Appendix D11:
Indirect and Cumulative Effects Supplemental Information

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Acronyms and Abbreviations

BRT ..... Bus Rapid Transit
CHC ..... Center for Handicapped Children
EIS ..... Environmental Impact Statement
FHWA ..... Federal Highway Administration
LRT ..... Light Rail Transit
Metro ..... Niagara Frontier Transit Metro System, Inc.
PAL ..... Metro Paratransit Access Line
Project ..... Buffalo-Amherst-Tonawanda Corridor Transit Expansion
NFTA ..... Niagara Frontier Transportation Authority
UB ..... University at Buffalo

Appendix D. Indirect and Cumulative Effects Supplemental Information

The Council on Environmental Quality (CEQ) regulations implementing National Environmental Policy Act (NEPA) (set forth in 40 CFR Parts 1500 through 1508) require Federal agencies to consider the potential for indirect and cumulative effects from a proposed action in addition to direct impacts. CEQ revised these regulations in July 2020. The revisions call for addressing both direct impacts and indirect effects of proposed actions as well as providing guidance on assessing cumulative effects.

As defined in the regulations, direct impacts are "caused by the action (Build Alternative) and occur at the same time and place" (40 CFR Section 1508.1(g)(1)). Indirect effects are those that are, "…caused by the action and are later in 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 Section 1508.1(i)(2)). Indirect effects can occur in any of the analysis areas evaluated in an EIS.

Cumulative effects result from the incremental consequences of an action when added to the effects of other past, present, and reasonably foreseeable future actions (40 CFR Section 1508.1(i)(3)). The CEQ regulations state, "cumulative effects can result from actions with individually minor but collectively significant effects taking place over a period of time." The direct impacts of an individual action could be negligible but could contribute to a measurable environmental impact when considered cumulatively with other past, present, or future projects.

D1. REGULATORY CONTEXT AND METHODOLOGY

The following NEPA regulations set forth procedures for evaluating the long-term cumulative and indirect effects of the LRT Build Alternative and BRT Build Alternative:

- *Assessing Indirect Effects and Cumulative Impacts Under NEPA*, American Association of State Highway and Transportation Officials, August 2016.
- *Considering Cumulative Effects under the National Environmental Policy Act*, CEQ Executive Office of the President, 1997.
- *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*, CEQ, 2005.

The basic steps for the indirect effects analysis include the following:

1. Identify as the study area the geographic area that would benefit from the mobility improvements and increased accessibility (*i.e.*, faster travel times or a more convenient commute) provided by the Project.

2. Assess the Project's potential to induce growth in the study area.
3. Evaluate the potential environmental effects that would result from induced growth.
4. Identify measures to mitigate or minimize the potential environmental effects (if required).

The basics steps for the cumulative effects analysis include the following:

1. Identify the study area to be considered for the cumulative effects analysis.
2. Summarize potential effects of a proposed action (direct and indirect effects) on sensitive resources in the study area.
3. List other past, present, and reasonably foreseeable actions and their effects on the sensitive resources in the study area.
4. Review the current health of each resource in terms of the past and present actions and identify and assess any current trends and future projects, including a proposed action that when combined could impact the sensitive resources in the study area.
5. Identify measures to mitigate or minimize potential environmental effects (if required).

D.1.1 Study Area

The alignment for both Project Build Alternatives begins at the existing University Station and traverses Kenmore Avenue, Niagara Falls Boulevard, Maple Road, Sweet Home Road, the SUNY University at Buffalo (UB) North Campus, and John James Audubon Parkway to a proposed station north of I-990 (see Chapter 2, "Alternatives"). Both Project Build Alternatives propose the construction of stations at the same locations along the Project alignment which includes a storage and light maintenance facility at the northern termini near the I-990 station. The primary difference between the Build Alternatives is the construction of underground segments for the LRT Build Alternative which are proposed to extend from the existing Metro University Station to Niagara Falls Boulevard and the grade-separation under the Sweet Home Road and Maple Road intersection. Therefore, the study areas for the indirect effects and cumulative effects assessments are the same for both the LRT Build Alternative and the BRT Build Alternative.

D.1.1.1 Indirect Effects Study Area

The indirect effects study area is the portion of the corridor that could be impacted by development induced by the construction and operation of either Build Alternative. This Draft EIS indirect effects assessment defines a Project study area which uses a 0.5-mile radius around transit stations and a 0.25-mile radius on either side of the proposed alignment.

D.1.1.2 Cumulative Effects Study Area

The cumulative effects analysis includes those resources that the LRT Build Alternative and the BRT Build Alternative would directly impact, resources that would be affected by potential indirect development that are particularly susceptible to cumulative effects, and resources that

could experience effects from one or more projects over time in addition to the incremental effects of the selected Build Alternative.

The Project has no potential to impact environmental resources that extend outside the direct impact study area, therefore, the study area for the assessment of cumulative effects is the same as the study area for indirect effects (*i.e.*, the area potentially impacted by development that could be induced by the construction and operation of the LRT Build Alternative and the BRT Build Alternative).

D2. ENVIRONMENTAL CONSEQUENCES

D.2.1 Indirect Effects

The LRT Build Alternative and the BRT Build Alternatives would use the same Project alignment with exceptions being the underground segments of the LRT Build Alternative and the segments where the BRT Build Alternative operates in mixed traffic. Direct impacts such as road improvements and widening, the addition of new turning lanes, redesignations of existing lanes, stations, and a storage and light maintenance facility are required for both alternatives.

The benefits of adding transit service, accessibility, and mobility to the community within the region would result from either Alternative. The indirect effects associated with the LRT Build Alternative and the BRT Build Alternative would be similar regarding induced development such as services and materials associated with future Project induced TOD.

D.2.1.1 Socioeconomics and Induced Growth

Market demand, local planning, land availability, transit accessibility, and TOD policies are factors that impact the amount, location, and type of growth in an area. The Project would support residential and commercial growth in the indirect effects study area by providing improved transit access to the area. The Project would introduce high-quality public transportation service, encouraging increased transit ridership. More public transit users would have access to these areas and connection to the existing transit system that extends southward; therefore, increased mobility options could result in increased residential and commercial activity throughout the study area.

As discussed in Section 4.3, "Community Facilities," the characteristics within the study area, including population, household size, and employment, are projected to be consistent with typical transit-oriented growth. In addition, zoning such as the Buffalo Green Code promotes transit strategies for development, and the zoning codes for Amherst and Tonawanda incorporate TOD-friendly components, including mixed use development, as described in Section 4.2, "Land Use."

In the new station areas, which are the same for both Build Alternatives, where TOD would occur, the pattern of land use would be oriented toward the proposed stations. Both the LRT Build Alternative and the BRT Build Alternative include infrastructure improvements at proposed station locations, particularly for pedestrians using the stations and areas adjacent. In

the established station areas, induced development could change the intensity of development or the timing of proposed development due to improved transit access but would be unlikely to have substantial effects on land use patterns because Project TOD induced land use and parcel development would be consistent with approved zoning in those areas.

The supply of available vacant, underutilized, or redeveloped parcels in the study area could accommodate the projected household and employment growth expected to occur through 2040.[1] Development induced by either Build Alternative would have economic benefits because of the predicted increase in study area jobs and housing. Based on the findings of the GBNRTC TOD study, future development indirectly resulting from the Project could add approximately 8.4 million square feet of commercial and residential space throughout the existing and proposed Metro Rail corridor, with an assessed valuation of about $1.7 billion, which would result in approximately $61.5 million in property tax revenues to Buffalo, Tonawanda, and Amherst. Induced retail development could add about $8.7 million in additional sales tax revenue for the State of New York and $10.3 million for Erie County.[2] In addition, GBNRTC and NFTA identified the Boulevard Mall as a priority site for affordable housing as well as TOD in the September 2023 Comprehensive Transit-Oriented Development Plan Strategic Implementation Plan Final Report. The Strategic Implementation Plan[3] describes 3,274 new units of affordable housing within 0.5-mile of existing and proposed Metro Rail stations by 2050. To meet this goal, the plan recommends the Boulevard Mall development dedicate 25 percent of the development to housing, with 40 percent of total units as affordable.

Some studies on the effect of transit on property values have indicated the potential for increases in real estate values for property close to transit stations.[4] Although existing homeowners would reap benefits from increased property values, renters could experience higher rents, which could present a burden for some households, most notably for low-income populations. Business owners could benefit from increased foot traffic in walkable TOD communities, but development pressure and associated increased rents could result in business displacement and influence neighborhood character within the study area. Anticipated developments are planning to incorporate affordable housing components, which could lessen the effects on residents. This induced growth could also burden public facilities such as schools and utilities, etc., but this growth would be distributed within and beyond the neighborhoods of the study area (a seven-mile corridor spanning multiple communities/municipalities) and would be unlikely to have concentrated effects on a single community.

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1 Comprehensive Transit-Oriented Development Planning, Final Report, GBNRTC, August 2019.

2 Comprehensive Transit-Oriented Development Planning, Final Report, GBNRTC, August 2019.

3 Comprehensive Transit-Oriented Development Plan Strategic Implementation Plan Final Report, September 2023, https://www.gbnrtc.org/todresources

4 See, for example: "The ARC Effect: How Better Transit Boosts Home Values and Local Economies", Regional Plan Association, July 2010 found at: *http://library.rpa.org/pdf/RPA-The-ARC-Effect.pdf* (Accessed 12/19/2019); "Capturing the Value of Transit" prepared by the Center for Transit-Oriented Development for FTA, November 2008 found at: *http://www.reconnectingamerica.org/assets/Uploads/ctodvalcapture110508v2.pdf* (Accessed 12/19/2019); and "Public Transportation Boosts Property Values", National Association of Realtors, 2014 found at: *https://www.nar.realtor/articles/public-transportation-boosts-property-values* . *(Accessed* 12/19/2019).

D.2.1.2 Construction

Construction of either Build Alternative would result in temporary beneficial indirect effects during the construction period. Beneficial direct socioeconomic effects related to construction labor and procurement of necessary services and materials; the Project's construction would result in indirect economic activity. Because earnings from the Project's direct expenditures would be spent throughout the regional economy by construction workers and companies that supply materials for construction, a ripple or multiplier effect would occur. This effect would include local secondary expenditures made by construction workers who frequent local businesses for dining and other goods and services, as well as similar secondary expenditures made by suppliers of materials and equipment for constructing the Project. Short-term construction-related impacts of the LRT Build Alternative and the BRT Build Alternative, as discussed in Section 4.17, "Construction Effects," would include temporary parking loss, easements for staging areas and construction access, temporary lane or road closures, and temporary property access restrictions.

In addition, the Project's indirect effects include greenhouse gas emissions associated with the production of the materials that would be used during construction. However, the off-site production, transport, and staging of these materials, as well as the localized delivery and energy consumption associated with these indirect effects, would be temporary in nature and not substantial.[5] For a detailed description of Project construction impacts, refer to Section 4.17, "Construction Effects."

D.2.2 Cumulative Impacts Assessment

The assessment of the Project's potential cumulative effects considers incremental Project-related effects together with the effects of other past, present, and reasonably foreseeable future actions. Past, present, and reasonably foreseeable actions, as presented in this section, were identified through research and consultation with municipal and county planning officials within the study area jurisdictions.

The study area is composed of established, developed neighborhoods of the region, developed along arterial traffic routes without the presence of a fixed guideway transit system. Therefore, the study area is low- and medium-density residential with varying densities of commercial development, and parking lots. Therefore, present and reasonably foreseeable future actions are considered in this analysis.

In accordance with the relevant guidance, the starting point for the analysis of cumulative effects is an understanding of the types of resources that are present near the proposed Build Alternatives, where incremental Project-related direct impacts and indirect effects could result in cumulative effects with one or more other projects over time. Resources considered under the cumulative effects analysis for the LRT Build Alternative and the BRT Build Alternative are based on the results of the analyses presented in this document and include the following:

[5] See Section 4.14, "Air Quality" and Section 4.15, "Energy."

community character and socioeconomic conditions, traffic and transportation, and ground disturbance activities related to natural and water resources.

As compared to existing conditions (2018), analysis of the 2040 No Build Alternative incorporated reasonably foreseeable projects in the study area. The assessment includes the cumulative effect of the Project and the following unrelated future residential and mixed-use development projects, which would be developed within or near the study area regardless of the selected Build Alternative (see Figure D-1): Costco at 4230 Ridge Lea Road, Apartments (220 units) at 2635-2655, 2675, and 2691 North Forest Road, and Apartments (122 units) at 480 Dodge. The land uses proposed for these projects are similar to surrounding development and in accordance with existing zoning. These include retail, restaurants, hotel, offices, residential (including student housing), and other commercial.

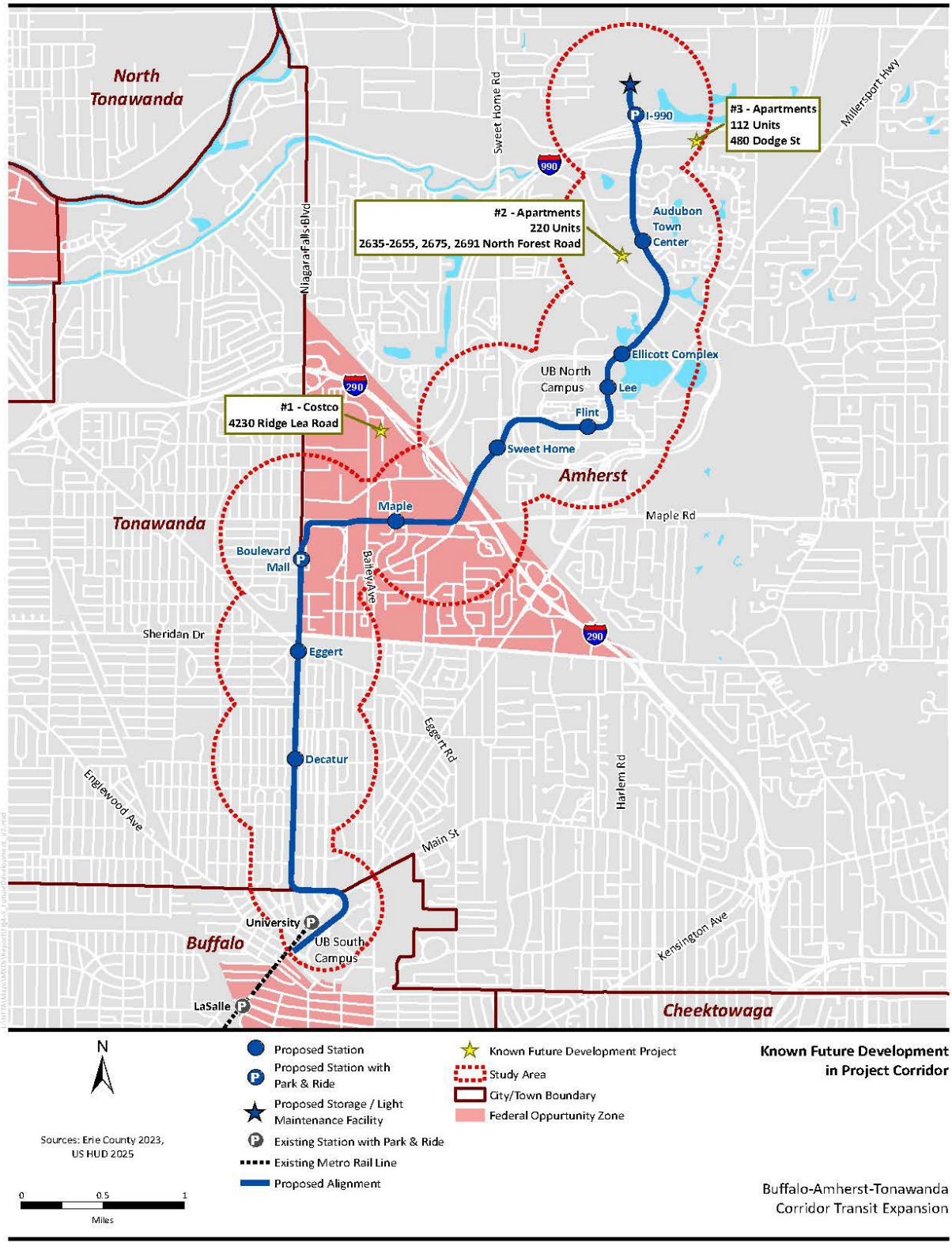
The UB campuses (North, South, and Downtown) also have development plans underway. North Campus projects include new academic and student buildings as well as roadway improvements to enhance walkability. Projects for the South Campus include a new dining hall, increase in student housing, and the construction of a new student union and recreational fields. For the Downtown Campus, streetscape and landscape improvements including the addition of campus entrances are aimed to improve pedestrian access and wayfinding.

In addition to these specific developments, as described in Section 4.2, "Land Use," a Federal Opportunity Zone, the Amherst Boulevard Central District, is located in Amherst. The district is a result of the Town's comprehensive planning effort within the region. The Town of Amherst released a Draft Generic EIS in August 2019 to evaluate the cumulative effects of growth within this opportunity zone (Amherst Boulevard Central District). The State Environmental Quality Review Act (SEQR) action involved applying newly adopted mixed-use zoning districts in the commercial areas of an approximately 1,260-acre study area—bounded on the east and north by the I-290, on the west by Niagara Falls Boulevard, and on the south by Sheridan Drive—as well as including properties immediately to the south of Sheridan Drive. The goal of the Amherst Boulevard Central District is to encourage denser mixed uses within a specific area of Amherst,[6] which overlaps the Project's study area.[7] Per the final Generic EIS for the Town of Amherst's Boulevard Central District, the growth potential for the 20-year planning period assumes 5,000 housing units, 1.9 million square feet of commercial retail, and 1.1 million square feet of commercial office. In addition, the Town of Tonawanda is undertaking a rezoning effort along Niagara Falls Boulevard that would allow additional mixed-use development.

[6] The Amherst Boulevard Central District is defined as the triangular area bounded by Niagara Falls Boulevard to the west, I-290 to the north, and Sheridan Drive to the south.

[7] The Amherst Boulevard Central District is the subject of the Final Generic Environmental Impact Statement and subsequent Findings Document, which evaluated the potential impact of implementing zoning changes associated with the district (November 2019) found at: *https://www.amherst.ny.us/pdf/planning/geis/191111_fgeis.pdf* (accessed 05/06/2022). The Findings Document can be found at *https://www.amherst.ny.us/pdf/planning/geis/200117_findings.pdf* (accessed 05/06/2022).

Figure D-1. Known Future Development Projects within the Study Area



In addition to these specific developments, as described in Section 4.2, "Land Use," a Federal Opportunity Zone, the Amherst Boulevard Central District, is located in Amherst. The district is a result of the Town's comprehensive planning effort within the region, which was accomplished through extensive stakeholder engagement, including coordination with adjacent municipalities and UB. The Town of Amherst released a Draft Generic EIS in August 2019 to evaluate the cumulative effects of growth within this opportunity zone (Amherst Boulevard Central District). The State Environmental Quality Review Act (SEQR) action involved applying newly adopted mixed-use zoning districts in the commercial areas of an approximately 1,260-acre study area—bounded on the east and north by the I-290, on the west by Niagara Falls Boulevard, and on the south by Sheridan Drive—as well as including properties immediately to the south of Sheridan Drive. The goal of the Amherst Boulevard Central District is to encourage denser mixed uses within a specific area of Amherst,[8] which overlaps the Project's study area.[9] Per the final Generic EIS for the Town of Amherst's Boulevard Central District, the growth potential for the 20-year planning period assumes 5,000 housing units, 1.9 million square feet of commercial retail, and 1.1 million square feet of commercial office.

In addition, the Town of Tonawanda is undertaking a rezoning effort along Niagara Falls Boulevard that would allow additional mixed-use development.

D.2.2.1 Socioeconomic Conditions and Community Character

The development of either Build Alternative would improve accessibility to public transit for planned developments. These developments are considered as part of the anticipated growth of the study area and are consistent with existing planning and zoning approved by the various jurisdictions in the study area.

The LRT Build Alternative and the BRT Build Alternative would have similar cumulative effects on the evolution of the community's character and the economic growth of the study area, adding more pedestrians and public transit-focused users into the study area. Residential growth, because of TOD, is anticipated to be focused near Project stations. Project induced TOD will concentrate new housing options near stations while preserving the existing neighborhood charter of residential communities outside the station TOD influence area. This, in conjunction with the other development projects within and adjacent to the study area, could further increase pedestrian and bicycle traffic, increasing the usage of pedestrian walkways and sidewalks. The improvements proposed as part of the Project under either Build Alternative would improve the existing unfavorable pedestrian and bicycling conditions (*e.g.*, long crossing distances, push-

[8] The Amherst Boulevard Central District is defined as the triangular area bounded by Niagara Falls Boulevard to the west, I-290 to the north, and Sheridan Drive to the south.

[9] The Amherst Boulevard Central District is the subject of the Final Generic Environmental Impact Statement and subsequent Findings Document, which evaluated the potential impact of implementing zoning changes associated with the district (November 2019) found at: *https://www.amherst.ny.us/pdf/planning/geis/191111_fgeis.pdf* (accessed 05/06/2022). The Findings Document can be found at *https://www.amherst.ny.us/pdf/planning/geis/200117_findings.pdf* (accessed 05/06/2022).

button signal deficiencies, incomplete network of sidewalks, lack of shoulders).[10] Both the LRT Build Alternative and the BRT Build Alternative would include multiuse paths (with wheelchair accessibility), bicycle lanes, and median refuge areas for pedestrians. These connections would improve bicycle and pedestrian access to the proposed stations and promote connectivity between stations and trip origins and destinations. In addition, intersections along the corridor would be upgraded with ADA-compliant ramps, and push buttons would be added to the crosswalks, thus improving walkability within the study area.

Existing properties where the current buildings and uses are expected to remain should see their cumulative assessed value increase by more than $310 million because of their proximity to the corridor. In addition, the potential retail development linked to the LRT Build Alternative would lead to approximately $8.7 million in annual sales tax revenues for the State of New York and $10.3 million in sales tax revenues for Erie County by 2040[11] (All financial figures are based on 2016 dollars). This may cause renters to experience higher rents, but the plans identified for the area aim to increase affordable housing with their development, which would maintain a supply of housing for low-income residents.

Either Build Alternative would result in a net beneficial cumulative impact on economic growth, with improved access and mobility that would facilitate and/or increase localized TOD-induced development and associated economic growth.

D.2.2.2 Transportation

This project, in conjunction with the current transit system around and connected to the study area, will result in cumulative benefit of greater multi-modal travel for the region.

Transportation impacts and mitigation measures needed as a result of construction and operation of the Project Build Alternatives are detailed in Chapter 3, "Transportation."

The other future developments anticipated to occur within the study area would not substantially contribute to the overall traffic congestion of the area and are consistent with the development goals and zoning requirements of the area. UB's campus improvements consider the corridor for the Build Alternatives and development of the Project, noting the connection of these campuses through transit is paramount to accommodate the University's growth. There would be a mix of vehicle owners and transit users among the residents of the two future housing developments, which represents only one percent of the current number of households in the study area. Driver influence on traffic and congestion would not contribute to a cumulative adverse effect. Therefore, the implementation of either Build Alternative, in conjunction with foreseeable development and therefore an increase in motor vehicles in the study area, would not result in an adverse cumulative effect regarding traffic congestion or level of service in the study area.

[10] New York State Department of Transportation. Transportation Project Report. Pedestrian Safety Corridor Evaluation. Niagara Falls Boulevard. Towns of Amherst and Tonawanda, Erie County. June 2019.

[11] Comprehensive Transit Oriented Development Plan. GBNRTC. 2019.

D.2.2.3 Natural Resources

The ecological communities that are present in the Project study area are characterized by disturbance and are of low ecological value, classified as either created and maintained by human activity or modified by humans to such an extent that the community's composition no longer has its original attributes. The Project would remove approximately 45 trees during construction, a temporary impact, which will be mitigated. The Project would have the potential to have adverse effects on vegetation and wildlife habitat during construction due to the tree removal; however, with the implementation of mitigation measures, potential impacts would not be adverse.

Other developments identified within the study area would not result in substantial vegetation loss, as those parcels are partially developed or planned for redevelopment. Therefore, it is anticipated that the Project and these other development projects would not result in an adverse cumulative effect to general ecology or wildlife resources.

D.2.2.4 Water Resources

New impervious area would be added in some areas through the Project; however, stormwater from the new impervious areas would be treated with BMPs that would reduce the overall impact on the area. Section 4.10, "Water Resources," describes that stormwater BMPs such as infiltration and detention basins, dry swales, and hydrodynamic stormwater treatment units would be incorporated into the Project. These BMPs, along with additional green infrastructure practices that would be chosen during the final stage of design, would result in water quality treatment and peak flow reductions, and therefore would offset discharges from the additional impervious surfaces that would be created by the Project. Given these Project-specific mitigation measures would offset direct impacts on stormwater discharges and associated water quality, it is anticipated the Project would not result in an adverse cumulative effect on surface waters, groundwater, and floodplains as a result of either Build Alternative.

The Project would impact 0.202 acre of wetlands. Depending on the identification of final disturbance areas, permanent impacts to wetlands and surface waters under Federal jurisdiction for the Project may require an individual Section 404 permit and Section 401 Certification under the Clean Water Act to place dredged or fill materials into waters of the United States, including wetlands. Mitigation would be required as part of the permitting process and the Project would not result in an adverse cumulative impact to wetlands.