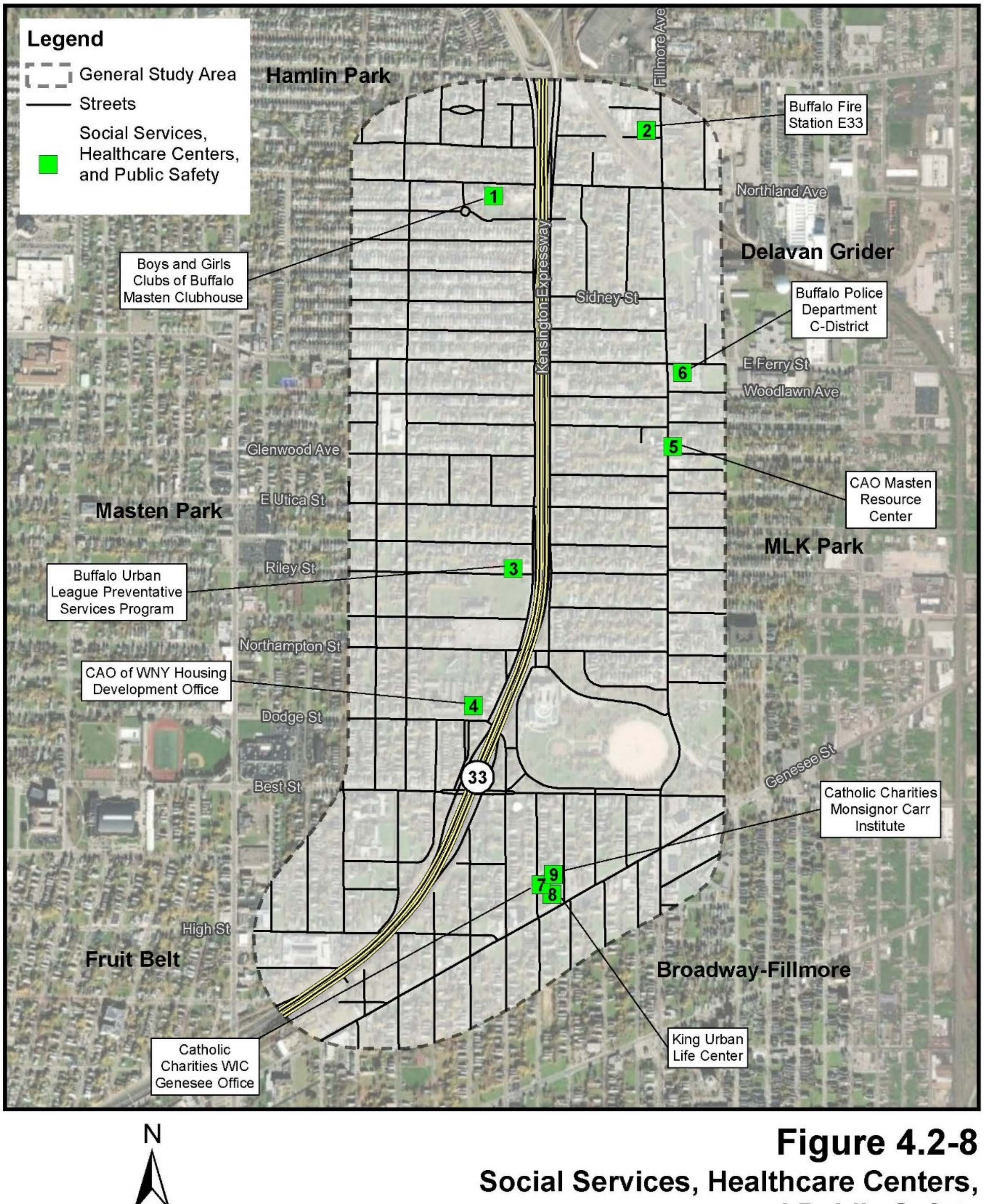
NYS Route 33, Kensington Expressway Project
Erie County, NY



Source: CUGIR 2023, Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2020.

Figure 4.2-8
Social Services, Healthcare Centers, and Public Safety
PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

4.2.3 Build Alternative Effects

This section documents the permanent operational effects on neighborhood character and community cohesion resulting from the implementation of the Build Alternative. The temporary construction effects of the Build Alternative are described in Section 4.20 of this DDR/EA, Construction. The indirect and cumulative effects of the Build Alternative are described in Section 4.21 and Section 4.22 of this DDR/EA, respectively.

4.2.3.1 Neighborhood Character and Community Cohesion

The Build Alternative would involve changes primarily within the boundaries of existing transportation rights-of-way (NYS Route 33, Humboldt Parkway and other local streets); thus, the Build Alternative would not directly affect the neighborhood configuration, population levels, age distribution, housing unit typology, occupancy, status or tenure, household size, or median household income within the Study Area compared to the No Build Alternative.

Community Cohesion

The Build Alternative would reduce the distances that pedestrians need to travel to cross the Kensington Expressway. Pedestrian accommodations would be improved at the existing crossings of East Ferry Street, East Utica Street, and Northampton Street and new crossings would be created at Sidney Street/Butler Avenue, Winslow Avenue, and Riley Street. Between Sidney Street and Best Street, the distance from one crossing to those adjacent would be substantially less than in the No Build Alternative, ranging from approximately 600 feet to approximately 785 feet (compared to an approximate range from 720 feet to 1,520 feet in the No Build Alternative).

Between the tunnel portals located at Sidney Street and Dodge Street, pedestrians would also have additional opportunities for crossing the expressway by travelling through the greenspace created above the tunnel. This area would provide an at-grade median with landscaping and would enable a more direct pedestrian travel route between the northbound and southbound alignments of Humboldt Parkway and connected streets.

Both southbound and northbound segments of Humboldt Parkway would be reconstructed to improve connectivity for pedestrians and cyclists. The segments located between Sidney Street and Dodge Street would be completely reconstructed on a new alignment while implementing “Complete Street” roadway design features, such as traffic calming, curb ramps, crosswalks, bicycle lanes, and pedestrian/bicycle signals.

These crossing and roadway improvements will improve the connection between Hamlin Park, Delavan-Grider, Masten Park, and MLK Park neighborhoods (see Figure 4.2-2) and reduce the physical barriers now separating them.

The Build Alternative would also include improvements to various City of Buffalo streets adjacent to the Kensington Expressway and Humboldt Parkway. The bounding street limits of these improvements are generally High Street to the south, Northland Avenue to the north, Fillmore Avenue to the east, and Wohlers Avenue to the west. The local street segments that would be rehabilitated are listed in Table 3.2-2 and the proposed local street improvements are described in Section 3.4.2.17 of this DDR/EA. Elements of the work would include improved lane striping and crosswalks, replacement of substandard sidewalks, construction of ADA compliant curb ramps, traffic-calming curb bump outs, and improved street lighting. The improvements to sidewalks and curb ramps would enhance community cohesion through improved pedestrian mobility to interact with neighbors and community facilities, particularly non-driver populations.

The tunnel between Sidney Street and Dodge Street would also eliminate a substantial visual barrier that now separates neighborhoods on opposite sides of the expressway. As described in Section 3.4.4.1 of this DDR/EA, the Build Alternative would result in a new attractive greenspace, which would improve in quality over time as the tree plantings mature. Furthermore, as described in Section 4.11 of this DDR/EA, the tunnel would also reduce the traffic noise levels at locations within adjacent neighborhood areas. In addition, the Build Alternative would not remove any buildings or relocate any residences or businesses, which could newly fragment the community. Refer to Section 3.4.2 of this DDR/EA for more information on the proposed right-of-way acquisitions that are part of the Build Alternative.

4.2.3.2 Land Use and Zoning

The Build Alternative would improve existing roadways and would largely preserve existing traffic patterns, thus maintaining access to existing land uses. Modifications to property access would be minor and would involve lengthening or lateral shifting of existing driveways along Humboldt Parkway to accommodate roadway realignment, completion of other roadway improvements, utility relocations, and related improvements. The only property acquisitions required beyond existing rights-of-way would be minor in extent (see Section 3.4.3.1 of this DDR/EA). These acquisitions would not interfere with the existing use of those properties.

The Build Alternative would not displace any existing residences or businesses within the Study Area, nor would it otherwise change the use of any existing Study Area parcel located beyond public rights-of-way. The Build Alternative would result in the creation of a new greenspace over the tunnel, which would be a beneficial change to land use. Construction completed under the Build Alternative would be consistent with local zoning.

Accordingly, there would be no adverse permanent operational effects of the Build Alternative relative to land use and zoning.

4.2.3.3 Community Facilities (including Schools and Places of Worship)

No community facility buildings, including schools and places of worship, would be acquired for the Build Alternative. The only property acquisitions required beyond existing rights-of-way would be minor in extent (see Section 3.4.2 of this DDR/EA). The Build Alternative would not adversely affect access to or operations of community facilities within the Study Area. As described in Section 4.2.3.1 of this DDR/EA, the Build Alternative would improve neighborhood connectivity throughout much of the Study Area. Examples of improved access to community facilities as a result of the Build Alternative include:

- Residents of the four neighborhoods adjacent to the tunnel could utilize one of the proposed additional expressway crossings (Riley Street, Winslow Avenue, Sidney Street/Butler Avenue) to access a facility located on the opposite side of the Kensington Expressway;
- Pedestrians could traverse the proposed greenspace developed on the tunnel cap to access a facility located on the opposite side of the expressway; and
- Pedestrians could utilize reconstructed sidewalks and ADA compliant curb ramps to access facilities located on the same side of the expressway.

There would be a perceptible decrease in traffic noise of 5 dB(A) between the No Build and Build Alternative at PS 59 / Dr. Charles R. Drew Science Magnet School. Changes in noise levels at all other schools in the Study Area would be 3 dB(A) or less.

There would be a perceptible decrease in traffic noise in the range of 5 to 6 dB(A) between the No Build and Build Alternative at several places of worship on Humboldt Parkway, including the Memorial Missionary Baptist Church, Humboldt Parkway Baptist Church, Tried Stone Baptist Church, and FellowshipWorld Church. At other places of worship farther from the capped section of the Kensington Expressway, changes in noise levels would not be perceptible (changes of 3 dB(A) or less).

The Build Alternative would not result in adverse permanent effects to community facilities or their operations.

4.3 Social Groups Benefited or Harmed

4.3.1 Study Area and Methodology

The Study Area for social groups benefited or harmed is defined as all 2010 census tracts that are within or intersect the general Study Area (see Figure 4.2-1). As shown in Figure 4.2-1, the census tract boundaries changed between the years 2010 and 2020; specifically, year 2010 tract 35 was divided into tracts 35.01 and 35.02 for year 2020 and year 2010 tract 27.02 was divided into tracts 27.03 and 27.04 for year 2020. To compare year 2010 to year 2020 data for these tracts, the 2020 data for the divided tracts were summed.

The "social groups" that are discussed in this section include the elderly (i.e., those over 65 years of age), persons with disabilities, transit-dependent populations, and non-driver populations. For purposes of this DDR/EA, the elderly is defined as individuals aged 65 and older. Transit-dependent populations are defined as those who depend on public transportation to commute to work. Non-driver populations are defined as individuals who do not have access to a personal vehicle. The U.S. Census Bureau defines "disability" in several different ways: hearing difficulty or deafness, vision difficulty or blindness, cognitive (remembering, concentrating, or decision-making) difficulties, ambulatory difficulties that make it hard for individuals to walk or climb stairs, self-care (bathing or dressing) difficulties, and independent living difficulties (ability to run important errands and make it to appointments without assistance).[64]

4.3.2 Existing Conditions

4.3.2.1 Elderly Individuals

As shown in Table 4.2-3, between years 2011 and 2021, the Study Area had a slight increase in the total population of elderly individuals (5.3 percent). Much like the City of Buffalo and Erie County (15.4 and 18.3 percent increases, respectively), census tracts 27.03, 31, and 33.01 had substantial increases (48.7, 27.1 and 25.2 percent, respectively) in the total population of elderly individuals. Census tract 33.02 had a substantial decrease in its elderly population (22.5 percent).

As shown in Table 4.3-1, the greatest number (and proportion) of elderly individuals is concentrated in census tract 33.01, part of the Hamlin Park neighborhood. The proportion of elderly residents in the Study Area (17.8 percent) is slightly lower than that of Erie County (18.0 percent) and is higher than that of the City of Buffalo (12.9 percent). See Section 4.2.2.1 of this DDR/EA for further detail on age distribution in the Study Area.

[64] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2021_ACSSubjectDefinitions.pdf

Table 4.3-1: Percent of Age Groups in Study Area							
Area	**Total Population**	**School Age Population**	**% School Age**	**Total Working Age**	**% Working Age**	**Total Elderly**	**% Elderly**
CT 27.03	3,346	1,332	39.8%	1,724	51.5%	290	8.7%
CT 31	2,397	531	22.2%	1,434	59.8%	432	18.0%
CT 33.01	2,397	644	26.9%	2,138	89.2%	920	38.4%
CT 33.02	3,017	770	25.5%	1,508	50.0%	739	24.5%
CT 34	3,312	913	27.6%	2,022	61.1%	377	11.4%
CT 35	3,170	952	30.0%	1,707	53.9%	511	16.1%
CT 166	2,800	618	22.1%	1,821	65.0%	361	12.9%
Study Area Total	20,439	5,760	28.2%	12,354	60.4%	3,630	17.8%
City of Buffalo	276,011	62,038	22.5%	178,246	64.6%	35,727	12.9%
Erie County	949,715	193,734	20.4%	585,468	61.7%	170,513	18.0%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (2007-2011), American Community Survey 5-Year Estimates (2017-2021)
*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.

4.3.2.2 Individuals with Disabilities

Table 4.3-2 shows the number of individuals with disabilities in the Study Area. In 2021, 20.4 percent of all noninstitutionalized individuals within the Study Area were identified as having a disability; this is a higher rate than that of the City of Buffalo (16.7 percent) and Erie County (13.5 percent).[65] The highest concentration of individuals with disabilities was in census tract 33.02 (28.8 percent).

[65] The U.S. Census Bureau defined “civilian noninstitutional population” as “civilians not residing in institutional group quarters facilities such as correctional institutions, juvenile facilities, skilled nursing facilities, and other long-term care living arrangements.” https://www.census.gov/glossary/?term=Civilian+noninstitutionalized+population

Table 4.3-2: Population with a Disability, 2021			
Area	**Total Civilian Noninstitutionalized Population**	**Population with a Disability**	
		Count	**Share of Total**
CT 27.03*	1,248	203	16.3%
CT 31	2,385	395	16.6%
CT 33.01	3,561	697	19.6%
CT 33.02	2,772	797	28.8%
CT 34	3,293	793	24.1%
CT 35**	3,170	384	12.1%
CT 166	2,780	655	23.6%
Study Area Total	19,209	3,924	20.4%
City of Buffalo	27,3890	45,665	16.7%
Erie County	94,0342	126,980	13.5%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimate Detailed Tables (2021)
*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.

4.3.2.3 Transit-Dependent / Non-Driver Populations, Pedestrians, and Bicyclists

As shown in Table 4.3-3, 17.0 percent of workers aged 16 and over within the Study Area rely on public transportation to get to work. This is a higher percentage than that of the City of Buffalo as a whole (9.1 percent) and Erie County (3.2 percent). The highest dependency on public transportation exists in census tract 31, in which 20.9 percent of the population relies on public transportation to get to work. The dependency on walking and bicycling is also highest in census tract 31 (17.8 percent and 3.9 percent, respectively).

Within the Study Area, 6.5 percent of the residents rely on walking to get to work, a higher rate than residents of the City of Buffalo as a whole (5.5 percent) and Erie County (2.5 percent). The reliance on bicycles and bicycle accessible roadways is just slightly lower in the Study Area (0.5 percent) than the City of Buffalo as a whole (0.7 percent). The reliance on bicycling is higher in the Study Area and the City of Buffalo than it is in Erie County (0.4 percent).

The reliance on other forms of transportation, such as taxicabs, ride-share services, and motorcycles, in the Study Area is 2.8 percent, higher than both the City of Buffalo (1.6 percent) and Erie County (1.1 percent).

Table 4.3-3: Workers by Means of Transportation to Work												
Area	**Total Workers Age 16+**	**Car, Truck or Van**		**Public Transportation**		**Bicycle**		**Walked**		**Taxi, Motorcycle, or Other**	
		Count	**Share**	**Count**	**Share**	**Count**	**Share**	**Count**	**Share**	**Count**	**Share**
CT 27.03*	761	681	89.5%	37	4.9%	0	0.00%	27	3.6%	16	2.1%
CT 31	916	490	53.5%	191	20.9%	36	3.9%	163	17.8%	0	0.0%
CT 33.01	1,707	936	54.8%	333	19.5%	0	0.0%	97	5.7%	67	4.0%
CT 33.02	938	719	76.7%	168	17.9%	0	0.0%	24	2.6%	27	2.9%
CT 34	1,010	649	64.3%	191	18.9%	0	0.0%	98	9.7%	72	7.1%
CT 35**	990	791	79.9%	166	16.8%	0	0.0%	0	0.0%	19	1.9%
CT 166	849	612	72.1%	133	15.7%	0	0.0%	57	6.7%	0	0.0%
Study Area Total	7,171	4,878	68.0%	1,219	17.0%	36	0.5%	466	6.5%	201	2.8%
City of Buffalo	118,996	92,296	77.6%	10,837	9.1%	873	0.7%	6,492	5.5%	1,951	1.6%
Erie County	454,568	387,719	85.3%	146,55	3.2%	1,680	0.4%	11,395	2.5%	4,783	1.1%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimate Detailed Tables (2021)
*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.

As shown in Table 4.3-4, nearly 39 percent of the households in the Study Area do not have access to a personal vehicle. This is higher than the City of Buffalo (24.7 percent) and Erie County (12.3 percent). Census tract 31 has the highest percentage of households without access to a personal vehicle (50.5 percent).

Table 4.3-4: Percentage of Households with No Vehicles Available			
Area	**Total # of Households**	**Households with No Vehicles Available**	**% of Households**
CT 27.03*	1,044	263	25.2%
CT 31	1,185	598	50.5%
CT 33.01	1,670	481	28.8%
CT 33.02	1,141	413	36.2%
CT 34	1,295	559	43.2%
CT 35**	1,415	618	43.7%
CT 166	1,142	504	44.1%
Study Area Total	8,892	3,436	38.6%
City of Buffalo	118,071	29,209	24.7%
Erie County	403,064	49,405	12.3%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimate Detailed Tables (2021)
*Census tract 27.03 was created after the 2020 Decennial Census. For consistency purposes within this report, 2021 data from census tracts 27.03 and 27.04 were combined.
**Census tract 35 was split into census tracts 35.01 and 35.02 after the 2011 ACS. For consistency purposes within this report, data from both census tracts were combined.

4.3.3 Build Alternative Effects

This section documents the permanent operational effects on social groups benefited or harmed resulting from the implementation of the Build Alternative. The temporary construction effects of the Build Alternative are described in Section 4.20 of this DDR/EA. The indirect and cumulative effects of the Build Alternative are described in Sections 4.21 and 4.22 of this DDR/EA, respectively.

The permanent operational effects of the Build Alternative would be beneficial to the elderly, individuals with disabilities, transit-dependent populations, and non-driver populations. These benefits would derive from the proposed development of the following:

- Additional, more closely spaced opportunities to cross the Kensington Expressway via at-grade crossings;
- Additional opportunities for pedestrians to cross the expressway by travelling through the greenspace created above the tunnel where an at-grade median with landscaping would also enable direct pedestrian travel between the northbound and southbound alignments of Humboldt Parkway;
- Improved pedestrian safety within segments of the Humboldt Parkway where “Complete Street” roadway design features, such as traffic calming, curb ramps, crosswalks, bicycle lanes, and pedestrian/bicycle signals, would be constructed;
- Improved access to public transit, including support for future construction of bus shelters at bus stops now located at the intersections of East Ferry Street, East Utica Street, and Best Street. The Build Alternative would include concrete pads in these locations to support NFTA’s development of bus shelters in the future as a separate independent action. The Route 81 bus currently using the East Utica Street ramp eliminated by the Build Alternative would be able reach NYS Route 33 via Best Street. Existing bus stops at Best Street would relocated within walkable distance in coordination with NFTA to accommodate the proposed roundabouts. The pedestrian mobility benefits of the Build Alternative could also enable NFTA to consolidate existing bus stops

and provide more efficient service (NFTA currently has additional stops on its route(s) to avoid the need for pedestrians to cross the existing roadway bridges over the Kensington Expressway).[66] ; and

- Improved pedestrian conditions in the areas where local streets would be improved.[67] For example, construction of missing curb ramps enables improved mobility for wheelchair users and others using mobility aids. Providing safe conditions for users of all abilities increases their ability to meaningfully interact with the community and improves quality of life.

4.4 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal actions on the health or environment of minority and/or low-income (environmental justice) populations to the greatest extent practicable and permitted by law. Executive Order 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All,* published on April 26, 2023, requires federal agencies to identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of federal activities, including those related to climate change and cumulative impacts of environmental and other burdens on communities with environmental justice concerns. U.S. DOT's Order 5610.2C *U.S. Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* defines "Environmental justice" as the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, income, national origin, or educational level, with respect to the development, implementation and enforcement of environmental laws, regulations and policies. U.S. DOT further defines fair treatment to mean that no population, due to policy or economic disempowerment, is forced to bear a disproportionate burden of the negative human health and environmental impacts, including social and economic effects, resulting from transportation decisions.[68]

The 2019 *New York Climate Leadership and Community Protection Act* ("CLCPA")[69] established targets to transform New York's energy generation and efficiency. A concurrent goal of the CLCPA is to relieve long-standing environmental justice burdens on "disadvantaged communities" by mandating a substantial portion of investment in CLCPA projects to such communities. As directed by provisions of the CLCPA, the Climate Justice Working Group[70] adopted final criteria[71] and identified disadvantaged communities[72]

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[66] Email communication to NYSDOT from NFTA dated March 27, 2023.
[67] Various City of Buffalo streets adjacent to the Kensington Expressway and Humboldt Parkway would be improved. The bounding street limits of these improvements are generally High Street to the south, Northland Avenue to the north, Fillmore Avenue to the east, and Wohlers Avenue to the west. The local street segments that would be rehabilitated are listed in Table 3.2-2 and the proposed local street improvements are described in Section 3.4.2.17 of this DDR/EA.
[68] https://www.transportation.gov/sites/dot.gov/files/Final-for-OST-C-210312-003-signed.pdf
[69] https://legislation.nysenate.gov/pdf/bills/2019/S6599
[70] The Climate Justice Working Group consisted of a 13-member assembly consisting of environmental justice community representatives from New York City, upstate urban communities, rural communities, the NYSDEC, NYSDOH, NYSERDA and NYSDOL charged with defining criteria to identify disadvantaged communities.
[71] The criteria consisted of 45 indicators that centered on environmental and climate change burdens and risks, population characteristics and health vulnerabilities.
[72] The identified communities were delineated by census tract boundaries as defined in the U.S. Census Bureau American Community Survey.

in March 2023. Application of the criteria generated a list of over 1,700 disadvantaged New York communities defined by US Census tract boundaries. [73]

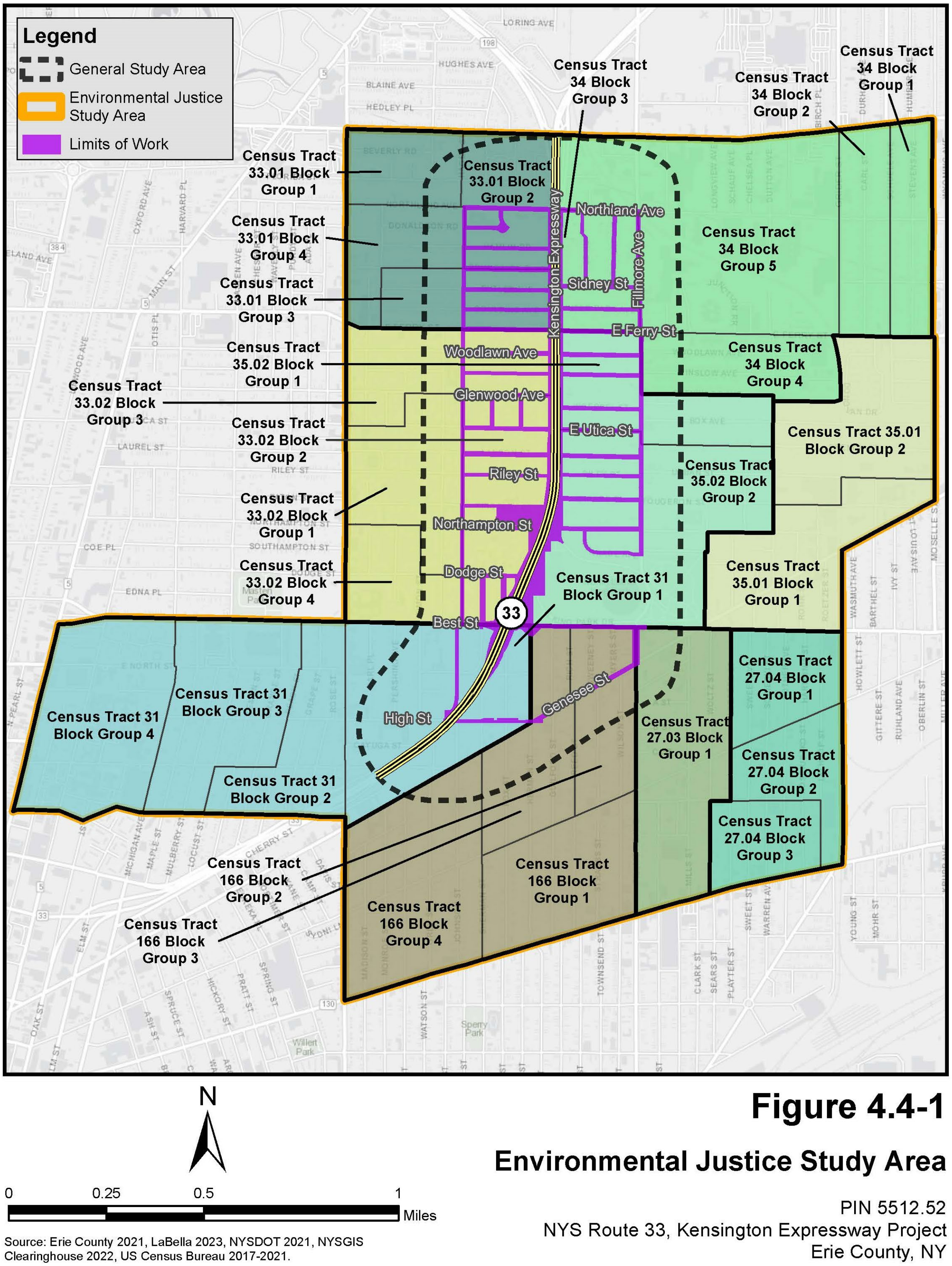
This section of the DDR/EA documents the assessment of the potential for the Project to result in disproportionately high and adverse effects on environmental justice populations.

Providing meaningful opportunities for participation in the Project by environmental justice populations is, and continues to be, an important part of the project development process. As discussed in Section 4.4.4, the NYSDOT has considered the input received from environmental justice populations in the Project design and assessment of effects.

4.4.1 Study Area and Methodology

The Study Area used for the assessment of potential disproportionately high and adverse effects to environmental justice populations includes the full extent of census tracts that intersect the Project's general Study Area. Figure 4.4-1 shows the census tracts in the Study Area and their associated block groups.

[73] An interactive map showing the New York communities identified as disadvantaged under the CLCPA is available at https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria .



Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2017-2021.

Figure 4.4-1

Environmental Justice Study Area

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

After defining the Study Area, the environmental justice assessment involved the following steps:

1. Identify existing minority and low-income (environmental justice) populations within the Study Area;
2. Determine whether the Build Alternative would result in potentially adverse effects on the identified environmental justice populations;
3. Consider mitigation for any adverse effects (required under NEPA for all adverse effects regardless of the type of population affected).
4. If potential effects would be adverse after mitigation is considered, identify whether those effects would be predominately borne by the environmental justice populations or are appreciably more severe or greater in magnitude on the environmental justice population than the adverse effects suffered by the non-minority or non-low-income population (e.g., disproportionately high and adverse effects); and
5. If disproportionately high and adverse effects on environmental justice populations are anticipated, evaluate whether there is a further practicable mitigation measure or practicable alternative that would avoid or reduce the disproportionately high and adverse effects.

Demographic data were obtained for block groups within the Study Area from the U.S. Census Bureau American Community Survey 5-Year Estimates (2017-2021). Survey data collected included data on minority and low-income populations. For comparison purposes, data for the City of Buffalo and Erie County were also obtained and are presented in Table 4.4-1.

The following guidance documents were used for this assessment:

- FHWA Order 6640.23A FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations[74];
- FHWA's Guidance on Environmental Justice and NEPA[75];
- FHWA's Environmental Justice Reference Guide[76];
- USEPA's Promising Practices for EJ Methodologies in NEPA Reviews[77]; and
- CEQ's Environmental Justice Guidance Under the National Environmental Policy Act.[78]

Minority Populations: The USDOT Order 5610.2C defines a minority population as a readily identifiable group of minority persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity. Minorities are those who identify as Black or African American, Hispanic or Latino, Asian American, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander, as well as those who identify as "some other race" or "two or more races." Demographic data were collected for census block groups and census tracts within the Study Area from the American Communities Survey (ACS) 2017-2021 5-Year Estimates. Survey data collected included data on minority and low-income populations. Consistent with the CEQ *Environmental Justice Guidance Under NEPA*, for this Project assessment, census block groups were considered a minority population area if the minority population of the block group exceeded 50 percent of the total population.

Low-Income Populations: The USDOT Order 5610.2C defines a low-income population as any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant,

[74] https://www.fhwa.dot.gov/legsregs/directives/orders/664023a.cfm
[75] https://www.environment.fhwa.dot.gov/env_topics/ej/guidance_ejustice-nepa.aspx
[76]https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/
[77] https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf
[78] https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf

geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity. A low-income person is a person whose household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines. The HHS poverty guidelines are used for administrative purposes, such as determining eligibility for federal programs.[79] However, local level (census tract or block group) information on the population below the HHS poverty guidelines is not available. Therefore, the identification of low-income populations was based on the 2017-2021 ACS, which uses the U.S. Census Bureau's poverty thresholds. The U.S. Census Bureau poverty thresholds are approximately equal to and are commonly used as a proxy for the HHS poverty guidelines.

For this Project assessment, the threshold used to identify low-income populations was twice (200%) the federal poverty threshold based on 2017-2021 ACS 5-Year Estimates at the block group level.[80] The federal poverty threshold is very low and reflects a level of severe poverty that may exclude populations that are above the threshold but are still economically struggling. For example, the 2022 federal poverty threshold for a family of four (with two of the four being children under 18) is $29,678. A low-income threshold of twice the federal poverty rate is commonly used in other tools and analyses, including the following:

- USEPA's EJSCREEN environmental justice screening and mapping tool[81]
- Council on Environmental Quality (CEQ) Justice40 Climate and Economic Justice Screening Tool[82]

For this Project assessment, Erie County was considered the community of comparison. A census block group is considered low-income if the percentage of the population living below the poverty level is greater than that of Erie County. The percentage of the population living below the poverty level in Erie County is 29.1 percent. Thus, census block groups in the Study Area with greater than 29.1 percent of the population living below the poverty level were considered low-income communities.

This assessment also considers the housing costs (median monthly rent and owner-occupied housing costs), as well as the median housing value, in the Study Area, the City of Buffalo, and Erie County. The U.S. Census Bureau definition of rent includes the average monthly cost of utilities if utilities are paid by the renter.[83] Monthly housing costs as defined by the U.S. Census Bureau include mortgages, real estate taxes, hazard insurance, and utilities.[84]

The Economic Research Service (ERS) of the United States Department of Agriculture (USDA) measures a household's access to affordable and healthy food by using the "low-income and low-access" criteria. For purposes of food store access metrics, a low-income census tract is defined as any tract where (1) the tract's poverty rate is 20 percent or greater; or (2) the tract's median family income is less than or equal to 80 percent of the state-wide median family income; or (3) the tract is in a metropolitan area and has a median family income less than or equal to 80 percent of the metropolitan area's median family income. Low-access census tracts are characterized by the number (at least 500) and share (at least 33 percent) of people within a census tract at different distances from the nearest supermarket, supercenter,

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[79] https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines
[80] The data source used is Table B17002: Ratio of Income to Poverty Level in the Past 12 Months. This table normalizes the poverty threshold by family size and composition. The table is available at the U.S. Census Bureau's website: https://data.census.gov/table?q=b17002&tid=ACSDT1Y2021.B17002
[81] https://www.epa.gov/ejscreen
[82] https://screeningtool.geoplatform.gov/
[83] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2021_ACSSubjectDefinitions.pdf
[84] See footnote 75.

or large grocery store, as well as the number of housing units in the area without access to a vehicle and that are more than 0.5 mile from one of these stores.[85]

Households receiving public assistance is defined by the U.S. Census Bureau and estimates were obtained from the 2017-2021 ACS 5-Year Estimates. ACS survey questions related to income are posed such that respondents consider their sources of income from only the last 12 months at the time of the survey. Several different types of public assistance were considered in this assessment, including Supplemental Security Income (SSI), Temporary Assistance to Needy Families (TANF) income and Supplemental Nutrition Assistance Program (SNAP)/Food Stamps benefits.

Limited English Proficiency: Data on the number and percent of Limited English Proficiency (LEP) households within the Study Area are available from the U.S. Census Bureau. As discussed in Chapter 5 Public Involvement, in compliance with Executive Order 13166 *Improving Access to Services for Persons with Limited English Proficiency* and New York State Executive Order 26 *Statewide Language Access Policy*, the public involvement activities for the Project were developed in consideration of LEP populations. An LEP household is defined as “one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well." In other words, all members 14 years old and over have at least some difficulty speaking English. By definition, English language-only households cannot belong to this group.”[86] For this Project, the count and percent of LEP households as well as the language spoken within LEP households were obtained from the 2017-2021 ACS 5-Year Estimates.[87]

4.4.2 Existing Conditions

As shown in Table 4.4-1, the total population within the Study Area is 21,744. Approximately 89 percent of the population within the Study Area identified as a minority. Overall, the percentage of minorities in the Study Area was higher than that in the City of Buffalo (55 percent) and Erie County (25 percent).

Approximately 60 percent of the population within the Study Area has household incomes below 200% of the federal poverty level (Table 4.4-1). Overall, the percentage of the population below 200% of the federal poverty level in the Study Area was higher than that in the City of Buffalo (49 percent) and Erie County (29 percent).

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[85]https://gisportal.ers.usda.gov/portal/apps/experiencebuilder/experience/?id=a53ebd7396cd4ac3a3ed09137676fd40&page=Measuring-Access
[86] See footnote 22.
[87] The data source used is B16003: Age by Language Spoken at Home for the Population 5 Years and Over in Limited English-Speaking Households.
https://data.census.gov/table?q=language+spoken+at+home&g=050XX00US36029_160XX00US3611000&tid=ACSDT5Y2021.B16003

Table 4.4-1: Race, Ethnicity, and Income Characteristics				
Area		Study Area	City of Buffalo	Erie County
Population		21,744	276,011	949,715
Race and Ethnicity	White	11.6%	47.8%	76.5%
	Black	69.0%	33.3%	12.8%
	Asian	13.0%	6.7%	3.9%
	Other[1]	6.5%	12.1%	6.7%
	Hispanic or Latino	5.3%	12.2%	5.8%
	Total Minority[2]	88.5%	55.3%	25.4%
Economic Profile	Median Household Income	$29,003	$42,186	$62,578
	Percentage Below 200% of Poverty Level	59.7%	48.9%	29.1%

Notes: An ethnic group can include members of different racial categories.
[1]"Other" includes individuals who identified as American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some Other Race, and Two or More Races.
[2] The total minority percentage does not include individuals who identify as both White and Hispanic, as these individuals contribute towards the percentage of the population that is White.
Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.

Table 4.4-2 provides a summary of race/ethnicity and poverty census data for each census block group within the Study Area. The Study Area contains 29 block groups within 9 census tracts. All 29 block groups are considered environmental justice populations based on the thresholds described above. Twenty-eight (28) of the 29 block groups in the Study Area exceed the minority population threshold of 50 percent. All 29 block groups in the Study Area exceed the low-income population threshold of 29.1 percent (the percentage of Erie County below 200% of the federal poverty level).

There are six block groups identified as having 100 percent minority populations: Tract 33.02 block groups 3 and 4, Tract 34 block groups 2 and 4, Tract 35.02 block group 1, and Tract 166 block group 3 (refer to Figure 4.4-2). These block groups are located within the Delavan-Grider, Masten Park, Broadway-Fillmore, and MLK Park neighborhoods.

Block groups with the highest percentage of low-income populations include Tract 27.03 block group 1, Tract 27.04 block groups 1 and 2, Tract 31 block group 4, Tract 35.01 block groups 1 and 2, and Tract 166 block group 2 (refer to Figure 4.4-3). These block groups generally lie within the MLK Park, Masten Park, Fruit Belt, and Broadway-Fillmore neighborhoods. Neighborhoods to the north, such as Hamlin Park and Delavan-Grider, generally have a lower percentage of their population below 200% of the federal poverty level.

Furthermore, each of the census tracts included in the Environmental Justice Study Area shown in Figure 4.4-1[88] has been identified as a disadvantaged community under the CLCPA.

A review of EJSCREEN, a mapping and screening tool developed by the USEPA, confirmed the presence of minorities and low-income populations within the Study Area, and identified environmental

[88] 2020 census tracts 27.03, 27.04, 31, 33.01, 33.02, 34, 35.01, 35.02, and 166.

and health risks to these populations using publicly available demographic and environmental information.

In comparison to the whole of New York State, populations within the Study Area had a higher risk of exposure or proximity to traffic (68th percentile), lead paint (75th percentile), facilities using extremely hazardous substances (89th percentile), and facilities with hazardous waste (80th percentile). Populations within the Study Area are in the 51st percentile for exposure to particulate matter (PM2.5), the 47th percentile for exposure to diesel particulate matter and the 36th percentile for ozone compared to New York State. According to the USEPA, screening results should be supplemented with additional information. Additional details and information on air quality and hazardous waste and contaminated materials in relation to the Project are provided in Section 4.9, Air Quality, and Section 4.19, Hazardous Waste and Contaminated Materials.

EJSCREEN results also indicate that, compared to New York State, the populations within the Study Area had a higher prevalence of asthma among adults aged 18 and older (98th percentile), higher prevalence of heart disease (98th percentile), low life expectancy (99th percentile), and higher proportion of persons with disabilities (91st percentile).[89]

As described in Section 2.1 Project History, the construction of the Kensington Expressway removed the Humboldt Parkway and created a barrier to community connectivity, thereby changing the context of the neighborhood from a cohesive residential community to one divided by a major transportation facility. East-west roadway connections were severed by the expressway construction, resulting in a physical and visual barrier between the east and west sides of the expressway and more circuitous trips to reach community services on either side. The loss of the wide median with mature trees of the Humboldt Parkway also altered the aesthetic character of the neighborhood and its adjoining neighborhoods. The six-lane expressway and concrete retaining walls are the predominant element of the viewshed for residents along the transportation corridor.

The transportation corridor's prominence in the community especially affects the approximately 39 percent of the population of the Study Area that do not have access to a vehicle (see Section 4.3 Social Groups Benefitted or Harmed). Existing bicycle and pedestrian infrastructure within the Project's limits have several deficiencies, including narrow sidewalks; non-compliance with ADA standards; a lack of crosswalks, dedicated bicycle infrastructure, and traffic calming measures; and outdated signal systems (see Section 2.4.2).

Access to food is a quality-of-life factor that is influenced greatly by community connectivity and infrastructure. According to the USDA ERS and as shown in Figure 4.4-4, census tracts within the Study Area that are considered low-income and low-access at a ½-mile distance[90] from the nearest food store include Tracts 31, 33.01, 34, 35.01, 35.02, and 166. These census tracts are also considered low-income and low-access when using vehicle access as the indicator, meaning that within these census tracts, more than 100 households do not have access to a vehicle and are more than ½-mile from the nearest food store. None of the census tracts within the Study Area are considered low-income and low-access at a 1-mile distance from the nearest food store. Figure 4.4-5 shows the walking distance within the Study Area to the closest large supermarket (Tops Friendly Markets). Larger supermarkets are important to access fresh produce and healthy food options. Figure 4.4-6 shows the locations of other smaller retail food stores in addition to the supermarket that are also important to local food availability. For the locations and number of other community facilities, see Figures 4.2-6, 4.2-7, and 4.2-8 in Section 4.2, Neighborhood Character.

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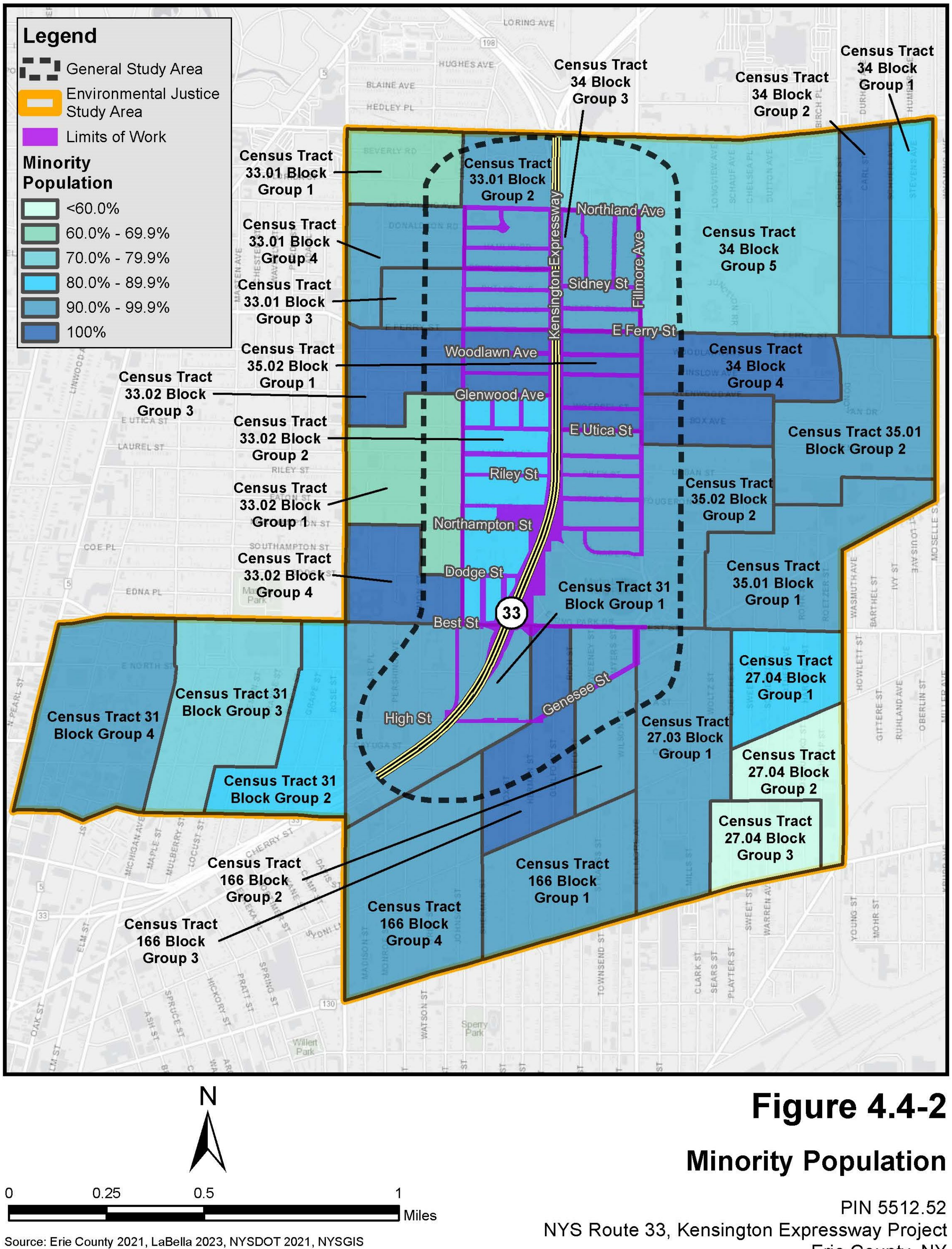
[89] EJScreen Version 2.2. https://ejscreen.epa.gov/mapper/ Accessed September , 2023.
[90] One-half mile represents an approximately 10- to 15-minute walk for an average pedestrian.

Table 4.4-2: Race/Ethnicity and Poverty in the Study Area, 2021[91]														
Census Tract	**Block Group**	**Total Population**	**White**	**%**	**Black**	**%**	**Asian**	**%**	**Other**	**%**	**Hispanic**	**%**	**Total Minority %**	**Population in poverty %**
27.03	1	1,248	123	9.9%	381	30.5%	744	59.6%	0	0.0%	18	1.4%	91.5%	86.0%
27.04	1	1,006	150	14.9%	140	13.9%	716	71.2%	0	0.0%	0	0.0%	85.1%	84.4%
27.04	2	449	339	75.5%	59	13.1%	51	11.4%	0	0.0%	9	2.0%	26.5%	78.4%
27.04	3	643	144	22.4%	40	6.2%	239	37.2%	59	9.2%	59	9.2%	52.6%	71.5%
31	1	633	62	9.8%	493	77.9%	0	0.0%	78	12.3%	63	10.0%	90.2%	49.5%
31	2	759	125	16.5%	572	75.4%	0	0.0%	62	8.2%	93	12.3%	88.6%	54.9%
31	3	526	112	21.3%	342	65.0%	0	0.0%	72	13.7%	53	10.1%	78.7%	41.3%
31	4	479	28	5.9%	348	72.7%	0	0.0%	103	21.5%	103	21.5%	94.2%	73.5%
33.01	1	562	178	31.7%	357	63.5%	4	0.7%	23	4.1%	7	1.3%	68.3%	40.9%
33.01	2	815	71	8.7%	721	88.5%	23	2.8%	0	0.0%	0	0.0%	91.3%	30.6%
33.01	3	1,374	36	2.6%	1,297	94.4%	0	0.0%	41	3.0%	73	5.3%	97.4%	52.9%
33.01	4	951	40	4.2%	720	75.7%	0	0.0%	191	20.1%	0	0.0%	95.8%	34.4%
33.02	1	517	177	34.2%	334	64.6%	6	1.2%	0	0.0%	10	1.9%	67.7%	50.9%
33.02	2	836	135	16.2%	642	76.8%	0	0.0%	29	3.5%	0	0.0%	80.3%	30.5%
33.02	3	754	13	1.7%	741	98.3%	0	0.0%	0	0.0%	13	1.7%	100.0%	45.4%
33.02	4	910	0	0.0%	495	54.4%	0	44.2%	13	1.4%	13	1.4%	100.0%	75.9%
34	1	839	155	18.5%	684	81.5%	0	0.0%	0	0.0%	0	0.0%	81.5%	59.5%
34	2	465	0	0.0%	338	72.7%	88	18.9%	39	8.4%	0	0.0%	100.0%	48.6%
34	3	922	70	7.6%	820	88.9%	32	3.5%	0	0.0%	0	0.0%	92.4%	46.3%
34	4	203	0	0.0%	152	74.9%	51	25.1%	0	0.0%	0	0.0%	100.0%	31.0%
34	5	883	204	23.1%	641	72.6%	0	0.0%	38	4.3%	38	6.5%	76.9%	64.6%
35.01	1	510	2	0.4%	345	67.7%	130	25.5%	33	6.5%	33	6.5%	99.7%	76.5%
35.01	2	937	12	1.3%	483	51.6%	71	7.6%	371	39.6%	315	33.6%	98.8%	76.4%
35.02	1	612	74	12.1%	463	75.7%	61	10.0%	14	2.3%	74	12.1%	100.0%	57.4%

[91] Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.

35.02	2	1,111	37	3.3%	931	83.8%	99	8.9%	44	4.0%	0	0.0%	96.7%	57.4%
166	1	478	196	41.0%	282	59.0%	0	0.0%	0	0.0%	156	32.6%	91.6%	63.8%
166	2	719	36	5.0%	584	81.2%	75	10.4%	24	3.3%	24	3.3%	94.9%	91.4%
166	3	841	0	0.0%	841	100.0%	0	0.0%	0	0.0%	0	0.0%	100.0%	64.8%
166	4	762	7	0.9%	748	98.2%	0	0.0%	7	0.9%	7	0.9%	99.1%	48.4%

Note: Shading indicates that the block group is considered an environmental justice population based on the thresholds.

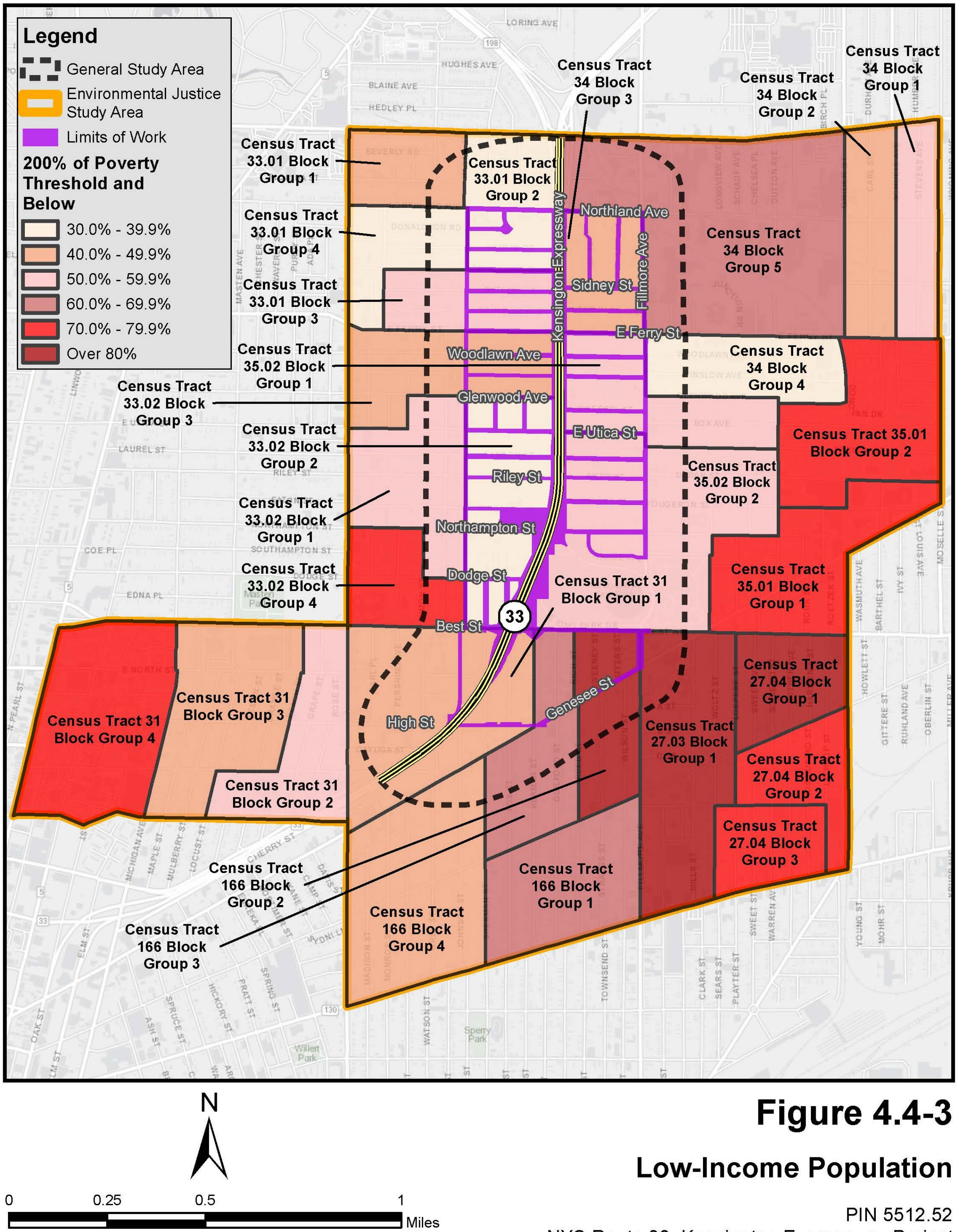


Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2017-2021.

Figure 4.4-2

Minority Population

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY



Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2017-2021.

Figure 4.4-3

Low-Income Population

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

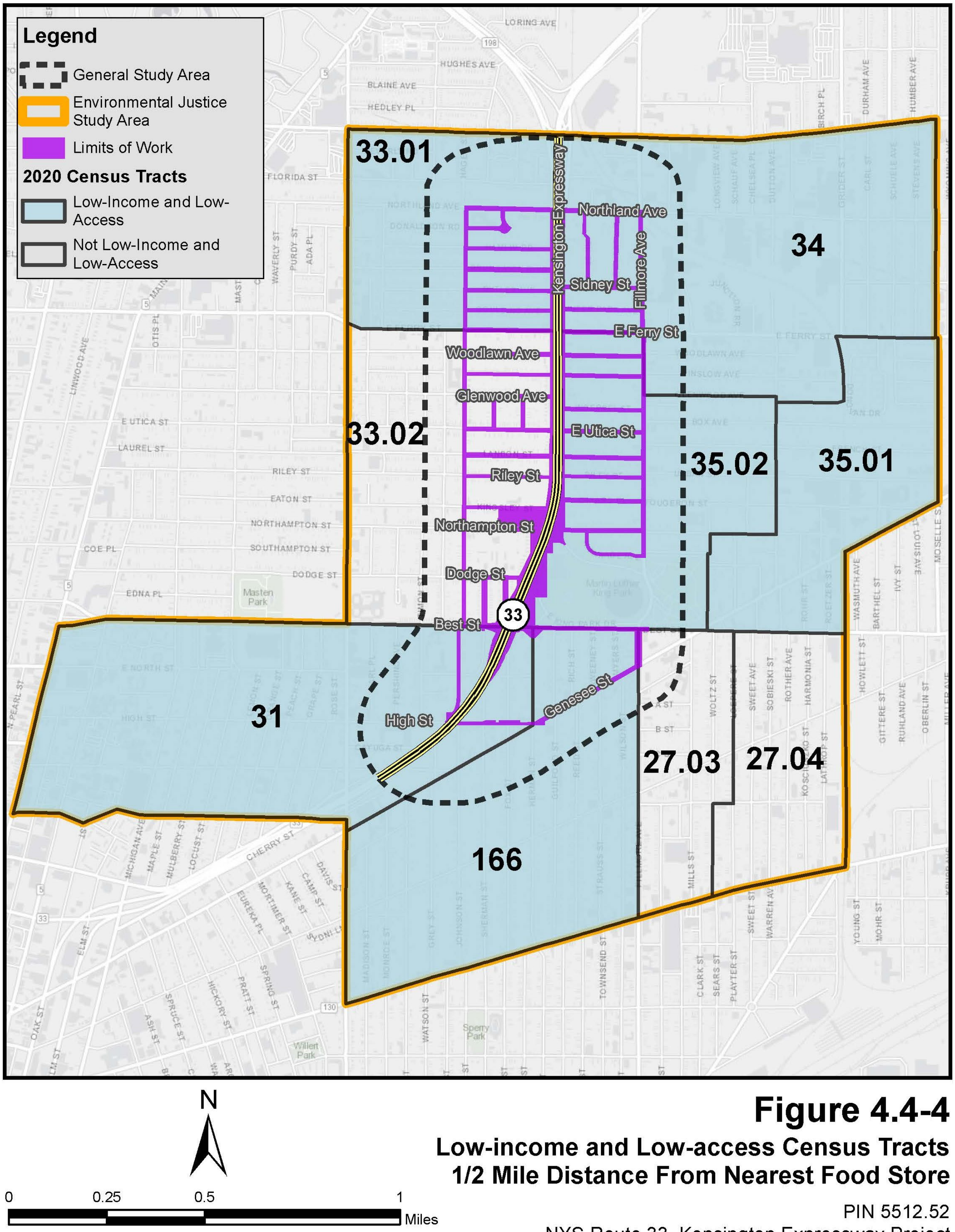
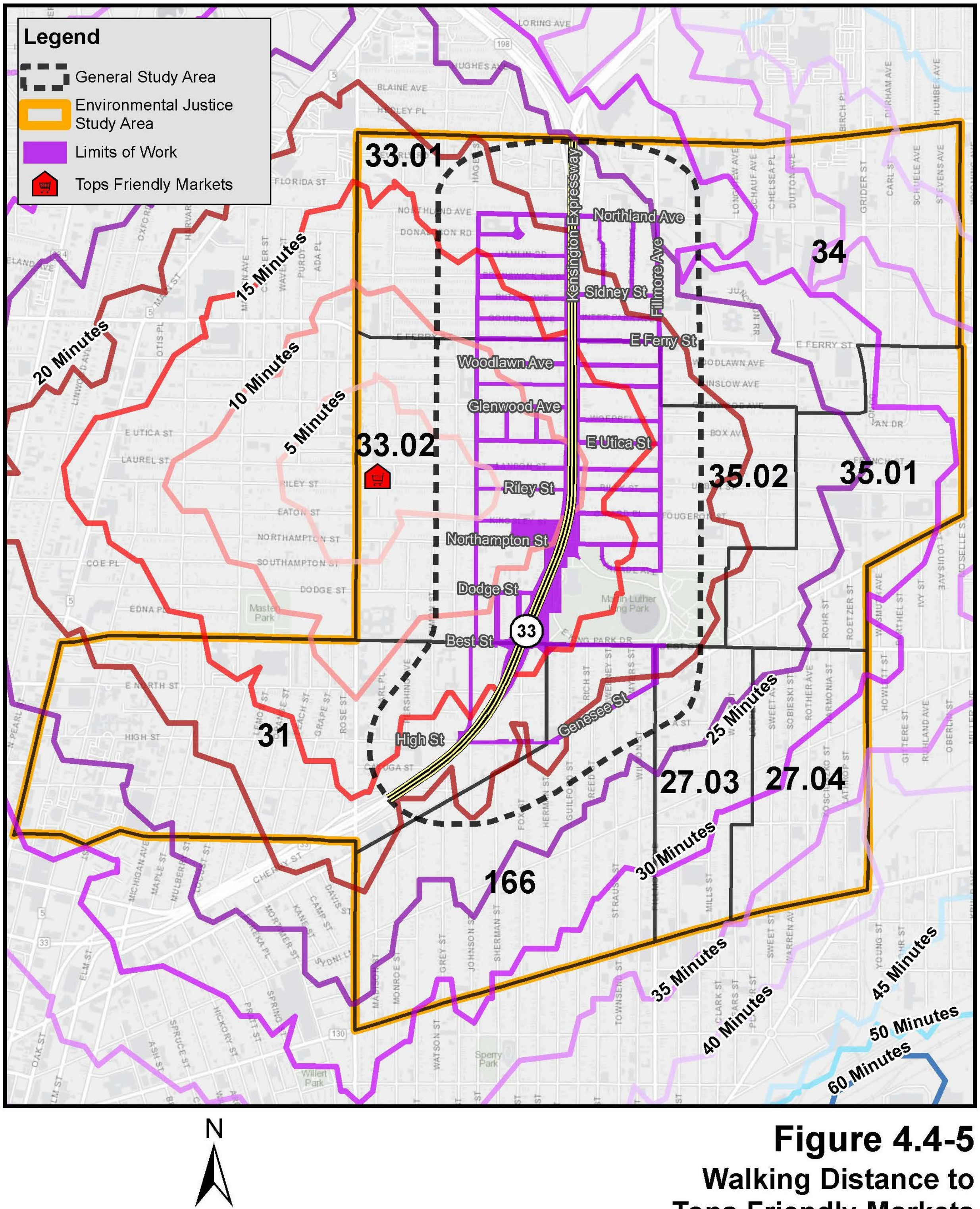


Figure 4.4-4

Low-income and Low-access Census Tracts 1/2 Mile Distance From Nearest Food Store

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

Source: Erie County 2021, LaBella 2023, NYSGIS Clearinghouse 2022, US Census Bureau 2017-2021, USDA 2019.

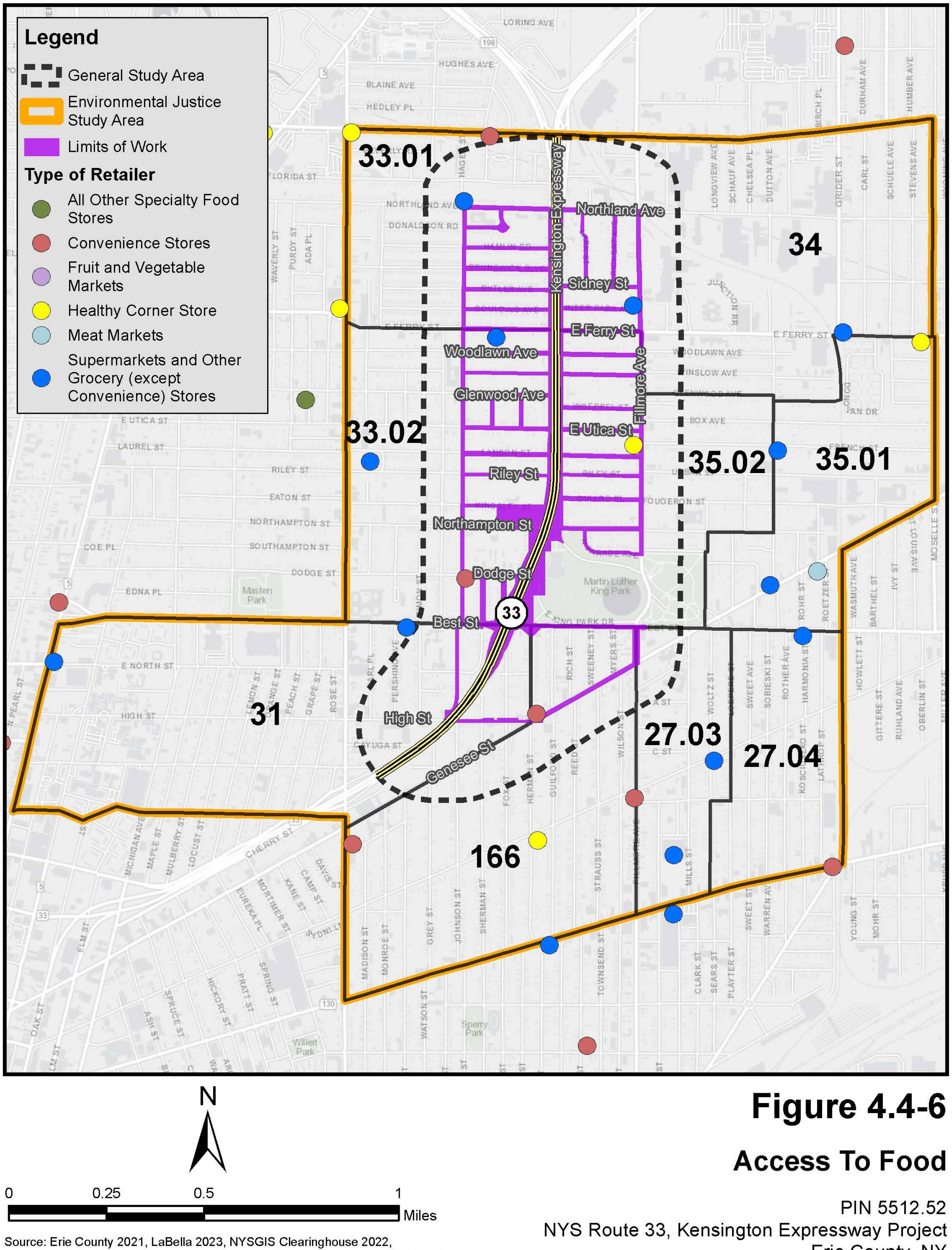


Source: Erie County 2021, LaBella 2023, NYSGIS Clearinghouse 2022, US Census Bureau 2017-2021, USDA 2019.

Figure 4.4-5

Walking Distance to Tops Friendly Markets

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY



Source: Erie County 2021, LaBella 2023, NYSGIS Clearinghouse 2022, University at Buffalo Food Lab 2021, US Census Bureau 2017-2021, USDA 2019.

Figure 4.4-6

Access To Food

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

As discussed in Section 4.2 of this DDR/EA, approximately 46.7 percent of housing units in the Study Area are owner-occupied while approximately 53.3 percent are renter-occupied. As shown in Table 4.4-3, the median gross monthly rent for the Study Area is $761, while median gross monthly rent is higher in the City of Buffalo overall ($849) and Erie County ($893).

Furthermore, the median house value in the Study Area is $65,434, substantially lower than that of the City of Buffalo overall ($112,900) and Erie County ($169,100). See Table 4.4-3 for the median house value in the Study Area, the City of Buffalo, and Erie County.

Table 4.4-3: Median Gross Rent and Median House Value for Selected Areas, 2021

Area	Median Gross Rent	Median House Value
Tract 27.03	$588	$102,600
Tract 27.04	$772	$27,400
Tract 31	$579	$80,000
Tract 33.01	$844	$82,400
Tract 33.02	$806	$44,000
Tract 34	$815	$50,600
Tract 35.01	$775	$32,900
Tract 35.02	$782	$74,200
Tract 166	$725	$53,200
Study Area	$761	$65,434
City of Buffalo	$849	$112,900
Erie County	$893	$169,100

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.

Table 4.4-4: Monthly Owner Costs for all Owner-Occupied Housing Units in the Study Area, 2021												
Selected Monthly Owner Costs	**Tract 27.03**		**Tract 27.04**		**Tract 31**		**Tract 33.01**		**Tract 33.02**		**Tract 34**	
	Count	**Share**	**Count**	**Share**	**Count**	**Share**	**Count**	**Share**	**Count**	**Share**	**Count**	**Share**
Less Than $200	0	0.0%	7	2.8%	0	0.0%	47	4.3%	22	4.4%	75	13.8%
$200 To $299	60	38.5%	65	25.8%	25	6.1%	165	15.2%	163	32.5%	88	16.2%
$300 To $399	60	38.5%	60	23.8%	104	25.5%	183	16.9%	52	10.4%	102	18.7%
$400 To $499	10	6.4%	32	12.7%	0	0.0%	212	19.6%	92	18.4%	74	13.6%
$500 To $599	7	4.5%	15	6.0%	108	26.5%	48	4.4%	9	1.8%	15	2.8%
$600 To $699	0	0.0%	16	6.4%	73	17.9%	81	7.5%	11	2.2%	84	15.4%
$700 To $799	0	0.0%	9	3.6%	9	2.2%	221	20.4%	47	9.4%	0	0.0%
$800 To $899	0	0.0%	48	19.1%	17	4.2%	67	6.2%	43	8.6%	16	2.9%
$900 To $999	19	12.2%	0	0.0%	0	0.0%	17	1.6%	52	10.4%	0	0.0%
$1,000 To $1,249	0	0.0%	0	0.0%	25	6.1%	22	2.0%	0	0.0%	81	14.9%
$1,250 To $1,499	0	0.0%	0	0.0%	13	3.2%	5	0.5%	10	2.0%	0	0.0%
$1,500 To $1,999	0	0.0%	0	0.0%	0	0.0%	11	1.0%	0	0.0%	0	0.0%
$2,000 Or More	0	0.0%	0	0.0%	34	8.3%	4	0.4%	0	0.0%	10	1.8%
Total	156	100%	252	100%	408	100%	1,083	100%	501	100%	545	100%

Table 4.4-4: Monthly Owner Costs for all Owner-Occupied Housing Units in the Study Area, 2021												
Selected Monthly Owner Costs	**Tract 35.01**		**Tract 35.02**		**Tract 166**		**Study Area**		**City of Buffalo**		**Erie County**	
	Count	**Share**	**Count**	**Share**	**Count**	**Share**	**Count**	**Share**	**Count**	**Share**	**Count**	**Share**
Less Than $200	13	5.7%	48	12.9%	0	0.0%	212	5.0%	1,169	2.3%	3,383	1.3%
$200 To $299	90	39.5%	19	5.1%	46	6.2%	721	16.8%	4,605	9.1%	8,705	3.3%
$300 To $399	26	11.4%	13	3.5%	96	13.0%	696	16.2%	5,754	11.4%	13,187	5.0%
$400 To $499	0	0.0%	70	18.8%	204	27.5%	694	16.2%	5,913	11.7%	19,147	7.3%
$500 To $599	24	10.5%	35	9.4%	114	15.4%	375	8.8%	3,769	7.5%	19,407	7.4%
$600 To $699	0	0.0%	67	18.0%	174	23.5%	506	11.8%	3,772	7.5%	18,777	7.2%
$700 To $799	13	5.7%	28	7.5%	0	0.0%	327	7.6%	3,700	7.3%	17,200	6.6%
$800 To $899	30	13.2%	14	3.8%	0	0.0%	235	5.5%	3,480	6.9%	15,395	5.9%
$900 To $999	0	0.0%	0	0.0%	74	10.0%	162	3.8%	2,714	5.4%	14,386	5.5%
$1,000 To $1,249	0	0.0%	34	9.1%	0	0.0%	162	3.8%	4,916	9.8%	33,049	12.6%
$1,250 To $1,499	13	5.7%	16	4.3%	0	0.0%	57	1.3%	3,509	7.0%	30,040	11.4%
$1,500 To $1,999	0	0.0%	0	0.0%	33	4.5%	44	1.0%	3,358	6.7%	35,254	13.4%
$2,000 Or More	19	8.3%	28	7.5%	0	0.0%	95	2.2%	3,776	7.5%	34,795	13.2%
Total	228	100%	372	100%	741	100%	4,286	100%	50,435	100%	262,725	100%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.

Table 4.4-4 shows the monthly owner costs for all owner-occupied housing units in the Study Area. In the Study Area, most homeowners pay between $200 to $699 per month in housing costs. A small number – 212 (5.0 percent) – spend less than $200 per month. Approximately 1,082 (25.2 percent) of homeowners in the Study Area spend over $700 per month on housing costs. This is comparable to the overall City of Buffalo, wherein the majority (27,513; 54.5 percent) of homeowners spend between $200 and $799 per month and 1,169 (2.3 percent) spend less than $200 per month. Approximately 21,753 (43.3 percent) of homeowners in the City of Buffalo spend over $799 per month. In Erie County, approximately half of owner-occupied housing units spend less than $999 per month on housing costs, while the other half spends $1,000 or more. Approximately 3,383 (1.3 percent) of homeowners in Erie County spend less than $200 per month.[92]

As shown in Table 4.4-5, approximately 10.2 percent of the population in the Study Area are considered Limited English Proficient. This is higher than the City of Buffalo overall (7.9 percent) and Erie County (3.9 percent). Census Tracts 27.03, 27.04, and 35.01 have the highest percentage of LEP populations – 35.75 percent, 22.23 percent, and 24.08 percent, respectively.

Table 4.4-5: LEP Populations, 2021

Area	Population	LEP	Percent LEP
Tract 27.03	1,172	419	35.75%
Tract 27.04	1,795	399	22.23%
Tract 31	2,232	221	9.90%
Tract 33.01	3,378	142	4.20%
Tract 33.02	2,871	182	6.34%
Tract 34	3,144	40	1.27%
Tract 35.01	1,362	328	24.08%
Tract 35.02	1,615	241	14.92%
Tract 166	2,654	92	3.47%
Study Area	20,223	2,064	10.21%
City of Buffalo	258,322	20,405	7.90%
Erie County	898,634	35,433	3.94%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.

Approximately 79.3 percent of the population in the Study Area speaks only English. The next largest group of languages spoken are "Other Indo-European" languages[93], making up 8.9 percent of the population. Additionally, 4.3 percent of the population speak Spanish, 2.8 percent speak "Other and unspecified" languages[94], 2.4 percent speak "Other Asian and Pacific Island languages," and 1.2 percent speak Arabic. See Table 4.4-6 for a breakdown of the languages spoken in the Study Area.

[92] U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates

[93] These include French, Haitian, Italian, Portuguese, German, Yiddish, Greek, Russian, Polish, Serbo-Croatian, Ukrainian and other Slavic languages, Armenian, Persian, Gujarati, Hindi, Urdu, Punjabi, Bengali, Nepali and other Indic languages, Telugu, Tamil, Malayalam and other Dravidian languages, and others. See American Community Survey and Puerto Rico Community Survey 2021 Subject Definitions (census.gov) for more detail.

[94] These include Hungarian, Jamaican Creole English, and "Unspecified." See website link in footnote 85 for more detail.

Table 4.4-6: Languages Spoken in the Study Area, 2021		
Language Spoken	**Population**	**Percent of Population**
Total Population	20,223	100%
English only	16,029	79.3%
Other Indo-European	1,804	8.9%
Spanish	861	4.3%
Other and unspecified	572	2.8%
Other Asian and Pacific Island languages	480	2.4%
Arabic	238	1.2%
French, Haitian, or Cajun	88	0.4%
Chinese (incl. Mandarin, Cantonese)	53	0.3%
Russian, Polish, or other Slavic languages	62	0.3%
Korean	24	0.1%
German or other West Germanic Languages	12	0.1%
Vietnamese	0	0.0%
Tagalog (incl. Filipino)	0	0.0%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.
Note: This table reflects the total population that speaks each language, i.e., it includes individuals who speak English in addition to a second language, as well as those who are limited English proficient.

Out of the total population within the Study Area who are considered LEP (2,064 individuals), 35.2 percent speak an “Other Indo-European” language, 20.4 percent speak Spanish, 17.1 percent speak an “Other and unspecified” language, and 14.8 percent speak an “Other Asian and Pacific Island language.” See Table 4.4-7 for a breakdown of all languages spoken amongst the LEP population.

Table 4.4-7: Languages Spoken by LEP Populations in the Study Area, 2021

Language Spoken	LEP Population	Percent of LEP Population
Total LEP Population	2,064	100%
Other Indo-European	727	35.2%
Spanish	422	20.4%
Other and unspecified	353	17.1%
Other Asian and Pacific Island languages	305	14.8%
Arabic	166	8.0%
Chinese (incl. Mandarin, Cantonese)	53	2.6%
Korean	14	0.7%
German or other West Germanic Languages	12	0.6%
Russian, Polish, or other Slavic languages	11	0.5%
French, Haitian, or Cajun	1	0.0%
Vietnamese	0	0.0%
Tagalog (incl. Filipino)	0	0.0%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.

As shown in Table 4.4-8, of all households in the Study Area, approximately 14.2 percent receive Supplemental Security Income (SSI). SSI is a monthly payment from the U.S. government for people who "are age 65 and older, or blind, or have a disability"[95] and have limited income and limited resources. The percent of households that receive SSI income is higher in the Study Area than in the City of Buffalo overall (9.9 percent) and Erie County (5.6 percent). The highest percentage of households receiving SSI in the Study Area is within Census Tract 34 (26.5 percent).

Furthermore, approximately 41.1 percent of the households within the Study Area receive public assistance (including TANF) and/or SNAP/Food Stamps benefits. This is higher than the percentage of households in the City of Buffalo overall (31.3 percent), as well as Erie County (16.0 percent). Many of the census tracts within the Study Area have over 40 percent of households that receive public assistance (including TANF) and/or SNAP/Food Stamps, with Census Tracts 27.03 and 34 exceeding 50 percent of all households.

[95] https://www.ssa.gov/ssi/

Table 4.4-8: Households Receiving Public Assistance, 2021					
Area	**Number of Households**	**Households Receiving Supplemental Security Income**		**Households Receiving Public Assistance (incl. TANF) or SNAP/Food Stamps**	
		Count	**Percent**	**Count**	**Percent**
Tract 27.03	513	119	23.20%	259	50.49%
Tract 27.04	555	117	21.08%	267	48.11%
Tract 31	1,207	166	13.75%	567	46.98%
Tract 33.01	1,762	72	4.09%	400	22.70%
Tract 33.02	1,166	201	17.24%	506	43.40%
Tract 34	1,320	350	26.52%	740	56.06%
Tract 35.01	640	13	2.03%	257	40.16%
Tract 35.02	751	90	11.98%	211	28.10%
Tract 166	1,272	175	13.76%	570	44.81%
Study Area	9,186	1,303	14.18%	3,777	41.12%
City of Buffalo	118,071	11,715	9.92%	36,954	31.30%
Erie County	403,064	22,634	5.62%	64,307	15.95%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.

4.4.3 Potential Effects

This section documents the potential for the implementation of the Project to result in disproportionately high and adverse effects on environmental justice populations. Under FHWA Order 6640.23A[96], a disproportionately high and adverse effect[97] on a minority or low-income population means the adverse effect is predominantly borne by such population or is appreciably more severe or greater in magnitude on the minority or low-income population than the adverse effect suffered by the non-minority or non-low-income population. This assessment also considers potential effects to disadvantaged communities per New York's Climate Leadership and Community Protection Act (CLCPA).

The assessment followed the five steps described below (as previously described in the Study Area and Methodology section).

4.4.3.1 Step 1: Identify existing minority and low-income (environmental justice) populations within the Study Area.

As described in Section 4.4.2, the Study Area contains 29 block groups within 9 census tracts. All 29 block groups are considered environmental justice populations based on the thresholds described above. Twenty-eight (28) of the 29 block groups in the Study Area exceed the minority population threshold of 50 percent. All 29 block groups in the Study Area exceed the low-income population threshold of 29.1 percent (the percentage of Erie County below 200% of the federal poverty level). In addition, each of the census tracts included in the Study Area has been identified as a disadvantaged community under the CLCPA. There is no geographic distinction within the Environmental Justice Study Area between identified environmental justice populations and communities identified as disadvantaged under the CLCPA. Thus, the effects upon environmental justice populations determined in Step 2 would also represent effects upon CLCPA disadvantaged communities.

4.4.3.2 Steps 2 and 3: Determine whether the Build Alternative would result in potentially adverse effects on the identified environmental justice populations and consider mitigation for any adverse effects

Neighborhood Character and Community Cohesion

As documented in Section 4.2.3 of this DDR/EA, the Build Alternative would not displace any existing residences or businesses within the Study Area, nor would it otherwise change the use of any parcel within the Environmental Justice Study Area located beyond public rights-of-way. The Build Alternative would have no adverse permanent effects to community facilities or their operations.

As documented in Section 4.2.3, the Build Alternative would reduce the distances that pedestrians need to travel to cross the Kensington Expressway. In addition, both southbound and northbound segments of Humboldt Parkway would be reconstructed to improve connectivity for pedestrians and bicyclists. The

[96] https://www.fhwa.dot.gov/legsregs/directives/orders/664023a.cfm

[97] On April 21, 2023, President Biden signed Executive Order (EO) 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*. The new order incorporates the simpler phrase "disproportionate and adverse" in place of the customary phrase "disproportionately high and adverse" referenced in past orders. However, the Office of the President (the Office) has clarified that the new EO complements existing EO 12898 and does not disrupt ongoing NEPA reviews. Accordingly, the Office has advised that agencies should continue to perform environmental justice analyses under existing NEPA implementing procedures and longstanding agency practice in addition to referring to the text of both EO 14096 and EO 12898.

proposed improvements would reconnect the Hamlin Park, Delevan-Grider, Masten Park, and MLK Park neighborhoods and reduce the physical barriers now separating them. The improvements would improve access to food stores and community facilities for environmental justice populations.

Therefore, the Build Alternative would not result in adverse effects on environmental justice populations with respect to neighborhood character and community cohesion. The Build Alternative is anticipated to result in beneficial effects on these populations.

Parks and Recreational Resources

Section 4.7 of this DDR/EA documents the potential effects of the Build Alternative on parks and recreational resources. The Build Alternative would not require permanent right-of-way acquisition or adverse changes to access to recreational resources. The Build Alternative would create approximately 11 acres of new publicly accessible greenspace for passive recreation; this greenspace would be readily accessible to the environmental justice populations within the Study Area. The tunnel cap and associated pedestrian and bicycle infrastructure improvements would also enhance public access to MLK Jr. Park, particularly for individuals living on the west side of the Kensington Expressway. The Build Alternative would not result in permanent adverse effects on parks and recreational resources and would result in long-term beneficial effects. Thus, the Build Alternative would not result in adverse effects on environmental justice populations with respect to parklands and recreational resources. The Build Alternative is anticipated to result in beneficial effect on these populations.

Visual and Aesthetic Resources

Section 4.8 of this DDR/EA documents the potential effects of the Build Alternative on visual and aesthetic resources. All of the viewpoints in the visual impact assessment conducted for the Project are located in areas with environmental justice populations. Environmental justice populations living in and travelling through the Study Area would experience improved aesthetics due to tree plantings and landscaping improvements. The effects of the Build Alternative on all viewer groups would be beneficial; no adverse visual effects were identified.

Air Quality

Section 4.9 of this DDR/EA documents the potential effects of the Build Alternative on air quality. All of the receptors in the air quality model for the Project are located in areas with environmental justice populations. The model showed that concentrations of particulate matter equal to or less than 2.5 micrometers (PM2.5) would decrease at locations along the tunnel cap and increase slightly (6% or less) near the tunnel exit portals. Modeling results indicate that all of the receptors would have PM2.5 concentrations that are below (better than) the applicable USEPA National Ambient Air Quality Standards (NAAQS). As discussed in Section 4.9, the NAAQS are established based on scientific studies, with a margin of safety, to protect human health and welfare, including the health of sensitive populations such as asthmatics, children, and the elderly. Thus, adverse effects related to PM2.5 concentrations are not anticipated. In addition, the Project includes a variety of air quality minimization measures at the tunnel portals, including tree plantings, the establishment of vegetative buffers in the areas of proposed greenspace adjacent to the portals, and coating of retaining wall surfaces with photocatalytic treatments that reduce NOx emissions (a contributor to both secondary PM2.5 and ozone).

Noise

Section 4.11 documents the potential effects of the Build Alternative on noise levels. All of the receivers in the traffic noise model for the Project are located in areas with environmental justice populations. The traffic noise model showed that noise levels would decrease by 1 to 13 dB(A) for the majority of receiver locations. Out of the 199 modeled receivers, 70 receivers (representing 271 receptors) would receive a perceptible (greater than 3 dB(A)) decrease in traffic noise levels as a result of the Build Alternative. In general, the decreases in noise levels would be most pronounced at receivers adjacent to the new tunnel cap. No receivers would experience a perceptible increase in noise levels. Therefore, the Build Alternative would not result in adverse effects on environmental justice populations related to traffic noise.

Traffic and Transportation

Chapter 3 of this DDR/EA documents traffic and transportation conditions under the Build Alternative. The Build Alternative would provide the same capacity on NYS Route 33 as currently exists, maintaining speeds and travel times similar to the No Build Alternative. The partial interchange with East Utica Street would be eliminated, redirecting traffic to the Best Street interchange. The Best Street interchange would be improved, including the provision of two lanes on the off-ramps and construction of two adjacent roundabouts to appropriately manage traffic flow. Local signalized intersection performance would generally be at acceptable levels and signal timing would be optimized. The new roadway connections across the tunnel deck would improve local roadway connectivity.

The effects of the Build Alternative on pedestrian accommodations are beneficial, including standard sidewalks, crosswalks/ADA-compliant curb ramps at the crossings of the tunnel cap and along Humboldt Parkway, as well as sidewalk improvements through the larger local street improvements area. Bicycle accommodations would be improved by reconstructing the bicycle lanes on Humboldt Parkway and providing a 10-foot-wide multi-use path crossing of the Best Street bridge over NYS Route 33 to aid cyclists that may not be comfortable riding with traffic in the roundabout.

The pedestrian accommodation improvements under the Build Alternative would also improve pedestrian access to transit (NFTA bus stops). The Project includes installing concrete pads for future bus shelters at locations determined in coordination with NFTA (construction of the shelters would be a separate independent action by NFTA). As discussed in Section 3.4.2.3, the NFTA 81 bus route would be modified as a result of the elimination of the East Utica Street ramps, however the nearby Best Street interchange would be able to accommodate the bus to reach NYS Route 33 westbound with minimal change in travel times. Bus stops at Best Street would be reconfigured in coordination with NFTA to accommodate the proposed roundabouts, however the location would remain within a short walkable distance of the existing stops. Finally, NFTA may use the mobility and safety improvements as a result of this Project as an opportunity to consolidate stops on either side of NYS Route 33, which could improve service efficiency and reduce travel times for transit users. Stops would remain within walkable distance of the existing stops.

The Build Alternative would require the elimination of up to 43 parking spaces in residential areas along Humboldt Parkway in order to meet sight distance requirements and shorten pedestrian street crossings; however, this represents a small portion of the available on-street parking supply (approximately 173 spots currently) and the existing parking is not currently utilized to capacity. Additionally, all residences on Humboldt Parkway in this area also have access to off-street driveways. Therefore, there would be no adverse effect on parking supply/availability. See Section 3.4.1.10 and Appendix A9 for additional supporting information.

Overall, the Build Alternative would not result in adverse effects on environmental justice populations related to traffic and transportation conditions. The Build Alternative would largely result in beneficial effects.

Property Acquisition, Displacement, and Relocations

Section 3.4.2 of this DDR/EA documents the property acquisitions that would be required for the Build Alternative. The acquisitions include minor permanent and temporary easements that would not interfere with the existing use of adjoining properties. No residential or business displacements or relocations would be required. Partial property acquisitions, including any temporary construction easements, would be conducted in accordance with NYSDOT right-of-way procedures to ensure that just compensation is paid. As such, the Build Alternative would not result in adverse effects on environmental justice populations with respect to land acquisition, displacement, and relocation.

Construction Effects

The Build Alternative would take approximately three to four years to construct. Section 3.5 of this DDR/EA documents the construction means and methods, and work zone safety and mobility considerations for the Project. As documented in Section 4.20, construction effects, such as noise, dust, and vibration, would occur temporarily in areas adjacent to construction activities, including areas with environmental justice populations.

As discussed in Section 4.20.4, Construction Traffic Effects, the Build Alternative would result in temporary effects on vehicle traffic and public transit services during construction. Environmental justice populations, who often rely on public transit, walking, and bicycling to a greater extent than non-environmental justice populations, could be temporarily affected by these changes. The NYSDOT would coordinate with NFTA to ensure that changes to service (such as temporary relocation of bus stops, for example) would be communicated to transit users and that temporary bus stops would remain within walkable distance.

During peak hours at least two lanes in each direction would remain available on the Kensington Expressway throughout the construction sequence. One lane would be provided through construction on Humboldt Parkway northbound and southbound. Temporary parking restrictions would occur on Humboldt Parkway on a block by block basis during the installation of support-of-excavation walls. Best Street would remain usable through construction as a result of the bridge being replaced in stages. Temporary bridges would be used to maintain east-west connectivity at Northampton Street and East Ferry Street. Additional pedestrian-only temporary bridges would be provided as appropriate to provide an east-west crossings over the expressway at least every 1,300 feet. Construction staging and Work Zone Traffic Control Plans, described in Section 3.5 of this DDR/EA, would be further developed during final design to minimize the duration and extent of traffic related inconveniences to both drivers and pedestrians during construction. The Work Zone Traffic Control Plans focus on ensuring that access to transit, businesses, churches, and residences would remain available. With the implementation of these plans, traffic and transportation effects during construction would not have adverse effects on environmental justice populations.

As discussed in Section 4.20.3, Construction Air Quality, temporary effects during construction could include increases in particulate matter in the form of fugitive dust, as well as exhaust emissions from material delivery trucks, construction equipment, and worker’s private vehicles. These air quality effects would occur within areas with environmental justice populations. Temporary construction air quality effects would be minimized through implementation of the following mitigation measures:

- Requiring the Contractor to use lower emission equipment (Tier 4 emissions standards) where appropriate and to the extent practicable. Contract provisions would require the contractor to report at least monthly to NYSDOT the total number of pieces of equipment over 50 horsepower used on-site and the number/type out of this total that met Tier 4 emissions standards. The contractor would also be required to consider and report on the use of Diesel Particulate Filter retrofits on older equipment over 50 horsepower per NYSDOT Specification 696.0002 Diesel Engine Emission Control.
- Requiring the Contractor to prepare and implement a Dust Control Plan that includes pro-active measures to prevent discharge of dust into the atmosphere. In areas not subject to traffic, apply products and materials including vegetative cover, mulch, and spray adhesives on soil surfaces to prevent airborne migration of soil particles. In areas subject to traffic, apply products and materials including water sprinkling, polymer additives, barriers, windbreaks, and wheel washing.

- Avoid locating diesel engines within 50 feet of sensitive receptors such as residences and schools where practicable (locate equipment in transportation corridor to maximize the source-receptor distance).
- Limit idling time for diesel powered equipment to three consecutive minutes for delivery and dump trucks and all other diesel powered equipment with limited exceptions.
- Implement an outdoor ambient air quality monitoring program during construction of the Project overseen by the NYSDOT. The program would consist of real-time particulate monitoring at a number of locations within the local community. Locations and durations would be determined in consideration of land uses, non-Project sources of emissions, and construction phasing. Locations of monitors would be determined during final design. Background particulate monitoring would be conducted as part of the program to establish and routinely verify baseline levels. During construction, real-time particulate matter data would be collected at an established interval (for example, measurements every 10 seconds and logged in 15-minute periods) and time-weighted over 24 hours for comparison to the USEPA's NAAQS. These standards are designed to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly, with an adequate margin of safety. Results of onsite air quality monitoring data would be available for the public to view on the Project website. If the monitoring data show that air quality levels are approaching a concern level (to be established during final design) that could result in an exceedance of the 24-hour NAAQS, then operational and/or mechanical deficiencies would be identified and corrected. If the data result in any particulate air quality levels that exceed the 24-hour NAAQS, then the applicable construction activities would be suspended until the deficiencies are identified and corrected.

As discussed in Section 4.20.1, Construction Noise and Section 4.20.2 Construction Vibration, temporary construction-related noise and vibration effects could occur within areas with environmental justice populations. These temporary construction noise and vibration effects would be minimized through implementation of the following mitigation measures:

A Construction Noise Mitigation Plan would be developed during final design and would include the following components:

- Implement a construction noise monitoring program, including establishing the noise levels that would trigger the need for investigation and/or changes to construction approaches. These noise levels would be determined during final design. If the noise levels are exceeded, the applicable construction activities would be suspended until a plan to abate the noise issues has been approved by the NYSDOT. The construction noise monitoring program would be prepared with input from the community and allow for modification of methodologies in consideration of public input received throughout construction. The results of the noise monitoring would be available on the Project website. The public would also have the opportunity to discuss any questions or concerns with the community liaison designated for the Project and/or by visiting the staffed project outreach office.
- Coordinate work operation to coincide with time periods that would least affect neighboring residences and businesses to the extent practicable. Normal work hours would be scheduled between 6:00 a.m. and 9:00 p.m. The City of Buffalo's noise ordinance restricts construction work (including building, excavating, hoisting, grading, and pneumatic hammering) between the hours of 9:00PM and 7:00AM that would cause "sound which annoys or disturbs a reasonable person of normal sensitivities in a residential real property zone."[98] Although the NYSDOT is not subject to local noise ordinances, the contractor would implement reasonable efforts to accommodate the

[98] https://ecode360.com/11767329

intent of the local ordinance to the extent practicable. No blasting or mechanical rock removal would be performed at night.

- Implement temporary construction noise abatement measures, such as shrouds or other noise curtains, acoustic fabric, physical barriers, and/or enclosures to reduce noise from pile drivers, compressors, generators, pumps, and other equipment when practicable. The need for each of these temporary measures would be assessed during final design. The effectiveness and need of these temporary measures would also be assessed in real-time throughout construction based on public input (e.g., noise concerns) and the construction noise monitoring program.
- Require motorized construction equipment to be equipped with an appropriate well-maintained muffler and require silencers to be installed on both air intakes and air exhaust when practicable.
- Require all construction devices with internal combustion engines to be operated with engine doors closed and with noise-insulating material mounted on the engine housing that does not interfere with the manufacture guidelines.
- Require the contractor to transport construction equipment and vehicles carrying rock, concrete, or other materials along designated routes that would cause the least disturbance to noise sensitive receivers when practicable.
- Require self-adjusting or manual audible back up alarms or broadband alarms in lieu of pure tone alarms for vehicles and equipment used in areas adjacent to sensitive noise receivers.
- Require the contractor to use pre-auguring equipment to reduce the duration of impact or vibratory pile driving when practicable.

A Construction Vibration Mitigation Plan would be developed during final design and would include the following components:

A Construction Vibration Mitigation Plan would be developed during final design and would include the following components:

- Implement a construction vibration monitoring program that includes a communication and public outreach plan throughout the construction period.
    - The construction vibration monitoring program would be prepared with input from the community and allow for modification of methodologies based on public input throughout construction.
    - The results of construction vibration monitoring would be available for the public to view on the project website.
    - NYSDOT would include contract requirement for a public outreach liaison that would conduct proactive outreach ahead of blasting and pile driving activities. Further, the community liaison would be able to accept complaints from the public which would then be assessed by NYSDOT for any appropriate action. If at any time it is determined that vibration levels are unacceptable, the problematic construction operations would be halted until a plan to mitigate the vibration issues has been approved by NYSDOT.
    - Publishing a blasting schedule that will be available at the Project public outreach office;
    - Informing local police and emergency services about the blasting schedule;
    - Pre-blast audio alert procedures, consisting of a well-defined sequence of airhorn blasts prior to a blast and a following all-clear.

- Prohibit nighttime use of impact and drilling equipment including pile drivers, jackhammers, hoe rams, core drills, direct push soil probes (e.g., Geoprobe), pavement breakers, pneumatic tools, and rock drills.
- Direct contractor to use pre-auguring equipment to reduce the duration of vibratory pile driving when reasonable.
- Require contractor to develop and implement a blasting program designed to avoid the potential for damage to structures by modifying the weight of explosives per delay, the loading density, and the delay pattern consistent with GEM22, the Geotechnical Engineering Manual published by the

NYSDOT. Blast vibration would be kept within bounds as determined by US Bureau of Mines in Report of Investigations 8507 and adjusted on an as-needed basis during construction.

- Prior to construction blasting, test blasts would be conducted to assess appropriate explosive charge weights, and if deemed appropriate, industry-standard signature hole analysis.
- Conduct vibration and airblast monitoring per the blasting program.
- Although no threshold damage is expected, any unanticipated damage to buildings or utilities found by the NYSDOT to be attributable to the construction would be repaired by the contractor. Pre- and post-construction surveys of building conditions would be conducted within a survey area of up to approximately 300 feet (this estimated distance for the surveys would be refined during final design, as appropriate).

In addition to the topic-specific mitigation commitments listed above, a communication and public outreach program would be implemented and the project outreach office would continue to be available throughout the construction period to provide timely updates to the public on construction activities and mechanisms for hearing and resolving construction-related concerns.

Short-term construction-related effects to environmental justice populations are unavoidable. However, the effects are not expected to remain adverse after the mitigation measures described above are implemented.

Indirect/Secondary Effects

As described in Section 4.21 of this DDR/EA, the Build Alternative has the potential to indirectly affect the value of properties, the rate of infill development, and general quality of life in the vicinity of the Project by directly affecting related factors, such as improved connectivity between the affected neighborhoods, the creation of new public greenspace above the proposed tunnel, improved aesthetics within the transportation corridor, and a reduction in traffic noise near the tunnel.

Increases in property values can result in increases in property taxes, which can pose a burden to low-income homeowners and renters. The available literature on factors affecting property values generally associates proximity to greenspace, reductions in noise and improvements in pedestrian/bicycle mobility as factors that tend to result in increases in property values. However, property values are also affected by other factors, including external characteristics (e.g., “curb appeal,” home condition, lot size); internal characteristics (e.g., size and number of rooms, construction quality, energy efficiency); supply and demand; and location characteristics (e.g., desirability of particular school district). In addition, the administration of property assessment and taxation is under the authority of the City of Buffalo. Thus, the exact magnitude of potential effects to property values cannot be reasonably predicted.

The potential increases in property values could be offset by the Project benefits. Increased taxes would positively affect the local tax base, which would be expected to benefit the community in the form of better-funded government programs. As documented in Section 4.5 of this DDR/EA, improved pedestrian access to local businesses could have a positive effect on the local economy by increasing the extent to which local residents patronize local businesses. Also, construction spending would be expected to indirectly benefit the local and regional economies by increasing employment and earnings in the construction industry. As new construction workers spend a portion of their payroll in the local area and construction companies purchase materials from local suppliers, the overall demand for local goods and services expands. In addition, the NYSDOT would implement the following local workforce and hiring measures:

- NYSDOT would partner with local community organizations, unions and political leaders to develop a program for local hiring and for contracting women and minority-owned businesses.
- In coordination with FHWA, NYSDOT would include a local hiring preference in the contract documents for the Kensington Expressway Project to encourage local hires for the contracts.

- NYSDOT would advertise training programs and construction employment opportunities at public meetings and the Project's outreach center.
- NYSDOT would monitor the local hiring metrics throughout the Project and conduct regular meetings with partnering agencies to discuss progress and any steps to modify the initiatives.

The Build Alternative would contribute to an overall improved quality of life for the environmental justice populations who live within the vicinity of the Project. Overall, it is expected that the benefits of the Project would offset the effects associated with potential increases in property values. The indirect effects of the Project are not anticipated to be adverse.

4.4.3.3 Step 4: If potential effects would be adverse after mitigation is considered, identify whether those effects would be predominately borne by the environmental justice populations or are appreciably more severe or greater in magnitude on the environmental justice population than the adverse effects suffered by the non-minority or non-low-income population (e.g., disproportionately high and adverse effects).

As documented above, the Build Alternative would not result in adverse effects on environmental justice populations. Thus, this step does not apply.

4.4.3.4 Step 5: If disproportionately high and adverse effects on environmental justice populations are anticipated, evaluate whether there is a further practicable mitigation measure or practicable alternative that would avoid or reduce the disproportionately high and adverse effects.

As documented above, the Build Alternative would not result in adverse effects on environmental justice populations. Thus, this step does not apply.

4.4.4 Public Engagement with Environmental Justice Populations

Chapter 5 of this DDR/EA describes the general outreach and public involvement methods utilized by the FHWA and NYSDOT to provide opportunities for meaningful public participation and engagement in the transportation decision-making process for the Project. Executive Order (EO) 12898 and the subsequent EO 14096 require federal agencies to provide meaningful opportunities for affected minority and/or low-income communities to participate in a project. As the Environmental Justice Study Area (see Figure 4.4.1) includes environmental justice populations, the public involvement activities and methods for involving the public in the Project were developed in consideration of these populations. This section describes the extensive environmental justice public engagement program developed and implemented for the Project.

4.4.4.1 Initial Meeting with Community Groups and Leaders

NYSDOT has held reoccurring meetings with community groups and leaders that represent key stakeholders and these meetings were used to communicate project information and provide general community representation in the transportation decision-making process. The NYSDOT held an initial meeting on June 29, 2022 with community groups and leaders. One of the goals of this meeting was to gather input on the best ways to engage the greater community and inform the environmental justice engagement approach moving forward. Regarding potential engagement strategies and considerations, the NYSDOT heard the following:

- The NYSDOT should provide advance notice and involvement prior to engagement opportunities.
- Community groups could help the NYSDOT more effectively advertise public involvement opportunities to the community.
- The NYSDOT should attend community events to disseminate project information.
- The Delavan-Grider Community Center could be used as a potential location for future meetings.

- Regularly scheduled meetings would help to ensure a consistent dialogue between the NYSDOT and the local community.
- Make public presentations/materials less technical and easier to understand.
- Community members will likely be concerned about potential impacts to air quality, and the potential effects of ventilation infrastructure should be disclosed to community members so they can offer informed comments.

4.4.4.2 Project Team Attendance at Community Events

In consideration of the feedback received at the initial meeting with community groups/leaders, project team members have attended local community events to disseminate information about the Project and solicit input. These events have included festivals, block club meetings, meetings with church congregations and church leaders, and more. At the community events, brochures and comment forms are provided, Project information is available for viewing, and staff are available to answer questions about the Project. A list of community outreach activities and community events attended by the Project team is provided in Appendix E1.

4.4.4.3 Community Outreach Office and Community Liaisons

In consideration of the feedback received at the initial meeting with community groups/leaders, the NYSDOT opened a community outreach office for the Project in November 2022. The office is located in a central, transit-accessible location within the transportation corridor at an ADA-accessible site. The office is open to the public for eight hours on each of four weekdays and for four hours on Saturdays. Office visitors may learn about the Project, access additional information, ask questions, and provide input regarding the Project. Project materials and documents, including the Project Scoping Report and this DDR/EA are available at the office as are comment forms. A computer with access to the Project website and electronic versions of Project materials is also provided. The office will remain open through construction of the Project.

The NYSDOT also established two community liaisons who are dedicated to this Project. The liaisons are members of the community with knowledge of the community and connections to the area. The community liaisons staff the outreach office, attend events in the community, communicate public input to the NYSDOT, explain the Project to the community, and answer questions about the Project. The liaisons are supported by other Project team members as needed to answer questions.

4.4.4.4 Project Stakeholder Group Meetings

In consideration of the feedback received at the initial meeting with community groups/leaders, the NYSDOT established and has been meeting on a monthly basis with a project stakeholder group. As documented in Section 5.2 of this DDR/EA, the group includes multiple organizations, including the Restore Our Community Coalition, Hamlin Park Community & Taxpayers Association, Inc., the Black Chamber of Commerce of Western New York, Inc., Citizen's Alliance, Inc., Masten Block Club Coalition, Inc., Winslow Block Club, and MLK Block Club. The NYSDOT has considered the input received from these meetings in the continued development of the Project and the overall decision-making process.

4.4.4.5 Public Meetings

A public scoping meeting for the Project was held on June 30, 2022 at the Buffalo Museum of Science, a location within the vicinity of the Project that is accessible by public transit. The meeting included two sessions, one during the day and one during the evening, to accommodate varying schedules of meeting attendees. The same information was presented at both sessions. The meeting was advertised in the following ways:

- Electronic distribution to select stakeholders from community-based groups;
- Publication in local newspapers and online news sources, including Spanish-language publications;
- Physical notices placed on buildings directly adjacent to the Kensington Expressway corridor;
- Physical notices sent via U.S. mail to residences located directly adjacent to the Kensington Expressway corridor; and
- Advertisement placed on the NYSDOT Facebook page and twitter account.

A Spanish-language interpreter and language assistance service were made available at the meeting. The NYSDOT considered the input received at this meeting, and during the subsequent 30-day scoping comment period, in the development of the Project.

A public information meeting for the Project was held on June 20, 2023, at the Buffalo Museum of Science. Two sessions were held, one during the day and one during the evening. The same information was presented at both sessions. The meeting was advertised in a similar manner to the scoping meeting. In addition, flyers and information were distributed by the Project team at community events and at the outreach office. A Spanish-language interpreter was available at the meeting. The NYSDOT considered the input received at this meeting, and during the subsequent comment period, in the ongoing development of the Project.

A public hearing will be held after the release of this DDR/EA to the public. The hearing date, time and location will be appropriately noticed using the same methods at the previous public meetings.

4.4.4.6 Project Design Changes That Have Been Made Based on Public/Community Input

The NYSDOT has considered the public/community input received on the Project to date and has made the following changes to the project design in response to this input:

- Extending the northern limit of tunnel to Sidney Street, increasing the total length of the tunnel by 610 feet;
- Narrowing the tunnel section width from 151'-4'' to 114'-8" to minimize construction effects to properties along Humboldt Parkway;
- Avoiding the construction of above ground mechanical buildings by constructing substations and tunnel systems mechanical buildings underground;
- Avoiding property acquisitions that would require residential or business relocations;
- Incorporating roundabouts at the Best Street interchange area to improve traffic flow and safety;
- Constructing a multi-use path on the Best Street bridge to accommodate all users; and
- Providing landscaping design and soil depth on the tunnel cap to accommodate trees reaching up to 50 feet in height at maturity, addressing a public preference for larger trees.

4.5 Regional and Local Economies

4.5.1 Study Area and Methodology

The Study Area for the assessment of effects to the regional economy includes Erie County, with statistics for the City of Buffalo included for comparison purposes. Data from the 2011 and 2021 U.S. Census Bureau American Community Survey and the 2002-2019 U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics Version 7 were evaluated.

The Study Area for the assessment of effects to the local economy includes those 2010 census tracts that are within or intersect the general Study Area (see Figure 4.2-1 and the description in Section 4.2.1 of this

DDR/EA). Data from the 2011 and 2021 U.S. Census Bureau American Community Survey and the 2002-2019 U.S. Census Bureau LEHD Origin-Destination Employment Statistics Version 7 were evaluated.

Economic development within the local and regional study areas (Erie County, the City of Buffalo, and the Study Area) is coordinated through several entities. The City of Buffalo's Office of Strategic Planning coordinates economic development in the City with associated development agencies and other public agencies including the Erie County Industrial Development Agency; Empire State Development; and the Western New York Regional Economic Development Council.

The *Humboldt Parkway Deck Economic Impact Study*, covering Erie and Niagara Counties, was reviewed and considered as part of the assessment of effects to regional and local economies.[99] The study was consulted for general information regarding how construction spending can impact both regional and local economies temporarily and the potential for residual effects in surrounding neighborhoods following indirect effects upon property values.

4.5.2 Existing Conditions

4.5.2.1 Employment

State and federal agencies classify employment by industry sectors as defined by the North American Industry Classification System (NAICS)[100]. Table 4.5-1 presents employment by industry for individuals within the general Study Area, the City of Buffalo, and Erie County. As shown in Table 4.5-1, the largest industry sector in terms of employment at the regional and local levels is Health Care and Social Assistance, constituting 16.4 percent of all jobs in Erie County, 21.1 percent in Buffalo, and 75.8 percent in the Study Area. The second largest industry sector in terms of employment at the regional and local levels is Educational Services, constituting 10.0 percent of all jobs in Erie County, 9.3 percent in Buffalo, and 5.8 percent in the Study Area.

In 2019, over 490,000 people worked in Erie County. In addition to Health Care and Social Assistance and Educational Services, Erie County contains a diverse mix of industries as shown in Table 4.5-1, with other leading industries being Retail Trade (10.4 percent) and Accommodation and Food Services (9.1 percent). The City of Buffalo is an employment center for the larger region, being the locale for over 155,000 workers in 2019. In addition to Health Care and Social Assistance and Educational Services, the City of Buffalo also contains a diverse mix of industries as shown in Table 4.5-1, with other leading industries being Professional, Scientific, and Technical Services (8.6 percent) and Public Administration (8.0 percent).

Within the City of Buffalo, the Study Area is also an employment destination, particularly in the Health Care and Social Assistance sectors. This is due to the location of the Buffalo Niagara Medical Campus within census tract 31 on the west side of the Study Area. The medical campus includes three large hospitals (Buffalo General Medical Center, Oishei Children's Hospital, and Roswell Park Cancer Institute); several large medical clinics, laboratories, and offices; and the University at Buffalo Jacobs School of Medicine and Biomedical Sciences.

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[99] Humboldt Parkway Deck Economic Impact Study, University at Buffalo Regional Institute, March 25, 2014.

[100] https://www.census.gov/naics/?58967?yearbck=2022

Table 4.5-1: Employment by Industry						
	Study Area		**City of Buffalo**		**Erie County**	
Industry Sectors	**Individuals Employed**	**Percent Employed**	**Individuals Employed**	**Percent Employed**	**Individuals Employed**	**Percent Employed**
Agriculture, Forestry, Fishing and Hunting	0	0.0%	8	0.0%	852	0.2%
Mining, Quarrying, and Oil and Gas Extraction	0	0.0%	16	0.0%	213	0.0%
Utilities	0	0.0%	756	0.5%	1,371	0.3%
Construction	91	0.7%	3,541	2.3%	16,969	3.4%
Manufacturing	457	3.7%	9,450	6.2%	42,815	8.7%
Wholesale Trade	40	0.3%	3,637	2.4%	19,426	3.9%
Retail Trade	194	1.6%	7,777	5.1%	51,122	10.4%
Transportation and Warehousing	20	0.2%	5,368	3.5%	18,561	3.8%
Information	1	0.0%	3,683	2.4%	7,052	1.4%
Finance and Insurance	47	0.4%	8,607	5.7%	31,051	6.3%
Real Estate and Rental and Leasing	27	0.2%	2,399	1.6%	6,843	1.4%
Professional, Scientific, and Technical Services	356	2.9%	12,983	8.6%	27,092	5.5%
Management of Companies and Enterprises	27	0.2%	7,259	4.8%	15,999	3.2%
Administration & Support, Waste Management and Remediation	158	1.3%	5,993	4.0%	25,511	5.2%
Educational Services	721	5.8%	14,034	9.3%	49,117	10.0%
Health Care and Social Assistance	9,350	75.8%	31,986	21.1%	80,791	16.4%
Arts, Entertainment, and Recreation	81	0.7%	4,332	2.9%	8,675	1.8%
Accommodation and Food Services	356	2.9%	11,306	7.5%	44,807	9.1%
Other Services (excluding Public Administration)	418	3.4%	6,356	4.2%	21,037	4.3%
Public Administration	0	0.0%	12,117	8.0%	23,324	4.7%

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2019).

As shown in Table 4.5-2, over 11,000 workers are employed in the Study Area, yet less than 1 percent of these individuals reside in the Study Area. Collectively, the medical campus accounts for the majority of these workers. Furthermore, of the 5,632 residents within the Study Area less than two percent also work in the Study Area.

Table 4.5-2: Worker Inflow and Outflow, 2019		
	Total	**Percent**
Individuals Living in the Study Area		
Living in the Study Area[101]	5,632	100%
Living and employed in the Study Area	105	1.86%
Living in the Study Area and employed outside the Study Area	5,527	98.1%
Individuals Employed in the Study Area		
Employed in the Study Area	11,801	100%
Employed and living in the Study Area	105	0.89%
Employed in the Study Area and living outside the Study Area	11,696	99.1%
Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2019).		

Other large employers in the Study Area are the Northland Workforce Training Center, the Buffalo Public School District, and the Buffalo Museum of Science. As described in Section 4.2, Neighborhood Character and Community Cohesion, the areas in the vicinity of the Project are predominantly residential with a small number of commercial streets, mostly consisting of small businesses such as retail and services.

Unemployment

Labor force reflects the number of working aged people (16 years and older) who reside in a geographic area and who either have a job or are seeking a job. At a regional level, Erie County and the City of Buffalo alike experienced a growth in the total labor force (4.3 and 22.6 percent, respectively) between 2011 and 2021 (see Table 4.5-3). Similarly, the Study Area experienced a 4.1 percent increase in the total labor force. At both the regional and local levels, the percentage of the labor force that was unemployed decreased substantially between 2011 and 2021 – from 20.6 percent to 10.3 percent in the Study Area, from 15.0 percent to 7.7 percent in the City of Buffalo, and from 8.0 percent to 5.1 percent in Erie County. The 2021 unemployment rates for the Study Area, the City of Buffalo, and Erie County are higher than the unemployment rate for the United States (3.4 percent).[102]

For further information on income and poverty in the region and the local area, see Section 4.3, Social Groups Benefited or Harmed, and Section 4.4, Environmental Justice.

[101] The number of people identified as "Living in the Study Area" is not the same as the "total population" as discussed in other sections of the DDR/EA. It is also lower than the "Total Labor Force" of the Study Area, as shown in Table 4.5-3. This is due to the U.S. Census Bureau calculating these statistics using different data sources. The U.S. Census Bureau is aware of the discrepancies between these statistics.
[102] U.S. unemployment rate information was referenced on May 5, 2023 from the following source: https://www.bls.gov/news.release/pdf/empsit.pdf

Table 4.5-3: Labor Force and Unemployment in the Local and Regional Economy							
	Total Labor Force 2011	Total Labor Force 2021	Percent Change	Unemployed Labor Force 2011	Percent Unemployed 2011	Unemployed Labor Force 2021	Percent Unemployed 2021
Study Area	7,670	7,985	+4.1%	1,577	20.6%	821	10.3%
City of Buffalo	108,498	133,070	+22.6%	16,243	15.0%	10,232	7.7%
Erie County	470,435	490,712	+4.3%	37,700	8.0%	25,238	5.1%
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (2007-2011), American Community Survey 5-Year Estimates (2017-2021)							

4.5.2.2 Local Economy

There are several commercial and mixed-use corridors within the Study Area. Jefferson Avenue, Fillmore Avenue, and Genesee Street represent major commercial districts for East Buffalo, while East Ferry Street and Northland Avenue are also commercial corridors that contribute to the local economy. Along Genesee Street, East Ferry Street, and Fillmore Avenue, typical businesses include hair salons, auto repair shops, convenience stores, liquor stores, restaurants, and ethnic food stores. Jefferson Avenue has similar businesses as well as a grocery store, the only large grocery store in the area. Northland Avenue also contains a small number of convenience stores and a restaurant, though it predominantly consists of manufacturing-based businesses in a grouping referred to as the Northland Corridor.

Since their inclusion in the U.S. tax code in 2017, there have been 17 Opportunity Zones established in the City of Buffalo. "An Opportunity Zone is an economically distressed community where new investments, under certain conditions, may be eligible for preferential tax treatment,"[103] resulting in tax benefits for those who invest in eligible properties, thus spurring development in low- to middle-income areas. Buffalo's 17 Opportunity Zones are delineated by census tract boundaries and are grouped in ten zone clusters based on their geography, economy, land use and planning, common infrastructure, and assets.[104] Located partially within the Study Area are the Northland-Hospital and East Main-Jefferson Opportunity Zones (see Figure 4.5-1 for the geographic location of these zones):

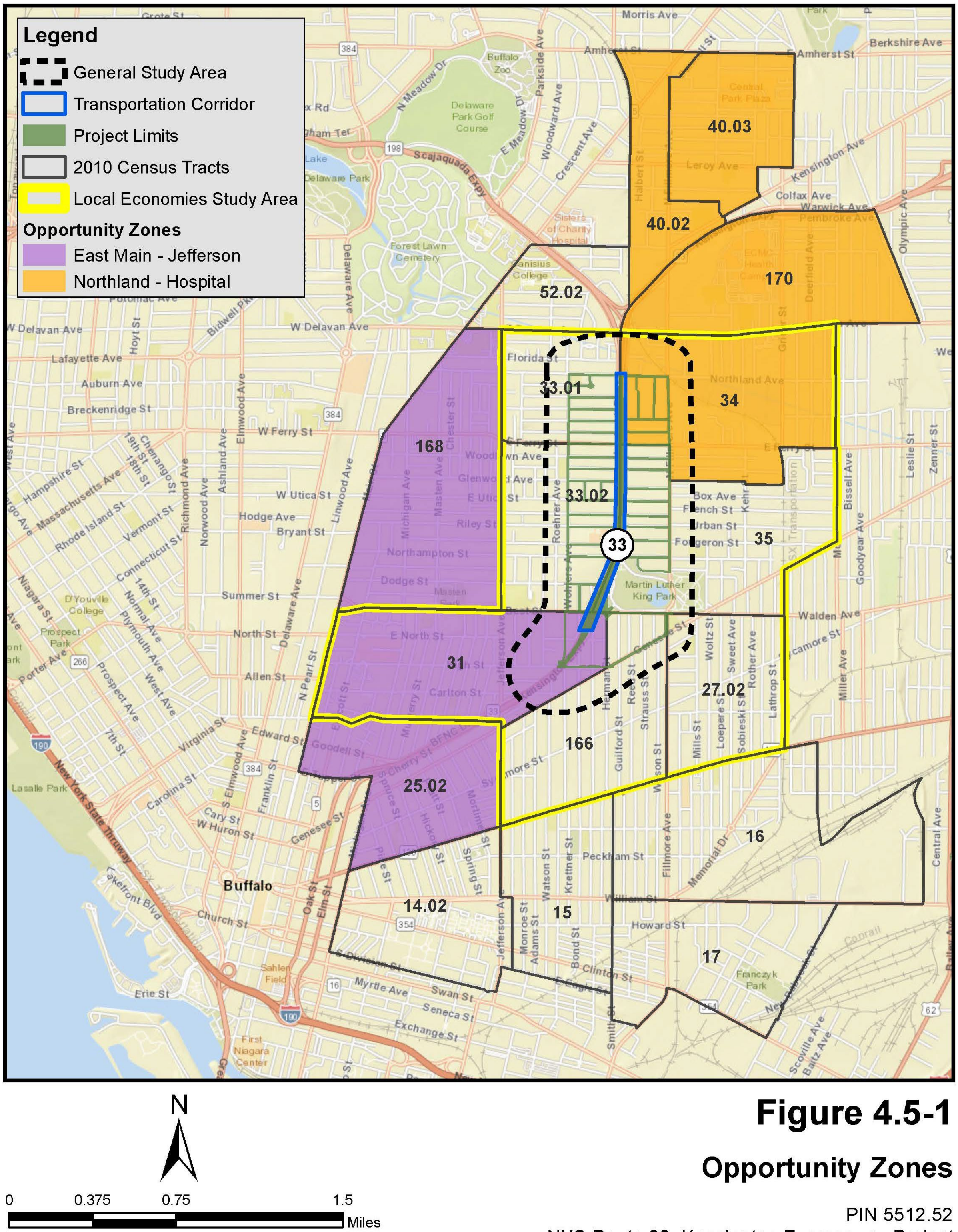
- **Northland-Hospital**: This Opportunity Zone, made up of census tracts 34, 170, 40.02, and 40.03 (40.02, 40.03, and 170 are outside of the Study Area), encompasses much of the Delavan-Grider neighborhood, including the Northland Corridor. Its anchor institutions are the Northland Workforce Training Center, Erie County Medical Center, and Canisius College. Current projects include a 35-acre brownfield redevelopment project with the goal of returning industrial and commercial properties to productive use.
- **East Main-Jefferson**: This Opportunity Zone is made up of census tracts 25.02, 31, and 168, which was subdivided in 2020 as 168.01 and 168.02(25.02, 168.01, and 168.02 are outside of the Study Area). This Opportunity Zone is inclusive of the Jefferson Avenue commercial district, the Masten Park and Fruit Belt neighborhoods, the Buffalo Niagara Medical Campus, and the Beverly Gray Business Exchange Center. Current projects include the ongoing investment on Jefferson

[103] https://www.buffalony.gov/DocumentCenter/View/6283/City-of-Buffalo---Equal-Opportunity-Zones
[104] Ibid.

Avenue, several recently completed new and adaptive reuse residential and commercial buildings, and continuing development in the Buffalo Niagara Medical Campus.

The New York State Brownfield Opportunity Area (BOA) program offers grants to local governments to address areas that have been affected by brownfields – properties where redevelopment is hindered by the cost of cleaning up and removing hazardous materials, pollutants, and contaminants. There are currently no BOAs in the Study Area; however, exploratory-level planning has begun for a Northland Corridor BOA, undertaken by the Buffalo Urban Development Corporation. The Northland Corridor BOA would cover an area bounded by NYS Route 33 (Kensington Expressway) to the north; William L. Gaiter Parkway to the east; Genesee Street, East Parade Avenue, and Northampton Street to the south; and Fillmore Avenue to the west. If implemented, the Northland Corridor BOA would have an anticipated completion date of 2028.[105]

[105] https://regionalcouncils.ny.gov/cfa/project/391022



Source: Erie County 2019 and 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, US Census Bureau 2010.

Figure 4.5-1

Opportunity Zones

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

4.5.3 Potential Effects

This section presents the assessment of potential effects of the Build Alternative on local and regional economies. Section 4.4 of this DDR/EA describes the Project's potential effects on minority and/or low-income populations, including potential effects related to changes in property values in surrounding neighborhoods.

4.5.3.1 Short-term Effects to Regional and Local Economies

In general, construction spending directly impacts regional economies by increasing employment and earnings in the construction industry.

Construction expenditures can also have a positive impact on a local economy. As new construction workers spend a portion of their payroll in the local area and construction companies purchase materials from local suppliers, the overall demand for local goods and services expands. Revenues at local retail outlets and service providers can increase as a result. As local merchants respond to such increases in demand, they may in turn increase employment at their operations and/or purchase more goods and services from their providers. These new workers may then spend a portion of their income in the area, thus "multiplying" the positive economic impacts of the original injection of funds. Such "multiplier" effects would continue until all the original funds have left the regional economy through either tax, savings, or purchases from outside the local area.

The Build Alternative's construction spending would be expected to result in the foregoing short-term positive impacts to both the regional and local economy. The magnitude of the effects would be proportional to the magnitude of the construction budget. The duration of the Build Alternative construction period (approximately three to four years) is a reasonable estimate for the duration of such short-term effects. The Project includes a local hire program commitment to encourage the training and hiring of local residents for construction and construction-related employment opportunities. NYSDOT will partner with local community organizations, unions and political leaders to develop a program for local hiring and for contracting women and minority-owned businesses.

- In coordination with FHWA, NYSDOT will include a local hiring preference in the contract documents for the Kensington Expressway Project to encourage local hires for the contracts.
- NYSDOT will Advertise training programs and construction employment opportunities at public meetings and the Project's outreach center.
- NYSDOT will monitor the local hiring metrics throughout the Project and conduct regular meetings with partnering agencies to discuss progress and any steps to modify the initiatives.

4.5.3.2 Long-term Effects to Local Economies

Construction projects like the Build Alternative can also have long-term residual effects upon local economies. For example, construction projects can add new household wealth and tax revenues by indirectly increasing property values. In instances of increased property values where both suitable vacant sites and additional direct investment are available, further positive impacts to local economies can result from re-densification of surrounding neighborhoods and infill of new mixed-use development along commercial corridors. Such long-term effects are generally taken to be permanent. Although increases in property values, household wealth, and tax revenues may be expected to manifest soon after construction in completed, the development of any ensuing infill development may take much longer, perhaps decades. The Build Alternative does have the potential to indirectly increase neighborhood property values as a consequence of direct impacts to accessibility, community cohesion and connectivity, pedestrian east-west mobility and safety, proximity to greenspace, aesthetics and visual quality, and traffic noise reduction. The potential of these Build Alternative effects to indirectly affect property values and the challenges inherent in estimating the magnitude of indirect effects upon property values are described in Section 4.21 of this DDR/EA.

4.5.3.3 Opportunity Zones

The Build Alternative would not result in changes to either the Northland-Hospital or East Main-Jefferson Opportunity Zones. Furthermore, the transportation improvements included in the Build Alternative are generally consistent with the overall vision of the Opportunity Zones to support and improve local and regional economic development. The Build Alternative improvements would enhance the benefit and vision of the Opportunity Zones by maintaining efficient access to the zones, by maintaining efficient local travel, and by improving connectivity within segments of the zones and within closely associated neighborhoods.

4.5.3.4 Right-of-Way Acquisitions, Local Tax Base

Right-of-way acquisitions that would be necessary for implementation of the Build Alternative are described in Section 3.4.2 of this DDR/EA and the preliminary anticipated property impacts are listed in Table 3.4-6. Many of the listed acquisitions are temporary easements that would have no effect upon the local tax base. Although the 30 fee acquisitions listed in the table would affect the tax base by removing small portions of each property from the property tax roll, together they total only 0.123 acres in extent. As the Build Alternative fee acquisitions would exempt only a small fraction of an acre from property taxes, there would be no meaningful impact to the local tax base.

4.5.3.5 Travel Times and Routes

Transportation projects have the potential to affect retail and other commercial uses both locally and regionally by altering travel times and routes because substantial increases or decreases in traffic volumes may affect businesses' customer base. Businesses that rely heavily on pass-by traffic such as gas stations, convenience stores, and fast food can be especially vulnerable to such effects. Regional employment can also be affected by changes in travel times or routes between workplaces and residences.

Vehicles encounter very different conditions on the Kensington Expressway, the adjacent segments of the Humboldt Parkway, and the available crossings of the Kensington Expressway than do pedestrians and cyclists. Therefore, potential changes in vehicular travel times and routes are assessed separately from those that could be experienced by pedestrians and cyclists.

Vehicular Travel Times and Routes

The Build Alternative would not include a hazardous materials truck restriction on the tunnel, therefore there would be no effect on regional truck traffic or routes through the area or any resulting traffic congestion or delays affecting access to local businesses.

Traffic now utilizing the two Kensington Expressway ramps near East Utica Street that the Build Alternative would eliminate would have access instead to the full interchange developed in the Build Alternative at Best Street including additional ramp capacity and roundabouts which would reduce vehicle delays. The elimination of these two ramps would have no effect upon regional vehicular travel through the area and would not impede trucks or other vehicles accessing local businesses.

The Build Alternative would increase the number of vehicular crossings of the Kensington Expressway between East Delavan Avenue and High Street from seven to ten (the seven existing plus an additional three located at Sidney Street/Butler Avenue, Winslow Avenue, and Riley Street). The availability of additional crossings of the expressway would have no impact upon regional vehicular through traffic and would only improve access to local businesses.

Pedestrian and Cyclist Travel Times and Routes

The seven vehicular crossings of the Kensington Expressway now available between East Delavan Avenue and High Street do not meet current safety standards for accommodating pedestrians and are therefore likely to be used less frequently by these travelers than might otherwise be the case. For example, as described in Section 2.4.2.1 of this DDR/EA, many of the sidewalks on the bridges within the corridor are less than 5 feet in width, some of the sidewalks on intersecting side streets are in poor condition, and many of the ADA-required curb ramps at intersections are missing or deteriorated. The Build Alternative would:

- Increase the number of available vehicular crossings from seven to ten;
- Provide pedestrian amenities to make sub-standard crossings and sidewalks more suitable for use by pedestrians (see Section 3.4.2.1 of this DDR/EA);
- Provide pedestrian crossings along the existing and proposed cross streets, further increasing opportunities for pedestrians to connect between neighborhoods located on opposite sides of the expressway; and
- Reconstruct segments of the Humboldt Parkway adjoining the proposed tunnel to include “Complete Streets” improvements that would facilitate safe pedestrian travel (as described in Section 3.4.2 of this DDR/EA).

Routes and travel times for cyclists would remain mostly as they are in the Build Alternative. However, the foregoing Build Alternative improvements would better support efforts of pedestrians to travel throughout the affected neighborhoods and overcome barriers imposed by the Kensington Expressway. As approximately 39 percent of the population within the Environmental Justice Study Area do not have access to a vehicle (see Sections 4.4.2 and 4.3 of this DDR/EA), improved pedestrian access to local businesses could have a positive effect on the local economy by increasing the extent to which local residents patronize local businesses.

Because the Build Alternative would both increase and enhance opportunities for pedestrians to cross the expressway, the improved ease of crossing could affect where pedestrians shop in the commercial and mixed-use corridors located on opposite sides of the Kensington Expressway on Jefferson Avenue and Fillmore Avenue. However, such an outcome is not certain and not expected to substantially affect local businesses.

4.6 Historic and Cultural Resources

The Project is a federal undertaking subject to review under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulation, 36 CFR Part 800: Protection of Historic Properties. Section 106 requires federal agencies to account for the effects of their undertakings on historic properties. As defined by the regulations implementing Section 106, a historic property is “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior.” The Section 106 process is a consultation process that seeks to balance historic preservation concerns with the needs of federal undertakings through consultation among the agency, Advisory Council on Historic Preservation, State Historic Preservation Office (SHPO) and other parties interested in the effects of the undertaking on historic properties. Projects reviewed under Section 106 do not require a separate review under Section 14.09 of the New York State Historic Preservation Act.

As part of this evaluation, resources under Section 4(f) Department of Transportation Act of 1966 also must be considered. Refer to Section 4.6.5 for a discussion of the Section 4(f) evaluation.

4.6.1 Methodology

The methodology for the evaluation of historic and cultural resources for the Project includes the following:

- Initiate consultation.
- Define the Area of Potential Effects (APE).
- Identify historic properties within the APE.
- Assess effects on the identified historic properties within the APE.
- Consider measures to avoid and minimize adverse effects; and
- Document an effect finding.

The Federal Highway Administration (FHWA), in coordination with the NYSDOT, initiated consultation with the SHPO on November 4, 2022. As part of the Section 106 consultation, NYSDOT submitted a Cultural Resources Screening (Screening) for review and comment to SHPO and to the Tribal Nations who have identified the Project location as an area of interest, including the Seneca Cayuga Tribe of Oklahoma, the Seneca Nation of Indians, the Tonawanda Seneca Nation, and the Tuscarora Nation. The Screening describes the assessment of the potential presence of archaeological resources and historic architectural properties within a defined Study Area. It also provides an inventory of reported archaeological sites and previous surveys, an overview of precontact settlement and historical development, and a general sensitivity assessment for the Project. The Screening indicated that there are archaeologically sensitive areas in the vicinity of the Project. The Screening also identified known and potential historic architectural resources, including known and potential historic districts.

Based on the results of the 2022 Screening, a Cultural Resources Screening Addendum for Archaeological Sensitivity (Screening Addendum) was prepared in 2023 to assess the archaeological potential within the Project limits of disturbance (LOD). The Screening Addendum builds on the research, background information and preliminary assessments prepared for the Screening and identifies areas of prior disturbance. Based on the extensive prior disturbance and the lack of archaeological sensitivity at the depths of 20-30 feet below original grade, the Screening Addendum concludes that with the exception of one parcel, there is no potential for the presence of archaeological resources within the LOD for the Project. Subsequent to the Screening Addendum and based on design activities, the NYSDOT is no longer proposing any ground disturbance in that parcel. Therefore, the parcel has been removed from the LOD and no archaeological survey is recommended for the Project.

On May 12, 2023, FHWA transmitted the Screening Addendum to the Seneca Cayuga Tribe of Oklahoma, the Seneca Nation of Indians, the Tonawanda Seneca Nation, and the Tuscarora Nation to seek their views on the recommendation for no further archaeological investigations. None of the Tribal Nations had comments. In coordination with the FHWA, the NYSDOT submitted the Screening Addendum to the SHPO for review and concurrence with the assessment that an archaeological survey is not needed. In a letter dated July 20, 2023, SHPO concurred with the determination that an archaeological survey is not needed.

Historic architectural properties were identified in accordance with the requirements of 36 CFR Part 800 for implementing Section 106 of the NHPA and in consultation with SHPO. Based on the results of the 2022 Screening, an architectural reconnaissance survey was conducted. One individual property and two historic districts were previously listed in the NRHP, and one individual property was previously determined by the SHPO to be eligible for inclusion in the NRHP. Based on the results of the Architectural Reconnaissance Survey, the NYSDOT recommended three additional historic districts and five additional individual properties as eligible for inclusion in the NRHP. The Architectural Survey Report was submitted to SHPO. In a letter dated July 20, 2023, SHPO provided concurrence on the previously identified National Register-eligible (NRE) or National Register-listed (NRL) properties and made eligibility determinations on historic districts and individual properties.

On August 18, 2023, a draft Finding Documentation prepared for the Project was submitted to the SHPO, Tribal Nations, and Consulting Parties for review. The draft Finding Documentation assessed the Project's effects on the identified historic properties, applying the criteria of adverse effect (36 CFR 800.5(a)(1)) and recommended a Finding that the Project would have No Adverse Effect on historic properties (See Appendix D10). A Consulting Parties meeting was held September 1, 2023 to provide an opportunity for the Consulting Parties to discuss and ask questions related to the draft Finding Documentation. Minor revisions/clarifications to the draft Finding Document have been made, based on the comments received during this meeting. Section 4.6.4 provides further discussion of Section 106 Consultation that has occurred for the project.

In accordance with 36 CFR 800.5 and 36 CFR 800.8, FHWA will continue to consider input from the consulting parties and the public; however, it is anticipated that the project will have No Adverse Effect on Historic Properties. FHWA will make its Section 106 Finding prior to issuing a NEPA determination. The Section 106 Finding will be documented in the NEPA decision document.

4.6.1.1 Study Area

The study area used for the cultural resources assessments consists of the APE, defined in 36 CFR 800.16 (d), as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties if such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."

In accordance with 36 CFR 800.4(a)(1), the APE for the Project (**Figure 4.6-1**) was defined in consultation with the SHPO to establish the geographic scope of efforts for the identification of historic architectural properties and was defined based on a proposed scope of work that includes:

- Reconstruct the Kensington Expressway to a 6-lane tunnel on a new vertical alignment between Dodge Street and Sidney Street;
- Reconstruct Humboldt Parkway from Northampton Street to Sidney Street;
- Removal of the East Ferry Street, East Utica Street, Northampton Street, and Dodge Street bridges over the Kensington Expressway; the newly constructed tunnel would reconnect these streets at-grade;
- Replacement of the Best Street bridge over the Kensington Expressway; and
- Creation of new greenspace above the proposed tunnel carrying the Kensington Expressway.

The APE has been defined based on the potential direct and indirect (visual and auditory) effects on architectural resources resulting from the Build Alternative. The area representing potential direct effects to historic properties that might result from physical alterations associated with the Project has been identified and represents the LOD of the Build Alternative. In developing the APE, the existing topography and building heights have been taken into consideration. As distance from the LOD and obstructions increase, the potential for adverse effects to a resource's setting due to the introduction of new visual elements and/or audible changes decreases. Therefore, the APE for the Project has been delineated to include parcels that are within or immediately adjacent to (i.e., extend one parcel out from) the LOD.

On May 11, 2023, NYSDOT submitted a proposed APE to the SHPO. In a letter dated July 20, 2023, SHPO concurred with the APE (see Appendix B of the Finding Documentation in Appendix D10). Subsequent to SHPO's July 20, 2023 concurrence with the APE, changes to the project design have resulted in minor modifications to the APE. The APE was amended to include areas subject to temporary or permanent impacts in the vicinity where minimal grading/profile changes during reconstruction of the roadbed have been added into the project design (see Figure 4.6-1)

4.6.2 Existing Conditions – Identified Historic Properties within the APE

There are 77 NRHP eligible or listed historic properties identified within the APE as well as four NRHP eligible or listed historic districts (Table 4.6-1 and Figure 4.6-1). The historic properties include:

- Martin Luther King, Jr. Park Historic District, and three residential historic districts (NRE and/or NRL),
- 77 buildings contributing to the NRE or NRL historic districts,
    - six buildings are individually NRE or NRL,

Within the APE there are 75 buildings that are not NRE. There are also six bridges within the APE; four are not eligible for the NRHP and two bridges were not evaluated because they meet the applicability criteria of the *Program Comment for Common Post-1945 Concrete and Steel Bridges* and are exempt from further Section 106 review (see Appendix C of the Finding Documentation in Appendix D10).

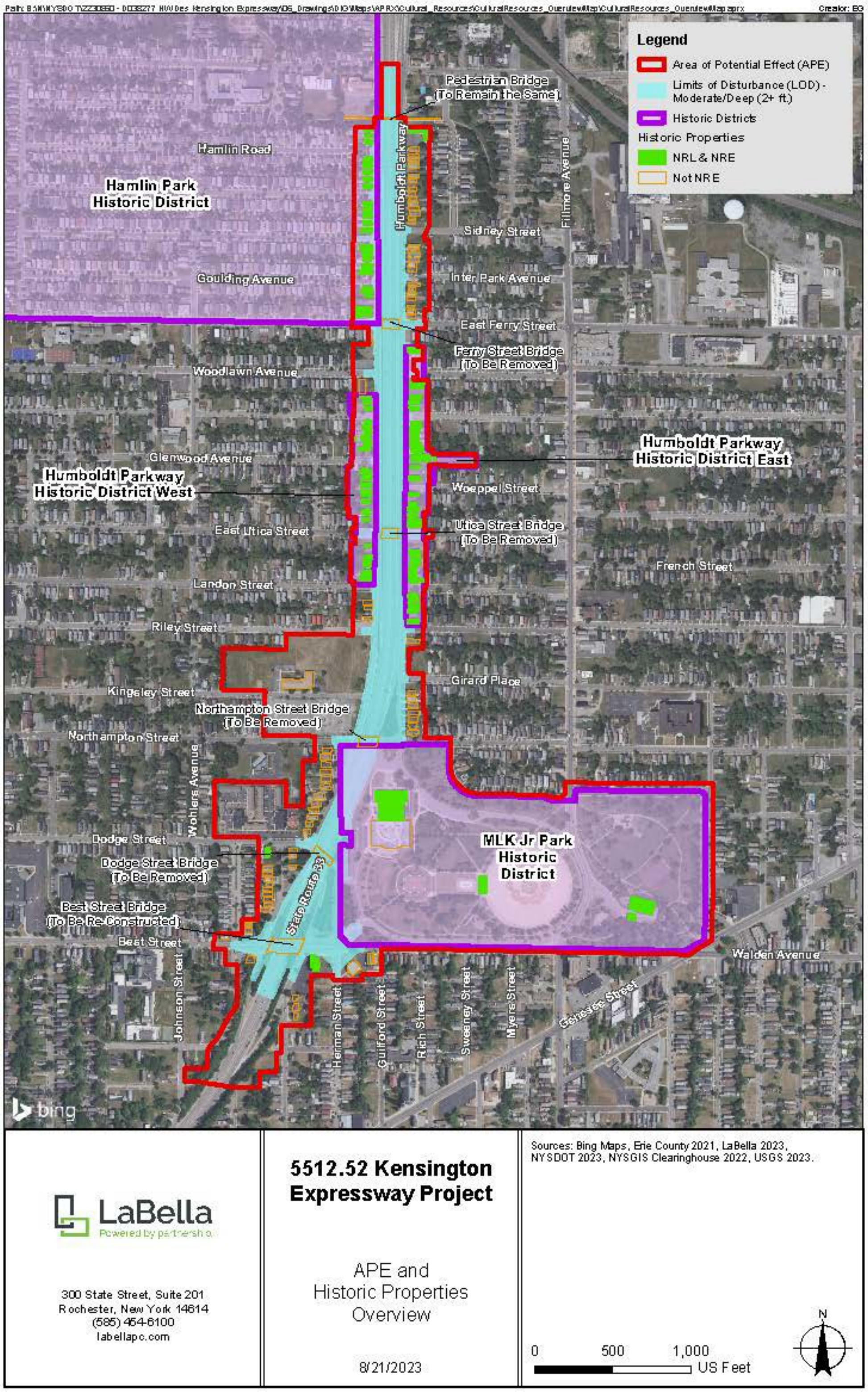

Legend
Area of Potential Effect (APE)
Limits of Disturbance (LOD) - Moderate/Deep (2+ ft.)
Historic Districts
Historic Properties
NRL & NRE
Not NRE
Pedestrian Bridge (To Remain the Same)
Hamlin Road
Hamlin Park Historic District
Humboldt Parkway
Fillmore Avenue
Sidney Street
Goulding Avenue
Inter Park Avenue
East Ferry Street
Ferry Street Bridge (To Be Removed)
Woodlawn Avenue
Humboldt Parkway Historic District East
Glenwood Avenue
Humboldt Parkway Historic District West
Woeppel Street
Utica Street Bridge (To Be Removed)
East Utica Street
French Street
Landon Street
Riley Street
Girard Place
Kingsley Street
Northampton Street Bridge (To Be Removed)
Northampton Street
Wohlers Avenue
Dodge Street
Dodge Street Bridge (To Be Removed)
MLK Jr Park Historic District
State Route 33
Best Street Bridge (To Be Re-Constructed)
Best Street
Walden Avenue
Genesee Street
Johnson Street
Herman Street
Guilford Street
Rich Street
Sweeney Street
Myers Street
bing
LaBella
Powered by partnership.
300 State Street, Suite 201
Rochester, New York 14614
(585) 454-6100
labellapc.com
5512.52 Kensington Expressway Project
APE and Historic Properties Overview
8/21/2023
Sources: Bing Maps, Erie County 2021, LaBella 2023, NYSDOT 2023, NYSGIS Clearinghouse 2022, USGS 2023.
0
500
1,000
US Feet
N

Table 4.6-1 NRHP-Eligible and -Listed Historic Properties			
Property Name	**NR Number or OPRHP Unique Site Number**	**Location**	**NRHP Status**
Historic Districts			
Martin Luther King, Jr. Park Historic District (Part of NRHP-listed Olmsted Parks and Parkways Thematic District) (Includes 5 contributing resources)	90NR01218	Bounded by Northampton Street and North Parade Avenue to the north, East Parade Avenue to the east, Best Street to the south, and Kensington Expressway/ West Parade Avenue to the west	Listed (2002)
Hamlin Park Historic District (Includes 21 contributing resources with the APE)	13NR06421	Bounded by NYS Route 33 to the north, Humboldt Parkway South to the east, East Ferry Street to the south, and Jefferson Avenue to the west	Listed (2013)
Humboldt Parkway Historic District (West) (Includes 21 historic-contributing resources)	02940.033432	One tax lot west of Humboldt Parkway from 787 Humboldt Parkway south to Landon Street	Eligible
Humboldt Parkway Historic District (East) (Includes 30 contributing resources)	02940.033469	One tax lot east of Humboldt Parkway from 772 Humboldt Parkway south to Riley Street	Eligible
Individual Properties			
Faith Missionary Baptist Church (historic name: Temple Beth David)	18NR00020 02940.019106	626 Humboldt Parkway North	Listed (2018)
Pilgrim English Evangelical Church/ Young Tabernacle Holiness Church	02940.023821	623 Best Street	Eligible
Memorial Baptist Church Individually Eligible and Contributing to the Humboldt Parkway Historic District (East)	02940.033423	772 Humboldt Parkway North	Eligible
Humboldt Parkway Baptist Church Individually Eligible and Contributing to the Humboldt Parkway Historic District (East)	02940.033427	790 Humboldt Parkway. North	Eligible
Fellowship World Church Individually Eligible and Contributing to the Humboldt Parkway Historic District (East)	02940.033430	878 Humboldt Parkway North	Eligible
Hobert Siblings House Peoples-Stokes House	02940.033431	58 Linden Park	Eligible

Vacant parcel Former residence – damaged by fire	02940.016817	763 Humboldt Parkway	Demolished

4.6.2.1. Properties Outside the APE

The Development of Area of Potential Effects document, transmitted to the SHPO on May 11, 2023, concludes that certain project elements would have no potential to cause direct or indirect visual or audible effects since these Project elements would not alter the character of the existing setting. These types of improvements would occur in areas of previous disturbance within existing right-of-way and would not alter the size or configuration of the roadways in which they are to be placed or in which associated activities are to be conducted. Areas within which these activities would occur were not included in the APE. In a letter dated July 20, 2023, SHPO concurred with the APE.

There are several discrete locations outside the APE where minor fee acquisitions of portions of properties are needed to establish the right-of-way for the existing sidewalk within the transportation facility to accommodate sidewalk and ADA curb ramp work. These include easements along properties previously listed on the NRHP or determined eligible for the NRHP (USN 314 Northland Avenue (within Hamlin Park Historic District; USN 02940.023886 - Liberty National Bank Genesee Street Branch at 892 Genesee Street; and USNs 02940.006036/02940.03203 - St. Mary of Sorrows Roman Catholic Church and Complex), properties that have not been inventoried (1490,1538 and 1564 Fillmore Avenue and 917, 945 and 969 Genesee Street), or whose NRHP eligibility is undetermined (USNs 02940.020913 -1011 Genesee Street and 02940.031055 -1507 Fillmore Avenue).

4.6.3 Build Alternative Effects

The FHWA in coordination with the NYSDOT, and in consultation with the SHPO, has applied the Criteria of Adverse Effect (36 CFR 800.5(a)(1)) to identified historic properties within the APE, and is proposing that the Project would have No Adverse Effect on historic properties (see Appendix D10: Section 106 Finding Documentation). The assessment of effects is based upon evaluating effects associated with the Project that pertain to the National Register qualifying characteristics of the identified historic properties. For this Project, the assessment of potential effects included consideration of the proposed reconstruction of the Kensington Expressway to construct a 6-lane tunnel on a new vertical alignment between Dodge Street and Sidney Street; reconstruction of the Humboldt Parkway (northbound and southbound); removal of the East Ferry Street, East Utica Street, Northampton Street, and Dodge Street bridges over the Kensington Expressway (the newly constructed tunnel would reconnect these streets at-grade); replacement of the Best Street bridge over the Kensington Expressway with a new roundabout on the Best Street Bridge; and, creation of new tree-lined greenspace above the newly constructed tunnel.

In general, the tunnel construction would occur in the public, state-owned and Operational Maintenance right-of-way. Direct, physical effects to historic properties are minor in nature and related to constructing sidewalks with Americans with Disabilities Act (ADA) crosswalks at intersections, and temporary easements for replacing driveway aprons. The Project would not entail any direct, physical impacts or changes to the historic buildings in the APE. Table 4.6-1 shows the summary of changes to NRHP-Eligible and -Listed Historic Properties. Measures to mitigate potential construction-related effects, as discussed in Section 4.20, have been developed. Therefore, construction activities would not result in the alteration of the National Register qualifying characteristics of historic resources.

Table 4.6-2: Summary of Changes to NRHP-Eligible and -Listed Historic Properties		
Property Name	**Contributing Properties**	**Changes Associated with the Project**
Martin Luther King, Jr. Park Historic District (part of NRHP-listed Olmsted Parks and Parkways Thematic District)	Martin Luther King Jr. Park* **; Greenhouse; Martin Luther King Jr. Park Casino; Buffalo Museum of Science; Shelter House	Direct: No physical changes to the contributing buildings. In-kind replacement of pavement and sidewalk at the southwest entrance. Temporary easement of ROW along the western edge, the northwest corner, and the northeast corner, and the southern edge of the Martin Luther King Jr. Park/District. Design modifications have been incorporated into the Project to avoid permanent land acquisitions and easements at this location. Indirect: Minor change in setting due to intersection improvements and new roundabout. Although minor changes in the surrounding setting would occur, these changes would not result in the alteration of the National Register qualifying characteristics of this historic district or its contributing resources. **The Project would not result in adverse effects to the property.**
Hamlin Park Historic District	617, 621, 623, 633, 641, 645, 649, 653, 663, 669, 673, 677, 681, 691, 695, 699, 705, 709, 717, 723 and 725 Humboldt Parkway as well as 314 Northland Avenue***	Direct: No physical changes to the contributing buildings. Design modifications have been incorporated into the Project to avoid permanent land acquisitions and easements at this location. Small acquisition of property on one parcel to establish right-of-way for existing sidewalk. Indirect: Minor change in setting due to tunnel construction elements. Although minor changes in the surrounding setting would occur, these changes would not result in the alteration of the National Register qualifying characteristics of this historic district or its contributing resources. **The Project would not result in adverse effects to the District and Contributing properties.**

Table 4.6-2: Summary of Changes to NRHP-Eligible and -Listed Historic Properties		
Property Name	**Contributing Properties**	**Changes Associated with the Project**
Humboldt Parkway Historic District West	787, 791, 795, 803, 807, 811 815 (house plus Carriage house), 817, 821, 835, 839, 845, 849, 855, 859, 865*, 879*, (883)*, 885*(vacant lot), 889*, 893*, 901*, and 905** Humboldt Parkway	Direct: No physical changes to the contributing buildings. Temporary easement for water service replacement at a few properties. Indirect: Minor visual changes to the setting due to tunnel construction elements. Although minor changes in the surrounding setting would occur, these changes would not result in the alteration of the National Register qualifying characteristics of this historic district or its contributing resources. Temporary: Temporary changes during construction (noise, vibration, and driveway access) would not alter the National Register qualifying characteristics of this historic district or its contributing resources. **The Project would not result in adverse effects to the property.**
Humboldt Parkway Historic District East	772, 788, 796, 800, 804, 814, 818, 822, 826, 832, 834, 842, 850, 860, 866, 870, 874, 878, 890 (parking lot), 896, 900, 904, 908, 912, 916, 924, 928, 932, 936, 942, Humboldt Parkway	Direct: No physical changes to the contributing buildings. Design modifications have been incorporated into the Project to avoid permanent land acquisitions and easements at this location. Indirect: Minor change in setting due to tunnel construction elements. Although minor changes in the surrounding setting would occur, these changes would not result in the alteration of the National Register qualifying characteristics of this historic district or its contributing resources. Direct/Indirect: Temporary changes during construction (noise, vibration, and driveway access). **The Project would not result in adverse effects to the property.**
Faith Missionary Baptist Church (historic name: Temple Beth David)	N/A	Direct: No physical changes to the building. Indirect: Minor change in setting due to tunnel construction elements. Direct/Indirect: Temporary changes during construction (noise, vibration, and driveway access). **The Project would not result in adverse effects to the property.**

Table 4.6-2: Summary of Changes to NRHP-Eligible and -Listed Historic Properties		
Property Name	**Contributing Properties**	**Changes Associated with the Project**
Pilgrim English Evangelical Church/Young Tabernacle Holiness Church	N/A	Direct: No physical changes to the contributing buildings. Indirect: Minor change in setting due to roundabout at Best Street. Although minor changes in the surrounding setting would occur, these changes would not result in the alteration of the National Register qualifying characteristics of this historic district or its contributing resources. Direct/Indirect: Temporary changes during construction (noise and vibration) **The Project would not result in adverse effects to the property.**
Memorial Baptist Church (also a contributor to Humboldt Parkway Historic District East)	N/A	Direct: No physical changes to the building. Indirect: Minor change in setting due to tunnel construction elements. Although minor changes in the surrounding setting would occur, these changes would not result in the alteration of the National Register qualifying characteristics of this historic district or its contributing resources. Direct/Indirect: Temporary changes during construction (noise and vibration). **The Project would not result in adverse effects to the property.**
Humboldt Parkway Baptist Church	N/A	Direct: No physical changes to the building. Indirect: Minor change in setting due to tunnel construction elements. Direct/Indirect: Temporary changes during construction (noise and vibration). **The Project would not result in adverse effects to the property.**
FellowshipWorld Church (also a contributor to Humboldt Parkway Historic District East)	N/A	Direct: No physical changes to the building. Indirect: Minor change in setting due to tunnel construction elements. Direct/Indirect: Temporary changes during construction (noise, vibration, and driveway access. **The Project would not result in adverse effects to the property.**
Hobert Siblings/Peoples-Stokes House	N/A	Direct: No physical changes to the house or to the property. Indirect: No potential for indirect effects. **The Project would not result in effects to the property.**

Table 4.6-2: Summary of Changes to NRHP-Eligible and -Listed Historic Properties		
Property Name	**Contributing Properties**	**Changes Associated with the Project**
938 Genesee Street ***	930 vacant lot part of NRE church complex (02940.032030)	Direct: No physical changes to the church. Minor acquisition to establish existing sidewalk into ROW. **The Project would result in no effects to the property**.
892 Genesee Street ***	N/A	Direct: No physical changes to the building. Minor acquisition to establish existing sidewalk into ROW. **The Project would result in no effects to the property**.
*Indicates temporary easements for water service replacement, construction activities, and/or landscaping **Indicates temporary easements for support of excavation tie back walls *** indicates FEE acquisition to establish right-of-way for existing sidewalks within the existing transportation facility to accommodate sidewalk/curb ramp work		

4.6.4 Section 106 of NHPA Consultation

In consultation with the SHPO, the Project Sponsors identified potential Consulting Parties and invited them to participate in Section 106 consultation. Outreach to identify Section 106 consulting parties began in November 2022 with letters and public meetings. Local governments, local organizations, and individuals with a demonstrated interest in the Project and historic resources in the Study Area were invited to apply to be Section 106 consulting parties. Individuals and organizations that responded in writing to NYSDOT and FHWA requesting Consulting Party status. FHWA and NYSDOT approved ten of those with a demonstrated interest, and they are considered Consulting Parties. A summary of outreach efforts can be found in Appendix B of the Finding Documentation (Appendix D10). NYSDOT and the FHWA initiated consultation with the SHPO in November 2022.

4.6.4.1 Tribal Nations

The Seneca Nation of Indians, the Tonawanda Seneca Nation, the Seneca Cayuga Tribe of Oklahoma, and the Tuscarora Nation Onondaga have a consultation role in accordance with 36 CFR §800.2(c)(ii), having previously identified a geographical area of interest for Section 106 consultation that includes the Project location. The FHWA formally initiated government-to-government consultation with the Tribal Nations for the Project by letter dated November 9, 2022. The Seneca Nation of Indians is the only Tribal Nation that has responded and participated to date. On February 27, 2023, a virtual Section 106 meeting for the Tribal Nations was held. The purpose of the meeting was to provide Tribal Nations participating in Section 106 consultation for this Project with Project information and an opportunity to provide input regarding the Project location and potential to affect properties of religious and cultural significance. No comments were made.

The FHWA provided the Seneca Nation of Indians, the Tonawanda Seneca Nation, the Seneca Cayuga Tribe of Oklahoma, and the Tuscarora Nation Onondaga with the Cultural Resources Screening report and the Cultural Resources Screening Addendum for Archaeological Sensitivity report. The FHWA requested information and input from the Tribal Nations regarding the Project and the recommendation for no further archaeological investigations, as determined in the Cultural Resources Screening Addendum for Archaeological Sensitivity report. No comments were submitted.

4.6.4.2 Other Consulting Parties

Outreach to identify Section 106 Consulting Parties began in 2022 with letters and information at public meetings. Owners of properties that are NRHP listed, eligible or potentially eligible within the Study Area, regional and local historic preservation organizations, and other stakeholders were invited to apply for Consulting Party status. Copies of *A Citizen's Guide to Section 106 Review*, published by the Advisory Council on Historic Preservation (ACHP), applications for Consulting Party status, and other information about the Section 106 process were made available at the public meetings and on the Project website.

The FHWA and the NYSDOT coordinated to identify, approve, and notify applicants of their status as Section 106 Consulting Parties. The following organizations requested Consulting Party status and were approved by the FHWA:

- Buffalo Museum of Science
- Buffalo Olmsted Parks Conservancy
- Fillmore Forward
- Hamlin Park Community & Taxpayers Association: Sandra McClary Howard
- Hamlin Park Community & Taxpayers Association: Shirley Harris
- Hamlin Park Historian
- Preservation Buffalo Niagara
- Resource Council WNY
- Florence Johnson
- Alan Oberst

NYSDOT, in coordination with the FHWA, held a virtual meeting with Section 106 Consulting Parties on February 28, 2023. The purpose of this meeting was to initiate Section 106 consultation by providing an overview of the Project and the Section 106 process. At the meeting NYSDOT shared the preliminary APE with the Consulting Parties and requested input on the APE. During the meeting, Consulting Parties made comments related to the following:

- Suggestions for NYSDOT's consideration of surrounding cultural landscapes and analysis of the broader neighborhood effects.
- The preliminary APE boundary and the limited scope of direct and indirect effects
- The historic systemic damage to the surrounding neighborhoods during the construction of the initial Kensington Expressway in the 1960s

The NYSDOT has considered the comments received from the Consulting Parties.

On August 21, 2023 a Consulting Parties package, including the Kensington Expressway Section 106 Consulting Parties February 28, 2023 Meeting presentation, the Kensington Expressway Section 106 Consulting Parties February 28, 2023 Meeting summary, the Kensington Expressway Consulting Parties contact list, the Architectural Reconnaissance Survey, and the Finding Documentation was distributed to Consulting Party members. A second Consulting Parties meeting will be held September 1, 2023 and the Consulting Parties will have an opportunity for review and comment on the preliminary Finding Documentation for effects on historic properties. Comments received on the draft Finding Documentation will be considered as part of Section 106 consultation for the Project.

4.6.5 Section 4(f) of the Department of Transportation Act and Historic Properties

4.6.5.1 Introduction

Section 4(f) of the Department of Transportation Act of 1966 (49 United States Code [USC] Section 303 and 23 USC Section 138; U.S. Department of Transportation [USDOT] Act) applies to the use of publicly or privately owned historic sites determined eligible for or listed on the National Register of Historic Places (NRHP); and publicly owned parks, recreation areas, and wildlife and waterfowl refuges (collectively, Section 4(f) properties). The requirements of Section 4(f) apply to FHWA and other agencies of USDOT.

Based on the application of Section 4(f) requirements listed under 23 CFR 774.11(e) the following summarizes Section 4(f) regulatory framework as well as defines impacts to Section 4(f) historic sites within the Project Area of Potential Effects. As discussed below, the Project is anticipated to result in a de minimis impact on several historic sites where minor acquisitions will occur to establish the right-of-way along the existing transportation corridor. FHWA will make its Section 4(f) determination upon completion of the Section 106 process and prior to issuing a NEPA determination. The Section 4(f) determination will be documented in the NEPA decision document.

4.6.5.2 Regulatory Framework

Section 4(f) of the USDOT Act stipulates that FHWA and other USDOT operating administrations may not approve the use of Section 4(f) properties unless they have determined that the following conditions apply:

- There is no feasible and prudent alternative that would avoid the use of the Section 4(f) property; and
- The Project includes all possible planning to minimize harm to that property resulting from such use (23 Code of Federal Regulations [CFR] Section 774.3(a)); or
- The use of the Section 4(f) property, including any measures(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) would have a *de minimis* impact, as defined in 23 CFR Section 774.17, on the property.

Pursuant to 23 CFR Section 774.17, a project uses a Section 4(f) property when:

- Land from the Section 4(f) property is permanently incorporated into a transportation facility;
- There is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose, as determined by the criteria in 23 CFR Section 774.13(d) (e.g., when all or part of the Section 4(f) property is required for a project's construction-related activities); or
- There is a "constructive" use of a Section 4(f) property, as determined by the criteria defined in 23 CFR Section 774.15(a).

A *de minimis* impact (per 23 CFR 774.17) involves the use of Section 4(f) property that is generally minor in nature. A *de minimis* impact is one that—after considering avoidance, minimization, mitigation, and enhancement measures that are committed to by the applicant—results in no adverse effect to a historic site and no adverse effect on historic properties and will not adversely affect the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f). As set forth in the Section 4(f) regulations (23 CFR Part 774), once FHWA determines that a transportation use of Section 4(f) property results in a de minimis impact, an analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete.

4.6.5.3 Section 4(f) Findings

There are very minor acquisitions from several properties to establish the right-of-way along the existing transportation corridor to accommodate proposed work to construct ADA curb ramps on the existing sidewalk. These properties include historic sites at 314 Northland Avenue, 938 Genesee Street, 892 Genesee Street, and 930 Genesee Street. These minor acquisitions will also occur at several properties that have not been evaluated for the NRHP and so are not identified as Section 4(f) resources, including 945 Genesee Street, 969 Genesee Street, 1011 Genesee Street, 1490 Fillmore, 1507 Fillmore, and 1538 Fillmore. However, because the existing sidewalk is part of the existing transportation corridor and there would be no impact to the buildings or the setting, this change would not adversely affect the attributes that qualify these known or potential historic sites for protection under Section 4(f). Therefore, the FHWA has made a *de minimis* impact determination. FHWA will make its Section 4(f) determination upon completion of the Section 106 process and prior to issuing a NEPA determination. The Section 4(f) determination will be documented in the NEPA decision document.

As defined in the Section 4(f) regulations, FHWA may make a finding of *de minimis* impact on a historic site when the following have occurred:

1. FHWA has considered the views of any consulting parties participating in the Section 106 consultation process, as established by the National Historic Preservation Act and its implementing regulation (36 CFR Part 800).
2. The Section 106 process results in a determination of no adverse effect with the written concurrence of the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) if that agency is participating in the Section 106 consultation.
3. The SHPO, and the ACHP if participating in the Section 106 consultation, are informed of FHWA's intent to make a *de minimis* impact finding based on their written concurrence in the Section 106 determination of no adverse effect.

As discussed in Sections 4.6.3 and 4.6.4, through the Section 106 process and in consideration of consultation with the SHPO and consulting parties, the FHWA has proposed the undertaking would result in No Adverse Effect on historic properties. On September 5, 2023, the SHPO concurred with the draft Finding Documentation, including FHWA's intent to make a *de minimis* impact determination.

Temporary construction effects have been considered in Section 4.20, Construction Effects. Temporary easements are needed during construction, as described below. These temporary occupancies meet each of the necessary conditions under 23 CFR 774.13(d) for temporary occupancy to not be considered a "use" for the purpose of Section 4(f).

Table 4.6-3 Summary of 4(f) Resources and Potential Uses

Property Name (and contributing resources)	Section 106 Assessment	Section 4(f)
Martin Luther King, Jr. Park Historic District (Martin Luther King Jr. Park* **; Greenhouse; Martin Luther King Jr. Park Casino; Buffalo Museum of Science; Shelter House)	no adverse effects	Temporary occupancy Exception under 23 CFR 774.13(d) -no use
Hamlin Park Historic District 617, 621, 623, 633, 641, 645, 649, 653, 663, 669, 673, 677, 681, 691, 695, 699, 705, 709, 717, 723, and 725 Humboldt Parkway as well as 314 Northland Avenue***	no adverse effects	*De minimis*

Table 4.6-3 Summary of 4(f) Resources and Potential Uses		
Property Name (and contributing resources)	**Section 106 Assessment**	**Section 4(f)**
Humboldt Parkway Historic District West 787, 791, 795, 803, 807, 811 815 (house plus separate carriage house), 817, 821, 835, 839, 845, 849, 855, 859, 865*, 879**, (883)*, 885* (vacant lot), 889*, 893*, 901*, and 905* Humboldt Parkway	no adverse effects	Temporary occupancy Exception under 23 CFR 774.13(d) - no use
Humboldt Parkway Historic District East 772, 788, 796, 800, 804, 814, 818, 822, 826, 832, 834, 842, 850, 860, 866, 870, 874, 878, 890 (parking lot), 896, 900, 904, 908, 912, 916, 924, 928, 932, 936, and 942 Humboldt Pkwy.	no adverse effects	No use
Faith Missionary Baptist Church (historic name: Temple Beth David)	no adverse effect	No use
Pilgrim English Evangelical Church/ Young Tabernacle Holiness Church	no adverse effect	No use
Memorial Baptist Church (also a contributor to Humboldt Parkway Historic District East)	no adverse effect	No use
Humboldt Parkway Baptist Church	no adverse effect	No use
Fellowship World Church (also a contributor to Humboldt Parkway Historic District East)	no adverse effect	No use
Hobert Siblings Peoples-Stokes House	no effect	No use
938 Genesee Street ***	no effect	*De minimis*
892 Genesee Street ***	no effect	*De minimis*
930 Genesee Street ***	no effect	*De minimis*
*Indicates temporary easements for water service replacement, construction activities, and/or landscaping **indicates temporary easements for support of excavation tie back walls *** indicates FEE acquisition to establish right-of-way for existing sidewalks within the existing transportation facility to accommodate sidewalk/curb ramp work		

Martin Luther King, Jr. Park and Historic District

Martin Luther King, Jr. Park is both a public park and a historic district listed on the NRHP; therefore, it qualifies for protection under Section 4(f) as both a park resource and as a historic site.

No permanent incorporation of land from MLK Jr. Park would be required for the Project. However, temporary easements would be required to construct the Project. Temporary easements, totaling 0.58-acre, would be required for the installation of temporary support of excavation tiebacks (metal cables underground in rock having no surface impact on park function) in two discrete locations. The duration of the construction work is anticipated to last for up to one month and the support of excavation tiebacks would remain in place permanently (underground). Access to this location would be restricted for approximately half of the anticipated construction window (approximately 3 to 4 years) for the Project.

A temporary easement would also be required for landscaping improvements in the northwest corner of the park, in the vicinity of Northampton Street and West Parade Avenue (0.18-acre). This isolated area is separated from the majority of the park by the Kensington Expressway and has no recreational facilities. The landscaping improvements would temporarily limit access to this portion of the park for approximately one month; however, the remainder of the park would remain open, accessible and available for use throughout the construction period.

A temporary occupancy (but not an easement) would be required at the entrance to the park near Best Street, Herman Street and West Parade Avenue, where the existing roadway and sidewalk would be reconstructed to conform to the new roundabout proposed at this intersection. The reconstruction of the entrance roadway and sidewalk work would occur within the existing pavement area. This entrance may be temporarily closed during construction for up to two weeks. Nearby entrances would be available to access the park so that this temporary closure would not adversely affect park users.

Finally, temporary easements would be required for the reconstruction of curb ramps at other park entrances along Best Street and Fillmore Avenue. Specifically, this work would occur at the intersections of Best Street and Sweeney Street (0.01-acre), Best Street and Fillmore Avenue (0.03-acre), and Fillmore Avenue and North Parade Avenue (0.01-acre). Work at each of these locations would last for up to two weeks and would be staggered so as not to occur concurrently or at the same time as the work at the southwest park entrance. As a result, park access would not be adversely affected.

The temporary easements within MLK, Jr. Park would accommodate short-term construction activities associated with the Project. Consistent with the criteria set forth in 23 CFR Part 774.13(d), the temporary occupancy of the MLK, Jr. Park would not constitute a use of this Section 4(f) property for the following reasons:

1. **Duration must be temporary, i.e., less than the time needed for construction of the Project, and there should be no change in ownership of the land**: In each location, the total amount of time that the park is temporarily occupied would be less than the overall construction period for the Project, and there would be no change in the ownership of the land.

2. **Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal:** The Project would involve only minor construction activities within the park, including reconstruction of the MLK, Jr. Park entrance, sidewalk/curb ramp improvements, and landscaping. The construction activities would not impede access to recreational facilities. The underground tiebacks would have no effect on the surface use of the park. The temporary effects of landscaping installation and entrance roadway improvements at Best Street would have very limited effect in terms of both duration and area of the park affected.

3. **There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis:** The Project would not result in permanent adverse physical impacts or interfere with the protected activities, features, or attributes of MLK, Jr. Park. The locations of the temporary occupancy at MLK, Jr. Park would be away from the main recreational features of the park, totaling approximately 1.5% of the overall acreage.

4. **The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project:** The land being temporarily occupied would be returned to its current uses, in the same or improved condition, upon the completion of construction.

5. **There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions:** Coordination with the SHPO and the City of Buffalo, as officials with jurisdiction, has occurred, including documented agreement regarding the above conditions (See Appendices D8 and D10).

Temporary Easements for Water Service Replacement – Humboldt Parkway Historic District West - 865, 883, 889, 893, 901, and 905 Humboldt Parkway

The Humboldt Parkway Historic District West and its contributing resources have been determined eligible for listing on the NRHP; therefore, they qualify for protection under Section 4(f) as historic sites. The FHWA has proposed that the Project would not result in adverse effects on the Humboldt Parkway Historic District West (Section 4.6.3). Temporary easements are needed during construction for water service replacement. This temporary occupancy within the contributing resources of the historic district meets each of the necessary conditions under 23 CFR 774.13(d) for temporary occupancy to not be considered a “use” for the purposes of Section 4(f):

1. **Duration must be temporary, i.e., less than the time needed for construction of the Project, and there should be no change in ownership of the land**: The duration of the temporary occupancy would be shorter than the overall construction period for the Project, which is likely 3 weeks for the water service replacement. Construction of the Project is anticipated to be 3 years.

2. **Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal:** The work is limited to replacing existing water service. After the work in this area is concluded, the area would be restored to its former condition.

3. **There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis:** No permanent adverse physical impacts are anticipated, nor will there be interference with the protected activities, features, or attributes that qualify these properties Section 4f resources, on either a temporary or permanent basis.

4. **The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project:** The land being utilized would be fully restored.

5. **There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions:** Coordination with the SHPO, as the official with jurisdiction, has occurred, including documented agreement regarding the above conditions (See Appendix D10).

Figure 4.6-2

MLK Jr. Park Temporary Easements

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

Source: Bing Maps, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022.

4.7 Parks and Recreational Areas

4.7.1 Study Area and Methodology

The Study Area for the assessment of effects to parks, open spaces, and recreational resources is the general Study Area for the Project. Parks and recreational resources within the Study Area were identified based on GIS mapping data from the City of Buffalo Division of Parks and Recreation.[106]

This assessment describes the Build Alternative's potential effects on parks, open space, and recreational resources, including physical changes resulting from the construction of the Build Alternative and other activities that may alter the use of an open space or facility to the extent that it no longer serves the same user population, limits public access to an open space, and/or results in conditions (such as increased noise, air pollutant emissions, odor, or shadows) that will temporarily or permanently affect the use of a public open space or facility.

The regulatory context considered for parks and recreational areas includes:

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 United States Code [USC] Section 303 and 23 USC Section 138): applies to publicly owned parks, recreation areas, wildlife and waterfowl refuges, and publicly or privately owned historic properties determined eligible for or listed in the National Register of Historic Places (NRHP). Section 4(f) is discussed in Section 4.7.4.

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965 (54 USC 2003 et seq.): state assistance program that is a federal matching grant program administered by the National Park Service (NPS) to provide grants to states and, through states, to local governments and tribes to plan, acquire, or develop land for public outdoor recreation. Parkland resources subject to Section 6(f) were identified through coordination with the City of Buffalo Division of Parks and Recreation (see correspondence in Appendix D8).

Section 1010 of the Urban Park and Recreation Recovery (UPRR) Act of 1978 (16 U.S.C. § 2501–2514): protects recreation sites that received funding under the Urban Park and Recreation Recovery (UPRR) Program. This program provides federal funds to economically distressed urban communities for the rehabilitation and renovation of recreational facilities. Pursuant to Section 1010 of the Act, no property improved or developed with UPRR assistance can be converted to a use other than public recreation uses without the approval of the NPS.

4.7.2 Existing Conditions

A total of eight parks and recreational resources are located within the Study Area (see Table 4.7-1 and Figure 4.7-1). These resources are owned by the City of Buffalo and include the large City of Buffalo park, Martin Luther King (MLK), Jr. Park, Scajaquada Creek Trail, two neighborhood parks, two landscaped medians and one landscaped circle. All of these resources are considered Section 4(f) resources. One resource received LWCF funding (Horace "Billy" Johnson Park) and is therefore considered a Section 6(f) resource. None of the parks and recreational resources have received Urban Park and Recreation Recovery Act funding.[107]

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[106] https://gis.buffalony.gov/portal/apps/webappviewer/index.html?id=594c95209a6744038c9eff70594a820d

[107] Based on correspondence with the City of Buffalo and NPS data on UPRR funded projects (no longer available online): NPS 2006 "Urban Park & Recreation Recovery: Funded Cities"; and NPS 2003 "Urban Park and Recreation Recovery: New York"

Table 4.7-1: Parks and Recreational Resources in the Study Area			
Number on Figure 4.7-1	**Park Name**	**Existing Uses**	**Acres**
1	Horace “Billy” Johnson Park	Fitness area and playground	1.86
2	Donaldson Circle	Landscaped traffic circle	0.06
3	Scajaquada Creek Trail	Multi-use trail	3.79
4	Box Avenue Park	Basketball courts and playground	0.42
5	Martin Luther King, Jr. Park	Basketball and tennis courts, multi-use trails, picnic shelters, playgrounds, pool, splash pad/ice rink, natural area, concession stand, and garden	56.13
6	Norway Park Medians	Median	0.50
7	Linden Park Median	Median	0.17
8	Viola Park Median	Median	0.26

Source: Bing Maps, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022.

Figure 4.7-1

Existing Parks and Recreational Facilities

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NYS Route 33, Kensington Expressway Project
Erie County, NY

Within the Study Area, the existing Scajaquada Creek Trail (also known as the Scajaquada Creek Path) runs on an off-road alignment between Donaldson Road to the west and a termination to the east at Fillmore Avenue approximately 250 feet north of Sidney Street. Within the Study Area, the trail is 0.6-miles in length and encompasses 3.79 acres of adjacent greenspace. As noted in Section 2.4.2.2 of this DDR/EA, the trail crosses over NYS Route 33 on the existing pedestrian bridge that is approximately 300 feet south of Northland Avenue. Horace “Billy” Johnson Park and Donaldson Circle are both resources located along the route of the Scajaquada Creek Trail.

Box Avenue Park is a small neighborhood park with basketball courts and a playground located east of Fillmore Avenue along the edge of the Study Area.

MLK, Jr. Park currently includes two basketball courts, four tennis courts, two playgrounds, a pool, a splashpad/ice rink, concession stand, 2.8 miles of multi-use trails, eight picnic shelters, four parking areas and two rest rooms. The park also has some small natural areas and a designated garden on 56.13 overall acres. It was originally known as “The Parade” and then “Humboldt Park” from 1896 until 1977. Its original design was by Frederick Law Olmsted and Calvert Vaux in 1868-1870. The Buffalo Museum of Science and Charles R. Drew Science Magnet School are located in the northwest portion of the park. The park was listed on the NRHP in 1982.

Historically, the Kensington Expressway was constructed through the northwest side of MLK, Jr. Park, isolating a small corner on the west side of the expressway south of Northampton Street. The isolated northwest corner of the park has no recreational facilities and is bordered by sidewalk. The existing portion of the Kensington Expressway that was formerly part of MLK, Jr. Park is located on operational right-of-way because the underlying land is owned by the City of Buffalo. There is currently a maintenance agreement between the City and the NYSDOT in which NYSDOT agrees to maintain the existing expressway within the operational right-of-way since NYS Route 33 is a New York State facility.

Three landscaped medians are located within the Study Area along Norway Park, Linden Park. and Viola Park. These landscaped medians are identified by the City of Buffalo Division of Parks and Recreation as parkland; however, there are no recreational facilities located within the grassy medians, so recreational use is passive.

4.7.3 Build Alternative Effects

4.7.3.1 Horace “Billy” Johnson Park

Local street rehabilitation work would occur on Northland Avenue in the vicinity of the Horace “Billy” Johnson Park (pavement rehabilitation, sidewalk replacement as needed, curb ramps, lighting, drainage improvements). These activities would not affect access to the park or impact the features or use of this park, and there would be no temporary or permanent effects, and no Section 6(f) conversion.

4.7.3.2 Donaldson Circle

Local street rehabilitation work would occur on Donaldson Road in the vicinity of the Donaldson Circle (pavement rehabilitation, sidewalk replacement as needed, curb ramps, lighting, drainage improvements). These activities would not impact this traffic circle greenspace, and there would be no temporary or permanent effects.

4.7.3.3 Scajaquada Creek Trail

The Build Alternative would not modify the existing pedestrian bridge carrying the trail over NYS Route 33. The final design of sidewalk or curb ramp improvements in the vicinity of the roadways along the trail route (Fillmore Avenue, Rickert Avenue, Lark Street, Donaldson Road and Northland Avenue) would be coordinated with the City of Buffalo for consistency with improvements to the trail currently under study.[108] The Build Alternative would not have a permanent effect on the Scajaquada Creek Trail. Access to the trail would be maintained throughout construction and the short duration of work necessary for sidewalks/curb ramps at the trail crossings of local streets would not cause temporary effects to the resource. The sidewalks and curb ramps are located with the existing street right-of-way and no temporary easements from the trail property are required.

4.7.3.4 Box Avenue Park

Box Avenue Park is located outside the area of local street rehabilitation. The Project would have no temporary or permanent effect on this resource.

4.7.3.5 Martin Luther King, Jr. Park

There would be no permanent incorporation of land from MLK Jr. Park required for the Build Alternative. The permanent infrastructure for the tunnel would fit within the existing Kensington Expressway operational right-of-way boundaries. However, temporary easements would be required as described in detail in Section 4.6.5 and shown in Figure 4.6-2.

4.7.3.6 Norway Park Medians

The Build Alternative would include street rehabilitation work on Norway Park; however, this work would be conducted within the limits of existing street bed and would not modify the existing landscaped medians. The Build Alternative would have no temporary or permanent effect on the Norway Park Medians.

4.7.3.7 Linden Park Median

The Build Alternative would include street rehabilitation work on Linden Park; however, this work would be conducted within the limits of existing street bed and would not modify the existing landscaped median. The southern end of the Linden Park roadway would be dead-ended as part of the Project, however this area of physical changes to the roadway is located south of the Linden Park Median (near Best Street and the interchange ramps to NYS Route 33). There would be no temporary or permanent effect to the planted Linden Park Median.

4.7.3.8 Viola Park Median

The Build Alternative would include street rehabilitation work on Viola Park; however, this work would be conducted within the limits of existing street bed and would not modify the existing landscaped medians. The Build Alternative would have no temporary or permanent effect on the Viola Park Median.

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[108] https://gobikebuffalo.org/project/eastsidetrailconnections/

4.7.4 Section 4(f)

Section 4(f) prohibits the FHWA from approving the use of any Section 4(f) resource for a transportation project, except where there is no feasible and prudent alternative that would avoid the use of the Section 4(f) resource, and when the project includes all possible planning to minimize harm to that property. A "use" of a Section 4(f) resource, as defined in 23 CFR 774.17, occurs when:

- Land is permanently incorporated into a transportation facility;
- There is a temporary occupancy of land that is adverse and does not meet the Section 4(f) conditions under 23 CFR 774.13(d); or
- There is a constructive use of a Section 4(f) resource.

The following conditions under 23 CFR 774.13(d) must be met for temporary occupancy to not be considered a "use" for the purposes of Section 4(f):

1. Duration must be temporary, i.e., less than the time needed for construction of the Project, and there should be no change in ownership of the land.
2. Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal.
3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis.
4. The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project.
5. There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

Under Section 774.15, a constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the property are substantially diminished.

Section 4(f) Evaluation

As stated above, all of the eight identified parks and recreational resources are considered Section 4(f) resources. The Build Alternative would not result in a direct use of Section 4(f) park resources. As discussed in Section 4.7.3, there would be no permanent incorporation of land from any resource outside the existing operational right-of-way.

The Build Alternative is expected to require temporary easements/occupancy of MLK, Jr. Park and during construction as discussed in Section 4.6.5. MLK Jr. Park is both a public park and a historic district listed on the NRHP; therefore, it qualifies for protection under Section 4(f) as both a park resource and as a historic site. The temporary easements within MLK, Jr. Park would meet the necessary conditions under 23 CFR 774.13(d) for temporary occupancy to not be considered a "use" for the purposes of Section 4(f). The City of Buffalo provided concurrence with FHWA's determination that the temporary occupancy of the park meets the conditions of 23 CFR 774.13(d) in correspondence dated September 1, 2023.

The visual and aesthetic effects of the Build Alternative with respect to parkland are beneficial (additional greenspace and trees adjacent to MLK Jr. Park for example). There will be no constructive use of any park or recreational resources resulting from the Build Alternative.

4.8 Visual Resources

4.8.1 Study Area and Methodology

This section describes the existing visual environment and evaluates potential effects of the Build Alternative as compared to the No Build Alternative on the visual resources. A Visual Impact Assessment (VIA; Appendix D2) was prepared using the guidelines and methodologies contained in FHWA's "Guidelines for the Visual Impact Assessment of Highway Projects" (2015) and applicable portions of the NYSDEC's "Assessing and Mitigating Visual and Aesthetic Impacts" (2019).

The VIA process can be characterized into four primary phases:

- Establishment – Define the visual character of the Project, documenting the regulatory context and defining the Area of Visual Effect (AVE).
- Inventory – Define the character of the affected environment (natural, cultural and Project), discuss affected populations, and define the existing or preferred condition of visual quality.
- Analysis – Evaluate impacts on visual quality and assess changes to the degree of visual quality as being beneficial, adverse, or neutral to the relationship viewers have with their visual environment.
- Mitigation – Define measures to avoid and minimize adverse visual impacts associated with a transportation project and identify opportunities for enhancing visual quality.

The area of Project visibility is referred to as the Area of Visual Effect (AVE). The AVE is determined by the physical constraints of the environment and the physiological limits of human sight. An initial AVE was defined as a one-half-mile offset from the Project limits due to the surrounding landscape and vegetation, a large amount of built urban structures, and limits of human sight. The one-half-mile is conservative and accounts for those areas where the Kensington Expressway is closer to the surrounding grade level—south of Best Street and north of Sidney Street. Development and refinement of the AVE considered information on topography, vegetation, the built environment and visually sensitive resource mapping, as a guide to estimate the extents of where the proposed Project impacts will be visible (see Figure 4.8-1). The size of the AVE considered the location of sensitive viewer groups. Some of the factors used to develop the AVE, such as building heights and topography, and static verses dynamic viewsheds, are discussed in the VIA (Appendix D2).

As described in Section 4.4.3 of the FHWA's Guidelines, the geographic unit on which impacts on visual character, viewers, and visual quality are assessed is called a landscape unit. Landscape units are defined by viewsheds and land uses. Landscape units are geographic areas that generally correspond to the areas with a distinct visual character, defined by factors such as topography, density, scale, architectural character, land use, vegetation, and use by different viewer groups. A landscape unit is an area with visual boundaries that have relatively homogeneous visual characteristics.

To provide a framework for comparing the visual effects of the Project, the AVE was organized into three distinct landscape units. These landscape units are described below and in greater detail in the VIA (see Appendix D2 and Figure 4.8-2).

Landscape Unit #1: Urban Neighborhood – Residential

The Urban Neighborhood – Residential Landscape Unit is the largest Landscape Unit in the AVE and includes residential land uses along the transportation corridor. Residential properties vary from single-family detached and semi-detached to low (3-story and under) multi-unit apartment buildings.

Landscape Unit #2: Urban Open Space - Institutional

The Urban Open Space / Institutional Landscape Unit includes open space and institutional uses interspersed with residential areas located in the southern portion of the AVE.

Landscape Unit #3: Transportation Corridor

The Transportation Corridor Landscape Unit includes transportation land uses throughout the length of the AVE. This landscape unit includes the Kensington Expressway as well as bridges overhead and on/off ramps.

In accordance with the FHWA Guidelines, viewer groups are broken down into two categories: travelers (those who have views from the Kensington Expressway or Humboldt Parkway) and neighbors (those who have views of the Kensington Expressway or Humboldt Parkway). Categories are then subdivided into the mode of a traveler or the specific land use of a neighbor to further define the different preferences represented within the AVE. Five types of travelers were identified within the AVE: motoring, pedestrian and bicycling, touring, shipping, and commuting travelers.

As defined in the FHWA's Guidelines, the term "neighbor" does not always mean that a person is adjacent to the roadway. Rather, it refers to people who are not traveling on the roadway but may see it from their geographic location in the AVE. Neighbors were further subdivided into residential (those who live adjacent to the Project area), institutional (including school employees and students), commercial and recreational.

Nineteen (19) viewpoints were chosen to represent the change in visual quality that would result from the Build Alternative (see Section 6.3 of Appendix D2) and Figure 4.8-3). Selection of viewpoint locations considered the affected population's sensitivity to the proposed visual changes of the Build Alternative as well as locations with the potential for the most contrast between the Existing Conditions/No Build Alternative and Build Alternative. Visual quality was assessed to evaluate the effects of the Build Alternative.

Photographs were taken at each viewpoint in order to establish existing conditions. Photo simulations of proposed Build Alternative preliminary design features were then developed using visual modeling computer software. This process created visual representations of the Build Alternative at key viewpoints that could be compared to the No Build Alternative.

To evaluate the level of visual effects under the Build Alternative, the changes to the environment (measured by the compatibility of the impact and change in visual quality) and to viewers (measured by sensitivity) were analyzed. The compatibility of the project environment is defined as compatible or incompatible by analyzing any proposed contrasts to the existing scale, form, materials, and visual character. The sensitivity of viewers is defined by analyzing the viewer's exposure (proximity, extent, and duration) and awareness (attention, focus, and protection) of any changes in the visual character of visual resources. Visual quality is the interaction between the visible landscape and the viewers.

4.8.2 Existing Conditions

The Kensington Expressway is a multi-lane state highway which generally consists of three travel lanes in each direction in a depressed section with concrete retaining walls on either side within the AVE. The Humboldt Parkway (northbound and southbound) runs parallel to the expressway on each side, connecting to the expressway entrance and exit ramps. The majority of the corridor consists of sections with concrete retaining walls, though there are a smaller number of areas where the transportation corridor is lined by vegetation. These areas serve as a visual transition from the concrete edge to the residential/greenery areas to the east and west of the transportation corridor.

In the vicinity of the Project, there are three public parks (MLK Jr. Park, Horace "Billy" Johnson Park, and Box Avenue Park), three grassy medians, a landscaped traffic circle, and the Scajaquada Creek Trail. From the residential and institutional buildings lining the higher elevated Humboldt Parkway, the transportation corridor is visually characterized by open sky viewsheds that are partly obstructed (during foliage seasons) by mature trees on the outer shoulders of Humboldt Parkway and in some areas, the corridor embankments. This is largely because the Kensington Expressway is depressed relative to the adjoining topography. Between Dodge Street and Riley Street, the transportation corridor is somewhat wider while the Kensington Expressway stays essentially the same width, allowing more area for growth of trees and landscaping. The trees and plantings along the transportation corridor including Humboldt Parkway are a visual asset to the adjacent neighborhoods. Viewsheds are primarily from the streets and the residential neighbors that line the transportation corridor.

There are several visually sensitive resources identified in the AVE, including historic properties and parkland. Properties determined eligible for listing in the National Register of Historic Places include The Buffalo Museum of Science, Martin Luther King Jr. Park, Memorial Baptist Church, Tried Stone Baptist Church, and the Faith Assembly Baptist Church, among other individually eligible properties and districts (see DDR/EA Section 4.6). The AVE also contains the Scajaquada Creek Trail, the Linden Park median, and the Norway Park medians. These resources were considered when selecting and analyzing views, and the proximity of these resources was considered when assessing visual impacts. Further information regarding these sites is provided in Section 4.6 and Section 4.7 of the DDR/EA.

There are no wildlife or waterfowl refuges in the vicinity of the transportation corridor. The historic sites in the vicinity of the transportation corridor are discussed in Section 4.6. Parks and recreational areas along the transportation corridor are discussed in Section 4.7. There are no Section 6(f) properties In the vicinity of the transportation corridor (see Section 4.7). See Section 4 in Appendix D2 for additional information about the existing visual character.

4.8.3 Affected Populations

The inventory phase of the assessment of visual resources defines the existing status of the affected environment and affected population and the existing or preferred condition of visual quality. The inventory phase helps generate the baseline conditions from which visual impacts can be assessed.

The population affected by the proposed Project is referred to as viewers. Viewers are defined by their relationship to the proposed Project and their visual preferences. Visual quality is a result of the interactive experience between viewers and their environment. Visual quality is determined by a viewer's preference for natural harmony, cultural order, and project coherence. A detailed description of these terms of visual preference is included in the VIA (Appendix D2). The greater the degree to which the visual resources of the AVE/landscape unit meet the viewer's preferred concept of harmony, cultural order, and project coherence, the higher the value the viewer places on those visual resources.

4.8.4 Potential Effects

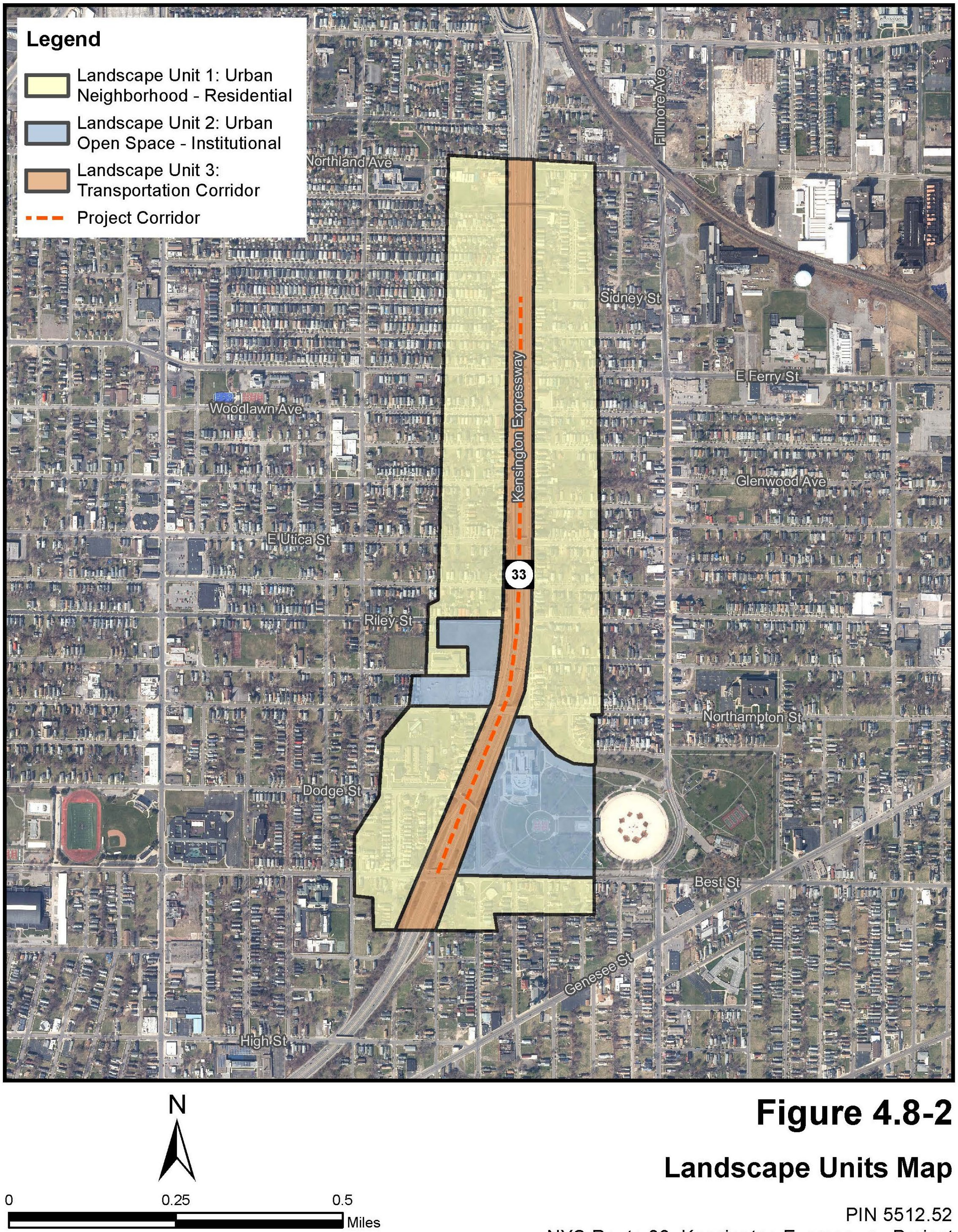
To evaluate the level of visual impact under the Build Alternative, the changes to the environment (measured by the compatibility of the impact and change in visual quality) and to viewers (measured by sensitivity) were analyzed. The compatibility of the Project environment is defined as compatible or incompatible by analyzing any proposed contrasts to the existing scale, form, materials, and visual character. The sensitivity of viewers is defined by analyzing the viewer's exposure (proximity, extent, and duration) and awareness (attention, focus, and protection) of any changes in the visual character of visual resources. Visual quality is the interaction between the visible landscape and the viewers. The visual resources, the existing visual character, quality of the affected environment, and associated viewer response provided the framework for assessing the changes in visual quality that would occur as a result of the Project.

Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, World Street Map.

Figure 4.8-1

Area of Visual Effect Map

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

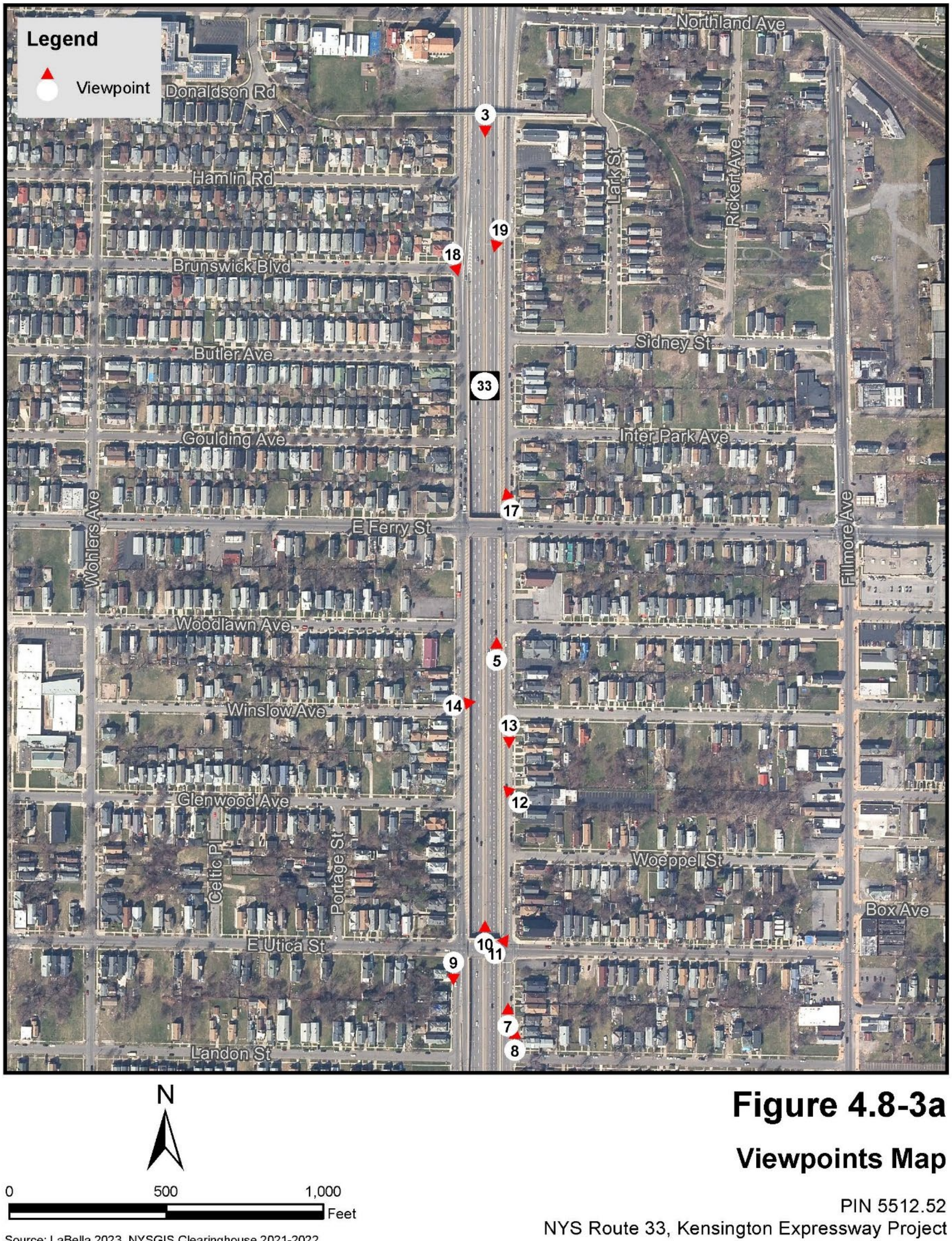


Source: Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, World Street Map.

Figure 4.8-2

Landscape Units Map

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY



Source: LaBella 2023, NYSGIS Clearinghouse 2021-2022.

Figure 4.8-3a

Viewpoints Map

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

Source: LaBella 2023, NYSGIS Clearinghouse 2021-2022.

Figure 4.8-3b

Viewpoints Map

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

No Build Alternative

The existing visual quality represents the anticipated conditions under the No Build Alternative. The existing visual quality from the 19 selected viewpoints evaluated in the VIA is generally considered as low to moderate, with the majority being low visual quality. Approximately 74 percent (14 viewpoints) of these selected viewpoints were evaluated as having low visual quality. This is primarily due to the prominence of the existing Kensington Expressway infrastructure and associated features. Approximately 16 percent (three viewpoints) of the selected viewpoints possess low-moderate visual quality and approximately 11 percent (two viewpoints) possess moderate visual quality.

Under the No Build Alternative, existing visual character and quality within the Project's visual environment would not be affected.

Build Alternative

The Build Alternative would cover the depressed section of the Kensington Expressway with a grassy treed median between Dodge Street and Sidney Street and would reconstruct Humboldt Parkway on both sides of the expressway within the Project limits. It would also involve the replacement of the Best Street bridge and installation of roundabouts at the Best Street interchange and at the Best Street/West Parade Avenue/Herman Street intersection. In the photo simulations of the proposed Build Alternative (Appendix D2, Section 6.3.1), the simulations from approximately 68 percent (13 viewpoints) of the viewpoints were rated as having a beneficial impact to visual quality, while 16 percent (3 viewpoints) were rated as having a minor beneficial impact and 16 percent (3 viewpoints) were rated as having a neutral impact.

Under the Build Alternative, 16 of the 19 viewpoint evaluations were determined to have a beneficial impact to visual quality, while three were determined to have a neutral impact to visual quality.

4.8.5 Visual Impact Mitigation

Due to the positive effects to visual resources from the Project, no visual mitigation is recommended or necessary.

4.8.6 Summary

As described above, elements of the Build Alternative will have primarily beneficial visual effects on the existing visual quality of the AVE.

Existing visual resources associated with views of the depressed section of the Kensington Expressway and related elements (retaining walls, guard rails, etc.) at 14 of the 19 viewpoints (viewpoints 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17 and 18) would experience beneficial effects to visual quality under the Build Alternative due to covering the existing expressway with a new treed greenspace and reconstruction of Humboldt Parkway. Minor beneficial effects to visual quality under the Build Alternative at three viewpoints (viewpoints 3, 15 and 16) are anticipated due to the south tunnel portal at Dodge Street and covering of the Kensington Expressway and the proposed Best Street Bridge replacement and roundabouts associated with the Best Street / Kensington Expressway interchange and the intersection of Best Street, West Parade Avenue, Herman Street, and West Parade Circle. Neutral effects to visual quality under the Build Alternative at three viewpoints (viewpoints 1, 5 and 19) are anticipated due to the proposed south tunnel portal at Dodge Street and the proposed north tunnel portal at Sidney Street, and the covering of the Kensington Expressway.

Due to the positive effects to visual resources resulting from the Build Alternative, no adverse effects are anticipated.

4.9 Air Quality

The Clean Air Act (CAA) (42 U.S.C. 7401 et seq.) is a comprehensive Federal law that regulates all sources of air emissions. The CAA established a framework to improve air quality to protect public health and the environment. It authorizes the U.S. Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) for the following “criteria” pollutants: ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter with an aerodynamic diameter smaller than or equal to 10 micrometers (PM10), particulate matter with an aerodynamic diameter smaller than or equal to 2.5 micrometers (PM2.5), and lead (Pb). Table 4.9-1 shows the current NAAQS. Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, or micrograms per cubic meter of air (µg/m3).

The NAAQS are divided into two types of criteria: primary standards and secondary standards. Primary standards are intended to protect the public health with an adequate margin of safety, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are intended to protect the public welfare from any known or anticipated adverse effect of a pollutant (e.g., soiling, vegetation damage, material corrosion). The State of New York has adopted these standards (both primary and secondary) as the state air quality standards.

The New York State Department of Environmental Conservation (NYSDEC) is responsible for statewide monitoring of criteria pollutant concentrations. Areas with measured air pollutant concentrations lower than the NAAQS are designated “attainment” for that standard. Areas that exceed the NAAQS are designated “nonattainment.” Areas that previously did not meet one of the NAAQS but have since attained the standard are subject to a State Implementation Plan (SIP) for air quality “maintenance.”

Table 4.9-1: National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 µg/m^3	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m^3	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years

Table 4.9-1: National Ambient Air Quality Standards				
Pollutant	Primary/ Secondary	Averaging Time	Level	Form
	secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year
Source: https://www.epa.gov/criteria-air-pollutants/naaqs-table				

The primary transportation-related pollutants with NAAQS are PM2.5, PM10, CO, NO2, and O3. The CAA also specifies a list of regulated hazardous air pollutants and establishes a regulatory framework to reduce those emissions and reduce public exposure to hazardous air pollutants. The most prevalent hazardous air pollutants emitted from motor vehicles are referred to as Mobile Source Air Toxics (MSAT). Greenhouse gases (GHG), including carbon dioxide (CO2), are also regulated pollutants under the CAA and are discussed in Section 4.10 of this DDR/EA (Energy and Climate Change).

4.9.1 Transportation Conformity

Transportation conformity refers to a requirement of the Clean Air Act to ensure that highway and transit projects requiring federal funding or approval in nonattainment and maintenance areas are consistent with the air quality goals established by a state air quality implementation plan (SIP)Transportation conformity does not apply in attainment areas.

Erie County is currently in attainment with all current NAAQS.[109]

Erie County was part of a nonattainment area for the 1997 8-hour ozone NAAQS. The 1997 NAAQS were subsequently replaced by the 2008 and 2015 NAAQS, and Erie County was designated attainment for both standards. The USEPA revoked the 1997 ozone NAAQS in 2015. A 2018 court decision required transportation conformity determinations in areas designated nonattainment or maintenance for the 1997 NAAQS but attainment for the 2008 and 2015 NAAQS (referred to as orphan areas), such as Erie County. USEPA issued guidance entitled Transportation Conformity Guidance for the South Coast II Court Decision to clarify the transportation conformity requirements for these orphan areas.110 No regional emissions analysis is required for the revoked 1997 NAAQS and hot-spot analysis requirements are not applicable to ozone. Based on the USEPA South Coast II guidance, the following project-level conformity requirements are applicable:

- Consultation requirements (40 CFR 93.112);
- There is a currently conforming transportation plan and Transportation Improvement Program (TIP) in place (40 CFR 93.114); and
- The project is from that transportation plan and TIP (40 CFR 93.115).

The Greater Buffalo Niagara Regional Transportation Council (GBNRTC) has prepared a transportation conformity determination for the GBNRTC 2023-2027 TIP and 2050 Long-Range Transportation Plan (LRTP).111 The NYS Route 33 Kensington Expressway Project is included in the conforming 2023-2027 TIP and LRTP, which was adopted by the GBNRTC on September 7, 2022. Final FHWA/FTA approval of the GBNRTC transportation conformity determination occurred on October 4, 2022. The requirement for

[109] https://www3.epa.gov/airquality/greenbook/anayo_ny.html
[110] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100VQME.pdf
[111] https://www.gbnrtc.org/tip-2023-2027-air-quality-conformity

interagency and public consultation has been met through the GBNTRC TIP and Plan conformity process, this includes an in place TIP which this project is part of. Therefore, all transportation conformity requirements for the Project are met.

4.9.2 Study Area and Methodology

The air quality analyses for the Project were performed based on USEPA and FHWA guidance, using required USEPA models (which incorporate the best available science), and were developed in consultation with the Project's interagency air quality group (consisting of FHWA, NYSDOT, USEPA and NYSDEC). Key guidance documents used in the development of the air quality analysis methodologies included:

- NYSDOT's *Transportation Environmental Manual (TEM) Air Quality Section*.[112]
- USEPA's *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas*[113]
- USEPA's *Using MOVES3 in Project-Level Carbon Monoxide Analyses*.[114]
- FHWA's *Updated Interim Guidance on Mobile Source Air Toxic (MSAT) Analysis in NEPA Documents* [115]

The air quality analyses for the Project consisted of the following:

- Localized Concentrations or Microscale Analysis
- Mesoscale or Regional Emissions Burden Analysis
- Mobile Source Air Toxics Analysis

The Study Areas for the air quality analyses varied based on the specific purpose of the analysis being undertaken and are described in the subsections below. Additional details on the methodology used for these analyses can be found in the Air Quality Technical Report in Appendix D7. Construction air quality effects are discussed in Section 4.20 of this DDR/EA.

4.9.2.1 Localized Concentrations (Microscale) Analysis Methodology

The localized concentrations or microscale air quality analysis for the Project involved estimating short-term and annual average concentrations of pollutants that would be experienced at specific receptor locations, comparison of these concentrations to the NAAQS, and comparison of the No Build and Build Alternatives. The pollutants for the microscale analysis were PM2.5, PM10 and CO. NO2 was not included in the microscale analysis, refer to Appendix D7 for a detailed discussion of the consideration of NO2. Ozone is a regional pollutant issue not suitable for microscale analysis, effects on ozone precursor pollutant emissions (VOC and NOx) were considered as part of the mesoscale analysis.

The analysis followed six steps as outlined below.

1. Determine air quality study area and analysis years

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[112]https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm/repository/epmair01.pdf
[113] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013C6A.pdf
[114]https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013NP8.pdf
[115]https://www.fhwa.dot.gov/environMent/air_quality/air_toxics/policy_and_guidance/msat//fhwa_nepa_msat_memorandum_2023.pdf

For the microscale analysis, the Study Area includes an area within 1,000 feet of the Kensington Expressway corridor from High Street to Northland Avenue.

The analysis years are 2027 (the anticipated Project completion year or estimated time of completion [ETC]) and 2047 (design year 20 years after Project completion). NYSDOT's procedures call for analyzing the year with the highest emissions in a microscale analysis. It was expected that year 2027 would be the year with the highest emissions because mobile source emissions are decreasing due to fleet turnover and more efficient vehicles being introduced at a faster rate than regional traffic growth. For this Project, analyzing both years 2027 and 2047 provided additional information on expected air quality trends over time to inform other analyses in this DDR/EA (including environmental justice).

2. Emissions modeling (MOVES)

The second step of the analysis involved estimating the quantity of pollutant emissions generated by traffic on the roadways within the Study Area. The microscale analysis used the latest version of USEPA's Motor Vehicle Emission Simulator at the time the air quality analysis was initiated (MOVES3.1, released November 2022). MOVES was used to estimate PM2.5, PM10 and CO emission rates for different vehicle types, speeds, roadway types and roadway grades. The MOVES analysis used NYSDEC-developed inputs specific to Erie County for required data on fuel formulation, meteorology, and the age distribution of the vehicle fleet, among other inputs. MOVES also takes into account national and state emissions standards and vehicle inspection/maintenance programs.

Road dust emissions were included in the PM10 analysis based on USEPA's AP-42.[116] Road dust is not a substantial contributor to ambient PM2.5 concentrations in New York State and therefore was not included in the PM2.5 analysis consistent with USEPA's PM hotspot guidance.

CO emissions are sensitive to temperature; therefore, the CO emissions modeling was performed for the January AM peak hour. This represents the condition under which CO emission rates would be the highest.

3. Air quality modeling to predict concentrations from Project (AERMOD)

The third step of the analysis involved using meteorological data and the emissions information from step 2 to predict pollutant concentrations at specific receptor locations. The American Meteorological Society/EPA Regulatory Model (AERMOD) is the required model for this type of analysis and the latest available version at the time the analysis was initiated was used (Version 22112).

The roadways in the Study Area were represented as volume sources in AERMOD. For the Build Alternative, the emissions occurring in the tunnel would be pushed out the exit portals by the movement of vehicles (portal jet). Based on a review of relevant literature and approaches used on other tunnel air quality analyses, each portal jet was characterized as 300 meters long with emissions highest in the vicinity of the portal and decreasing with increasing distance.[117]

Two categories of receptors were developed: 1) No Build/Build Alternative receptors (representing human use areas that currently exist and would continue to be present in the future under either alternative), and 2) Build Alternative-only receptors (representing new human use areas created by the Build Alternative, [i.e., the greenspace on the tunnel deck]).

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[116] https://www.epa.gov/sites/default/files/2020-10/documents/13.2.1_paved_roads.pdf
[117] Ginzburg, H and Schattanek, G. Analytical approach to estimate pollutant concentrations from a tunnel portal exit plume (1997)

The No Build/Build Alternative receptors were used for comparing the No Build and Build concentrations, as well as comparing the Build concentrations to the NAAQS. Build Alternative-only receptors were compared to the NAAQS (a No Build to Build comparison is not possible for these receptors because the greenspace they represent only exists in the Build Alternative). Receptor density was the highest closest to the Kensington Expressway/Humboldt Parkway transportation corridor and decreased with increasing distance from the transportation corridor. In total, 2,833 No Build/Build Alternative receptors were modeled, and 492 Build Alternative-only receptors were modeled (see Figures 4.9-1a and 4.9-1b), totaling 3,325 receptors.

Consistent with USEPA's PM hot-spot guidance, the AERMOD option for flat terrain was used. This is a conservative approach because terrain height differences could result in lower concentrations in some conditions where the expressway roadway is depressed relative to receptors. The effects of trees on air quality were not included in the AERMOD modeling analysis.

The analysis used five years of hourly surface and upper air meteorological data (2018-2022) from the Buffalo International Airport.

4. Add background concentrations to project concentrations

Background concentrations are used to represent the contribution of other emission sources in the region that contribute to the total concentration experienced at receptors. Based on review of the available monitoring locations, the data from the NYSDEC Buffalo monitor at the Thruway Authority Bridge Maintenance Facility Access Road were used to establish background concentrations. This is the closest monitoring location to the Study Area. Background concentration data for the three most recent complete years of monitoring were used (2020-2022). Background concentrations are as follows:

- Annual Average PM2.5: 6.8 (μg/m^3)
- 24-hr Average PM2.5 (98th percentile): 17.2 (μg/m^3)
- 24-hr PM10: 45 (μg/m^3)
- 8-hr CO: 0.9 ppm
- 1-hr CO: 1.2 ppm

The modeled concentration due to traffic in the Study Area (from AERMOD, as described under step 3) was added to the background concentrations to determine the total concentration at each receptor.

5. Compare total concentrations to NAAQS and compare Build to No Build

The highest total concentration under the Build Alternative was compared to the NAAQS to determine compliance with air quality standards. In addition, the No Build and Build results were compared to determine the incremental changes at receptors due to the Build Alternative.

6. Evaluate measures to mitigate effects

The last step of the analysis was to identify and evaluate measures to minimize the effects of the Build Alternative.

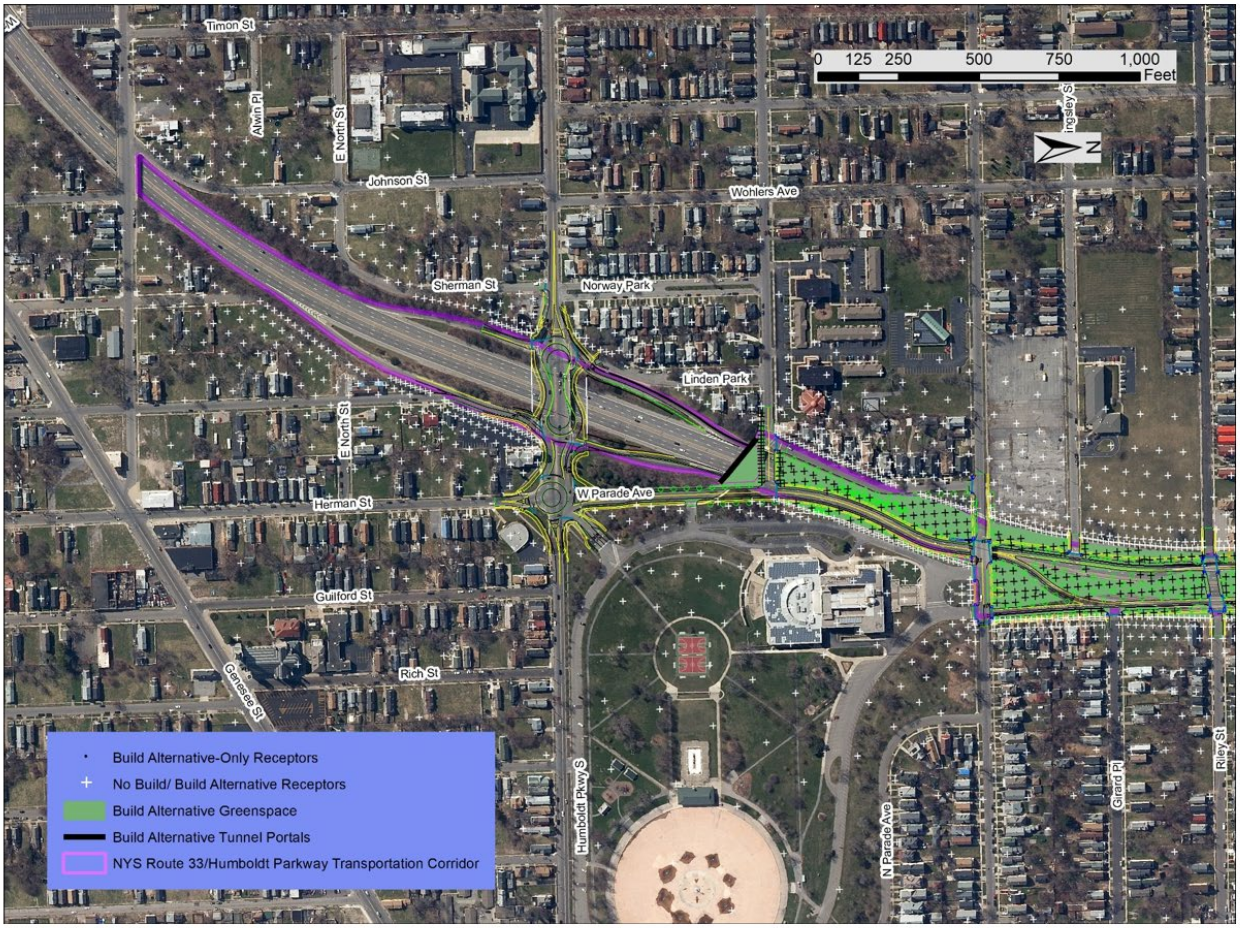

Figure 4.9-1a: Receptor Network 1 of 2

Figure 4.9-1b: Receptor Network 2 of 2

4.9.2.2 Regional Emissions Burden (Mesoscale) Analysis Methodology

For the mesoscale analysis of potential regional changes in emissions, the Study Area was the GBNRTC travel demand model area consisting of Erie and Niagara Counties.

The mesoscale analysis was conducted for years 2027 (ETC), 2037 (ETC+10 years), and 2047 (ETC+20 years). GBNRTC vehicle miles traveled (VMT) outputs were available for years 2019 and 2050 for both the No Build and Build Alternatives. The year 2045 VMT outputs were used to represent year 2047 and the years 2027 and 2037 region-wide VMT were interpolated from the two available years.

The mesoscale emissions analysis was performed using MOVES3 at the county-scale using Erie County specific vehicle, roadway and fuel characteristics. The VMT breakdown by vehicle type and breakdown by hour/ weekday or weekend/ month were consistent with the latest NYSDEC/ NYSDOT MOVES inputs for Erie County.

4.9.2.3 Mobile Source Air Toxics Analysis Methodology

Under the Clean Air Act, USEPA is required to regulate emissions of 188 air toxics that have the potential for serious health effects. USEPA has identified nine compounds with substantial contributions from mobile sources that are among the national and regional-scale health risk contributors and FHWA considers these pollutants the priority Mobile Source Air Toxics (MSATs): 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter.

Under FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*, the Project falls under Category 2: "Projects with Low Potential MSAT Effects" because it does not add new highway capacity, does not create facilities that would increase MSAT emissions, and involves annual average daily traffic (AADT) volumes less than 140,000 to 150,000. AADT on the Kensington Expressway through the defined transportation corridor is approximately 75,000. The FHWA guidance recommends that Category 2 projects be addressed with a qualitative discussion considering factors such as the effect of the Project on VMT, effects of fleet turnover, MSAT control regulations, and changes in source-receptor distances.

4.9.3 Existing Conditions

NYSDEC air quality monitoring data for 2020 through 2022 is summarized in Table 4.9-2. The data for all pollutants except ozone are from the NYSDEC Buffalo monitor at the Thruway Authority Bridge Maintenance Facility Access Road, which is also the closest monitoring site to the Project (approximately three miles to the southeast). The only location monitored for ozone in the Buffalo area is in Amherst; therefore, the Amherst monitor results for ozone are provided.

The air quality monitoring data show concentrations well below the applicable NAAQS for all pollutants except the 8-hr ozone standard, which was exceeded one day in both 2021 and 2022. However, the area is in attainment with the ozone standard because compliance is based on the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentrations being below 0.070 ppm. The average of the 4^{th} highest 8-hr ozone concentrations for 2020 through 2022 is 0.067 ppm, which is below the standard.

Table 4.9-2: Existing Air Quality Data (2020-2022)						
Pollutant (units)	**Averaging time period**	**Statistic**	**2020**	**2021**	**2022**	**NAAQS**
CO (ppm)	8-hr	Maximum	1.0	0.8	0.8	9
	1-hr	Maximum	1.4	1.1	1.1	35
NO2 (ppb)	1-hr	98th percentile	40	45	51	100
	Annual	Annual mean	7.6	8.2	9.2	53
Ozone (ppm)	8-hr	4th highest	0.066	0.068	0.066	0.07
		# Days> Std	0	1	1	
PM2.5 (μg/m³)	Annual	Annual mean	6.5	7.4	6.5	12
	24-hr	98th percentile	19	17	16	35
PM10 (μg/m³)	24-hr	Maximum	29	39	67	150
SO2 (ppb)	1-hr	99th percentile	16	13	3	75
Source: https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors All data from Buffalo monitor ID # 36-029-0005, except ozone, which is from Amherst monitor ID # 36-029-0002						

4.9.4 Build Alternative Effects

Overall, the microscale air quality analysis results for the Build Alternative compared to the No Build Alternative show slightly decreased concentrations along the tunnel cap and slightly increased concentrations near the tunnel portals. The concentrations under the Build Alternative would remain well below the NAAQS. Measures that would minimize the air quality effects at the portals have been included in the Build Alternative.

4.9.4.1 Microscale Analysis – PM2.5

Tables 4.9-3 and 4.9-4 provide the years 2027 and 2047 No Build PM2.5 concentration results, respectively. The results represent the receptor with the highest modeled concentration consistent with the statistical form of the standards. The predicted concentrations remain well below the NAAQS. The 2047 highest concentration decreases slightly compared to the 2027 highest concentration as a result of fleet turnover and emission standards regulations. Figures 4.9-2 and 4.9-3 shows the No Build and Build modeled concentration contour plot for the 24-hour PM2.5 standard in 2027 and 2047, respectively. Figures 4.9-4 and 4.9-5 shows the No Build and Build modeled concentration contour plot for the annual average PM2.5 standard in 2027 and 2047, respectively. The contours show a drop off in concentrations with increasing distance from the transportation corridor as well as the contribution of cross streets to the total concentrations. In the No Build Alternative, the highest concentration occurs at a receptor near the East Ferry Street intersection with Humboldt Parkway northbound.

Table 4.9-3: Year 2027 No Build Alternative PM2.5 Results (µg/m^3)				
	Modeled Concentration	Background	Total	NAAQS
Annual Average PM2.5	0.5	6.8	7.3	12
24-hr Average PM2.5	1.2	17.2	18.5	35

Table 4.9-4: Year 2047 No Build Alternative PM2.5 Results (µg/m^3)				
	Modeled Concentration	Background	Total	NAAQS
Annual Average PM2.5	0.4	6.8	7.2	12
24-hr Average PM2.5	0.9	17.2	18.2	35

Tables 4.9-5 and 4.9-6 provide the years 2027 and 2047 Build Alternative PM2.5 concentration results, respectively. The predicted concentrations remain well below the NAAQS. Figure 4.9-3 shows the pattern of the Build Alternative modeled annual average PM2.5 concentrations. Concentrations are lower along the proposed tunnel cap where receptor exposure would be reduced by the Build Alternative, and higher just north and south of the proposed tunnel portals where the density of emissions would slightly increase.

Table 4.9-5: Year 2027 Build Alternative PM2.5 Results (µg/m^3)				
	Modeled Concentration	Background	Total	NAAQS
Annual Average PM2.5	0.7	6.8	7.5	12
24-hr Average PM2.5	1.5	17.2	18.7	35

Table 4.9-6: Year 2047 Build Alternative PM2.5 Results (µg/m^3)				
	Modeled Concentration	Background	Total	NAAQS
Annual Average PM2.5	0.5	6.8	7.3	12
24-hr Average PM2.5	1.0	17.2	18.3	35

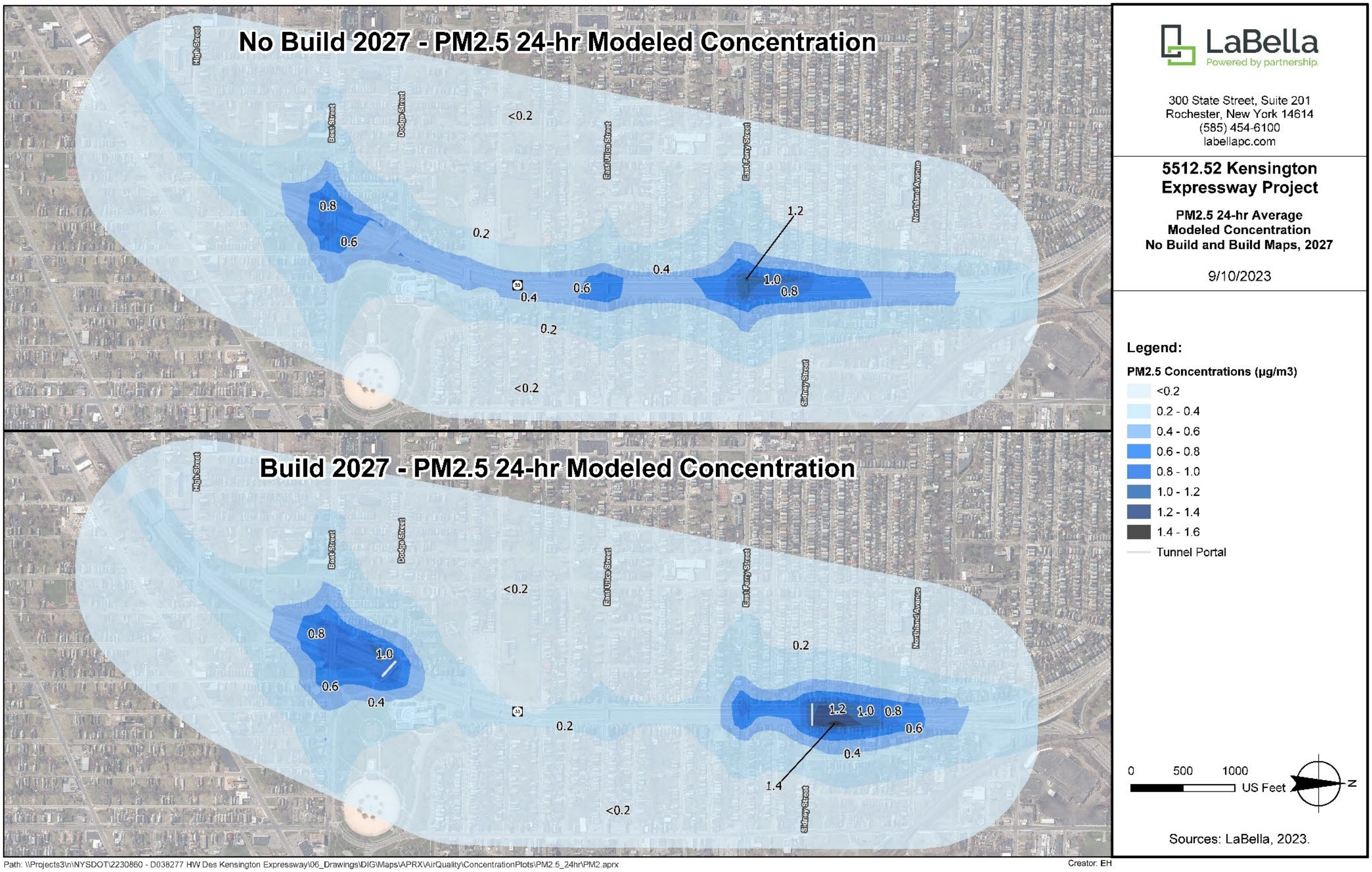

Figure 4.9-2: Modeled Year 2047 24-hr Average PM2.5 Concentrations

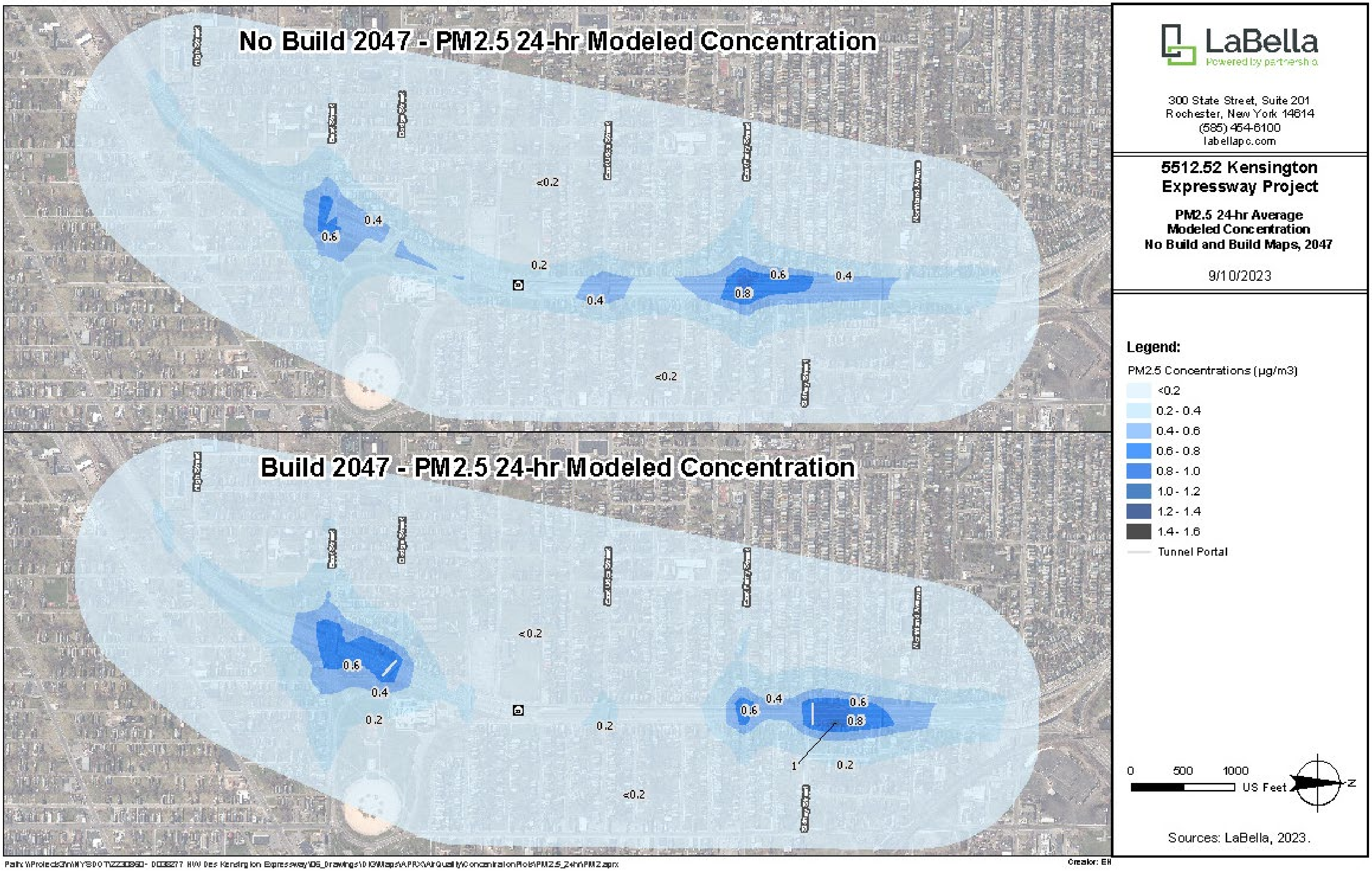

Figure 4.9-3: Modeled Year 2047 24-hr Average PM2.5 Concentrations

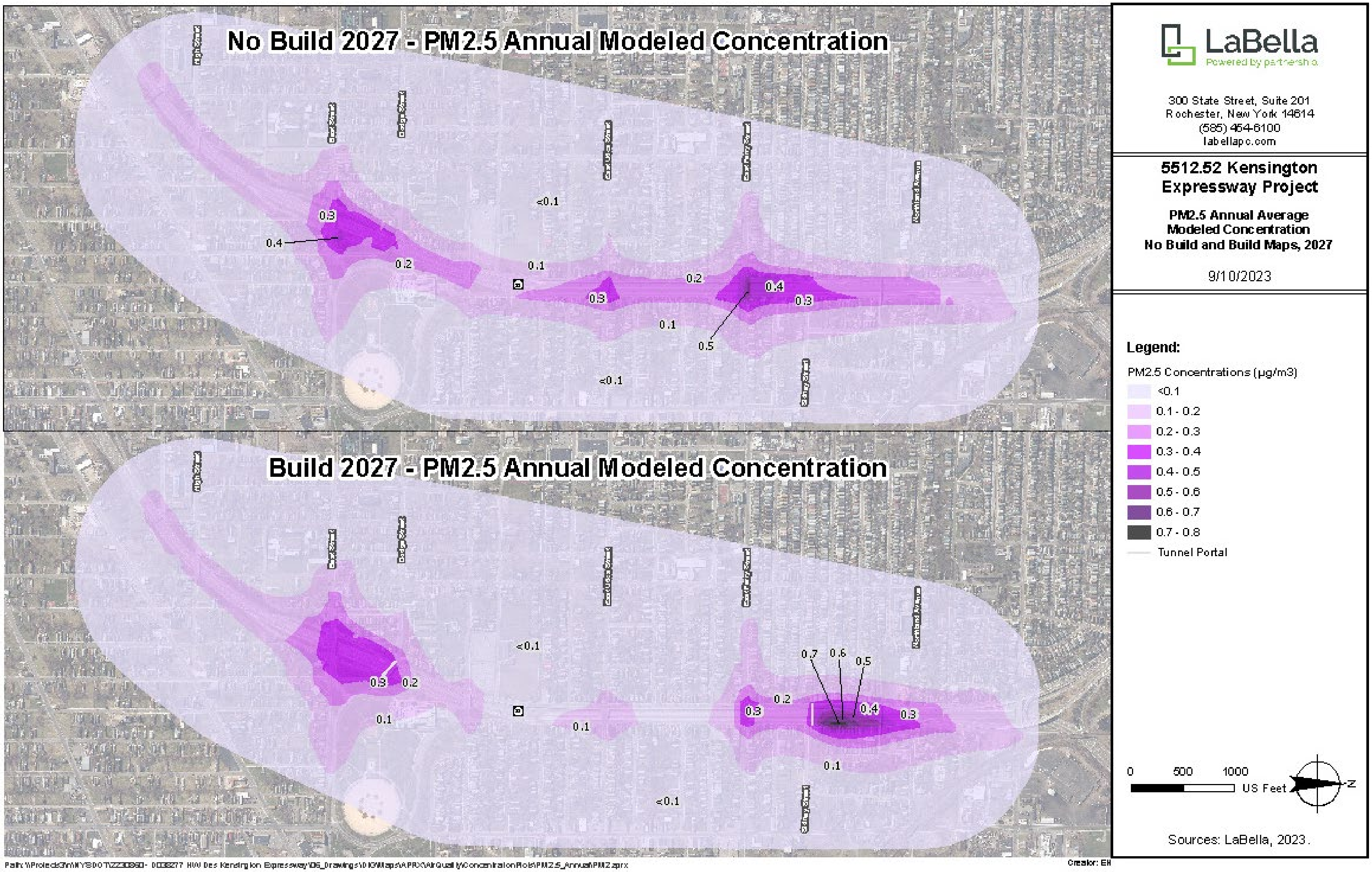

Figure 4.9-4: Modeled Year 2027 Annual Average PM2.5 Concentrations

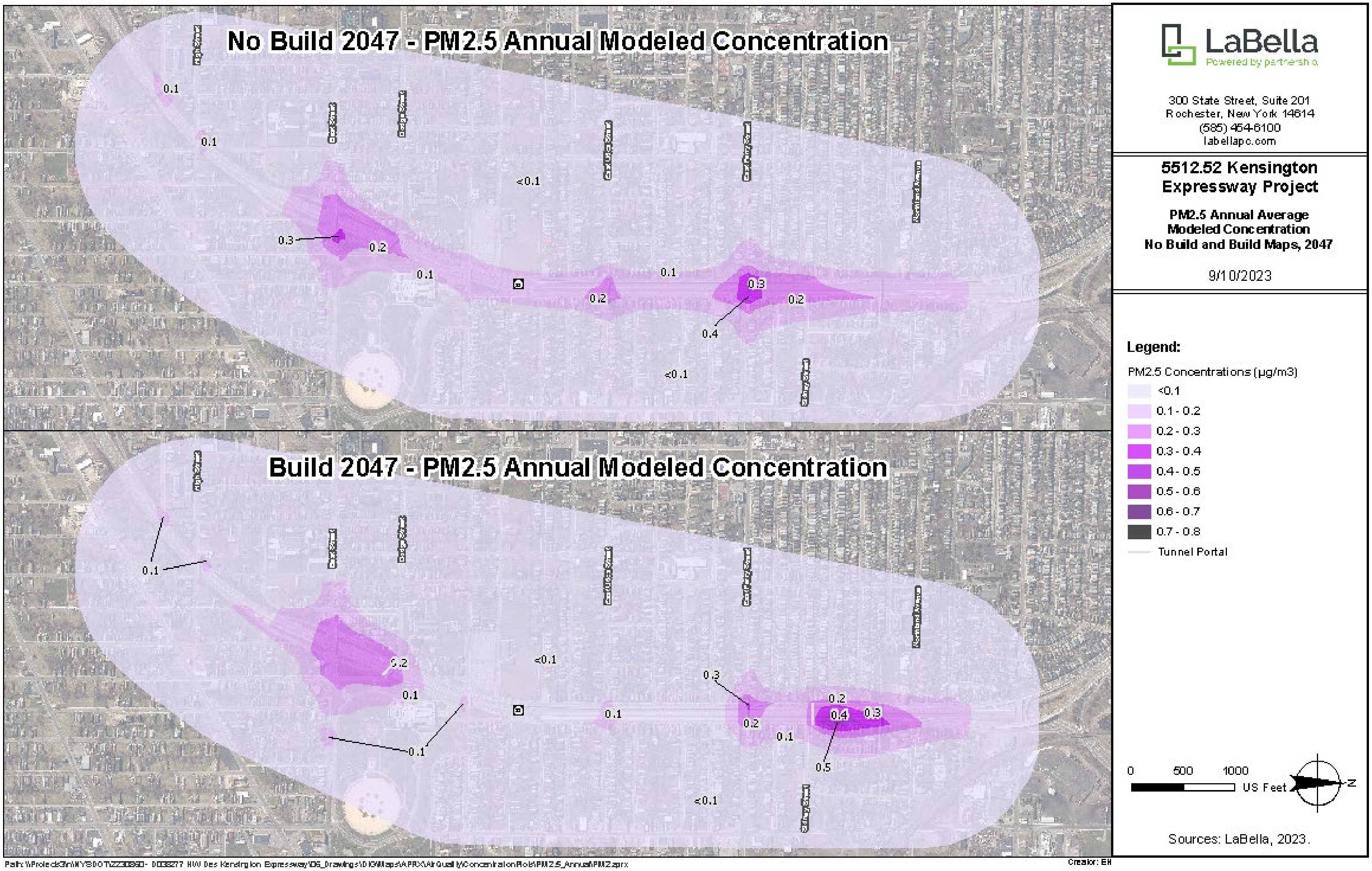

Figure 4.9-5: Modeled Year 2047 Annual Average PM2.5 Concentrations

The difference between the No Build Alternative concentration and the Build Alternative concentration was calculated for each individual receptor location and the results are summarized in Tables 4.9-7 (highest increases) and 4.9-8 (highest decreases). The highest increase at a receptor is 0.4 µg/m3 for the annual average PM2.5 standard, and 0.8 µg/m3 for the 24-hr average standard in 2027. The receptor with the highest No Build to Build increase for both the annual average and 24-hour average standards is located along Humboldt Parkway northbound, north of Sidney Street. The total concentration at this location would be less than 63% of the annual average NAAQS and less than 54% of the 24-hour average NAAQS in 2027. Concentrations would be slightly lower in year 2047 compared to year 2027. The specific receptor with the highest increase is located on the sidewalk. Concentrations at homes where people would be exposed for a longer period of time would be lower. Measures to minimize air quality effects in the tunnel portal area are discussed in Section 4.9.4.6.

Table 4.9-7: Receptor Level No Build to Build Change in Annual Average PM2.5 Concentrations Highest Increase, Years 2027 and 2047

	2027-Highest No Build to Build Increase (µg/m3)	2047-Highest No Build to Build Increase (µg/m3)	2027 Total Build (w/background)		2047 Total Build (w/background)		NAAQS (µg/m3)
			Concentration (µg/m3)	Percent of NAAQS	Concentration (µg/m3)	Percent of NAAQS	
Annual Ave. PM2.5	+0.4	+0.3	7.5	62.5%	7.3	60.8%	12 (100%)
24-hr PM2.5	+0.8	+0.6	18.7	53.4%	18.3	52.6%	35 (100%)

Table 4.9-8: Receptor Level No Build to Build Change in Annual Average PM2.5 Concentrations Highest Decrease, Years 2027 and 2047

	2027-Highest No Build to Build Decrease (µg/m3)	2047-Highest No Build to Build Decrease (µg/m3)	2027 Total Build (w/background)		2047 Total Build (w/background)		NAAQS (µg/m3)
			Concentration (µg/m3)	Percent of NAAQS	Concentration (µg/m3)	Percent of NAAQS	
Annual Ave. PM2.5	-0.2	-0.2	6.9	57.5%	6.9	57.5%	12 (100%)
24-hr PM2.5	-0.4	-0.3	17.6	50.3%	17.5	50.0%	35 (100%)

The largest No Build to Build Alternative decrease at a receptor is -0.2 µg/m3 for the annual average PM2.5 standard, and -0.4 µg/m3 for the 24-hr average standard in 2027. For 2027, the receptor with the largest No Build to Build decrease for the annual average PM2.5 standard is located along Humboldt Parkway southbound, just north of East Utica Street. The receptor with the largest No Build to Build decrease for the 24-hour average PM2.5 standard is located along Humboldt Parkway northbound, just south of East Utica Street. The area of the largest decreases is near the center of the tunnel cap. The total concentration at these locations would be less than 58% of the annual average NAAQS and equal to approximately 50% of the 24-hour average NAAQS in 2027. Concentrations would be slightly lower in year 2047 compared to year 2027.

For the receptor network as a whole, the average No Build to Build change in annual average PM2.5 concentrations is a decrease of 0.02 µg/m3 and 0.01 µg/m3 in 2027, and 2047, respectively. For 24-hour average PM2.5, the receptor network average change from No Build to Build is a decrease of 0.03 µg/m3 and 0.02 µg/m3 in 2027 and 2047, respectively.

For the Build Alternative only receptors on the tunnel cap/new greenspace, the highest modeled annual average PM2.5 concentration is 0.4 µg/m3 in years 2027 and 2047. The average annual modeled concentration for all the Build condition only receptors is 0.17 µg/m3 and 0.12 µg/m3 in years 2027 and 2047, respectively. When combined with background concentrations, these concentrations would be well below the NAAQS.

4.9.4.2 Localized Concentration Analysis - PM10

Tables 4.9-9 and 4.9-10 provide the PM10 concentration results for the No Build and Build Alternatives, respectively. The predicted concentrations remain well below the NAAQS in years 2027 and 2047. The pattern of concentrations is similar to the PM2.5 results discussed above. The highest concentration in the No Build condition is at the East Ferry Street intersection. The highest concentration in the Build condition is at a sidewalk receptor on Humboldt Parkway northbound, north of the Sidney Street exit portal.

The largest contributors to PM10 concentrations include road dust and particles released by vehicle brake wear and tire wear, which are not sensitive to cleaner emitting vehicles increasing in the fleet over time. As result, the 2047 concentrations do not change substantially compared to 2027. The 2027 exhaust emission rates are lower than in 2047, but this can be offset by the higher traffic volumes in 2047 increasing the road dust component of the emissions.

Table 4.9-9: Year 2027 and 2047 No Build Alternative PM10 Results (µg/m3)

	Modeled Concentration	Background	Total	NAAQS
2027 Highest 24-hour average	20	45	65	150
2047 Highest 24-hour Average	19	45	64	150

Table 4.9-10: Year 2027 and 2047 Build Alternative PM10 Results (µg/m3)

	Modeled Concentration	**Background**	**Total**	**NAAQS**
2027 Highest 24-hour average	21	45	66	150
2047 Highest 24-hour Average	22	45	67	150

Table 4.9-11 shows the highest increase and highest decrease in 24-hour PM10 concentrations between the No Build and Build Alternatives for the years 2027 and 2047. The highest predicted total concentration is 45% of the 24-hour PM10 NAAQS. The pattern of slight increases in concentrations occurring near the tunnel portals and slight decreases along the tunnel cap is similar to the PM2.5 results.

The highest decrease occurs on Humboldt Parkway southbound at the intersection with Landon Street, which is within the tunnel cap area. The specific receptor with the highest increase is located on the sidewalk on Humboldt Parkway northbound, north of the Sidney Street exit portal. Concentrations at homes where people would be exposed for longer periods of time would be lower. Measures to minimize air quality effects in the tunnel portal area (including dust control/ tunnel washing which is important to PM10) are discussed in Section 4.9.4.6.

Table 4.9-11: Receptor Level No Build to Build Change in 24-hr Average PM10 Concentrations Highest Increase/Decrease, years 2027 and 2047

Year	Highest No Build to Build Increase (µg/m3)	Highest No Build to Build Decrease (µg/m3)	Total Build Concentration at Receptor with Highest Increase (w/background)		Total Build Concentration at Receptor with Highest Decrease (w/background)		NAAQS (µg/m3)
			Concentration (µg/m3)	Percent of NAAQS	Concentration (µg/m3)	Percent of NAAQS	
2027	+9	-8	66	44%	52	35%	150(100%)
2047	+9	-8	67	45%	52	35%	150(100%)

4.9.4.3 Localized Concentration Analysis – CO

Tables 4.9-12 and 4.9-13 provide the No Build Alternative CO concentration results for years 2027 and 2047, respectively The highest 1-hour average concentration was modeled and the highest 8-hour average concentration estimated based on a 0.7 persistence factor.[118]The highest total concentrations are well below the NAAQS in 2027 and 2047, and concentrations decrease between 2027 and 2047. The highest No Build Alternative CO concentration occurs at receptors in the parking lot of the Buffalo Museum of Science, south of Northampton Street and adjacent to the Kensington Expressway eastbound. This is the location in the Study Area where receptors are closest to the Kensington Expressway (in other locations receptors are farther from the highway because of the buffer distance provided by Humboldt Parkway or by inaccessible areas around interchange ramps).

[118] EPA. 1992. Guideline for Modeling Carbon Monoxide from Roadway Intersections.

Table 4.9-12: Year 2027 No Build Alternative CO Results (ppm)				
	Modeled Concentration	Background	Total	NAAQS
1-hr average	0.8	1.2	2.0	35
8-hr average	0.6	0.9	1.5	9

Table 4.9-13: Year 2047 No Build Alternative CO Results (ppm)				
	Modeled Concentration	Background	Total	NAAQS
1-hr average	0.5	1.2	1.7	35
8-hr average	0.3	0.9	1.2	9

Tables 4.9-14 and 4.9-15 provide the years 2027 and 2047 Build Alternative CO concentration results, respectively. The predicted concentrations remain well below the NAAQS. The highest concentration under the Build Alternative occurs at a sidewalk receptor at the intersection of Dodge Street and West Parade Avenue (near the Dodge Street tunnel exit portal). The highest concentration likely occurs at this location because the CO screening analysis is based on the AM peak hour traffic analysis and AM traffic is heaviest in the westbound direction.

Table 4.9-14: Year 2027 Build Alternative CO Results (ppm)				
	Modeled Concentration	Background	Total	NAAQS
1-hr average	1.9	1.2	3.1	35
8-hr average	1.3	0.9	2.2	9

Table 4.9-15: Year 2047 Build Alternative CO Results (ppm)				
	Modeled Concentration	Background	Total	NAAQS
1-hr average	1.1	1.2	2.3	35
8-hr average	0.8	0.9	1.7	9

Table 4.9-16 shows the highest increase and highest decrease in CO concentrations between the No Build and Build Alternatives for years 2027 and 2047. The highest predicted total concentration is 9% of the 1-hour average CO NAAQS. The pattern of slight increases in concentrations occurring near the tunnel portals and slight decreases along the cap is similar to the PM2.5 results. The highest decrease occurs on Humboldt Parkway northbound north of East Utica Street, which is within the tunnel cap area. As noted above, the specific receptor with the highest increase is located on the sidewalk in the vicinity of the Dodge Street portal. Concentrations at homes where people would be exposed for longer periods of

time would be lower. Measures to minimize air quality effects in the tunnel portal area are discussed in Section 4.9.4.6.

Table 4.9-16: Receptor Level No Build to Build Change in 1-hour Average CO Concentrations Highest Increase/Decrease, years 2027 and 2047							
Year	Highest No Build to Build Increase (ppm)	Highest No Build to Build Decrease (ppm)	Total Build Concentration at Receptor with Highest Increase (w/background)		Total Build Concentration at Receptor with Highest Decrease (w/background)		NAAQS (ppm)
			Concentration (ppm)	Percent of NAAQS	Concentration (ppm)	Percent of NAAQS	
2027	+1.4	-0.5	3.1	9%	1.5	4%	35
2047	+0.8	-0.3	2.3	7%	1.4	4%	35

4.9.4.4 Mesoscale Emissions Analysis

Table 4.9-17 presents the regional emissions burdens of volatile organic compounds (VOC), nitrogen oxides (NO_x), CO, PM_{10} and $PM_{2.5}$ under the No Build and Build Alternatives. VOC and NO_X are quantified because they are precursor pollutants to the formation of O_3. As shown in Table 4.9-13, the Build Alternative would result in a negligible decrease in emissions in all three analysis years. For each analysis year, even though there is an increase in VMT from 2027 to 2047, there is an overall emissions reduction due to fleet turnover and emission standards regulations.

Table 4.9-17: Mesoscale Emissions Burden (tons/year)									
	2027			2037			2047		
Pollutant	No Build	Build	% Difference	No Build	Build	% Difference	No Build	Build	% Difference
VOC	223.62	223.61	0.00%	163.95	163.92	-0.02%	154.87	154.81	-0.04%
NOx	1,091.83	1,091.78	0.00%	721.16	721.01	-0.02%	679.83	679.59	-0.04%
CO	9,576.90	9,576.50	0.00%	6,518.38	6,517.05	-0.02%	5,995.66	5,993.46	-0.04%
PM10	277.95	277.93	0.00%	268.05	268.00	-0.02%	267.31	267.21	-0.04%
PM2.5	53.66	53.65	0.00%	43.39	43.38	-0.02%	42.11	42.09	-0.04%

4.9.4.5 Mobile Source Air Toxics Analysis

Under FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*, the Project falls under Category 2: "Projects with Low Potential MSAT Effects" because it does not add new highway capacity, does not create facilities that would increase MSAT emissions, and involves annual average daily traffic (AADT) volumes less than 140,000 to 150,000. AADT on the Kensington Expressway through the defined transportation corridor is approximately 75,000. The FHWA guidance recommends that Category 2 projects be addressed with a qualitative discussion considering factors such as the effect of the Project on VMT, effects of fleet turnover, MSAT control regulations, and changes in source-receptor distances.

Table 4.9-18: Regional VMT in the No Build and Build Alternative

Analysis Year	Alternative	Annual VMT	% Difference
2027	No Build	24,212,178	0.00%
	Build	24,211,186	
2037	No Build	24,265,438	-0.02%
	Build	24,260,473	
2047	No Build	24,318,309	-0.04%
	Build	24,309,759	

Note: Based on 2019 and 2047 VMT provided by GBNRTC (interim years interpolated)

MSAT emissions would be proportional to the VMT of the No Build and Build Alternatives for a given year when variables such as fleet mix remain similar. Since the estimated VMT under the No Build and Build Alternatives varies by less than 1 percent for the 2027, 2037 and 2047 analysis years as shown in Table 4.9-18, there would be no appreciable difference in overall MSAT emissions between the alternatives in either analysis year. Similar to other pollutants such as PM2.5, there may be localized areas of increased ambient concentrations of MSATs near the tunnel portals. Under both the No Build and Build Alternatives, future MSAT emissions are expected to be substantially lower than under existing conditions due to implementation of USEPA's vehicle and fuel regulations.

In general, data are not sufficient to predict the project-specific health impacts due to changes in MSAT emissions. To determine the potential for adverse health effects, multiple levels of modeling must be performed (emissions, dispersion, exposure, etc.) with each subsequent model building on the predictions and assumptions of the previous model. Furthermore, there are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population.[119] Due to the limitations in the methodologies for forecasting health impacts, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. FHWA's MSAT guidance Appendix C provides additional discussion of incomplete or unavailable information for project-specific MSAT health impacts analysis.[120]

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[119] Health Effects Institute. Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-reviewliterature-exposure-and-health-effects.
[120] FHWA. 2023. Updated Interim Guidance on Mobile Source Air Toxic (MSAT) Analysis in National Environmental Policy Act (NEPA) Documents Appendix C.

4.9.4.6 Measures to Minimize Air Quality Effects

Although total concentrations under the Build Alternative would be well below the NAAQS, the Build Alternative includes the measures listed below to minimize the air quality effects in the tunnel portal areas. As a result, the Build Alternative would not have an adverse impact on air quality.

- **Splitting the Thrust of Air Coming out of the Exit Portal**
  - Adding openings in the tunnel ceiling area of the exit portal would divert a portion of the air coming out of the portal (e.g., 90% out of the tunnel and 10% out of the openings). This measure could reduce the concentration of pollutants in the portal jet, causing better distributed emissions.

- **Installing SmogStop Wall Treatments**
  - SmogStop Photocatalytic Treatment removes NOx, which is a precursor to ozone and secondary particulate matter formation in the atmosphere.[121]
  - Treatment could be applied to retaining walls and safety walls in the tunnel portal areas, improving overall air quality in the portal areas.

- **Controlling dust**
  - A washing schedule for the tunnel would be implemented to remove dust, reducing dust resuspension by traffic.

- **Greenspace and tree-planting related**
  Trees have direct benefits on air quality in urban areas, including removal of particulate matter through uptake of particles into the leaf stomata or interception of particles onto the leaf surface.[122] Factors affecting pollutant removal rates include the size and type of tree (especially leaf surface characteristics), ambient pollutant concentrations, the length of the growing season, precipitation and other factors. Trees planted can also physically affect how pollutants disperse, reducing concentrations for receptors separated from a traffic emissions source by a tree stand. It is important to note that these air quality benefits of trees were not included in the air quality modeling analysis. Removal of particulate matter and physical changes in dispersion patterns are only a portion of the many health-related benefits provided by trees and greenspace. Other important benefits include providing summer temperature reduction from shade (which directly benefits human health and can also affect building energy consumption), encouraging physical activity, and psychological benefits.[123] In addition to providing approximately 11 acres of new treed greenspace on and around the tunnel cap, the following greenspace and tree-planting related commitments are incorporated in the Build Alternative:

  - Planting trees in front of the residential properties adjacent to the tunnel portals.
  - Realigning Humboldt Parkway north of Sidney Street to accommodate tree planting.
  - Planting low growing shrubs ("vegetative buffer") in the greenspace immediately adjacent to the portals, with fencing to restrict public access to this greenspace for safety reasons.
  - Planting low growing trees adjacent to the above-referenced fencing.
  - Incorporating plantings into the design of retaining walls near the tunnel portals.

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https://www.fhwa.dot.gov/ENVIRonment/air_quality/air_toxics/policy_and_guidance/msat/fhwa_nepa_msat_appendix_c_2023.pdf

[121] https://www.smogstop.co.uk/wp-content/uploads/2022/03/Van-Heyst-Shaw.pdf

[122] Nowak, David J. 2020. *Urban trees, air quality and human health*. In: Gallis, Christos; Shin, Won Sop, eds. Forests for public health. Newcastle Upon Tyne: Cambridge Scholars Publishing: 31-55.

[123] Wolf et al. Urban Trees and Human Health: A Scoping Review. Int J Environ Res Public Health. 2020 Jun; 17(12): 4371

Based on the air quality effects of the Build Alternative described in this section and the measures that would be implemented to minimize air quality effects, the Build Alternative would not have an adverse effect on air quality.

4.10 Energy Greenhouse Gases (GHG) and Climate Change

This section documents the evaluation of the Project's effects on greenhouse gas (GHG) emissions and energy consumption, which are contributors to climate change. According to the New York State Department of Environmental Conservation (NYSDEC), climate change is projected to have broad effects to the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change will also be experienced at local scales. New York State has established sustainability initiatives and goals for reducing GHG emissions and for adapting to climate change.

4.10.1 Regulatory Context

In coordination with the National Highway Traffic Safety Administration (NHTSA), the United States Environmental Protection Agency (USEPA) currently regulates GHG emissions from newly manufactured on-road vehicles. In addition, USEPA regulates transportation fuels via the Renewable Fuel Standard Program, which will phase in a requirement for the inclusion of renewable fuels, increasing annually up to 36 billion gallons in 2022.

There are also regional and State efforts to reduce GHG emissions. State Executive Order No. 24, issued in 2009, established a goal of reducing GHG emissions by 80 percent, compared with 1990 levels, by 2050. The 2015 New York State Energy Plan also established interim targets to be achieved by 2030. In 2019, New York State enacted the Climate Leadership and Community Protection Act (CLCPA) to achieve the GHG reduction goals established in the New York State Energy Plan as well as to establish new emission limits to reduce statewide GHG emissions by 85 percent from 1990 levels by 2050.

4.10.2 Pollutants of Concern and Methodology

Water vapor, carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), and ozone are the primary greenhouse gases in the Earth's atmosphere. CO_2 is by far the most abundant and, therefore, the most influential GHG. CO_2 is emitted from any combustion process; from some industrial processes such as the manufacture of cement, mineral production, metal production, and the use of petroleum-based products; as well as natural sources. CO_2 is removed (sequestered) from the lower atmosphere by natural processes such as photosynthesis and uptake by the oceans. The total GHG impact can be measured as CO_2 equivalent (CO_2e), which is a sum of GHG emissions multiplied by a "global warming potential" (GWP) – a factor that weights the warming effectiveness. Carbon dioxide equivalent (CO_2e) comprises the three primary transportation-related GHGs: CO_2, CH_4, and N_2O. CO_2e emissions are based on current EPA 100-year GWP values of 1, 25, and 298 for CO_2, CH_4, and N_2O, respectively as well NYSDEC's 20-year GWP, which reflects a greater influence of methane (CH4) on a short-term basis. CO_2e emissions based on current NYSDEC's 20-year GWP values are 1, 84, and 264, respectively.

4.10.2.1 Operational Effects

The long-term operational effects of the Project were assessed by considering the net change in energy consumption and GHG emissions between the No Build and Build Alternatives using the traffic forecast for year 2047 (the project design year). The Study Area for this analysis was the same as the study area used for the mesoscale (regional) air quality analysis (Erie and Niagara Counties) (see Section 4.9 of this DDR/EA). The Project would affect energy consumption and GHG production in two ways: (1) directly from vehicles using the facility and the surrounding roadway network, and (2) from the energy and related emissions required to operate the tunnel ventilation system, roadway lighting and other electrically-powered systems (e.g., CCTV, communications).

The USEPA's MOVES3 model was used to estimate the mobile source emission factors and energy consumption for the direct transportation energy and GHG analyses. Direct transportation energy is a function of traffic and vehicle characteristics affecting fuel consumption (i.e., volume, speed, distance traveled, vehicle mix, and thermal value of the fuel used for roadway vehicles). As discussed in Section 4.9 of this DDR/EA for the mesoscale (regional) air quality analysis, regional traffic data were based on estimates from the Greater Buffalo Niagara Regional Transportation Council (GBNRTC) Regional Travel Demand Model for the No Build and Build Alternatives.

The long-term operational effects analysis also considered the effects of the tunnel ventilation, lighting and other support systems on future energy consumption and GHG emissions. The analysis was based on the current preliminary design and anticipated operating conditions.

4.10.2.2 Construction Effects

The short-term GHG emissions and energy consumption from construction of the Build Alternative were calculated using the Federal Highway Administration (FHWA) Infrastructure Carbon Estimator (ICE). The ICE is a spreadsheet modeling tool that estimates GHG emissions and energy use from the construction of transportation facilities. The analysis not only assesses the direct effects from construction equipment but also includes estimates of the "upstream" embedded energy consumption and GHG production from the extraction, manufacture and delivery of materials required for construction.

The construction analysis was based on project specific data including lane-miles of new roadway construction, lane-miles of reconstructed roadways and lane-miles of milling and paving. The covered roadway section was modeled as multi-span bridges.

4.10.3 Long Term Operational Effects of the Project

Table 4.10-1 compares vehicle miles travelled (VMT) and vehicle hours of travel (VHT) for roadways for the year 2047 for the No Build and Build Alternatives. These data, which provide insight into the overall traffic use of the road network under each alternative, forms the basis for much of the energy and GHG analyses. As shown in the table, the Project would provide a slight reduction in overall VMT and VHT in the Study Area.

Table 4.10-1: VMT and VHT in 2047

	No Build	Build	Percent Change
VMT (Daily)	24,318, 698	24,309,759	-0.04
VHD (Daily)	798,024	797,554	-0.06

Based on the methodology described above, Tables 4.10-2 and 4.10-3 show the annual energy consumption and GHG production for operation of the No Build and Build Alternatives within the Study Area. Consistent with the predicted reductions in VMT, the Project would result in a slight reduction in energy consumption and GHG production from vehicular operations.

Table 4.10-2: Direct Operational Annual Energy Consumption (2047) – mmBtu/Year

No Build	Build	Reduction	Percent Change
23,162,474	23,153,944	8,530	-0.04

Table 4.10-3: Direct Operational CO_2e Emissions (2047) – Metric Tons/Year				
GWP	**No Build**	**Build**	**Reduction**	**Percent Change**
100-year	1,766,330	1,765,680	650	-0.04
20-year	1,766,430	1,775,780	650	-0.04

As discussed in Section 4.10.2, the analysis also considered the effects of the proposed ventilation, lighting and other mechanical, electrical, and communication systems. The effects of the three main tunnel systems are discussed below.

Ventilation

The proposed tunnel's highly efficient ventilation system, which would use jet fans in the tunnel, would result in low power consumption (e.g., no ducts, dampers, louvers, bends). During normal operation, the fans would not generally be operational, as the movement of traveling vehicles would create a piston effect, naturally ventilating the tunnel. However, mechanical ventilation could be employed during extended periods of congestion, when there is no airflow within the tunnel. In such instances, the fans would be activated to exchange air, to maintain acceptable air quality within the tunnel and at the tunnel portals. These situations are only expected to occur rarely. Variable speed drives would allow an efficient ramp-up, without electrical current spikes, when starting the fans. In contrast, asynchronous jet fan motors without variable speed drives typically require approximately seven times the nominal current at startup. Based on the manufacturer's recommendation, the proposed fans would be tested typically on a weekly or biweekly basis for a short duration. This routine testing would provide for a reliable and ready system without compromising efficiency.

Lighting

The lighting system in the tunnel would consist of light emitting diode (LED) fixtures with adaptive dimming control, allowing adjustments to tunnel lighting levels based on exterior ambient light levels. This approach would result in an efficient and low-power consumption solution. Nighttime lighting would be maintained throughout the entire tunnel, from portal to portal, at a consistent level. The required nighttime levels would be achieved by dimming a predefined pattern of fixtures. This method would provide the necessary visibility for safety, while also allowing for energy efficiency.

Other Systems

Other tunnel systems would include fire alarm, detection, and suppression systems, closed-circuit television (CCTV), and communications and control systems for the operation of the various tunnel systems.

The estimated energy consumption for the tunnel systems is shown in Table 4.10-4.

Table 4.10-4: Annual Energy Consumption of Tunnel Systems (mmBtu)				
System	**Ventilation**	**Lighting**	**Other**	**Total**
Energy Use (mmBtu)	147	8,388	2981	11,516

While the annual energy required to safely operate the tunnel (11,516 mmBtu) is greater than the reduction in traffic related energy (8,530 mmBtu), New York's electrical gird is highly supplied from renewable sources. Based on USEPA's Emission & Generation Resource Integrated Database (eGRID), approximately 72 percent of the energy within the electrical grid for upstate New York is supplied by either renewable sources (e.g., hydro, solar or wind power) or non-GHG producing sources (e.g., nuclear). Therefore, the energy to power the tunnel systems from non-renewable sources would be approximately 28 percent of 11,516 mmBtu or approximately 3,224 mmBtu. Combined with the operational energy reduction of 8,530 mmBtu as shown in Table 4.10.3, the overall net savings of energy from non-renewable sources would be approximately 5,300 mmBtu.

To determine the annual GHG emissions for the tunnel system, the 11,516 mmBtu from Table 4-10.4 needed to first be converted to megawatt-hours (MWh). This resulted in 3,375 MWh. [124] Next, the 3,375 MWh needed to be converted to pounds of CO_2e per MWh. The USEPA's eGRID database was used for this conversion. While the national average for GHG output is 852 pounds of CO_2e per MWh, based on the USEPA's data, GHG output in upstate New York is 233 pounds of CO_2e per MWh. As described above, this reflects the reliance on renewable energy sources in upstate New York. Thus, the 3,375 MWh was converted to 786,375 pounds of CO_2e per MWh,[125] which converts to 354 metric tons of CO_2e per year.[126] As shown in Table 4.10-5, the Build Alternative would result in a net benefit with respect to the emissions of GHG on an annual basis. No adverse effects are anticipated in regard to energy and GHG emissions.

Table 4.10-5: Net Change in Long-Term Operational GHG Emissions (CO_2e in metric tons/year)

	Savings from VMT reductions	Emissions from Tunnel Systems	Total Net Change
CO_2e	-650 (from Table 4-10-3)	354	-296

Although not quantified above, the 12-acre increase in greenspace and new tree plantings as a result of the Build Alternative would contribute to sequestration of CO_2 emissions from the atmosphere while the trees are growing over the next several decades.[127] The Build Alternative also includes additional plantings around the tunnel portals and on Humboldt Parkway north of Sidney Street (see Section 4.9).

4.10.4 Short-term Construction Related Effects

Construction of the Build Alternative would require the short-term expenditure of energy and its related production of GHG emissions. The FHWA ICE was used to determine energy usage and GHG emissions from construction activities including:

- operation of construction equipment;
- the transport of construction materials and debris to and from the site; and
- the embodied energy and GHG emissions to extract and produce the various materials for roadway and structure construction such as aggregate, asphalt binder, cement, steel and fuel.

The energy and GHG emissions for construction worker travel to and from the site was based on the conceptual construction schedule and activities required to complete each phase of work. Emission estimates were based on the USEPA MOVES3 model, and the results are shown in Table 4.10-6. Construction air quality commitments (as described in Section 4.20.3.2), such as requiring the contractor to use lower emitting equipment where practicable and limitations on idling, would minimize construction-related GHG emissions from trucks and equipment.

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[124] 1 MWh = 3.4121 mmBtu
[125] 3,375 MWh x 233 pounds of CO_2e per MWh = 786,375 pounds of CO_2e per MWh
[126] 1 pound = 0.00045 metric tons
[127] Nowak, D; Greenfield, E,; Hoehn, R; Lapoint, E. Carbon storage and sequestration by trees in urban and community areas of the United States. Environmental Pollution
Volume 178, July 2013, Pages 229-236

Table 4.10-6: Energy Use and GHG Emissions from Construction		
	Energy Use (mmBtu)	**CO_2e (metric tons)**
Construction Equipment	58,710	5,770
Materials	210,290	29,300
Materials Transportation	8,850	850
Worker Transportation	9,310	700
Total	287,160	36,620

4.10.5 Consistency with Climate Leadership and Community Protection Act

In 2019, New York State enacted the Climate Leadership and Community Protection Act (CLCPA) to achieve the GHG reduction as well as establish new emission limits to reduce statewide GHG by 85 percent from 1990 levels by 2050. The legislation charges the New York State Climate Action Council with establishing statewide GHG emission limits and agency regulations to reduce emissions, increase investments in renewable energy sources, and ensure that substantial portions of investments are made in disadvantaged communities. Pursuant to these requirements, the Climate Action Council will prepare and approve a scoping plan outlining recommendations for attaining the GHG emission limits and reduction goals.

The Project would be consistent with the CLCPA by:

- addressing geometric and infrastructure deficiencies within the corridor, leading to a reduction in VMT and vehicular-related energy consumption;
- providing modern, energy-efficient infrastructure systems for tunnel operations;
- meeting equity and inclusion objectives of the Act by reconnecting the community (which has been identified as a disadvantaged community under the CLCPA) with a continuous greenspace to enhance livability, mobility, and park access;
- providing improved bicycle and pedestrian facilities, which would encourage non-vehicular modes of travel; and
- developing treed greenspace that would remove pollutants and sequester CO_2.

Whether using the EPA or NYSDEC's GWP values, the Project would result in the same level of GHG reduction of CO2e of 0.04%. Section 4.9.4.4 provides additional detail on the mesoscale analysis that includes hazardous air co-pollutants. Table 4.9-13 presents the emissions burden of volatile organic compounds (VOC), nitrogen oxides (NOx), CO, PM10 and PM2.5 under the No Build and Build Alternatives. VOC and NOX are quantified because they are precursor pollutants to the formation of O3. Overall, the Build Alternative would result in the same percent reduction of CO2e of 0.04%. Therefore, this Project would be consistent with CLCPA.

The *Smart Growth Public Infrastructure Policy Act* also requires NYS agencies to ensure that their projects are consistent with specific criteria that directly or indirectly affect GHG emissions. The Act also encourages the advancement of projects for the use of existing infrastructure and enhancing the beauty of public spaces, while promoting sustainability and encouraging public involvement in community planning. All of these factors are applicable to the Project.

4.11 Noise

The FHWA highway traffic noise regulation (23 CFR 772) and the NYSDOT TEM Section 4.4.18 *Noise Analysis Policy and Procedures* (NYSDOT Noise Policy) provide criteria to determine if a project requires a traffic noise analysis and consideration of abatement measures. This Project meets the definition of a Type III noise project under 23 CFR 772 and NYSDOT Noise Policy.[128] The project does not meet the definition of a Type I Project per 23 CFR 772.5. Although the project does involve the physical alteration of a highway, it will not involve substantial alterations that will decrease the distance between a traffic noise source and the closest receptor. The major source of traffic noise within the general study area is NYS Route 33 (Kensington Expressway), which is a high volume (approximately 75,000 vpd -existing AADT) and high speed (55 mph) freeway. The horizontal alignment of the Kensington Expressway will not be changed by the project. The project proposes to cap 4,150 feet of the Kensington Expressway, blocking the line-of-sight between the traffic noise source and receptors along this length. The project proposes to lower the vertical alignment of the Kensington Expressway, thus increasing the shielding (via tunnel portal retaining walls) between the traffic noise source and receptors. Therefore, there will be no substantial alterations of the Kensington Expressway horizontal or vertical alignment, as defined by 23 CFR 772.5. The Humboldt Parkway, which is a low volume (approximately 9,500 vpd -existing AADT) and low speed (30 mph) roadway, is not a major source of traffic noise within the general study area. The vertical alignment of the Humboldt Parkway will not be changed by the project. The project proposes to shift the Humboldt Parkway inward and further away from receptors; therefore, there will be no substantial alterations to the Humboldt Parkway horizontal and vertical alignment, as defined by 23 CFR 772.5..

Therefore, a traffic noise analysis is not required for this Project under 23 CFR 772. However, to inform the transportation decision-making process and for NEPA and SEQRA purposes, a traffic noise analysis was performed for the No Build and Build condition(s).

4.11.1 Study Area and Methodology

As stated in FHWA's *Highway Traffic Noise: Analysis and Abatement Guidance*, "Highway traffic noise is not usually a serious problem for people who live more than 500 feet from heavily traveled freeways or more than 100 to 200 feet from lightly traveled roads." Thus, the traffic noise modeling effort for this Project focused on the area within 500 feet of the limits of work surrounding the Kensington Expressway and Humboldt Parkway corridor (see Figure 1 within the Noise Analysis Report in Appendix D9). This traffic noise study area encompasses the areas where there is the potential for traffic noise changes due to the proposed enclosure of portions of the Kensington Expressway within a tunnel and alignment changes to local streets.

The methodology used in this analysis is consistent with the NYSDOT Noise Policy. The traffic noise analysis was performed using the FHWA Traffic Noise Model (TNM) version 3.1.

The traffic noise study area includes noise sensitive land uses, including residences, parkland, schools, and places of worship. All sensitive receptors within the traffic noise study area were identified and categorized by Noise Study Land Use Categories as defined below in Table 4.11-1 (see Figure 2 within the Noise Analysis Report in Appendix D9).

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[128] The December 2022 Project Scoping Report stated that the Project is categorized as a Type I noise project per 23 CFR 772 and NYSDOT Noise Policy. However, upon further consideration as the design progressed, it was determined that the Project meets the definition of a Type III noise project.

Table 4.11-1: Noise Study Land Use Categories		
Land Use Category	**Interior or Exterior**	**Land Use Description**
A	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	Exterior	Residential
C[1]	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[1]	Exterior	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F.
F	Either	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	Either	Undeveloped lands that are not permitted.

Notes:
1. Includes undeveloped lands permitted for this Category.

Representative noise receivers within the traffic noise study area were chosen as modeling locations. Receiver modeling locations were chosen based on common noise environments. Each modeled receiver represented multiple receptors/locations with similar source-receptor distances and imperceptible differences in noise levels. A noise receiver is defined as a point where highway traffic noise levels are measured and/or modeled. A noise receptor is defined as a discrete or representative location of a noise sensitive area(s).

In total, 199 representative noise receivers were chosen to represent 766 noise receptors along the Kensington Expressway. Receivers were placed in exterior areas of frequent human use. Traffic noise modeling was performed at these locations to predict future noise levels for the No Build and Build Alternatives. Refer to Figure 1 within the Noise Analysis Report in Appendix D9 for the receiver locations.

Representative receivers were also modeled within the proposed new greenspace above the tunnel deck to document the anticipated Build Alternative noise levels in the noise sensitive areas created by the Project. These receivers were not compared to No Build Alternative levels because the greenspace would not exist under the No Build Alternative.

The design year for this Project is 2047 (estimated time of completion [ETC]+20). Thus, the traffic noise analysis was conducted for year 2047 under the Build and No Build Alternatives.

In accordance with FHWA's *Highway Traffic Noise Analysis and Abatement Policy and Guidance*, a noise level change of 3 dB(A) or less is generally imperceptible to the human ear. In evaluating the analysis results, an increase of over 3 dB(A) from the No Build Alternative to the Build Alternative at a receiver was used to assist in identifying receivers that would experience perceptible noise increases from the Build Alternative. Any perceptible increases in traffic noise would warrant further investigation to determine if these increases would affect the quality of the human environment, thus warranting mitigation.

Additional details on the methodology used for the analysis are provided in the Noise Analysis Report in Appendix D9. Construction noise and vibration effects are discussed in Section 4.20 of this DDR/EA.

Representative noise measurements were collected at four locations within the traffic noise study area for the purposes of validating the traffic noise model and establishing the loudest noise hour. These measurements consisted of one 24-hour noise measurement and three 15-minute L_{eq}[129] noise measurements.

The 24-hour noise measurement was collected to determine the loudest noise hour to be used for the analysis. Based on the 24-hour measurement, the loudest noise hour was determined to be between 8:00 AM – 9:00 AM.

To validate the noise model developed for the Project, noise models (reflecting site-specific conditions, geometry, traffic volumes, vehicle distributions, and speeds observed during the field noise measurements) were developed for each short-term field measurement receiver site. The calculated noise levels from the validation modeling were then compared with the field measured noise levels to see how well they match. A project's noise model is considered valid if the modeled noise levels are within 3 dB(A) of the measured noise levels. For this Project, the modeled noise levels were all within 3 dB(A) of the measured noise levels; thus, the noise model developed for the Project was considered valid for use in predicting highway traffic noise levels.

Additional details on the field noise measurements and model validation are provided in the Noise Analysis Report in Appendix D9.

4.11.2 No Build Alternative

Under the No Build Alternative, the existing roadways would remain with ongoing maintenance and repairs (see Section 3.2.1). No new roadways or associated supporting infrastructure related to this project would be constructed, and changes in future traffic noise levels on the corridor would be associated with normal changes in traffic or other projects unrelated to the Kensington Project (i.e., those that would occur without the Project). Forecasted traffic volumes for the No Build Alternative are shown in **Table 2.4-6**.

No Build conditions were modeled for the year 2047 for comparison to the predicted noise levels under the Build Alternatives in 2047. This analysis was conducted for informational purposes and not for the determination of impacts under 23 CFR 772 and the NYSDOT Noise Policy.

Under the No Build Alternative, noise levels within the traffic noise study area would range from 45 to 74 dB(A). Areas closer to the Kensington Expressway (i.e., along Humboldt Parkway) would generally experience higher noise levels (ranging from 62 to 74 dB(A)) than areas further from the Kensington Expressway along local streets. The wide range in noise levels along Humboldt Parkway is mainly associated with the depressed nature of portions of the Kensington Expressway and the noise attenuation provided by the break in line-of-sight due to the retaining walls. Proximity to cross streets also influences noise levels to a lesser degree. The noise levels along Humboldt Parkway near the depressed expressway segment would range from 62 to 65 dB(A), while the noise levels along Humboldt Parkway near the at-grade expressway segments would range from 70 to 74 dB(A). Additional details on the results of the No Build Alternative noise analysis are provided in the Noise Analysis Report in Appendix D9.

[129] Per NYSDOT Noise Policy, L_{eq} is defined as the equivalent steady-state sound level that in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with L_{eq} (h) being the hourly value of L_{eq}.

4.11.3 Build Alternative Effects

Under the Build Alternative, noise levels within the traffic noise study area would range from 44 to 75 dB(A). The predicted future noise levels for the Build Alternative were compared to those for the No Build Alternative at each receiver to identify the locations where a perceptible change in noise levels is predicted. Most of the differences in noise levels appear to be related to the covering of the Kensington Expressway; however, some of the differences in noise levels would also associate to changes in travel patterns related to the Build Alternative design.

As stated above, a noise level change of 3 dB(A) or less is generally imperceptible to the human ear; therefore, a comparison was made to determine the number of receivers with changes of more than 3 dB(A), as compared to the future No Build Alternative conditions. Perceptible noise level changes are summarized in Table 4.11-2 by Noise Study Land Use Category.

Compared to the No Build Alternative conditions, it is anticipated that traffic noise level increases would not be perceptible at any of the modeled locations and decreases in traffic noise would be perceptible at 70 receivers, representing 271 receptors. Therefore, the Build Alternative is not anticipated to result in changes to the human environment that would warrant mitigation.

The majority of receivers with a perceptible noise level decrease are located adjacent to the proposed tunnel section where Kensington Expressway traffic would be isolated from adjacent receptors by the tunnel cap. Perceptible noise level reductions due to the proposed tunnel are expected to be in the range of 4 to 13 dB(A).

Table 4.11-2: Receptors with Perceptible Noise Level Changes (i.e., >3 dB(A)) by Noise Study Land Use Category

Noise Study Land Use Category	Perceptible Increases From No Build Alternative to Build Alternative *	Perceptible Decreases From No Build Alternative to Build Alternative *
B – Residential	None	248
C – Park	None	9
C – School	None	3
C – Medical Facility	None	2
C – Place of Worship	None	9
TOTALS	None	271

Note: *Predicted future noise level changes due to the Build Alternative are in relation to the No Build Alternative noise analysis results. Only categories with perceptible noise level changes are shown.

As indicated above, noise levels were also modeled for the future Build Alternative conditions at five locations along the proposed greenspace above the tunnel. Noise levels within the proposed greenspace would range from 57 dB(A) to 63 dB(A). Noise levels at these receivers were not compared to No Build Alternative noise levels because the space would not exist under the No Build Alternative.

Additional details on the results of the Build Alternative noise analysis and comparisons to the No Build Alternative noise analysis results are provided in the Noise Analysis Report in Appendix D9.

4.11.4 Noise Mitigation

No perceptible traffic noise level increases are predicted under the Build Alternative; therefore, the Build Alternative is not anticipated to result in changes to the human environment that would warrant mitigation.

4.12 Wetlands

4.12.1 Study Area and Methodology

The Study Area for the initial desktop screening assessment of wetlands was the same as the general Study Area. Field review of the potential for wetlands was focused on the vegetated portions of the Project limits along the Kensington Expressway from High Street to Northland Avenue. Field review of the larger area of local street rehabilitation was not necessary because the work on these streets would be within the existing curb lines and therefore would not have the potential to disturb wetland areas.

Wetland resources were reviewed following the guidance described in the NYSDOT's Transportation Environmental Manual (TEM). Online databases were used as an initial screening tool. These databases rely on interpretations of aerial photographs and satellite images and may not accurately characterize all wetland boundaries or identify all wetlands. The resources reviewed include:

- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), for Federal Wetlands Mapping;
- NYSDEC Environmental Resource Mapper, for State Freshwater Wetlands Mapping; and
- U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey for soils maps.

Field assessments were conducted on May 4 and May 9, 2023 following the U.S. Army Corps of Engineers Wetlands Delineation Manual (1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012, Version 2.0) to confirm the wetland mapping. The wetland assessments focused on the presence of wetland vegetation. The presence of hydrophytic vegetation is one of the required components that defines a wetland per the U.S. Army Corps of Engineers Wetland Delineation Manual. No wetland vegetation was observed, therefore no wetland delineations were conducted.

4.12.2 Existing Conditions

4.12.2.1 State Freshwater Wetlands

A review of the NYSDEC Environmental Resource Mapper (May 2023) indicated that no mapped NYSDEC regulated freshwater wetlands or regulated adjacent areas exist in the general Study Area (Figure 4.12-1). Additionally, no state jurisdictional wetlands were observed along the Kensington Expressway during the May 4 and May 9, 2023 site visits.

4.12.2.2 Federal Jurisdiction Wetlands

Federal Wetlands NWI mapping data for the general Study Area is shown in Figure 4.12-2. NWI data identifies the Scajaquada Creek as a riverine system in the general Study Area. Riverine systems can include both wetland and aquatic, non-wetland habitats. The Scajaquada Creek is classified as a R4SBC riverine habitat in the NWI. R4SBC refers to a riverine, intermittent, seasonally flooded streambed.

No federal jurisdictional wetlands were observed within the Study Area during the May 4 and May 9, 2023 site visits.

Of note, the portion of Scajaquada Creek located within the general Study Area is piped underground (the underground section of the Scajaquada Creek is referred to as the "Scajaquada Drain" in this DDR/EA). The 3.5-mile long Scajaquada Drain is piped underground from the east side of Pine Ridge Road at the Cheektowaga-City of Buffalo boundary to about 210 feet west of Main Street in Forest Lawn Cemetery. The Scajaquada Drain is portrayed as a straight line on the NWI mapping. However, based on record plans and engineering studies, the physical location of the Scajaquada Drain crossing under the Kensington Expressway occurs near the pedestrian bridge located south of Northland Avenue as shown on Figure 4.12-3. The Scajaquada Drain would not qualify as a federal wetland within the general Study Area because no hydrophytic vegetation is present. The presence of hydrophytic vegetation is one of the required components that defines a wetland per the U.S. Army Corps of Engineers Wetland Delineation Manual and Regional Supplement.

N

0 0.25 0.5 1 Miles

Source: Bing Maps, Erie County 2021, LaBella 2023, NYSDEC 2021, NYSDOT 2021, NYSGIS Clearinghouse 2022.

Figure 4.12-1

State Freshwater Wetlands

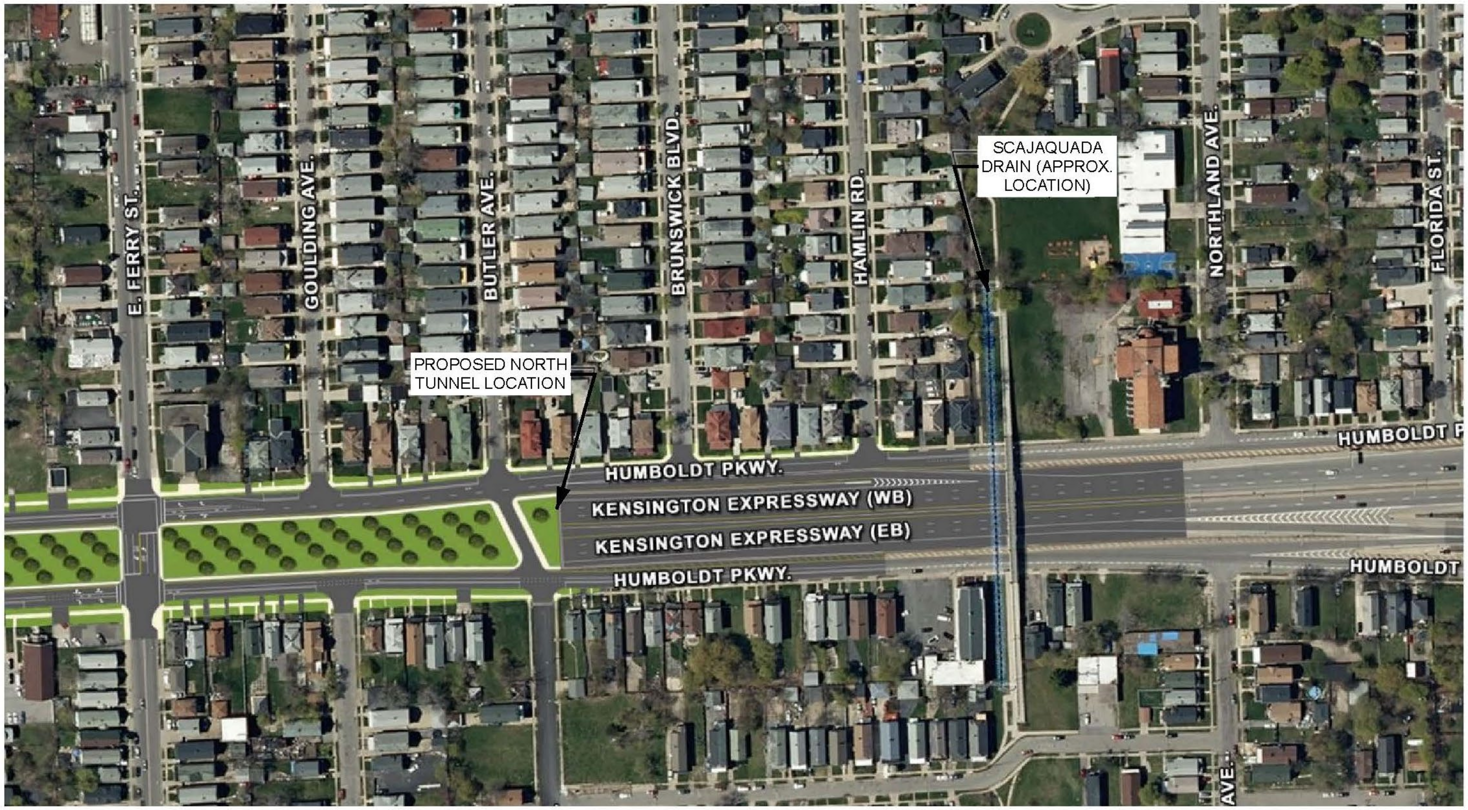
PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

Source: Bing Maps, Erie County 2021, LaBella 2023, NYSDOT 2021, NYSGIS Clearinghouse 2022, USFWS 2022.

Figure 4.12-2

Federal Jurisdictional Wetlands USFWS National Wetlands Inventory

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY



Source: LaBella 2023, NYSDOT 2022.

Figure 4.12-3

Scajaquada Creek Drain Location

PIN 5512.52
NYS Route 33, Kensington Expressway Project
Erie County, NY

4.12.3 Potential Effects

There are no wetlands in the Study Area, therefore the Build Alternative would have no effect on State or Federal wetlands.

4.13 Surface Waters and Waterways

4.13.1 Study Area and Methodology

The Study Area for the assessment of waters and waterways was the same as the general Study Area. Surface waters and waterways were reviewed using NWI maps, NYSDEC maps, historical maps (to identify a historical, possibly natural, channel location), NYSDEC stream class information, 303(d) Clean Water Act information, aerial imagery, and record plans. Site visits were performed on May 4 and May 9, 2023.

4.13.2 Existing Conditions

Scajaquada Creek is the only mapped stream in the general Study Area. As discussed above in Section 4.12.2.2, the Scajaquada Drain is portrayed as a straight line on the NWI mapping, but the physical location of the Scajaquada Drain crossing under the Kensington Expressway occurs near the pedestrian bridge located south of Northland Avenue (Figure 4.12-3).

Scajaquada Creek is piped underground as the Scajaquada Drain within the general Study Area and resurfaces in Forest Lawn cemetery about 210 feet west of Main Street, and about 0.25 mile outside the boundary of the general Study Area. From there, it flows northwest in an open creek channel into Hoyt Lake in Delaware Park and flows west to the Black Rock Canal.

Scajaquada Creek and Hoyt Lake are located north of and outside the northern limits of the Study Area. Scajaquada Creek and Hoyt Lake are found within Forest Lawn Cemetery and the adjacent Delaware Park.

Scajaquada Creek has a class and standard of B/B in the open water channel downstream (west) of the Scajaquada Drain and C/C within the Scajaquada Drain. The best uses of Class/Standard B waters are primary and secondary contact recreation and fishing.[130] The best usage for Class/Standard C waters is fishing, where the water quality is suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.[131]

Section 303(d) of the federal Clean Water Act identifies the entire length of Scajaquada Creek as an impaired and threatened waterbody due to urban runoff and combined sewer flows which empty into the waterway.[132] The listing identifies phosphorus, low dissolved oxygen levels and fecal coliform as the pollutant specific concerns.

[130] 6 CRR-NY 701.7
[131] 6 CRR-NY 701.8
[132] The Proposed Final New York State 2018 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy, June 2020

4.13.3 Potential Effects

The Build Alternative would not result in any direct change to the Scajaquada Drain within the general Study Area. Therefore, the Build Alternative would have no adverse effect on surface waters.

4.14 Groundwater

4.14.1 Study Area and Methodology

The Study Area for the assessment of groundwater was the same as the general Study Area. A review of NYSDEC, U.S. Environmental Protection Agency, and U.S. Geological Survey guidance summarizing groundwater resources and the NYSDEC aquifer data (NYSDEC 2016) was conducted for the Project.

4.14.2 Existing Conditions

A review of NYSDEC aquifer data indicates that there are no state mapped Primary Water Supply or Principal Aquifer Areas or mapped USEPA Sole Source Aquifers within the general Study Area. The Project is located just east of an unconfined aquifer (NYSDEC mapped Principal Aquifer) within the City of Buffalo limits.

The residential neighborhoods and businesses located in the general Study Area are all serviced by a public drinking water system maintained by the Buffalo Water Board, which sources drinking water from Lake Erie.

There are no municipal drinking water wells, wellhead influence zones, or reservoirs within or near the general Study Area, according to NYSDEC data (NYSDEC GIS, 2016).

The existing NYS Route 33 is approximately two to three feet below the groundwater table behind the existing retaining walls along the length of the proposed tunnel. As the existing roadway surface is below the level of the groundwater table, it is assumed that groundwater is currently draining from the embankment onto the existing NYS Route 33 and being collected into the corridor's stormwater system. Much of the length of the existing roadway that will fall within the tunnel limits currently drains to a low point just south of East Ferry Street. At the southwest corner of East Ferry Street and Humboldt Parkway, there is an existing pumphouse, where combined groundwater and stormwater collected along NYS Route 33 are pumped up to the local street level and piped to an existing eighty-inch stormwater main along East Ferry Street. As any groundwaters are mixed with stormwaters, it is unknown what the current groundwater withdrawal rates might be.

4.14.3 Potential Effects

There are no aquifers, drinking water supply wells or reservoirs in the general Study Area, therefore the Build Alternative would have no effect on groundwater resources.

With the lowering of the roadway with the Build Alternative, the final grades along NYS Route 33 will be approximately ten to fifteen feet below the existing groundwater table. The proposed east and west retaining walls would consist of secant piles embedded into rock to effectively and efficiently cutoff groundwater seepage into the tunnel, resulting in an anticipated groundwater capture of approximately 8,640 gallons per day. This rate is less than the 100,000 gallon per day threshold volume, and as such a NYSDEC Water Withdrawal Permit is not anticipated to be required for the Build Alternative. Similar to existing conditions, any captured groundwater would be piped to the low point within the tunnel limits, which occurs at East Ferry Street. There will be a pumphouse to bring this captured groundwater to street level and then pipe it into the existing eighty-inch stormwater main along East Ferry Street.

4.15 Stormwater Management

4.15.1 Study Area and Methodology

The Study Area for the assessment of stormwater was identified as the existing stormwater system within the Project limits, including the Kensington Expressway and Humboldt Parkway between High Street and Northland Avenue. An expanded area, which includes potential local street enhancements between Wohlers Avenue to the west and Fillmore Avenue to the east is also part of the Study Area. Calculations for the Project follow guidance contained in Chapter 9 of the New York State Stormwater Management Design Manual.

4.15.2 Existing Conditions

Within the Study Area, the stormwater systems along the Kensington Expressway can be characterized as typical urban stormwater systems with inlets and underground pipe systems, and the stormwater systems along Humboldt Parkway can be characterized as typical City of Buffalo combined sewer stormwater systems which includes inlets with laterals to the combined sewer system. The stormwater systems within the expanded local streets area can be characterized as typical City of Buffalo combined sewer stormwater systems which includes inlets with laterals to the combined sewer system.

The existing stormwater system has been constructed in stages over several contracts and is relatively complex given the following: interconnection of the Kensington Expressway and Humboldt Parkway stormwater systems; storm and sanitary flows are combined along some stretches of Humboldt Parkway; and an existing pump station is used to discharge some of the expressway stormwater.

4.15.2.1 Kensington Expressway (NYS Route 33)

Within the Study Area, the stormwater system for the Kensington Expressway collects stormwater and discharges to three stormwater system discharge points maintained by the Buffalo Sewer Authority. The first discharge point for the Kensington Expressway is a stormwater trunk that continues south along the Kensington Expressway and that discharges into a 96-inch combined sewer that follows Michigan Avenue. The stormwater along the Kensington Expressway collects in this stormwater system from just north of Riley Street to the southern Project limit. The second discharge point is the combined sewer on East Ferry Street. This discharge point uses an existing pump station located on the southwest quadrant of Humboldt Parkway and East Ferry Street. The stormwater along the Kensington Expressway collects in this stormwater system and includes stormwater from north of Riley Street to Butler Avenue. The third discharge point for the Kensington Expressway is the Scajaquada Drain. The Scajaquada Drain is classified as a City of Buffalo stormwater overflow and is the piped underground portion of Scajaquada Creek near the Project limits. The stormwater along the Kensington Expressway collects in this stormwater system and includes stormwater from north of East Ferry Street to the northern Project limit. All discharge points eventually discharge to the Niagara River either through a treatment plant or through a stormwater overflow. The stormwater systems throughout the entire expressway corridor can be characterized as typical urban stormwater systems with inlets and underground reinforced concrete pipe systems built when the expressway was installed in the 1960s.

4.15.2.2 Humboldt Parkway and Local Streets

The local street (Humboldt Parkway and other local streets) stormwater is collected into combined sewer systems owned and maintained by the City of Buffalo Sewer Authority. Generally, all stormwater drainage within the local streets area is collected with inlets and directly connected to combined sewers with laterals. These combined sewers have various discharge points.

4.15.3 Potential Effects

Stormwater drainage systems are proposed to be adjusted as stated below and stormwater management design information can be found in Section 4.15.3.1.

The existing stormwater discharge points described in Section 4.15.2.1 and 4.15.2.2 above would be used by the Build Alternative as follows:

- The stormwater along the Kensington Expressway between the southern Project limit and the southern tunnel portal at Dodge Street would collect in the existing stormwater trunk that travels south on the Kensington Expressway to discharge into the 96-inch combined sewer that heads south on Michigan Avenue. A portion of this system impacted by the construction of the proposed tunnel would be relocated within the Humboldt Parkway roadway. This portion impacted by construction of tunnel would no longer receive stormwater drainage from the Kensington Expressway in the area of the tunnel.
- The combined sewer on East Ferry Street would be relocated to Humboldt Parkway and would require a new pump station in a similar location to the existing pump station (due to changes in elevation of the Kensington Expressway). The new pump station is proposed to be adjacent to the tunnel underground. This discharge point would receive the stormwater collected at the northern tunnel portal entrance and would use a new proposed underground pump station. A portion of the drainage system on the east side of the tunnel would be redirected to an 84-inch drainage conduit within the Humboldt Parkway.
- The stormwater along the Kensington Expressway north of the northern tunnel portal to the northern Project limit would discharge to the Scajaquada Drain. The stormwater system associated with the Scajaquada Drain would be modified as needed to accommodate the change in grade of the proposed roadway but would outlet in the same location with less flow.
- The proposed tunnel portion of the Kensington Expressway would have a closed system with storage that would only be pumped out with vac trucks after an event (sprinkler activation or chemical firefighting effort).
- Within the local street enhancement area of the project the drainage work would be limited to cleaning, repairs, and adjustments to the curb inlets. These would continue to outlet into the varied combined sewer systems along each of the local roads.

4.15.3.1 Stormwater Management Design and Effects

The purpose of stormwater management design is to protect the waters of the State of New York from the potential adverse effects related to stormwater runoff. The disturbance area for this Project is anticipated to be approximately 76.7 acres; thus, the Build Alternative would require a NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for stormwater discharges from construction activity (GP-0-20-001). The entire Project area was previously developed therefore redevelopment standards apply. The Build Alternative would reduce impervious area by covering the Kensington Expressway with greenspace. Per chapter 9 of the NYSDEC Stormwater Design Manual, treatment of 25% of the Existing Water Quality Volume (WQv) is required for this Project. The stormwater plan proposes treatment of the WQv by a combination of reducing impervious cover and standard practices. Refer to the groundwater section above for discussion of how groundwater may be intercepted by the Build Alternative stormwater management systems.

It is anticipated that the changes to the drainage systems resulting from the implementation of the Build Alternative would have a beneficial effect because the proposed green space above the tunnel would be pervious; therefore, more rainfall would be absorbed and there would be less stormwater runoff. The proposed greenspace would reduce site imperviousness resulting in a reduction of the volume of stormwater runoff, thereby achieving, at least in part, stormwater criteria for both water quality and quantity. The final grading of the site would be designed to minimize runoff contribution from new pervious areas (area above the tunnel) onto the impervious area.

Effective implementation would require soil properties in the newly created pervious areas that meet both the depth requirements and the permeability of best management practices. This includes soil that would meet minimum percolation rates (1-inch per hour minimum) while also meeting water retention capabilities, ensuring that the water does not flow too quickly through the soil and into the subdrainage system. This would be a function of the physical makeup (sand/silt/lay) of the soil. The soil mix would be designed so that it would drain fast enough to eliminate surface flow but slow enough to retain moisture for trees and reduce loading on the stormwater system. The soil that would be placed above the tunnel would meet these properties and include a 6-inch layer of topsoil which would be installed and planted per the Landscape Plan (see Appendix A1).

Additional treatments may be needed based on the disturbance areas of local streets and are to be determined. These treatments may include but not be limited to pervious pavements in parking lanes, and rain gardens with or without storage areas beneath them. Standard practices that have successfully been used within the City of Buffalo on recent roadway reconstruction Projects have included pavement within parking lanes and rain garden designs (with and without storage areas beneath them). The NYSDOT has been and would continue to coordinate with the City of Buffalo Department of Public works and the City of Buffalo Sewer Authority for approval regarding any treatments within the City of Buffalo Right of Way. The City of Buffalo Sewer Authority requires property owner approvals for rain gardens in front of residences and commercial properties.

Overall, the Build Alternative effects on stormwater runoff would be beneficial compared to existing conditions because of the incorporation of appropriate stormwater management design and reduction in impervious surfaces. See Appendix D3 for the Stormwater Treatment Methodology Memo including calculations and figures. Therefore, the Build Alternative would have no adverse effect on stormwater.

4.16 General Ecology and Wildlife Resources

4.16.1 Study Area and Methodology

The general Study Area was used for the assessment of effects on general ecology and wildlife resources. Wildlife habitat was assessed by means of a road and walking survey along the streets within the general Study Area on May 4, May 9, and July 17, 2023.

Publicly available data were used to describe the existing general ecology and wildlife resources within the Study Area, including aerial photography and topographic maps, the NYSDEC Environmental Resource Mapper, the DECinfo Locator, and the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) system.

4.16.2 Existing Conditions

The general Study Area consists of a densely developed urban landscape. No ecologically sensitive areas or significant natural communities are within the Study Area according to the NYSDEC Environmental Resource Mapper and the DECinfo Locator. Also, based on the USFWS IPaC system, no critical habitats are under the jurisdiction of the USFWS within the general Study Area. Vacant lots dominated by grass are common. Greenspace is populated and used by urban tolerant species including miscellaneous birds and small mammals.

The field review of the Study Area identified the following habitat characteristics:

- Mown lawns (residences and vacant lots);

- Scattered mature, mostly deciduous, ornamental trees. Norway maple (*Acer platanoides)* is abundant;
- Small patches of unmanaged, mostly deciduous trees associated with housing lots;
- Ornamental shrubs; and,
- Small, wooded patches of unmanaged, mostly deciduous trees, as well as shrubs and herbaceous plants, along the embankments of the Kensington Expressway between High Street and Girard Place.

Martin Luther King, Jr. Park is the largest area of greenspace in the vicinity of the Project. The 56-acre park is characterized by manicured lawn with scattered, mature and immature, mostly deciduous trees. Some shrubs are also present.

Two areas of landscaped vegetation near the Kensington Expressway are north of Best Street and along West Parade Avenue. These areas have manicured lawn, and collectively, have scattered large English elm trees (*Ulmus minor*), mature Norway spruce (*Picea abies*) and Norway maple, and hackberry (*Celtis occidentalis*). Eastern red cedar (*Juniperus virginiana*) shrubs are also present.

Within the Study Area, areas of mostly unmanaged vegetation grow on the embankments of the Kensington Expressway between High Street and Girard Place. Vegetation is dominated by deciduous trees of varying sizes. Trees in the seedling size (less than 1.5-inch diameter) and sapling size (1.5 inch to 5.0-inch diameter) classes are the most abundant and include Norway maple, American elm (*Ulmus americana*), English elm, Scotch elm (*Ulmus glabra*), white ash (*Fraxinus americana*), littleleaf linden (*Tilia cordata*), and Japanese black pine (Pinus thunbergii).

The seedling and sapling size classes also include shrubs such as common buckthorn (*Rhamnus cathartica*), chokecherry (*Prunus virginiana*), fragrant sumac (*Rhus aromatica*),and honeysuckle (*Lonicera* spp.) (one or more of four invasive bush honeysuckles). Poison ivy (*Toxicodendron radicans*) in the form of a vine is also abundant in places. Mature trees dominate some places, and they are also scattered in areas dominated by seedlings and saplings. Mature tree species are mostly deciduous and include Norway maple, honey locust (*Gleditsia triacanthos*), tree-of-heaven (*Ailanthus altissima*), littleleaf linden, pin cherry (*Prunus pensylvanica*), apple (*Malus domestica*), frosted hawthorn (*Crataegus pruinosa*), and Japanese black pine.

Herbaceous vegetation is abundant in some areas, and sparse in other areas. Common herbaceous species include Timothy grass (*Phleum pratense*), red fescue (*Festuca rubra*), Canada goldenrod (*Solidago canadensis*), white avens (*Geum canadense*), eastern woodland sedge (*Carex blanda*), Indian hemp (*Apocynum cannabinum*), perennial pea (*Lathyrus latifolius*), smooth brome (*Bromus inermis*), and Kentucky bluegrass (*Poa pratensis*).

Common milkweed (*Asclepias syriaca*) is present but not abundant in, and adjacent to, the vegetated embankments of the Kensington Expressway. Milkweed is important because larvae of the Monarch buttferfly (*Danaus plexippus*) feed exclusively on this plant. The monarch butterfly is a candidate species for listing as threatened or endangered by the USFWS and was identified as being present within a 0.5-mile buffer around the portion of the Kensington Expressway where the proposed project would be conducted[133].

The vegetation within the Study Area provides limited habitat, including food, shelter, and nesting/denning sites for urban wildlife including various species of mammals, birds and insects. Unmanaged vegetation, as well as ornamental trees and shrubs, can provide nesting sites for birds within the urban landscape.

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[133] Refer to Section 4.17 on threatened and endangered species for information on the consultation with the USFWS.

During the site assessment on July 17, 2023, the following wildlife species were documented in or adjacent to existing tree and shrub areas located on the embankments of the Kensington Expressway within the Project area based on direct observation or other evidence (e.g., burrows): eastern cottontail rabbit *(Sylvilagus floridanus*), woodchuck (*Marmota monax*), gray catbird (*Dumetella carolinensis*), chipping sparrow (*Spizella passerina*), European starling (*Sturnus vulgaris*), cedar waxwing (*Bombycilla cedrorum*), bumble bee (*Bombus* spp.), European honey bee (*Apis mellifera*), and metallic green bee (*Agapostemon* spp.).

6.16.2.1 Invasive Species

Plant species were identified as being invasive if they are listed in the publication, *New York State Prohibited and Regulated Invasive Plants* (2014). Invasive plants were identified by means of a road and walking survey along the streets within the general Study Area on May 4 and May 9, 2023. No attempt was made to conduct an intensive survey of invasive plants that required entering private property. Norway maple, an invasive tree species, is abundant in the general Study Area. Common buckthorn, an invasive shrub species, was not common in the residential areas, but is abundant in the tree and shrub areas along the embankments of the Kensington Expressway. Other invasive species observed were honeysuckle, mugwort (*Artemisia vulgaris*), and cut-leaf teasel (*Dipsacus laciniatus*). Tree-of-heaven was also observed. This non-native tree species is not identified as being invasive. However, tree-of-heaven is the preferred host of the spotted lanternfly (*Lycorma delicatula*), an invasive insect that is a serious pest on a variety of agricultural crops, such as grapes, hops, fruit trees, and ornamental plants.

4.16.3 Potential Effects

Construction of the Build Alternative would require the removal of most of the linear vegetative stands located adjacent to Kensington Expressway between the Best Street interchange ramps and Girard Place. In total, approximately 2.2 acres of roadside vegetative cover would be impacted. However, disturbed areas would be replanted per the Project's Landscape Plan (see Appendix A1), with the addition of new tree planting areas on the tunnel cap. The Build Alternative would result in a net increase of 12 acres of tree plantings with manicured lawn within the Project limits.

Most urban bird and mammal species are tolerant and adapt quickly to changes in their environment. The loss of portions of urban greenspace would push these species into adjacent areas and/or contribute to their demise, though this should be limited to less mobile species. Potential effects to wildlife species during construction of the Build Alternative would be mitigated through Best Management Practices in accordance with the policies and procedures set forth in the NYSDOT Transportation Environmental Manual (TEM) and appropriate state and federal regulations. In the future under the Build Alternative, the vegetated areas on and adjacent to the tunnel cap would provide habitat for urban wildlife. For example, urban greenspace and tree canopy directly contribute to bird species diversity.[134] The ecological value of the greenspace created by the Project would increase over time as the tree plantings mature, as larger trees are associated with greater species diversity and habitat benefits.[135]

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[134] Frank A. La Sorte, Myla F.J. Aronson, Christopher A. Lepczyk, Kyle G. Horton. (2020). Area is the primary correlate of annual and seasonal patterns of avian species richness in urban green spaces, *Landscape and Urban Planning, Volume 203.* https://doi.org/10.1016/j.landurbplan.2020.103892.
[135] Stagoll, K., Lindenmayer, D.B., Knight, E., Fischer, J. and Manning, A.D. (2012), Large trees are keystone structures in urban parks. *Conservation Letters, 5*: 115-122. https://doi.org/10.1111/j.1755-263X.2011.00216.x

4.17 Threatened and Endangered Species

4.17.1 Study Area and Methodology

The Study Area for the evaluation of threatened and endangered plant and wildlife resources is the general Study Area for federal species and extends 1.5 miles from the Project limits for New York State listed species. A review of federal and state threatened and endangered plant and wildlife species was conducted pursuant to the federal Endangered Species Act and the NYS ECL Section 11-0535 (State Endangered Species Act). The United States Fish and Wildlife Service's (USFWS) online Information for Planning and Consultation (IPaC) system and the New York Natural Heritage Program (NYNHP) database were consulted to determine the potential presence or absence of listed species in the vicinity of the Study Area. See Appendix D4 for July 13, 2023 IPaC official species list. For each identified listed species, an effect determination was made based on the range and essential habitat for the species and the existing conditions within the Study Area. The NYSDOT conducted a threatened and endangered species review in accordance with the policies and procedures set forth in the *FHWA New York Division: Environmental Procedures – Endangered Species Act, Section 7, Essential Fish Habitat, and Marine Mammal Protection Act: Process for Compliance and Consultation* (June 2020) and the *NYSDOT Transportation Environmental Manual* (TEM)."

4.17.2 Existing Conditions

No federally listed threatened or endangered species were identified in the IPaC system as having the potential to occur in the vicinity of the Project. The IPaC system identified the potential for the monarch butterfly to occur within the Study Area. The monarch butterfly is a candidate species and does not currently have federal protection. No critical habitats were identified by the IPaC review. See Appendix D4 for the IPaC official species list.

A review of the NYNHP database indicated that three New York State-protected, rare, threatened or endangered plant or animal species were identified as potentially occurring within the 1.5-mile Study Area. The review identified the following species:

- Peregrine Falcon *(Falco peregrinus*, Endangered) – Three areas of documented peregrine falcon activity are located west, southeast, and southwest of the Kensington Expressway corridor, ranging from 0.66 to 0.95 miles away. There are no NYNHP records of peregrine falcon located in the immediate vicinity of the Project. Based on the lack of essential habitat preferred by peregrine falcon within, and adjacent to, the Project and pursuant to 6 NYCRR Part 182, the NYSDOT has made a "*no take, no habitat*" determination for this species. Therefore, this species is not subject to regulation under this part.

- Golden Dock *(Rumex fueginus*, Endangered) – This species is an annual plant that occurs almost exclusively along the edges of ponds and creeks and is considered a wetland plant. No wetlands or surface water bodies would be impacted by the Project as the Scajaquada Creek is piped underground within the general Study Area. Therefore, there is no suitable habitat for this plant species, and it is not expected to occur within the Study Area. A walkover of the Project area was conducted in May and July 2023 and this species was not observed at that time. Based on the lack of essential habitat preferred by American golden duck within, and adjacent to, the Project, the lack of recent occurrence or precise location data documented in the NYNHP database, and pursuant to 6 NYCRR Part 182, the NYSDOT has made a *"not likely to result in the take"* of the species. Therefore, this species is not subject to regulation under this part.

- Canada Bluets (*Houstonia canadensis*, Threatened) – This species is a small annual plant that commonly occurs on pond shores. No wetlands or surface water bodies would be impacted by the Project as the Scajaquada Creek is piped underground within the general Study Area. Therefore, there is no suitable habitat for this plant species, and it is not expected to occur within the Study Area. A walkover of the Project area was conducted in May and July 2023 and this species was not observed at that time. Based on the lack of essential habitat preferred by Canada bluets within, and adjacent to, the Project, the lack of recent occurrence or precise location data documented in the NYNHP database, and pursuant to 6 NYCRR Part 182, the NYSDOT has made a *“not likely to result in the take”* of the species. Therefore, this species is not subject to regulation under this part.

The review of the NYNHP database indicated that there are no significant natural communities within 1.5 miles of the Project limits.

4.17.3 Potential Effects

No New York State or Federally listed threatened or endangered species have been identified as having the potential to occur within the Study Area; therefore, the Build Alternative would have no effect on listed species.

The threatened and endangered species effect determinations for New York State listed species were submitted to NYSDEC in a letter dated August 25, 2023. The NYSDEC concurred with the NYSDOT’s effect determinations in a letter dated September 6, 2023. Documentation regarding threatened and endangered species is provided in Appendix D4.

No additional federal or state consultation is required.

4.18 Asbestos and Lead

4.18.1 Study Area and Methodology

4.18.1.1 Asbestos

Asbestos is a naturally occurring fibrous mineral that is heat and corrosion resistant. Due to its fire-resistant properties, asbestos has been used in a wide range of building materials, including floor tiles, construction mastics, roofing and siding shingles, paint, plaster and wall systems, wiring, and window caulk. Asbestos containing materials (ACM) are defined as any homogeneous matrix containing greater than 1 percent asbestos by weight and can be classified as either friable or non-friable. Friable ACM can be crumbled, pulverized, or reduced to powder by hand pressure (e.g., pipe insulation). Non-friable ACM is a material in which the asbestos component is firmly bound in the matrix of the material and unlikely to release measurable levels of airborne asbestos fibers if not disturbed (e.g., vinyl floor tiles and bitumen-based roofing material). Inhalation of asbestos is a well-recognized health hazard and asbestos fibers can cause loss of lung function, lung cancer (mesothelioma), and other lung diseases. Bridges, building structures and utilities often contain asbestos or suspect ACM.

The Study Area for asbestos was limited to structures that could be affected by the Build Alternative, specifically bridges and retaining walls. A preliminary asbestos assessment was conducted from May to July 2023 for the five bridge structures that cross the Kensington Expressway in the Study Area. The following NYSDOT Bridge Identification Numbers (BIN) were investigated:

- BIN 1022610 – Dodge Street Bridge over NYS Route 33
- BIN 1022620 – Northampton Street Bridge over NYS Route 33
- BIN 1022630 – East Utica Street Bridge over NYS Route 33
- BIN 1022640 – East Ferry Street Bridge over NYS Route 33
- BIN 1022609 – Best Street Bridge over NYS Route 33

See Table 2.4-23 for additional information about the above-referenced bridges and Figure 1.2.-2 (Study Area) for the bridge locations.

ACM may be encountered in the five existing bridge structures that cross the Kensington Expressway and associated adjacent retaining walls within the Study Area. Therefore, ACM Inspections were completed per United States Environmental Protection Agency (USEPA), New York State Department of Labor (NYSDOL), and New York State Department of Transportation (NYSDOT) asbestos regulations. Asbestos sampling was conducted in accordance with the NYSDOT Transportation Environmental Manual (TEM) (Section 4.4.19, Asbestos Management) requirements.

Previously existing ACM survey reports (with collected bulk samples information) were reviewed prior to the fieldwork for four of the bridge structures (BINs 1022610, 1022620, 1022630, and 1022640). A prior report was not available for Best Street bridge (BIN 1022609). See Appendix D5 for previous ACM survey reports.

The 2023 investigative scope of work also included a review of historic record plans for the five bridge structures within the Study Area to identify any additional suspect ACM that were not previously sampled and to ensure the completeness of reporting. In addition, field-identified and record plan review-identified utilities associated with the bridge structures were inspected for asbestos content. During the 2023 ACM field inspections of the five bridges, bulk samples of suspect ACM not previously tested were collected and analyzed for asbestos content by a certified laboratory. See the 2023 ACM Survey Reports found in Appendix D5 for additional information and detail. Below, find a summary of the identified confirmed ACM and inaccessible/assumed ACM at each bridge structure and retaining wall system within the Study Area.

4.18.1.2 Lead

Lead Based Paint (LBP) waste is typically associated with historic lead paint applications, and it may be associated with and generated by structural steel painting operations, steel rehabilitation, and demolition work involving steel-constructed bridges. This waste stream may be designated as either hazardous or non-hazardous. In most cases bridges constructed after 1988 or that have been previously 100% abrasively blasted to a surface preparation standard of the Steel Structures Painting Council (SSPC) Specification (SP) 10 near-white blast cleaning metal standard are considered non-hazardous. Of note, waste designation during construction is the responsibility of the contractor based on the requirements of the selected disposal facility and is based on representative sample analysis collected from the waste containers.

The Study Area for screening for LBP issues was limited to the bridge structures that could be affected by the Build Alternative and involved a NYSDOT records review of the LBP removal activities conducted at each structure.

4.18.2 Existing Conditions

4.18.2.1 Asbestos

<u>BIN 1022610</u>

The October 2002 Dodge Street Bridge (BIN 1022610) survey report identified two existing ACM (an asbestos-containing sheet packing located between the deck slab and the top of the backwall and an asbestos-containing joint sealer or caulking located in the vertical joints between the backwall of the bridge and the retaining wall). The 2002 report did not identify any inaccessible/assumed ACM.

The 2023 inspection confirmed the presence of the two previously identified ACMs and the presence of one additional ACM (caulking, discussed below) after submitting additional samples to comply with current sampling regulatory protocol. The record plan review identified one inaccessible/assumed ACM

(Item 61 – Bituminous Material [waterproofing]) associated with the back side of the retaining walls and abutment, the counterforts, and the footer piles). In addition, the 2023 investigation confirmed that the previously identified ACM caulking is associated with the entire retaining wall system adjacent to this bridge and throughout the corridor. This ACM is typically located within every third joint of the retaining wall (note that there are two control joints with no caulking present in the joints located in between the expansion joints, which were originally filled with a non-asbestos-containing joint filler and covered with an asbestos-containing caulking; also note that the original ACM caulking has been sporadically covered with a newer non-ACM caulking throughout the corridor). In addition, the inspection identified ACM caulking associated with the metal guide rail post bases on top of the retaining walls along the Kensington Expressway throughout the northern portion of the Study Area (no ACM caulking is associated with the recently installed decorative concrete guide rails along the Kensington Expressway throughout the southern portion of the Study Area).

BIN 1022620

The August 2013 Northampton Street Bridge (BIN 1022620) survey report identified two existing ACM (an asbestos-containing black coating on the piping suspended below the bridge and an asbestos-containing black caulking found in the vertical retaining wall joints) associated with the bridge. The 2013 survey also identified an inaccessible/assumed ACM (compressed asbestos sheet packing located between the deck slab and the top of the backwall) which was not observed during the field inspection in 2013. In addition, the 2013 survey identified metal conduits buried within the concrete sidewalks on both sides of the bridge and noted that suspect ACM may be present. However, no specific suspect ACM were identified in association with the encased metal conduits in the 2013 survey nor any of the historical records.

The 2023 investigation confirmed the presence of the previously identified two ACM and also confirmed the presence of the inaccessible/assumed ACM (compressed asbestos sheet packing). In addition, it was confirmed that the ACM caulking associated with the retaining wall system adjacent to this bridge and throughout the corridor is located within every third joint. It also identified ACM caulking associated with the metal guide rail post bases located on top of the retaining walls along the Kensington Expressway throughout the northern portion of the Study Area (same as described with BIN 1022610). The 2023 record plan review identified one inaccessible/assumed ACM (Item 61 – Bituminous Material [waterproofing]) associated with the back side of the retaining walls and abutment, the counterforts, and the footer piles.

BIN 1022630

The April 2022 East Utica Street Bridge (BIN 1022630) survey report identified four ACMs (grey caulk associated with the vertical retaining wall joints, grey caulk associated with the guide rail posts, grey sheet packing found between the deck and tops of the abutments at both ends of the bridge, and utility conduit packing sealant associated with the gas line). The 2022 report did not identify any inaccessible/assumed ACMs.

The 2023 investigation confirmed the presence of the four previously identified ACMs and the record plan review identified two inaccessible/assumed ACMs (Item 61 – Bituminous Material [waterproofing]) associated with the back side of the retaining walls and abutment, the counterforts, and the footer piles, and the felt expansion material associated with the buried 36” waterline located beneath the retaining wall footer piles). In addition, it confirmed that the ACM caulking associated with the retaining wall system adjacent to this bridge and throughout the corridor is located within every third joint. It also confirmed that the ACM caulking associated with the metal guide rail post bases is located on top of the retaining walls along the Kensington Expressway throughout the northern portion of the Study Area (same as described with BIN 1022610).

BIN 1022640

The January 2014 East Ferry Street Bridge (BIN 1022640) survey report identified three ACMs (grey/black sheet packing located between the deck and the abutment at both abutments, black bearing pad material, and grey caulking compound associated with the guide rail base plates). The 2014 survey identified metal conduits buried within the concrete sidewalks on both sides of the bridge and an associated gas utility main at the bridge. The report noted that there may be associated suspect ACMs, however no specific suspect ACMs were ever identified within the 2014 survey nor any of the historical records.

The 2023 investigation confirmed the presence of the three previously identified ACMs. In addition, it identified ACM caulking associated with the retaining wall system adjacent to this bridge and throughout the corridor within every third joint. It also confirmed that the ACM caulking associated with the metal guide rail post bases is located on top of the retaining walls along the Kensington Expressway throughout the northern portion of the Study Area (same as described with BIN 1022610). The 2023 record plan review identified one inaccessible/assumed ACM (Item 61 – Bituminous Material [waterproofing]) associated with the back side of the retaining walls and abutment, the counterforts, and the footer piles).

BIN 1022609

The July 2023 Best Street Bridge (BIN 1022609) survey report identified one ACM (dark grey headwall sheet packing found between the deck and tops of the abutments at both ends of the bridge. The 2023 record plan review identified one inaccessible/assumed ACM (Item 61 – Bituminous Material [waterproofing]) associated with the back side of the retaining walls and abutment, the counterforts, and the footer piles). In addition, it identified ACM caulking associated with the retaining wall system adjacent to this bridge and throughout the corridor within every third joint. It also identified ACM caulking associated with the metal guide rail post bases on top of the retaining walls along the Kensington Expressway throughout the northern portion of the Study Area (same as described with BIN 1022610).

4.18.2.2 Lead

NYSDOT records confirm that all of the bridges within the Study Area were previously reviewed for lead, and any previously identified lead-based paint was removed to the SP-10 total removal standard). No additional testing for lead is required.

4.18.3 Potential Effects

4.18.3.1 Asbestos

The Build Alternative would disturb ACMs associated with the bridge structures to be demolished or reconstructed. Utilities other than those associated with the bridge structures and that were inaccessible for sampling have not been investigated at this time.

Any asbestos-containing materials that will be disturbed as part of this Project will be done in accordance with all federal, state, and local asbestos regulations including:

- USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 61 Subpart M
- United States Department of Labor Occupational Safety and Health Administration (OSHA), 29 CFR 1926.1101
- NYSDOL Code Rule 56, 12 NYCRR Part 56
- NYSDOT Standard Specifications Section 210 – Removal and Disposal of Asbestos-Containing Materials (Buildings, Bridges, and Highways)
- City of Buffalo Demolition Permitting

During construction, a health and safety plan, including air monitoring, would be implemented for the protection of on-site personnel following NYSDOL Industrial Code Rule 56 (ICR 56) and all associated OSHA requirements. The abatement and removal, packaging for transportation, and disposal of materials with confirmed ACM will be conducted in accordance with federal, state, and local regulations to minimize the potential for adverse effects associated with the implementation of the Build Alternative.

NYSDOL ICR 56 requires the use of a NYSDOL certified asbestos Project Monitor/Air Sampler hired by the owner of the structures to oversee the asbestos abatement process, collect area air samples for laboratory analysis, and document the work conducted by the abatement contractor. The Project will follow identified and approved specifications and procedures developed by NYSDOT.

The Build Alternative will allow for the abatement and proper disposal of identified ACMs associated with the affected roadway bridges and retaining walls, thereby eliminating future adverse effects associated with these materials.

4.18.3.2 Lead

The Build Alternative would not require removal of lead-based paint on the bridges. Any previously identified lead-based paint on the bridges within the Study Area was previously removed to the SP-10 total removal standard; therefore, no adverse effects associated with lead are anticipated for the Build Alternative.

4.19 Hazardous Waste and Contaminated Materials

A hazardous/contaminated environmental condition is defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

4.19.1 Study Area Methodology

The Study Area for the assessment of hazardous waste and contaminated materials is defined as the area generally bounded by High Street, Genesee Street, Northland Avenue, Wohlers Avenue, and Fillmore Avenue, since this area includes the potential Project limits of ground disturbance (including NYS Route 33, Humboldt Parkway, and adjacent local streets). The area of potential ground disturbance is the area where there is the greatest potential for the Build Alternative to affect hazardous materials, if any are present.

A Hazardous Waste/Contaminated Materials Screening Assessment ("Site Screening") was conducted in accordance with NYSDOT TEM Chapter 4.4.20 to identify sites of environmental concern within the Study Area. The Site Screening included:

- a regulatory records search of federal, state, and local government databases of known or suspected inactive hazardous waste sites, bulk storage tank sites, reported spills, and hazardous waste generation sites;
- a review of various historical maps (Sanborn fire insurance maps, USGS topographic quadrangle maps, historic land use maps) and city directories;
- a review of aerial photographs;
- a review of City of Buffalo permits containing historical development information; and
- a site visit to the identified sites of environmental concern within the Study Area.

The Site Screening is included as Appendix D6 to this DDR/EA.

The following federal environmental laws govern the investigation, management, treatment, and/or generation of hazardous wastes and contaminated materials: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act of 1976 (TSCA), and the Clean Air Act (CAA). The Site Screening was conducted in accordance with these laws and/or regulations and the NYSDOT TEM.

4.19.2 Existing Conditions

Most of the streets in the Study Area have been developed for over 100 years, consisting of predominantly residential properties with several commercial and mixed-use corridors. The Site Screening identified 56 properties as sites of environmental concern, where 41 are located within the Study Area and 15 are adjacent to the Study Area (see Appendix D6, Table 1). Detailed findings for each site are described in the Site Screening (see Appendix D6).

Of the 56 sites of environmental concern, the following 21 properties were identified as having potential environmental concerns associated with current and/or former dry-cleaning operations, petroleum storage and retail, manufacturing operations, and potential contamination associated with those uses (see Table 4.19-1 below).

Table 4.19-1: Sites of Environmental Concern

Property Name and Address	Current or Former Use	Potential Environmental Concern	Site Screening Number
1345 Fillmore Avenue	Dry cleaner	Chemical/solvent contamination	3.1.13
1385 Fillmore Avenue	Vacant, former dry cleaner	Chemical/solvent contamination	3.2.3
Deaconess Center 1001 Humboldt Parkway	Mostly vacant lot, Hospital	Petroleum contamination, abandoned USTs[1] historical USTs located within ROW[2]	3.1.6
Pump House 759 Humboldt Parkway	State-owned pumphouse	Petroleum contamination, abandoned USTs	3.1.17
St. Martin's Village 564 Dodge Street	Seminary	Petroleum contamination, abandoned USTs	3.1.18
Ferry Express Gas Station/Convenience Store 1507 Fillmore Avenue	Gas station	Petroleum contamination, abandoned USTs	3.1.26
Science Magnet School 1 MLK Jr. Park	High school	Petroleum contamination, abandoned USTs historical USTs located within ROW	3.1.27
Hymans Service 571 Best Street	Auto repair shop	Petroleum contamination, waste containers, abandoned USTs historical USTs located within ROW	3.1.30
Cumberland Farms 1055 Genesee Street	Parking lot, former gas station	Petroleum contamination, abandoned USTs	3.1.36
Geiger Enterprises 1625 Fillmore Avenue	Commercial property, former gas station	Petroleum contamination, abandoned USTs	3.1.39
Hamlin Park School	Public school	Petroleum contamination, USTs	3.1.41

126 Donaldson Road			
Former Gas Station 1500 Fillmore Avenue (currently 1490 Fillmore Avenue)	Restaurant, former gas station	Petroleum contamination, abandoned USTs	3.1.47
Sunoco Gas Station (former Food Mart) 473 East Ferry Street	Gas station	Petroleum contamination, active USTs	3.1.48
New Chrome Motor 908 Genesee Street	Vacant, former electric motor and DLRS repair shop	Petroleum contamination, abandoned USTs	3.1.49
High Street Warehouse 630 High Street	Vacant land, previously occupied by warehouse	Waste containers, previous superfund site	3.1.50
1235 Fillmore Avenue	Vacant, former gas station	Petroleum contamination	3.2.1
Frank's Express Tire and Auto Repair 1251 Fillmore Avenue	Auto repair, former gas station	Petroleum contamination	3.2.2
Rite Aid 1070 Genesee Street (Former Gas Station 1066 Genesee Street)	Pharmacy, former gas station	Petroleum contamination	3.2.5
General Electric 1489 Fillmore Avenue	Police department building, former General Electric plant	Petroleum contamination	3.2.6
Engine 18 Fire Station 1032 Fillmore Avenue	Fire station	Petroleum contamination, ASTs[3]	3.2.7
545 East Utica Street	Residential property	Petroleum contamination, former UST	3.1.4

[1] UST – Underground storage tank
[2] ROW – Right-of-way
[3] AST – Aboveground storage tank

4.19.3 Potential Effects

4.19.3.1 Potential Effects Related to Identified Sites of Environmental Concern

The work associated with the Build Alternative would be conducted within existing ROW, as well as within properties proposed for easement or acquisition. The sites listed in Table 4.19-1 above have the potential to affect the Build Alternative. However, it is anticipated that effects would be limited since most of the identified sites were previously remediated; the spills/releases were small and occurred a long time ago; and/or a few of the sites are large in size and the location of historical environmental releases and property impairment may be at a distance from the proposed construction activity.

For the 18 sites where petroleum contamination is a potential environmental concern, a Detailed Site Investigation consisting of a soil gas survey and soil boring inspection would be performed if excavation is required at those sites. Due to the potential for underground storage tanks (UST) at 571 Best Street and 1 MLK Jr. Park, there is potential for contaminated soils and/or groundwater (depending on the depth of excavation) to be encountered in the subsurface during construction. However, since most construction work would be limited to the upper two to three feet of soil except near the Kensington Expressway, a

Detailed Site Investigation is not anticipated at this time; however, if contamination is identified during construction, appropriate measures would be implemented in accordance with federal, state and local regulations.

In addition, the Site Screening identified one remediated state brownfield cleanup site adjacent to the Study Area that currently has institutional controls (1055 Genesee Street). During construction (e.g., clearing, grading, and excavation), the disturbance of potentially contaminated soil and/or groundwater near this site would be restricted to the contract limits. Special procedures, precautions, and requirements for handling contaminated materials would be identified following NYSDOT specifications and guidelines before construction for the protection of soil and groundwater resources and worker safety.

Construction monitoring would be conducted in proximity to the sites with potential contamination resulting from current and/or former site uses (see Table 4.19-1 above). During construction, a health and safety plan, including dust monitoring, would be implemented for the protection of workers and the surrounding community. BMPs, such as materials management procedures and soil erosion and sediment controls (e.g., installation of straw bales, silt fence) would be implemented. Excavated soils would be temporarily stockpiled and characterized for off-site disposal in accordance with federal, state, and local regulations.

4.19.3.2 Potential Effects Related to Contaminated Fill Material/Bedrock

A review of the original Kensington Expressway construction documents was conducted to identify any potential concerns with materials specified for the proposed embankments or for the pavement construction. The majority of the Kensington Expressway within the current Project limits was constructed in a major cut of approximately 20 feet below original ground; therefore, embankment fills were not necessary, which minimizes the likelihood of encountering contaminated fill. However, it is possible that a slag subbase material was utilized since the subbase material was listed as an optional type on the record drawings. As part of ongoing soil borings for this Project, the NYSDOT is conducting a preliminary radiological assessment at five distinct locations, consisting of a Gamma survey, soil sampling and laboratory radiochemistry analysis. Additionally, at each of these five locations, samples will be collected for laboratory chemical analysis. The results of the sampling will be documented in a Soil Waste Characterization Report, which will be included in the Final Design Report/EA. It is not anticipated that radioactive materials will be identified in the soil samples; therefore, no mitigation is currently proposed. In the unlikely event that radioactive materials are found during sampling, a plan consistent with NYSDEC draft policy “DMM-5 / Management of Soils Contaminated with Technologically-Enhanced Naturally Occurring Radioactive Materials (TENORM)” would be developed during final design to protect the public and workers during construction. Compliance with this document would ensure compliance with 10 CFR 20 and 6 NYCRR Part 380 as it relates to prevention and control of environmental pollution by radioactive materials. Additionally, the Soil Waste Characterization Report would identify recommendations for further testing to determine the limits of any impacted soil/fill and for the proper handling and disposal procedures to be followed during construction.

Bedrock occurring within the Project limits consists of Onondaga Limestone, which is of Middle Devonian age. Limestone from this formation is extracted locally from several quarries situated within 10 miles of the Project that operate pursuant to permits issued under the New York State mining regulations. These quarries produce numerous products that satisfy state and federal specifications, including crushed stone; bituminous and Portland cement concrete aggregates; road construction base materials; and rip-rap revetment stone. These products are used throughout the region for the construction and maintenance of infrastructure, as well as for other public, commercial, private and residential construction work and maintenance. Given the widespread use of limestone products from this formation in the region, no issues associated with the chemical or radiological characteristics of the bedrock to be removed in conjunction with the Build Alternative are anticipated.

4.20 Construction Effects

Construction effects would be temporary and would cease with the completion of construction. Although the Build Alternative would be planned, designed, scheduled, and staged to minimize disruption to abutting communities and the environment during construction, short-term effects, such as construction noise, dust, and vibration, would occur temporarily in areas adjacent to construction activities. The proposed mitigation measures in this section have been developed to mitigate any potential adverse effects that are likely to result from construction of the Build Alternative.

It is anticipated that the Build Alternative would be constructed in eight phases. Refer to Section 3.5.2 of this DDR/EA (Work Zone Safety and Mobility) for more detail. Construction is expected to start in 2024 and last three to four years. The contractor would be required to have a designated community liaison for the Project to provide open communication during construction. In addition, a communication and public outreach program would be implemented, and the NYSDOT project outreach office would continue to be available and staffed throughout the construction period to provide timely updates to the public on construction activities and mechanisms for hearing and resolving construction-related concerns.

4.20.1 Construction Noise

Construction noise differs from traffic noise in the following ways:

- Construction noise lasts only for the duration of the construction contract;
- Construction activities are generally short term;
- Construction activities are usually limited to the daytime hours when most human activity takes place; and
- Construction noise is intermittent and depends on the type of operation.

Construction activities associated with the Build Alternative would include demolition, excavation, rock-blasting, sub-base preparation, roadway/bridge/tunnel construction, and other miscellaneous work. The levels of noise would vary, depending on the construction activities undertaken and the anticipated duration of the construction. The parameters that determine the nature and magnitude of construction noise include the type, age, and condition of construction equipment; operation cycles; the number of pieces of construction equipment operating simultaneously; and the distance between the construction activities and receivers (e.g., homes). Temporary construction noise from these activities and equipment could affect nearby receivers. Many of these parameters would not be fully defined until final design plans and specifications have been prepared and, in some cases, until the contractor has been selected; however, representative construction scenarios based on typical construction procedures have been identified for the Project and were used to assess potential effects.

Land uses and activities along the corridor that could be affected by noise from construction of the Project consist of residential, places of worship, parks, medical facilities, playgrounds, sports facilities, and educational facilities. The frequency of use for each of these land uses and activities is considered year-round even though the parks, playgrounds, and sports facilities would likely have less use in the winter.

To evaluate potential noise levels as a result of construction of the Build Alternative, the Roadway Construction Noise Model (RCNM) version 1.1, developed by the Federal Highway Administration (FHWA), was employed. This model is a screening tool that can be used for the prediction of construction noise during the various stages of project development and construction. The construction noise analysis was performed in iterations to predict noise levels for nine of the loudest construction scenarios during construction of the Build Alternative, at six representative distances (50, 100, 150, 200, 250, and 300 feet) from the construction zones, under both depressed roadway conditions and at-grade roadway conditions. These model iterations allow for estimation of noise levels along the length of the corridor for receivers at different distances for each construction scenario. The nine modeled construction scenarios are listed below. Refer to Figures 4A-4B within the Noise Analysis Report in Appendix D9 for the locations of the nine construction scenarios.

1. Construct Support-of-Excavation (SOE) Walls Behind Existing Retaining Walls
2. Removal of Existing Retaining Walls
3. Eastbound Construction of Retaining Walls and Tunnel Walls
4. Bridge Demolition (Removal)
5. Center Tunnel Wall Construction
6. Soil Overburden Removal
7. Rock Removal – Mechanical Means
8. Rock Removal – Blasting
9. Westbound Construction of Retaining Walls and Tunnel Walls

4.20.1.1 Potential Effects

The NYSDOT Noise Policy states that, for urban projects, a construction noise impact will not normally occur at levels under L_{eq}=80 dB(A). The RCNM results indicate that all nine scenarios studied would have noise levels of greater than or equal to 80 dB(A) at distances of 100 to 150 feet or less during Project construction, which includes the residences along Humboldt Parkway and other sensitive land uses such as the Buffalo Museum of Science, Science Charter School, and MLK Jr. Park. Table 8 within the Noise Analysis Report in Appendix D9 shows noise levels for each scenario.

The use of impact-related construction equipment (impact devices) is planned in six of the nine construction scenarios. Impact construction equipment is equipment that generates short duration (generally less than one second), high intensity, and abrupt impulsive noise. While the noise levels for impact devices is below 80 dB(A) for many of the receiver distances, impact devices can be more noticeable due to the abrupt changes in noise levels. Therefore, even the represented locations with impact noise levels below 80 dB(A) could experience construction noise effects.

The RCNM results indicated that average noise levels and maximum noise levels would be considered disruptive to nearby receivers within a range of approximately 150 feet and closer. The six distances used in the analysis assume construction is occurring directly in front of the receiver in question; however, realistically, given the mobile nature of road construction, the distances between the construction activities and receivers would change as the construction operations move along the length of the roadway. In addition, construction operations are in constant flux, and the equipment and operations would not always be at the worst-case levels predicted through this assessment. Additional details on the construction noise analysis can be found in the Noise Analysis Report in Appendix D9.

4.20.1.2 Mitigation Measures

A Construction Noise Mitigation Plan would be developed during final design and would include the following components:

- Implement a construction noise monitoring program, including establishing the noise levels that would trigger the need for investigation and/or changes to construction approaches. These noise levels would be determined during final design. If the noise levels are exceeded, the applicable construction activities would be suspended until a plan to abate the noise issues has been approved by the NYSDOT. The construction noise monitoring program would be prepared with input from the community and allow for modification of methodologies in consideration of public input received throughout construction. The results of the noise monitoring would be available on the Project website. The public would also have the opportunity to discuss any questions or concerns with the community liaison designated for the Project and/or by visiting the staffed project outreach office.

- Coordinate work operation to coincide with time periods that would least affect neighboring residences and businesses to the extent practicable. Normal work hours would be scheduled between 6:00 a.m. and 9:00 p.m. The City of Buffalo's noise ordinance restricts construction work (including building, excavating, hoisting, grading, and pneumatic hammering) between the hours of 9:00PM and 7:00AM that would cause "sound which annoys or disturbs a reasonable person of normal sensitivities in a residential real property zone."[136] Although the NYSDOT is not subject to local noise ordinances, the contractor would implement reasonable efforts to accommodate the intent of the local ordinance to the extent practicable. No blasting or mechanical rock removal would be performed at night.
- Implement temporary construction noise abatement measures, such as shrouds or other noise curtains, acoustic fabric, physical barriers, and/or enclosures to reduce noise from pile drivers, compressors, generators, pumps, and other equipment when practicable. The need for each of these temporary measures would be assessed during final design. The effectiveness and need of these temporary measures would also be assessed in real-time throughout construction based on public input (e.g., noise concerns) and the construction noise monitoring program.
- Require motorized construction equipment to be equipped with an appropriate well-maintained muffler and require silencers to be installed on both air intakes and air exhaust when practicable.
- Require all construction devices with internal combustion engines to be operated with engine doors closed and with noise-insulating material mounted on the engine housing that does not interfere with the manufacture guidelines.
- Require the contractor to transport construction equipment and vehicles carrying rock, concrete, or other materials along designated routes that would cause the least disturbance to noise sensitive receivers when practicable.
- Require self-adjusting or manual audible back up alarms or broadband alarms in lieu of pure tone alarms for vehicles and equipment used in areas adjacent to sensitive noise receivers.
- Require the contractor to use pre-auguring equipment to reduce the duration of impact or vibratory pile driving when practicable.

4.20.2 Construction Vibration

In general, vibration effects at a specific location are a function of the source strength (which is dependent upon the construction equipment and methods utilized), the distance between the equipment or construction activity and the location, the characteristics of the transmitting medium, and the building construction type at the location. Construction vibration for this Project comprises two types of vibration: vibration generated by mechanical equipment, which tends to be more continuous, and blast vibration, which is brief and episodic. Mechanical and blasting-related vibration are each discussed separately below. For each type of vibration, two types of effects are considered: 1) the potential for cosmetic damage to structures (threshold damage), and 2) the potential annoyance effects of vibration on building occupants. Vibration levels below the potential for threshold damage can still be perceptible.

No extremely vibration sensitive equipment (e.g., electron microscopes) or land uses (e.g., hospitals) have been identified in the Study Area; therefore, analysis of construction vibration effects on sensitive equipment is not applicable.

4.20.2.1 Vibration from Mechanical Equipment

There are no FHWA or NYSDOT guidelines for analyzing mechanical equipment vibration; therefore, the construction vibration prediction methodologies provided by the Federal Transit Administration (FTA)

[136] https://ecode360.com/11767329

Transit Noise and Vibration Impact Assessment Manual were used for this Project.[137] The analysis focused on the types of mechanical equipment expected to be used during construction that generate the highest vibration levels: vibratory pile drivers and hoe rams. Impact pile driving, which generates higher vibration levels than vibratory pile driving, is not proposed for this Project. The distance at which potential building damage and annoyance effects could occur was predicted and compared to the distances of structures in the Study Area to the locations of construction activity (refer to Appendix D9 for additional detail).

Potential Building Damage Effects

Based on the type of structures in the Study Area, the potential building damage threshold is 0.20 inches per second peak particle velocity (PPV). The operation of vibratory pile drivers would exceed this threshold at distances of less than 22 feet between the equipment and a structure. The operation of hoe rams would exceed this threshold at distances of less than 15 feet between the equipment and a structure. The closest structures are 33 feet from both operations (pile driving and hoe rams). Therefore, no buildings are expected to experience vibration from mechanical equipment that could potentially cause damage.

Underground utilities in the area (including waterlines and brick sewers) are within 22 feet of pile driving operations. However, underground utilities are generally not as sensitive to vibration as aboveground structures since underground structures do not tend to resonate vibration like aboveground structures. Blasting-related vibration levels would be below criteria recommended for protection of underground pipelines.[138] Therefore, damage to underground utilities is not anticipated.

Potential Annoyance Effects

For residential structures, the applicable annoyance threshold is 72 vibration decibels (VdB) referenced to 1 micro-inch/second.[139] Vibratory pile driving is the type of equipment with the highest potential for annoyance effects and the vibration analysis showed this type of equipment could generate perceptible vibration levels of 72 VdB or greater at distances of 125 feet or less between a building and the pile driving activity. This distance would generally include the first row of residences along Humboldt Parkway northbound and southbound. However, pile driving would only occur for limited periods of time at each particular pile driving location. The vibration level at a particular residence would increase as the work progresses closer to a residence, then decrease as it moves away along the Project corridor. Pile driving activities would progress along the Project corridor past the residences at different rates (mainly based on the presence of bedrock). It is expected that the maximum duration that any receiver would experience perceptible/annoying levels of vibration from pile driving would be between two to ten weeks. Annoyance effects would be minimized through the mitigation commitments described below, which include vibration monitoring, avoiding pile driving at night, and community outreach during construction. Therefore, adverse effects related to building occupant annoyance are not anticipated.

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[137] https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

[138] https://files.dep.state.pa.us/Mining/BureauOfMiningPrograms/BMPPortalFiles/Blasting_Research_Papers/RI%209523%20Blasting%20near%20Pipelines%201994%20(No.1).pdf

[139] The FTA vibration annoyance threshold is based on studies of the response of people to long-term exposure to transit vibration and is therefore a conservative basis for considering potential construction-related vibration effects. For additional context, 65 VdB is the approximate threshold of perception for many humans; 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible vibration and many people find transit vibration at this level annoying; and 85 VdB is distinctly perceptible and can result in strong annoyance.

4.20.2.2 Vibration from Blasting

Potential Building Damage Effects

No threshold damage to buildings (i.e., cracking of plaster or drywall) is expected at any properties within the Study Area, regardless of distance from the proposed blasting. The potential for building damage would be avoided through the design of the blasting program, which would take into account the distance and condition of the closest structure (among other factors) in determining the appropriate charge weight per delay. The specifications for the Project would mandate criteria that were developed by the US Bureau of Mines to avoid such damage due to blasting. Furthermore, test blasting would be used to develop blast designs (including charge weights) that are consistent with maintenance of those criteria. Vibration criteria in the specifications would include both Caution and Alert levels, where Alert is the level not to be exceeded, and Caution is a slightly lower level at which blast practices must be reviewed by the NYSDOT and the Contractor.

Although infrequent and below the potential for building damage, blasting vibration would be perceptible. Therefore, to protect the interests of the NYSDOT, the Contractor, and the residents, pre- and post-construction building condition surveys would be implemented for an area up to approximately 300 feet of the proposed blasting locations (this estimated distance for the surveys would be refined during final design, as appropriate). It is important to note that the pre- and post-construction survey area of up to 300 feet does not mean that damage to buildings is expected within 300 feet of blasting. As described above, no damage to buildings is anticipated through the design of the blasting program.

Potential Annoyance Effects

The public would be notified of the times and dates in advance of the blasting. Although the vibration would be perceptible, it is not considered an adverse effect in terms of building occupant annoyance effects due to the short and infrequent nature of blasting. The primary consideration for annoyance effects is pile driving, which would be more continuous throughout the day.

4.20.2.3 Mitigation Measures

A Construction Vibration Mitigation Plan would be developed during final design and would include the following components:

- Implement a construction vibration monitoring program that includes a communication and public outreach plan throughout the construction period.
    - The construction vibration monitoring program would be prepared with input from the community and allow for modification of methodologies based on public input throughout construction.
    - The results of construction vibration monitoring would be available for the public to view on the project website.
    - NYSDOT would include contract requirement for a public outreach liaison that would conduct proactive outreach ahead of blasting and pile driving activities. Further, the community liaison would be able to accept complaints from the public which would then be assessed by NYSDOT for any appropriate action. If at any time it is determined that vibration levels are unacceptable, the problematic construction operations would be halted until a plan to mitigate the vibration issues has been approved by NYSDOT.

    - Publishing a blasting schedule that will be available at the Project public outreach office;
    - Informing local police and emergency services about the blasting schedule;
    - Pre-blast audio alert procedures, consisting of a well-defined sequence of airhorn blasts prior to a blast and a following all-clear.

- Prohibit nighttime use of impact and drilling equipment including pile drivers, jackhammers, hoe rams, core drills, direct push soil probes (e.g., Geoprobe), pavement breakers, pneumatic tools, and rock drills.[140]
- Direct contractor to use pre-auguring equipment to reduce the duration of vibratory pile driving when reasonable.
- Require contractor to develop and implement a blasting program designed to avoid the potential for damage to structures by modifying the weight of explosives per delay, the loading density, and the delay pattern consistent with GEM22, the Geotechnical Engineering Manual published by the NYSDOT. Blast vibration would be kept within bounds as determined by US Bureau of Mines in Report of Investigations 8507 and adjusted on an as-needed basis during construction.
- Prior to construction blasting, test blasts would be conducted to assess appropriate explosive charge weights, and if deemed appropriate, industry-standard signature hole analysis.
- Conduct vibration and airblast monitoring per the blasting program.
- Although no threshold damage is expected, any unanticipated damage to buildings or utilities found by the NYSDOT to be attributable to the construction would be repaired by the contractor. Pre- and post-construction surveys of building conditions would be conducted within a survey area of up to approximately 300 feet (this estimated distance for the surveys would be refined during final design, as appropriate).

4.20.3 Construction Air Quality

4.20.3.1 Potential Effects

Temporary effects during construction could include increases in particulate matter in the form of fugitive dust, as well as particulate matter in exhaust emissions from material delivery trucks, construction equipment, and worker's private vehicles. The potential for air quality effects would vary substantially geographically throughout the Study Area and temporarily as the construction progresses through different phases. The highest emissions would likely occur during excavation and hauling of soil and rock by truck to modify the Kensington Expressway vertical alignment for the tunnel. In other portions of construction, such as installing support of excavation walls early in the construction sequence or landscaping at the end of the construction sequence, emissions would be lower.

Although emissions from both on-site construction equipment and construction-related traffic diversions could contribute to concentrations concurrently, extensive traffic diversions are not required by the construction phasing approach for the Build Alternative. Construction-related effects would self-correct when construction was completed.

4.20.3.2 Mitigation Measures

Measures incorporated in the Build Alternative to avoid and minimize temporary construction air quality effects include the following:

- Requiring the Contractor to use lower emission equipment (Tier 4 emissions standards), where appropriate and to the extent practicable. Contract provisions would require the contractor to report at least monthly to NYSDOT the total number of pieces of equipment over 50 horsepower used on-site and the number/type out of this total that met Tier 4 emissions standards. The contractor would also be required to consider and report on the use of Diesel Particulate Filter

[140] Nighttime defined as 9 pm to 7am.

retrofits on older equipment over 50 horsepower per NYSDOT Specification 696.0002 Diesel Engine Emission Control.
- Requiring the Contractor to prepare and implement a Dust Control Plan that includes pro-active measures to prevent discharge of dust into the atmosphere. In areas not subject to traffic, apply products and materials including vegetative cover, mulch, and spray adhesives on soil surfaces to prevent airborne migration of soil particles. In areas subject to traffic, apply products and materials including water sprinkling, polymer additives, barriers, windbreaks, and wheel washing.
- Avoid locating diesel engines within 50 feet of sensitive receptors such as residences and schools where practicable (locate equipment in transportation corridor to maximize the source-receptor distance).
- Limit idling time for diesel powered equipment to three consecutive minutes for delivery and dump trucks and all other diesel-powered equipment with limited exceptions.
- Implement an outdoor ambient air quality monitoring program during construction of the Project overseen by NYSDOT. The program would consist of real-time particulate monitoring at a number of locations within the local community. Locations and durations would be determined in consideration of land uses, non-Project sources of emissions, and construction phasing. Locations of monitors would be determined during final design. Background particulate monitoring would be conducted as part of the program to establish and routinely verify baseline levels. During construction, real-time particulate matter data would be collected at an established interval (for example, measurements every 10 seconds and logged in 15-minute periods) and time-weighted over 24 hours for comparison to the USEPA's NAAQS. These standards are designed to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly, with an adequate margin of safety. Results of onsite air quality monitoring data would be available for the public to view on the Project website. If the monitoring data show that air quality levels are approaching a concern level (to be established during final design) that could result in an exceedance of the 24-hour NAAQS, then operational and/or mechanical deficiencies would be identified and corrected. If the data result in any particulate air quality levels that exceed the 24-hour NAAQS, then the applicable construction activities would be suspended until the deficiencies are identified and corrected.

4.20.4 Construction Traffic and Transportation Effects

4.20.4.1 Potential Effects

The Build Alternative would result in temporary effects on vehicle/bicycle traffic, parking, and public transit services during construction. Neighborhood residents, travelers passing through the area by vehicle or bicycle, and those travelling locally by public transit could be affected by these temporary changes.

Temporary effects to vehicular traffic could include travel delays and increased traffic on adjacent local roads.

During the reconstruction of Humboldt Parkway northbound, the existing 5-foot-wide bicycle lanes would be removed until such a time when new pavement is installed.

During the construction of the Support-of-Excavation (SOE) walls behind the existing retaining walls, there would be temporary loss of curbside parking along Humboldt Parkway (northbound only) in the immediate area of construction activity for approximately two weeks per block (not concurrent).

Construction activities associated with the Build Alternative would have the potential to affect transit service that currently utilizes the Kensington Expressway and local roads such as East Utica Street, East Ferry Street, Humboldt Parkway southbound, Fillmore Avenue, and Best Street.

Temporary effects from lane closures or detours are not expected to affect schools or places of worship.

4.20.4.2 Mitigation Measures

The construction of the Build Alternative would be governed by a number of contract requirements to minimize temporary construction effects associated with traffic. These requirements would be included in the contract for the purpose of ensuring public safety, maintaining two lanes of traffic in each direction on the Kensington Expressway, maintaining through traffic on Humboldt Parkway and providing adequate crossings over the expressway. These requirements would also be included for the purpose of minimizing impacts to local access and parking.

The construction of the Build Alternative is expected to be completed in multiple stages. The stages are designed to provide enough space within the existing expressway corridor to maintain a minimum of two travel lanes in each direction throughout the construction period. This requirement would maintain traffic on the expressway. All on and off ramps at Best Street as well as the westbound off-ramp at East Ferry Street would be maintained. There would be no full closures or diversions.

On Humboldt Parkway northbound and southbound, local traffic would be maintained in a single travel lane thus providing continual access to properties along the corridor. During construction, east-west crossings will be maintained as follows based on coordination with BFD and construction traffic/ emergency access considerations:

- The Best Street bridge will be replaced in stages to maintain vehicle and pedestrian access.
- Northampton Street and East Ferry St. will be maintained for vehicle and pedestrian movement during construction through the use of temporary bridges.
- Dodge Street and East Utica Street may be closed at times during the construction sequence. Pedestrian-only temporary bridges would be used as appropriate to maintain east-west connectivity during the construction period. Pedestrian crossings would be located at a maximum spacing of 1,300 feet.

Coordination between the contractor and emergency service providers would be a contract requirement to ensure that services are maintained satisfactorily, both on the expressway and on local roads.

Construction effects such as pavement degradation, on local roads adjacent to the transportation corridor would be mitigated by the implementation of improvements such as pavement milling and resurfacing, and other street repairs as described in Section 3.4.2.17. Regarding the temporary loss of the existing 5-foot-wide bicycle lanes on Humboldt Parkway, bicyclists would be able to travel on Humboldt Parkway while sharing the single lane with local vehicular traffic.

The temporary parking effects would be mitigated. During the construction of the SOE walls, the temporary loss of curbside parking at the point of construction would require the temporary use of on-street parking on side streets, which generally have spare capacity. This temporary use of parking on side streets would last approximately two weeks. Regarding the influx of contractor vehicles, it would be the responsibility of the contractor to establish appropriate locations for parking. The contract would include a requirement that this parking cannot be located within a street right-of-way (i.e., off-street parking would have to be secured).

The NYSDOT would coordinate with NFTA to ensure that changes to service (such as temporary relocation of bus stops, for example) would be communicated to transit users and that temporary bus stops would remain within walkable distance. No bus routes would be discontinued during construction and transit riders would be able to travel using all routes that are available to them under normal conditions. Construction staging and Work Zone Traffic Control Plans, described in Section 3.5 of this DDR/EA, would be further developed during final design to minimize the duration and extent of traffic related inconveniences during construction. With the implementation of these plans, traffic and transportation effects during construction would be minimized.

4.20.5 Other Environmental Effects

Local and regional economies would be benefited by temporary increases in construction industry employment and earnings.

Visual effects from the presence of heavy machinery, materials, staging areas, and barriers would also occur during construction of the Project, but would be temporary and not result in long-term effects. Sight distances and views towards adjacent areas could be limited due to construction barriers and equipment.

Emissions of greenhouse gases from construction vehicles and equipment would increase temporarily (see Section 4.10).

Potential contamination of groundwater, surface waters, and/or soil could occur as a result of leaking construction equipment or a spill.

Construction of the Build Alternative would require the removal of most of the linear vegetative stands located adjacent to the Kensington Expressway between the Best Street interchange ramps and Girard Place.

As described in Section 4.16 of this DDR/EA, urban bird and mammal species, although tolerant, also adapt quickly to changes in their environment. The loss of portions of urban greenspace during construction would push some of these species into adjacent areas.

4.21 Indirect/Secondary Effects

Indirect (or secondary) effects are those that are caused by an action and occur at a later time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.1(g)).

The Build Alternative has the potential to indirectly affect the value of properties, the rate of infill development, and general quality of life in the vicinity of the Project by directly affecting related factors, such as improved connectivity between the affected neighborhoods, the creation of new public greenspace above the proposed tunnel, improved aesthetics within the transportation corridor, and a reduction in traffic noise near the tunnel.[141] The assessment of indirect effects presented herein is qualitative, since the exact magnitude of any potential increase in property values and resulting infill development cannot be reasonably predicted given the complex interacting factors influencing property values.

The existing depressed section of the Kensington Expressway currently acts as a physical and visual barrier within the community. As described in Section 3.2.2 of this DDR/EA, the Build Alternative would cover the depressed section of NYS Route 33, creating a 4,150-foot-long tunnel between Sidney Street and Dodge Street (see Figure 3.2-1). The proposed greenspace above the tunnel would continue to carry existing cross streets at Dodge, Northampton, East Utica, and East Ferry Streets. Additional crossings would be established at Riley Street, Winslow Avenue, and Sidney Street/Butler Avenue. These additional east-west connections, combined with the Project's proposed Complete Streets

[141] National Cooperative Highway Research Program Report 456. Guidebook for Assessing the Social and Economic Effects of Transportation Projects. https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_456-a.pdf

improvements[142], would allow greater walkability and increased pedestrian safety within the Project limits. Greater walkability and improved pedestrian safety are among many factors that are linked to market-value increases for office, retail, and residential properties.[143] Any potential property value increases would be expected to result in increases to household wealth and could act as a catalyst to infill development. Greater walkability and improved pedestrian safety would be expected to improve overall quality of life for surrounding residents by making travel by foot safer and more approachable, thus improving access to community services such as parks, schools, and libraries.[144] Improved walkability would also result in improved access to local businesses and community services, and the ability for people to interact with neighbors located on the opposite sides of the Kensington Expressway, all of which could contribute to overall improved quality of life.

The presence of parks and open spaces is generally correlated to increased property values, with properties adjacent to greenspace having the highest relative value, with diminishing effect as distance from the greenspace increases. The distance over which these effects could extend varies based on numerous factors but could be 500 feet or further for community-sized parks.[145] Therefore, any potential property value increases would be anticipated to be most notable along Humboldt Parkway, at those parcels closest to the Project's proposed new greenspace. The same concept would be expected in terms of overall improvements to quality of life; individuals living along Humboldt Parkway would be expected to experience the greatest improvements.

Both distance from the nearest park and size of a park can influence the magnitude of increase in property values, with closer proximity and larger parks both correlating to higher property values. The additional greenspace provided in the Build Alternative would be approximately 12 acres. As shown on Figure 4.2-4, several parks and recreational areas exist in the vicinity of the Project, including MLK Jr. Park and the Scajaquada Creek Trail. The proposed new greenspace would connect with the MLK Jr. Park near the Project's southern limits and would extend north to within one block of the Scajaquada Creek Trail. The collective benefit of connecting the proposed greenspace with an existing park and improving accessibility near the existing Scajaquada Creek Trail would enhance community cohesion, neighborhood aesthetic, accessibility, and recreational opportunities.

As documented in Section 1.3.2 of this DDR/EA, parks and greenspace can have numerous beneficial health, environmental, and economic effects on surrounding neighborhoods and their occupants, all of which contribute to improved quality of life. Convenient access to parkland is associated with greater park usage, and park usage is associated with more physical activity and lower negative health outcomes, such as obesity and type 2 diabetes. Parkland and greenspace are also notable for their benefits on general mental well-being, feeling of social cohesion, and even reductions in the need for mental health services.[146] Trees and vegetation remove air pollution and sequester carbon emissions. A developed tree canopy serves to mitigate the "urban heat island" effect and helps moderate summer temperatures. Greenspaces also play an important role in improving water quality by absorbing and filtering stormwater

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[142] Proposed Complete Streets improvements include providing or updating lane striping and crosswalks, replacing nonstandard sidewalks with new 5-foot-wide sidewalks, constructing ADA compliant curb ramps, providing curb bump outs for traffic calming, and replacing or updating street lighting.
[143] UNLV Business School. An Economic Summary on the Benefits of Complete Streets. https://cber.unlv.edu/wp-content/uploads/2022/06/Complete-Streets-White-Paper_Sept-2021.pdf
[144] https://www.buffalourbandevelopment.com/documents/NorthlandNeighborhoodStrategyDRAFT.pdf
[145] Crompton, John. (2001). The Impact of Parks on Property Values: A Review of the Empirical Evidence. Journal of Leisure Research. 33. 1-31. 10.1080/00222216.2001.11949928.
[146] https://www.urban.org/sites/default/files/2022-03/the-health-benefits-of-parks-and-their-economic-impacts_0.pdf

runoff.[147] These health and environmental benefits of parkland can have numerous economic benefits, such as lower medical treatment costs.[148] In addition, parks have been associated with business and worker attraction, and improved property values.[149]

As stated in Section 2.4.4.1 of this DDR/EA, the Project is in a highly constructed urban landscape and planting adjacent to the site is limited primarily to lawn and yard plantings. The existing transportation corridor includes no substantial plantings or aesthetic features and currently has little or no landscape value. As described in Section 4.8.2 and Appendix D2 – Visual Impact Assessment of this DDR/EA, the Build Alternative would replace present views of the below grade Kensington Expressway with views of the newly constructed greenspace atop the tunnel cap. Beneficial effects on the visual aesthetic of the transportation corridor as a result of the proposed new greenspace could potentially result in an increase in property values and infill development, in addition to overall quality of life improvements.

As described in Section 4.11 of this DDR/EA, the Project would reduce traffic noise levels at locations within adjacent neighborhood areas, since traffic noise from the currently depressed section of the Kensington Expressway would be attenuated by the proposed tunnel cap. Out of the 199 modeled receivers, 70 receivers (representing 271 receptors) would receive a perceptible (greater than 3 dB(A)) decrease in traffic noise levels as a result of the Build Alternative. No receivers would experience a perceptible increase in noise levels. Noise receptors closest to the proposed greenspace (i.e., those living along Humboldt Parkway) would be expected to experience the greatest reduction in noise levels. Noise attenuation provided by the tunnel cap would decrease as distance from the tunnel cap increases. Therefore, is it reasonable to assume that any potential increases in property values associated with noise level reduction would also decrease moving further from the transportation corridor.

Potential increases in property values could result in increases in property taxes and housing-related costs. However, property values are also affected by other, often interconnected, factors, including external characteristics (e.g., “curb appeal,” home condition, lot size); internal characteristics (e.g., size and number of rooms, construction quality, energy efficiency); supply and demand; and location characteristics (e.g., desirability of particular school district). In addition, the administration of property assessment and taxation is under the authority of the City of Buffalo. Thus, the exact magnitude of potential effects to property values cannot be reasonably predicted.

The potential increases in property values could be offset by the Project benefits. Increased taxes would positively affect the local tax base, which would be expected to benefit the community in the form of better-funded local government programs. As documented in Section 4.5 of this DDR/EA, improved pedestrian access to local business could have a positive effect on the local economy by increasing the extent to which local residents patronize local businesses. Also, construction spending would be expected to indirectly benefit the local and regional economies by increasing employment and earnings in the construction industry. As new construction workers spend a portion of their payroll in the local area and construction companies purchase materials from local suppliers, the overall demand for local goods and services expands.

Infill development and redevelopment in the vicinity of the Project could result from improved accessibility, community cohesion and connectivity, improved pedestrian east-west mobility and safety, proximity to new greenspace, improved aesthetics, and reduced traffic noise, and could be accelerated in response to potential increases in property values, if any. Numerous vacant parcels exist within the vicinity of the Project and could have the potential for infill development. As shown in Figure 4.2-5, these parcels are

[147] Ibid.
[148] Ibid.
[149] Buffalo Olmsted Parks Conservancy (2008). The Buffalo Olmsted Park System: Plan for the 21st Century

predominantly zoned N-3R (Residential), with a few lots zoned as N-3E (Mixed-Use Edge), N-3C (Mixed-Use Center), and D-R (Residential Campus). Any potential infill development and/or redevelopment of parcels would positively impact the local tax base and would also improve neighborhood cohesion and aesthetic. Potential in-fill development would likely take many years, perhaps decades, to occur.

According to the National Community Reinvestment Coalition (NCRC), the term “gentrification” is understood as a form of neighborhood change, resulting in the displacement of incumbent residents of one social class and culture by another more affluent class, linked with an increase in property values.[150] As described in Section 2.3 of this DDR/EA, several independent projects are currently underway within and in the vicinity of the Study Area. In addition, as stated in Sections 2.2.1 and 2.2.2, there are comprehensive plans, private development plans, and transportation plans for areas in the vicinity of the Project (a summary of each is provided in Appendix D1). These projects and plans are not dedicated to an extensive redevelopment or urban renewal of the community. Overall, given the discussion in this DDR/EA section and in consideration of the ongoing independent projects and plans for the area, it is not expected that the Project would indirectly result in gentrification of the community in the foreseeable future.

As described in Section 3.4.3.1 of this DDR/EA, the Build Alternative would include only de minimis permanent property acquisitions along boundaries between existing public rights-of-way and the adjoining private properties. Although these acquisitions would render any acquired land exempt from local property taxes, the lands acquired would be minor in extent and the value removed from the tax base would be minimal. Therefore, indirect effects to the local tax base as a result of the Project’s right-of-way acquisitions are not expected.

The Project would not affect regional land use patterns because it does not provide a new regional transportation route, new interchange or increase existing facility capacity. The Project would not result in substantial changes to motor vehicle traffic patterns or corresponding localized land use changes. The elimination of the partial interchange at East Utica Street would increase the use of the Best Street interchange by commuters to the medical center and Buffalo downtown core. This minor change in access to and from NYS Route 33 is not expected to affect land use or development patterns.

4.22 Cumulative Effects

As defined by the CEQ regulations (40 CFR § 1508.1(g)), cumulative effects are “effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Reasonably foreseeable means “sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision.” Based on this definition, proposed projects or developments would be considered “reasonably foreseeable actions” for the purposes of assessing cumulative effects.

Cumulative effects are most likely to arise when a relationship or synergy exists between a project and other actions expected to occur in a similar location and/or during a similar time period. Actions

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[150] According to the National Community Reinvestment Coalition (NCRC), “The term “gentrification” was first coined in the 1960s by British sociologist Ruth Glass (1964) to describe the displacement of the working-class residents of London neighborhoods by middle-class newcomers. From its inception, gentrification has been understood as a form of neighborhood change, resulting in the displacement of incumbent residents of one social class and culture by another more affluent class, linked with an increase in property values”. https://ncrc.org/gentrification/

overlapping with or in proximity to a project would be expected to have more potential for a relationship than those geographically separated from the project.

Cumulative effect assessments are resource specific and generally performed for the environmental resources directly affected by an action under study, such as a transportation project. However, not all of the resources directly affected by a project will require a cumulative effect assessment.[151]

The scope of the assessment of cumulative effects for this Project considers geographical and temporal overlaps of the Build Alternative with other past, present, and reasonably foreseeable future actions. The assessment was conducted based on the guidelines provided in the CEQ handbook, Considering Cumulative Effects under the National Environmental Policy Act (1997),[152] as well as guidance published by the USEPA, Consideration of Cumulative Impacts in EPA Review of NEPA Documents (1999)[153] and the FHWA Environmental Review Toolkit (2020).[154]

The assessment of cumulative effects includes the identification of past, present, and reasonably foreseeable future actions and evaluation of the potential direct and indirect effects of these actions that, when combined with the direct and indirect effects of the Build Alternative, could potentially result in cumulative effects.

4.22.1 Past, Present, and Reasonably Foreseeable Future Actions

Past actions include the construction of the Kensington Expressway, as described in Section 2.1 of this DDR/EA.

As described in Section 2.3 of this DDR/EA, many of the developments currently underway within the Study Area are the result of, or are associated with, the “Buffalo Billion,” a $1 billion investment dedicated to the Buffalo area economy by New York State. The reasonably foreseeable actions by others within the Study Area are discussed below.

The Region Central Initiative for the NYS Route 198 Corridor is programmed in the Greater Buffalo Niagara Regional Transportation Council (GBNRTC) long-range transportation plan and transportation improvement program; however, it is currently being advanced as a planning study and a specific project/action has not yet been identified. Any potential future project would be subject to environmental review and detailed traffic analysis. Therefore, the Region Central Initiative is not considered a reasonably foreseeable future action by others for purposes of cumulative effects analysis in this DDR/EA. The Kensington Expressway Project would not preclude the consideration of potential future projects in the NYS Route 198 corridor (see Section 1.4.2 of this DDR/EA).

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[151] dot.gov/nepa/QAimpact.aspx. Environmental Review Toolkit – NEPA and Project Development – NEPA and Transportation Decision-making: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process. Available at: https://www.environment.fhwa.dot.gov/nepa/QAimpact.aspx.
[152] Council on Environmental Quality (CEQ). 1997. Considering Cumulative Effects under the National Environmental Policy Act.
[153] USEPA. 1999. Consideration of Cumulative Impacts in EPA Review of NEPA Documents. Available at: https://www.epa.gov/sites/production/files/2014-08/documents/cumulative.pdf.
[154] https://www.environment.fhwa.dot.gov/default.aspx

4.22.1.1 Northland Beltline Redevelopment Project

The project to redevelop the Northland Beltline Corridor[155] in the Delavan-Grider neighborhood is being advanced by the Buffalo Urban Development Corporation in conjunction with Empire State Development (ESD), the New York Power Authority (NYPA), and the City of Buffalo. The east-west course of Northland Avenue transects the affected area, which is bounded by East Delavan Avenue to the north, East Ferry Street to the south, Grider Street to the east, and Fillmore Avenue to the west. The project involves the redevelopment of approximately 50 acres of vacant or underutilized land and over 700,000 square feet of industrial buildings, the acquisition of which was funded by Buffalo Billion funds awarded in 2014. The project aims to bring these properties back to productive use and create a manufacturing hub in East Buffalo. The anchor institution of the project is the Northland Workforce Training Center (WTC) completed in 2017 at 683 Northland Avenue with ESD and NYPA funding to provide job training and career services in the manufacturing sector.

Due to funding considerations, the project has been envisioned to be advanced in two or three phases, the first of which was development of the WTC as referenced above, including stabilization and select demolition of the 683 Northland site. As the anchor institution, the WTC is intended to enhance the desirability and marketability of the remaining portions of 683 Northland, followed by the surrounding properties.[156] Depending on available funding and any identified users, succeeding construction phases would include building and site improvements for the remaining properties.[157] When funding becomes available for building improvements, or when specific users are identified for the buildings, detailed site plans would be developed. Although many of the remaining structures are in disrepair, renovation or restoration is feasible at some sites. Future development site plans would require approval from the City of Buffalo Planning Board and hazardous materials present on some properties would require abatement in advance of other construction activities. The Northland Redevelopment Plan[158] provides more detailed descriptions of the involved sites and buildings as well as redevelopment requirements and potential suitability for various uses.

4.22.1.2 East Side Commercial Districts Program Projects

The East Side Commercial Districts Program projects are funded by capital investments from the Buffalo Billion's East Side Corridors Economic Program,[159] which provides funding for building renovations in four investment areas - the Jefferson Avenue Commercial District, the MLK Park Business District, the Broadway Fillmore corridor, and the Kensington Bailey corridor. The investment areas were chosen because they represent traditional mixed-used commercial districts; there is demand from building owners; and an established nonprofit Local Program Administrator (LPA) has shown an ability to administer a targeted building renovation program. Funds are targeted to "generate wealth for small business owners, combat vacancies, and revitalize commercial corridors."[160]

The projects are intended to address the need to expand neighborhood-serving businesses including retail, restaurants, and other services, and increase mixed-use opportunities along the corridors while

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[155] See https://www.buffalourbandevelopment.com/northland-corridor-redevelopment-project
[156] The properties identified for potential redevelopment include, in addition to 683 Northland Avenue, those located at 631, 644, 664, 688, 690, 741, 767, and 777 Northland Avenue as well as 537 Delavan Avenue.
[157] In the aggregate, a mix of buildings and structures remain on the properties from previous uses including office buildings, manufacturing facilities, warehouses, and parking lots.
[158] https://www.buffalourbandevelopment.com/northland-redevelopment-plan
[159] https://eastsideavenues.org/east-side-commercial-districts/
[160] https://eastsideavenues.org/wp-content/uploads/2022/10/UBRI_ESA_21-22_Annual_Report.pdf

also maintaining the historic character of the buildings on the corridors and re-establishing traditional walkable community business districts.

Buildings along the corridors have a broad range of needs including exterior façade renovations, interior improvements, systems improvements, and code compliance upgrades. The LPAs use funds to award matching capital grants to district building owners with oversight from the community nonprofit. Each of the four investment areas receives additional funds to administer the program and hire an experienced consultant or staff member to assist with program administration. These funds ensure LPAs receive the capacity building and technical expertise necessary to establish a portfolio of solid projects that have the greatest impact on the commercial district.

As of 2022, seven projects were under construction, two were in pre-construction, and seven were in the bidding process. Additional funding will support building improvements, greater assistance for building owners, and improved capacity to market and implement the program.

4.22.1.3 Commercial Building Stabilization Fund Projects

Utilizing funds from the East Side Corridors Economic Program, ESD established the Commercial Building Stabilization Fund.[161] The Commercial Building Stabilization Fund is a dedicated funding source of $5 million providing capital investments for projects able to "support stabilization of at-risk historic buildings in targeted investment areas."[162] Property owners and businesses in the target locations are eligible to receive grants from the fund of up to $150,000 for stabilization–related activities for commercial or mixed–use buildings. Eligible stabilization activities include structural repairs and weatherization, especially for buildings that are along commercial corridors and have plans for redevelopment. More specifically, the Fund will support smaller, seal-up efforts such as roof patching, mothballing precautions, etc., to address obstacles preventing active use and business activity that may become crisis-level failures in the future. It is also intended that the fund ensure that buildings with code violations or structural deficiencies where there is no currently viable project are not demolished as a short sighted "solution." The fund intends to instead keep such buildings viable so that the resources will be intact and available for re-use when market opportunities emerge.

To be eligible, buildings must be a commercial or mixed-use property located on Buffalo's East Side, buildings must be historic, and preference is given to buildings along commercial corridors in the target investment areas, and properties must be maintained following stabilization. ESD first announced the availability of applications in December 2020. In 2022, 20 projects had been selected to move forward with construction.

4.22.1.4 City of Buffalo Transportation Projects

Major transportation improvement projects identified on the City of Buffalo website[163] include the Fruit Belt Subsurface Investigation, Middle Main Street project, Main Street, Humboldt Avenue, Kensington Intersection project, Jefferson Avenue project, Allen Street Reconstruction project, Entertainment District project, Build Back Bailey project, Busti Traffic Calming project, Dewey Avenue Bridge Replacement project, Parkside and Linden Intersection Improvements project, and the Niagara Street project. The projects are of varying locations, scales, and stages of implementation. All are sufficiently separated from

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[161] https://eastsideavenues.org/commercial-building-stabilization-fund/ and https://preservationbuffaloniagara.org/east-side-commercial-building-stabilization-fund/
[162] See *The Buffalo Billion II East Side Corridor Economic Development Fund Spring 2019* https://eastsideavenues.org/wp-content/uploads/2019/12/East-Side-Strategies-2018.pdf
[163] https://www.buffalony.gov/1052/Major-Projects

the Build Alternative in both location and time that the potential for overlapping or coincident construction activities is very low.

4.22.2 Potential Cumulative Effects

Sections 4.1 through 4.20 of this DDR/EA document the anticipated direct effects of the Build Alternative. Section 4.21 documents the indirect effects of the Build Alternative.

The cumulative effects resulting from the effects of Build Alternative combined with the effects of past, present, and reasonably foreseeable future actions are described below.

4.22.2.1 Neighborhood Character and Community Cohesion

As described in Section 2.1 of this DDR/EA, the construction of the Kensington Expressway removed Humboldt Parkway and created a barrier to community connectivity, thereby changing the context of the neighborhood from a cohesive residential community to one divided by a major transportation facility. The Build Alternative would reconnect communities that were divided by the construction of the depressed section of the expressway. It would provide improved east-west pedestrian connectivity and new greenspace, among other improvements. Temporary construction effects would occur during the construction period; no other major capital project is expected to be under construction at the same time, thus, these effects would not be worsened by the construction effects of reasonably foreseeable actions by others. Reasonably foreseeable actions, such as the East Side Commercial Districts Program projects, are anticipated to have positive effects on neighborhood character. No adverse cumulative effects related to neighborhood character and community cohesion are anticipated to result from the Build Alternative.

4.22.2.2 Social Groups Benefited or Harmed

The effects of the Build Alternative on transit-dependent populations, non-driver populations, the elderly, and individuals with disabilities would be beneficial due to improved pedestrian accommodations and connectivity. Temporary construction inconveniences would occur but would be minimized by the construction staging plan to maintain sidewalk connectivity. No adverse cumulative effects related to social groups are anticipated to result from the Build Alternative.

4.22.2.3 Local and Regional Economies

The effects of the Build Alternative on local and regional economies would be beneficial as a result of construction spending/employment and related multiplier effects. In addition, access to local businesses would be improved by the multimodal accommodations incorporated in the Build Alternative. Reasonably foreseeable actions by others, such as the Northland Beltline Redevelopment Project, are expected to also result in beneficial economic effects. No adverse cumulative effects related to local and regional economies are anticipated to result from the Build Alternative.

4.22.2.4 Historic and Cultural Resources

The Build Alternative would have “no adverse effect” on historic properties under Section 106 of the National Historic Preservation Act. The visual setting of historic properties along Humboldt Parkway would be substantially improved by covering the expressway with a landscaped tunnel cap. The reasonably foreseeable actions by others, such as the Commercial Building Stabilization Fund projects, are expected to have beneficial effects on historic properties (e.g., preservation of historic commercial buildings). No adverse cumulative effects related to cultural resources are anticipated to result from the Build Alternative.

4.22.2.5 Parks and Recreational Resources

The Build Alternative would have beneficial effects on parkland with the creation of new greenspace and improved connectivity to existing parks. Reasonably foreseeable actions by others are expected to also result in beneficial effects to parks and recreational resources. Therefore, cumulative effects on parkland would be beneficial in the long-term.

4.22.2.6 Visual Resources

The Build Alternative would have beneficial effects on visual resources and aesthetics through the creation of a landscaped greenspace on the tunnel cap. Reasonably foreseeable actions by others, such as the East Side Commercial Districts Program projects, are expected to also result in beneficial visual effects. Therefore, cumulative effects on visual resources would be beneficial in the long-term.

4.22.2.7 Air Quality/Greenhouse Gases

The air quality and greenhouse gas analyses that were conducted for the Project are inherently cumulative effects evaluations because the traffic data used in the analyses account for reasonably foreseeable projects and background growth. The air quality analysis also includes background concentrations that account for other sources of emissions in the region. Temporary air quality effects during construction are anticipated; however, no other major capital project is expected to be under construction at the same time and the effects would be mitigated through dust control, air quality monitoring, and other measures. Therefore, no adverse cumulative effects related to air quality are expected to result from the Build Alternative.

4.22.2.8 Noise

The traffic noise analysis that was conducted for the Project is inherently a cumulative effects evaluation because the traffic data used in the analysis account for reasonably foreseeable projects and background growth. The Build Alternative would result in short-term noise effects during construction; however, no other major capital project is expected to be under construction at the same time and the effects would be abated through noise monitoring and noise control measures. Therefore, no adverse cumulative effects related to noise are anticipated to result from the Build Alternative.

4.22.2.9 Natural Resources

Construction of the Build Alternative would result in effects to vegetation, stormwater runoff and disturbance of urban wildlife. However, these effects would be minimized through the incorporation of best management practices in the Project. Long-term effects on natural resources would be beneficial through the creation of additional tree canopy and reduction in impervious surface. Overall, no adverse cumulative effects are anticipated to result from the Build Alternative.

4.22.2.10 Traffic and Transportation

The traffic study that was conducted for the Project included the use of the GBNRTC regional travel demand model, which accounts for other planned projects in the long-range transportation plan at the time of the analysis, future demographic conditions, land use, and travel times. The traffic study also included a background traffic growth rate that accounts for future growth. Therefore, the traffic study is inherently a cumulative effects evaluation. In addition, the reasonably foreseeable actions by others within the Study Area are not expected to result in major changes in traffic.

CHAPTER 5 – PUBLIC INVOLVEMENT

This chapter describes the public involvement process that has been developed and implemented for the NYS Route 33, Kensington Expressway Project ("the Project"). Public involvement is an integral part of the environmental review and decision-making processes, and the Federal Highway Administration (FHWA) and New York State Department of Transportation (NYSDOT) have provided, and will continue to provide, opportunities for meaningful public and agency participation and engagement in the Project.

The environmental provisions in 23 USC §139 require that joint lead agencies (FHWA and NYSDOT) establish a plan for coordinating public and agency participation and comment on the environmental review process for a project. Accordingly, a *Joint Agency Coordination Plan/Public Involvement Plan* (Joint ACP/PIP) has been developed, which describes the process and communication methods for coordinating with the agencies involved in the Project and providing meaningful opportunities for public involvement. The Joint ACP/PIP contains an Environmental Justice Engagement Plan that describes methods for targeted outreach to identified environmental justice communities in the vicinity of the Project. This Joint ACP/PIP will be in effect throughout the Project development process. The Joint ACP/PIP is a flexible, "living" document that can be amended as needed during the process.

As described in Section 4.4, Environmental Justice of this DDR/EA, the Environmental Justice Study Area for the Project includes minority and/or low-income communities (refer to Figure 4.4-1). Executive Order (EO) 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* and the subsequent EO 14096 *Revitalizing Our Nation's Commitment to Environmental Justice for All* require federal agencies to provide meaningful opportunities for affected minority and/or low-income communities to participate in a project. As described below, the public involvement activities and methods for involving the public in the Project were developed in consideration of these communities.

Individuals who do not speak English as their primary language and/or those who have limited ability to read, speak, write, or understand English are considered "limited English proficient" (LEP). According to 2021 data from the U.S. Census Bureau American Community Survey (ACS), approximately 10.2 percent of the population of the Environmental Justice Study Area are considered LEP. Approximately 79 percent of the population speaks only English. As shown in Table 5.1, out of the total population within the Study Area who are considered LEP, 35.2 percent speak an "Other Indo-European"[164] language, 20.4 percent speak Spanish, 17.1 percent speak an "Other and unspecified" language, and 14.8 percent speak an "Other Asian and Pacific Island language." In compliance with the federal EO 13166, *Improving Access to Services for Persons with Limited English Proficiency*, and the State of New York EO 26, *Statewide Language Access Policy*, the public involvement activities for the Project were developed to consider those populations with limited English proficiency, including the following:

- Advertising for public meetings in local Spanish-language newspapers;
- Providing telephonic interpretation services at the public meetings for those individuals with other language needs; and,
- Providing a Spanish-language interpreter at the public meetings.

[164] These include French, Haitian, Italian, Portuguese, German, Yiddish, Greek, Russian, Polish, Serbo-Croatian, Ukrainian and other Slavic languages, Armenian, Persian, Gujarati, Hindi, Urdu, Punjabi, Bengali, Nepali and other Indic languages, Telugu, Tamil, Malayalam and other Dravidian languages, and others. See [American Community Survey and Puerto Rico Community Survey 2021 Subject Definitions (census.gov)] for more detail.

Reasonable efforts were made to provide meaningful access for the LEP populations within the Environmental Justice Study Area. The NYSDOT will continue to conduct public involvement activities for the Project in consideration of LEP populations.

Table 5.1-1: Languages Spoken by LEP Populations in the Environmental Justice Study Area, 2021

Language Spoken	LEP Population	Percent of LEP Population
Total LEP Population	2,064	100%
Other Indo-European	727	35.2%
Spanish	422	20.4%
Other and unspecified	353	17.1%
Other Asian and Pacific Island languages	305	14.8%
Arabic	166	8.0%
Chinese (incl. Mandarin, Cantonese)	53	2.6%
Korean	14	0.7%
German or other West Germanic Languages	12	0.6%
Russian, Polish, or other Slavic languages	11	0.5%
French, Haitian, or Cajun	1	0.0%
Vietnamese	0	0.0%
Tagalog (incl. Filipino)	0	0.0%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates.

In addition, public meetings have been and will continue to be held in locations that comply with the Americans with Disabilities Act (ADA) to assure that individuals with disabilities have convenient access to meetings. Public notices announcing public meetings will continue to provide instructions for requesting special accommodations. Furthermore, the public meetings have been and will continue to be held in locations within environmental justice communities and in locations that are accessible via public transit.

5.1 Public Meetings and Hearing

5.1.1 Public Scoping Meeting

A public scoping meeting for the Project was held on June 30, 2022 at the Buffalo Museum of Science, 1020 Humboldt Parkway, Buffalo, New York to provide information about the Project; describe the Project development and environmental review processes; and obtain input from attendees. One session was held from 11:00 AM to 2:00 PM and a second session was held from 5:00 PM to 8:00 PM; sessions were held at different times of the day to accommodate varying work schedules and to maximize opportunities for attendance. During the morning session, 122 people attended. During the evening session, 105 people attended (227 attendees total). The attendees consisted of community members, elected officials' representatives, business owners, and members of the local media. Approximately two media outlets covered the meeting. The NYSDOT held meetings with state and local elected officials prior to the public scoping meeting.

The public scoping meeting was advertised in the following ways:

- Electronic distribution (e-mail blast sent June 22, 2022) to select stakeholders representing community-based groups.
- Publication in local newspapers and online news sources:
  - The Buffalo News (digital ad ran June 5, 2022 and June 19, 2022)
  - Buffalo Rising (digital ad ran June 14, 2022 through June 30, 2022)
  - Panorama Hispano News (Spanish-language, digital ad started June 6, 2022, and ran all month)

- Buffalo Latino Village (Spanish-language, digital ad started June 10, 2022, and ran all month)
- Bee Newspapers (ran June 16, 2022, Clarence, Amherst, Tonawanda, and Cheektowaga)
- Challenger Community News (ran June 16, 2022)
- The Buffalo Criterion Newspaper (ran June 18, 2022)

- Physical notices (door hanger flyers) placed on homes and other buildings located directly adjacent to the Kensington Expressway corridor between Best Street and the pedestrian bridge over the Kensington Expressway, located just north of Hamlin Street.
- Physical notices sent to residences located directly adjacent to the Kensington Expressway corridor via U.S. mail.
- Advertisement placed on the NYSDOT Facebook page and Twitter account.

Each of the sessions included 22 display boards that provided information about the Project and the 10 concepts that were being considered. The sessions were held in an open-house format, with a narrated Project presentation (PowerPoint) that played on a continuous loop throughout the meetings. Also, a public information brochure was developed and made available at the scoping meeting. The brochure provided a general Project overview and described the ways in which the public could provide comments. Public scoping meeting materials used at the meeting are available on the Project website.

At each session, attendees were able to submit comments via several methods. An area was dedicated to comments, with tables, chairs, comment cards (for handwritten comments), comment boxes, and Project staff available for questions and answers. There were also laptop and tablet computers available for attendees to submit comments directly using the comment form on the Project website. A stenographer was available at both sessions to record formal verbal comments from attendees. Spanish-language and American Sign Language interpreters were also available. After the meeting, comments could be submitted via e-mail, U.S. mail or on the Project website.

During the 30-day comment period following the public scoping meeting, which officially ended July 29, 2022, 154 comments were received. The NYSDOT also accepted several comments that were received after the July 29 deadline (six comments received between July 30, 2022 and August 3, 2022). Appendix E of the Project Scoping Report contains the comments received and responses to substantive comments. Refer to Section 5.7 for more information on the comments received since the conclusion of the formal scoping comment period.

During the scoping comment period, Project information was displayed at the Frank Merriweather Jr. Library, including display boards on the Project purpose and need, Project concepts, air quality and tunnel ventilation, Section 106, and the environmental review process. Project brochures and comment forms were available, along with a drop box where comments could be deposited.

5.1.2 Public Information Meeting

A public information meeting was held on Tuesday, June 20, 2023, at the Buffalo Museum of Science, 1020 Humboldt Parkway, Buffalo, New York to provide updated information on the Project; describe progress on Project development and environmental review processes; and obtain input from attendees. One session was held from 11:00 AM to 2:00 PM and a second session was held from 5:00 PM to 8:00 PM; sessions were held at different times of the day to accommodate varying work schedules and to maximize opportunities for attendance. During the morning session, 126 people attended. During the evening session, 114 people attended (240 attendees total). The attendees consisted of community members, elected officials' representatives, business owners, and members of the local media.

The public information meeting was advertised in the following ways:

- Electronic distribution (e-mail blast sent June 12, 2023) to 189 individuals (select stakeholders representing community-based groups as well as individuals who signed up for notifications via the Project website).
- Publication in local newspapers and online news sources:
  - The Buffalo News (ran May 28, 2023 and June 11, 2023 hard copy and digital)
  - Buffalo Rising (digital ad ran June 8, 2023)
  - Panorama Hispano News (Spanish-language; ran June 1, 2023 hard copy and digital)
  - Buffalo Latino Village (Spanish-language; ran June 1, 2023 hard copy and digital)
  - Bee Newspapers (ran June 7, 2023 and June 8, 2023, hard copy and digital)
  - Challenger Community News (ran June 8, 2023)
  - Buffalo Criterion (ran June 3, 2023)
- Advertisement placed on the NYSDOT Facebook page and Twitter account.
- Physical notices (approximately 2,800 door hanger flyers) placed on homes and other buildings located between East Delevan Avenue and Genesee Street and between Fillmore Avenue and Jefferson Avenue.
- Flyers and information were distributed by the Project team at community events (see Appendix E1).
- Flyers and information were available at the Public Outreach Office (878 Humboldt Parkway) prior to the public information meeting.

The public information meeting was held in an open house format. Participants were provided the opportunity to review 27 presentation boards and discuss the Project with Project staff. The presentation boards displayed information on environmental considerations; the Project location; the Build Alternative; changes to the proposed design since the 2022 public scoping meeting; landscaping and tree planting options; tunnel jet fans; work zone traffic control; construction staging, impacts, and mitigation; controlled blasting; rock excavation; and the Project schedule. All materials used at the public information meeting were posted to the Project website.

At each session, attendees were able to submit comments via several methods. An area was dedicated to comments, with tables, chairs, comment cards (for handwritten comments), and three laptop computers available for attendees to submit comments using voice-to-text recorders or typing comments into the Project website. Forms were available for attendees to submit written comments via a box at the welcome table. A stenographer was available to record formal verbal comments from attendees. Spanish-language and American Sign Language interpreters were also available. After the meeting, comments could be submitted by e-mail, U.S. mail, or on the Project website. During the seventeen-day comment period following the public information meeting (ending July 7, 2023), 36 comments were received. The NYSDOT also accepted one comment that was received after the July 7 deadline (received July 9, 2023). Comments received have been considered and substantive comments have been responded to, as appropriate, in this DDR/EA (See Appendix E2). Refer to Section 5.7 of this DDR/EA for more information.

5.1.4 Public Hearing

A public hearing for this Project will be held after this DDR/EA is released to the public and during the 45-day DDR/EA public comment period. The public hearing date, time and location will be appropriately noticed using the same methods as used for the June 2022 public scoping meeting and June 2023 public information meeting (e.g., door hanger flyers, emails to individuals on the mailing list, media outreach, social media, newspaper advertisements).

The public hearing will provide opportunities for agencies and the public to submit comments on this DDR/EA verbally and/or in writing. Comments received at the public hearing and during the DDR/EA comment period will be considered and substantive comments responded to, as appropriate, in the Final Design Report/Environmental Assessment (FDR/EA).

5.2 Stakeholder Meetings

5.2.1 Initial Outreach Efforts – January 2007 through December 2019

Coordination with the community regarding the Kensington Expressway improvements started as early as 2007, when the Restore our Community Coalition (ROCC) was formed. Meetings were held in 2009 and 2010 to discuss a variety of issues associated with the Kensington Expressway, including the negative effect that the facility has had on the community. The 2012 Concept Design Study was initiated in 2011 at the request of stakeholders, including former New York State Senator Antoine Thompson, State Assembly Member Crystal Peoples-Stokes, the Buffalo Olmsted Parks Conservancy, and other local officials and community organizations. After completion of a Concept Design Study in August 2012, the NYSDOT attended meetings with community stakeholders (described below) where input was received. The input was primarily in favor of full enclosure of the Kensington Expressway.

In the Fall of 2016, the NYSDOT identified stakeholders for the Project. An official stakeholder group was established, consisting of representatives from the ROCC, residents, businesses, the City of Buffalo, Erie County, the Buffalo Olmsted Parks Conservancy, the Buffalo Museum of Science, elected officials, and others. Table 5.2-1 identifies the stakeholder meetings that were held between January 2016 and December 2019.

Table 5.2-1: Initial Stakeholder Meetings - January 2016 through December 2019

Meeting Type	Purpose	Meeting Date
Community Stakeholder Meeting #1	Introduce the Project & solicit input.	October 25, 2016
Community Stakeholder Meeting #2	Discuss progress, present details of the Project & solicit input.	January 12, 2017
ROCC Meeting	Discuss progress, present details of the Project & review draft preliminary "Purpose & Need" statement.	May 26, 2017
Meeting Organized by NYS Assemblywomen Crystal Peoples-Stokes	Discuss issues related to the Kensington Expressway Project.	May 17, 2019
Community Stakeholder Meeting #3	Provide an update on the Project concepts, discuss the draft preliminary purpose and objectives, provide background on air quality regulations, screening, and analysis.	August 21, 2019
Community Stakeholder Meeting #4	Review Project concepts.	November 13, 2019

5.2.2 Stakeholder Meetings – January 2022 through Present

As part of the ongoing public engagement for the Project, the NYSDOT has presented and discussed the Project at stakeholder meetings. Table 5.2-2 identifies the stakeholder meetings that NYSDOT has held since January 2022.

Between January 2022 and November 2022, NYSDOT conducted several meetings with elected officials and community leaders to discuss the Project. In November 2022, NYSDOT held the first of a series of ongoing monthly meetings with key stakeholder group representatives. These meetings provide for an ongoing two-way dialogue about the Project status, design, and environmental review processes. Groups represented in the ongoing stakeholder group meetings include the following:

- Restore Our Community Coalition (ROCC)
- Hamlin Park Community & Taxpayers Association, Inc.
- The Black Chamber of Commerce of Western New York, Inc.
- Buffalo Olmsted Parks Conservancy
- True Community Development Corporation
- Buffalo Museum of Science
- Citizen's Alliance, Inc.
- Delavan Grider Community Center
- The African American Cultural Center
- Resource Council of WNY
- Masten Block Club Coalition, Inc.
- Winslow Block Club
- MLK Block Club

NYSDOT will continue to hold stakeholder group meetings through the final design and construction phases of the Project.

Table 5.2-2: Stakeholder Meetings – January 2022 through Present

Meeting Type	Meeting Location	Purpose	Meeting Date
New York State Assemblymember Crystal Peoples-Stokes	Virtual Meeting	Review Project concepts and the materials prepared for the public scoping meeting; solicit input.	April 25, 2022
New York State Senator Tim Kennedy	Virtual Meeting	Review Project concepts and the materials prepared for the public scoping meeting; solicit input.	April 26, 2022
U.S. Representative Brian Higgins	Virtual Meeting	Review Project concepts and the materials prepared for the public scoping meeting; solicit input.	April 27, 2022
Erie County Executive Chief of Staff Jennifer Hibit and Commissioner of Public Works Bill Geary	Virtual Meeting	Review Project concepts and the materials prepared for the public scoping meeting; solicit input.	May 3, 2022
New York State Assemblymember Crystal Peoples-Stokes and New York State Senator Tim Kennedy	New York State Capitol, Albany	Review Project concepts and the materials prepared for the public scoping meeting; solicit input.	May 4, 2022

Table 5.2-2: Stakeholder Meetings – January 2022 through Present			
Meeting Type	**Meeting Location**	**Purpose**	**Meeting Date**
Community Leaders Meeting[165]	NYSDOT-Region 5 Office	Review Project Concepts and the materials prepared for the public scoping meeting; solicit input; gather input on the best ways to engage the greater community.	June 29, 2022
New York State Assemblymember Crystal Peoples-Stokes Staff	Virtual Meeting	Project update	July 27, 2022
Stakeholder Group Meeting #1	Buffalo Museum of Science	Project status update, and discussion of air quality, funding, and schedule-related items	November 9, 2022
Stakeholder Group Meeting #2	Buffalo Museum of Science	Discuss extension of tunnel limits, tunnel ventilation requirements, and environmental progress.	December 7, 2022
Stakeholder Group Meeting #3	Buffalo Museum of Science	Concept evaluation, environmental progress and Project schedule, air ventilation requirements, and traffic study.	January 11, 2023
Stakeholder Group Meeting #4	Buffalo Museum of Science	Tunnel engineering progress, NEPA and SEQRA requirements, Section 106 updates, and air quality analysis.	February 8, 2023
Stakeholder Group Meeting #5	Buffalo Museum of Science	Landscaping options, Best Street interchange improvement options, and environmental update.	March 8, 2023
Stakeholder Group Meeting #6	Buffalo Museum of Science	Rock excavation presentation and environmental analysis update.	April 5, 2023
Stakeholder Group Meeting #7	Buffalo Museum of Science	Construction staging presentation, environmental analysis update, and information related to public information meeting.	May 10, 2023

[165] Initial meeting as described in the NYS Route 33 Kensington Expressway Project *Environmental Justice Engagement Plan*.

Table 5.2-2: Stakeholder Meetings – January 2022 through Present			
Meeting Type	**Meeting Location**	**Purpose**	**Meeting Date**
Stakeholder Group Meeting #8	Buffalo Museum of Science	Sharing boards for public information meeting and reviewing previous stakeholder questions and answers.	June 7, 2023
Stakeholder Group Meeting #9	Buffalo Museum of Science	Follow-up on public information meeting; review of localized street improvements; changes to design since public information meeting; power supply and additional building needs.	July 13, 2023
Stakeholder Group Meeting #10	Buffalo Museum of Science	Air quality model, preliminary results, anticipated impacts, and approaches to mitigation.	August 2, 2023
Stakeholder Group Meeting #11	Buffalo Museum of Science	Construction and indirect effects and mitigation, right-of-way impacts, and air quality.	September 6, 2023

5.3 Project Website

A Project website (http://kensingtonexpressway.dot.ny.gov) was established to provide information about the Project. The website serves as a source of Project information, including the Project Scoping Report and this DDR/EA, public meeting materials, and Project updates. The site also functions as a continuous means for the public to submit comments at any point during the Project. The website will continue to be updated to include announcements of public meetings and provide access to documents.

5.4 Mailing/Email Lists

Lists of contacts, including elected officials, public agency contacts, stakeholders, interested parties, and individuals, have been developed. Opportunities for individuals to be included on the mailing list were provided on the sign-in sheets at the public meetings and on the Project website. These lists have been and will continue to be used to share meeting notices and other communications with the public.

5.5 Community Outreach Office and Community Liaisons

On November 1, 2022, the NYSDOT opened a community outreach office for the Project in the FellowshipWorld Church at 878 Humboldt Parkway. The office is centrally located within the defined transportation corridor, in a community with environmental justice populations, and is transit-accessible (direct service by NFTA bus Route #12 on East Utica Street). The office is ADA-accessible. The purpose of the office is to provide a resource for members of the public to access information, ask questions, provide input, and learn about the NYS Route 33 Kensington Expressway Project. Office hours are Tuesday through Friday – 9:30 AM to 6:30 PM and Saturdays - 10:00 AM to 2:00 PM. Office hours are occasionally modified so that staff can conduct direct outreach to the community. Due to the Project team's experience and observations with success in attending community events, it was determined that a combination of active outreach and open office hours is more effective for community engagement than the passive method of having the community come to the office. Office hours are posted on the Project website and on signage outside the office.

During the office hours, two community outreach liaisons dedicated to this Project are available to interact with visitors and are supported by other Project team members as needed to answer questions. The liaisons are members of the community who are equipped with knowledge of the community and have connections to the area. The community outreach liaisons staff the outreach office, attend events in the community, communicate public input to the NYSDOT, explain the Project to the community, and answer questions that the community has about the Project.

Updated Project materials are on display at the office, along with comment forms and Project documents (e.g., the Project Scoping Report and this DDR/EA). A computer with access to the Project website and electronic versions of the Project materials is also provided. The office will remain open through the preliminary design/environmental review, final design, and construction phases of the Project to support continuous community engagement.

5.6 Community Outreach Activities/Events

In addition to hosting meetings with stakeholders, the NYSDOT has also attended multiple community events to discuss the Project with interested individuals. Community events included festivals, block club meetings, and meetings with church leadership and congregations. In general, these outreach efforts are intended to disseminate information about the Project and solicit input. At the community events, the NYSDOT staff answered questions about the Project and had Project information available to view. Comment forms and brochures were provided to interested people. See Appendix E1 for a list of community outreach activities and community events attended by the Project team.

5.7 Public Comments Received Since the Formal Scoping Comment Period

131 public comments have been received since the end of the scoping comment period (August 3, 2022), including comments received at the June 20, 2023 public information meeting. All comments received are contained in Appendix E2, along with summaries of substantive comments with responses.

5.8 Availability of Project Reports and Public Comment Opportunities

The Project Scoping Report, this DDR/EA, and (once available) the FDR/EA, and Environmental Determination have been and will continue to be made available on the Project website. The availability of this DDR/EA, the FDR/EA, and Environmental Determination will be appropriately noticed using the same methods as used for the June 2022 public scoping meeting, June 2023 public information meeting, and the public hearing (e.g., emails to individuals on the mailing list, media outreach, social media, and newspaper advertisements).

Table 5.8-1 lists the repositories for the Project Scoping Report and this DDR/EA. The availability of this DDR/EA for public review will be advertised in a similar manner as the public scoping meeting and public information meeting.

Table 5.8-1: Repositories for the DDR/EA	
Location	**Address**
Buffalo City Hall	65 Niagara Square Buffalo, NY 14202
Central Library	1 Lafayette Square Buffalo, NY 14203
Frank E. Merriweather, Jr. Library	1324 Jefferson Avenue Buffalo, NY 14208
NYSDOT Region 5 Office	100 Seneca Street Buffalo, NY 14203
NYSDOT Public Outreach Office	878 Humboldt Parkway Buffalo, NY 14211

A 30-day public comment period followed the public scoping meeting and extended until July 29, 2022. Comments received during that period were considered and substantive comments responded to in the Project Scoping Report (see Appendix E of the Project Scoping Report).

A 17-day public comment period followed the public information meeting and extended until July 7, 2023. Comments received during that period were considered and substantive comments summarized and responded to in Appendix E2 of this DDR/EA.

A 45-day public comment period will follow the release of this DDR/EA. Comments received on or before October 27, 2023 will be considered and substantive comments responded to, as appropriate, in the FDR/EA.

5.9 Public Engagement During Final Design and Construction

The NYSDOT Public Outreach Office would remain open through the final design and construction of the Project. During final design, periodic meetings of the project stakeholder group would continue to provide updates on project progress and obtain input on the various mitigation plans required to be developed in final design (such as the construction noise and vibration plans, construction air quality monitoring plan and work zone traffic control plans). The general public will also have an opportunity to provide input on these mitigation plans through engagement activities to be defined during final design."

During construction of the Project, the Public Outreach Office would accommodate visitors who have questions, comments, and/or concerns about ongoing and upcoming construction activities. NYSDOT would also include contract requirement for a public outreach liaison that would conduct proactive outreach during the construction phase. Further, the community liaison would be able to accept complaints from the public which would then be assessed by NYSDOT for any appropriate action. NYSDOT would also communicate with the public via construction updates to the project website, social media, email and attendance at community events.

5.10 Contact Information

For further information about the Project, please visit the Project website: https://kensingtonexpressway.dot.ny.gov/.

Comments about the Project may be submitted via the Project website, or via email to kensingtonexpressway@dot.ny.gov, or by mail to:

NYS Route 33, Kensington Expressway Project Team
New York State Department of Transportation, Region 5
100 Seneca Street
Buffalo, NY 14203

The deadline for submitting comments on this DDR/EA is October 27, 2023.