Chapter 6
Comparison of Build Alternatives

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Acronyms and Abbreviations

BNMC ..... Buffalo Niagara Medical Campus
BRT ..... Bus Rapid Transit
EIS ..... Environmental Impact Statement
GBNRTC ..... Greater Buffalo Niagara Regional Transportation Council
LRT ..... Light Rail Transit
Metro ..... Niagara Frontier Transit Metro System, Inc.
Metro Rail ..... Metro Light Rail Transit System
NFTA ..... Niagara Frontier Transportation Authority
Project ..... Buffalo-Amherst-Tonawanda Corridor Transit Expansion
UB ..... University at Buffalo

6 Comparison of Alternatives

This chapter summarizes and compares the LRT Build Alternative and BRT Build Alternative against the Project's goals and objectives. As stated, the identification of Project effects is consistently compared to and evaluated against the No Build Alternative. Refer to the prior Chapters of this Draft EIS for No Build Alternative considerations.

6.1 PROJECT PURPOSE AND NEED

As documented in Chapter 1, "Purpose and Need," the purpose of the Project is to link established and emerging activity centers (e.g., University of Buffalo (UB) campuses, the Buffalo Niagara Medical Campus (BNMC), the Buffalo central business district, employment and retail centers, and the Buffalo waterfront) along the existing Metro Rail line in Buffalo with existing and emerging activity centers in Amherst and Tonawanda by providing fast, reliable, safe, and convenient transit; help relieve parking constraints and capacity issues on the BNMC, UB campuses, Project Corridor, and downtown Buffalo; and minimize traffic and parking-related impacts on neighborhoods. Established Project needs are illustrated by Figure 6-1. Figure 6-2 shows the Project Corridor alignment where the build alternatives are being considered.

Figure 6-1. Project Needs

6.2 PROJECT PURPOSE, GOALS, AND OBJECTIVES

The need for increased mobility and transit service that the Project would serve has three main components: (1) serve existing and future travel demand generated by recent and future regional development; (2) provide high-quality regional transit service; and (3) improve service for transit-dependent populations. The purpose for the Project is to address and serve these needs with an investment in high-quality transit service, including its supporting infrastructure, while meeting regional planning objectives.

Table 6-1 presents the goals and objectives of the Project, focusing on key transportation, economic, and environmental issues. These goals and objectives, which are directly linked to the Project purpose and need, will guide the comparison of the LRT Build Alternative and BRT Build Alternative.

Figure 6-2. Existing Metro Rail and Project Corridor

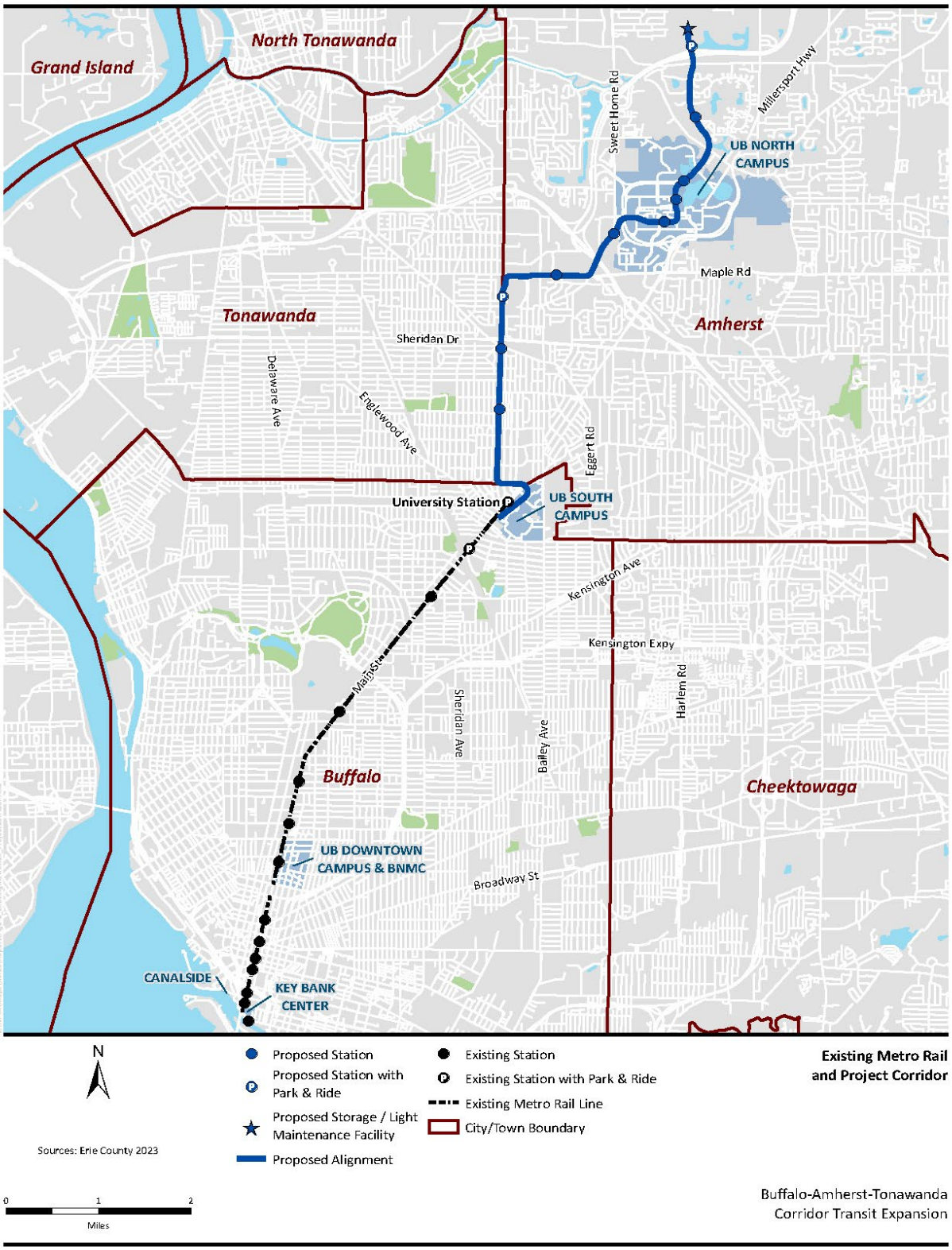

Table 6-1. Goals and Objectives

Goals	Objectives
Develop a cost-effective, attractive, and high-quality transit service to serve the Buffalo-Amherst-Tonawanda corridor.	▪ Provide cost-effective transit service to transit-dependent populations. ▪ Provide a reliable and convenient transit service. ▪ Provide more convenient transit services for riders transferring to or from Metro Rail at University Station. ▪ Improve mobility. ▪ Reduce number of transfers for riders destined for the UB North Campus.
Mitigate the growth of traffic congestion on study area roadways.	▪ Increase the share of trips using transit in study area.
Improve the accessibility of transit in the study area.	▪ Increase the number of transit options for travelers. ▪ Improve the connectivity of transit services. ▪ Improve livability by providing increased access to facilities such as affordable housing, jobs, education, medical services, food shopping, retail shopping, entertainment, etc. ▪ Provide access to populations that are traditionally underserved.
Increase the effectiveness of the regional transit system.	▪ Increase system ridership. ▪ Increase system revenue. ▪ Build on investment/reinvestment of original Metro Rail.
Support sustainable future economic growth in the study area.	▪ Serve new markets with high-quality transit services to support economic development. ▪ Provide transit-oriented development and design to enable the development/redevelopment of quality neighborhoods. ▪ Strengthen the regional economy.
Avoid or minimize adverse community and environmental impacts.	▪ Avoid or minimize impacts to sensitive environmental resources. ▪ Avoid or minimize negative impacts to neighborhoods. ▪ Avoid or minimize negative impacts to businesses.

6.3 COMPARISON OF BUILD ALTERNATIVES

Table 6-2 through Table 6-7 compare each Build Alternative against the Project goals and objectives. The physical characteristics of both Build Alternatives are summarized as follows:

- Both Build Alternatives follow the same alignment, have approximately the same typical cross-section, and propose the same number of stations.
- The LRT Build Alternative will require construction of underground facilities from University Station to Niagara Falls Boulevard and at the Maple Road and Sweet Home Road intersection.
- The LRT Build Alternative will require the construction of power substations and overhead catenary systems.

Table 6-2. Goal: High-quality Transit Service to Serve the Buffalo-Amherst-Tonawanda Corridor

Objective	LRT Build Alternative	BRT Build Alternative
Provide cost-effective transit service to transit-dependent populations Measure: Annual number of forecasted transit-dependent riders boarding the Project (Average Weekday)	▪ 2,493,400 forecasted boardings annually ▪ Represents 30% more boardings than the BRT Build Alternative annually	▪ 1,924,780 forecasted boardings annually
Provide a reliable and convenient transit service Measure: Total travel time and frequency of service	▪ 23-minute travel time from I-990 to University Station ▪ Service arrives every ten minutes during peak travel times	▪ 26-minute travel time from I-990 to University Station ▪ Service arrives every five minutes during peak travel times
Improve mobility Measure: Project investments effect on mobility services and infrastructure	▪ Investment in intersection signal technology and optimizing traffic signal timings ▪ Investment in roadway capacity improvements ▪ Investment in pedestrian and bicycle infrastructure along the Project corridor, including sidewalks, crosswalks, and bicycle paths ▪ Increases the coverage area of Metro's Paratransit Access Line (PAL) services ▪ Requires repurposing one lane of travel on Niagara Falls Boulevard	▪ Investment in intersection signal technology and optimizing traffic signal timings ▪ Investment in roadway capacity improvements ▪ Investment in pedestrian and bicycle infrastructure along the Project corridor, including sidewalks, crosswalks, and bicycle paths ▪ Increases the coverage area of Metro's Paratransit Access Line (PAL) services ▪ Requires repurposing one lane of travel on Niagara Falls Boulevard
Provide more convenient transit services for riders transferring to or from Metro Rail at University Station and reduce number of transfers for riders destined for the UB North Campus. Measure: Forecasted transfers at University Station	▪ The LRT Build Alternative would not require a transfer at the University Station for riders destined for the UB North Campus	▪ The BRT Build Alternative is forecasted to require 288 (Average Weekday) transfers at the University Station for riders destined for the UB North Campus
Ability to Meet Above Objectives	▪ Best meets Project objectives ▪ Better serves transit dependent riders (30% more), has a faster travel time, and does not require a transfer at university Station	▪ Meets Project objectives except for reducing the number of transfers at University Station.

Table 6-3. Goal: Mitigate the Growth of Traffic Congestion

Objective	LRT Build Alternative	BRT Build Alternative
Increase the share of trips using transit in study area Measure: Forecasted ridership for the Build Alternative and existing Metro Rail services (Average Weekday Total Boardings), forecasted new transit trips, and trips forecasted to shift from automobile travel to transit (mode shift)	▪ 2,328 forecasted new transit riders that previously travelled by automobile (average weekday, 2045) resulting in a 7.2% shift in trips taken by automobile to transit. ▪ 11,646,180 fewer automobile miles travelled annually (forecasted average weekday, 2045) because of the LRT Build Alternative	▪ 257 forecasted new transit riders that previously travelled by automobile (average weekday, 2045) resulting in a 1.2% shift in trips taken by automobile to transit. ▪ 763,880 fewer automobile miles travelled annually (forecasted average weekday, 2045) because of the BRT Build Alternative
Ability to Meet Above Objectives	▪ Best meets Project objectives ▪ Forecasted to result in a higher share of automobile trips shifting to the use of transit ▪ Forecasted to result in over 11 million fewer automobile miles travelled annually	▪ Meets Project objectives

Table 6-4. Goal: Improve the Accessibility of Transit

Objective	LRT Build Alternative	BRT Build Alternative
Increase the number of transit options for travelers and improve the connectivity of transit services. Measure: Investment in new transit services	▪ Both Build Alternatives equally increase the number of transit options through the investment in the Project	▪ Both Build Alternatives equally increase the number of transit options through the investment in the Project
Provide access to populations that are traditionally underserved. Measure: Ability to serve Project corridor populations that are traditionally underserved	▪ Both Build Alternatives equally serve traditionally underserved populations within the Project corridor	▪ Both Build Alternatives equally serve traditionally underserved populations within the Project corridor
Ability to Meet Above Objectives	▪ Meets Project objectives	▪ Meets Project objectives

Table 6-5. Goal: Increase the Effectiveness of the Regional Transit System

Objective	LRT Build Alternative	BRT Build Alternative
Increase system ridership and increase system revenue. Measure: Forecasted increase in system ridership as compared to the No Build Alternative (Average Weekday Boardings)	▪ As compared to the No Build Alternative, the LRT Build Alternative is forecasted to increase system ridership by 17,871 boardings or an increase of 134% ▪ This will also increase system revenue as a function of the fare spent by riders to use the service	▪ As compared to the No Build Alternative, the BRT Build Alternative is forecasted to increase system ridership by 14,088 boardings or an increase of 105% ▪ This will also increase system revenue as a function of the fare spent by riders to use the service
Build on investment/reinvestment of original Metro Rail. Measure: Extends existing Metro Rail service or provides a direct connection.	▪ The LRT Build Alternative directly builds upon the existing investment in Metro Rail service with an extension of service without a transfer	▪ The BRT Build Alternative supports the existing investment in Metro Rail service but requires riders to transfer at the University Station
Ability to Meet Above Objectives	▪ Best meets Project objectives ▪ Better serves the existing Metro Rail investment and is forecasted to have the greatest increase in system ridership and system revenue	▪ Meets Project objectives.

Table 6-6. Goal: Support Sustainable Future Economic Growth

Objective	LRT Build Alternative	BRT Build Alternative
Serve new markets with high-quality transit services to support economic development, provide transit-oriented development and design to enable the development/redevelopment of quality neighborhoods, and strengthen the regional economy. Measure: Socioeconomic conditions and opportunity for Transit Oriented Development	▪ Serves projected growth in corridor ▪ According to the Comprehensive Transit-Oriented Development 2019 Final Report, the LRT Build Alternative is expected to: – Encourage economic growth resulting in $1.7 Billion (assessed value, 2016 dollars) of residential, commercial, and office space – Increase of 32% in property tax revenues and $10.3 million in sales tax revenues for Erie County (2016 dollars)	▪ Serves projected growth in corridor ▪ The BRT Alternative is anticipated to have a positive impact on property tax revenues, sales tax revenues, and encourage growth in residential, commercial, and office space. However, the LRT Alternative would provide a larger catchment area and attract more regional riders, which would encourage TOD better than the BRT Alternative. Further study will be required to quantify these benefits.
Ability to Meet Above Objectives	▪ Meets Project objectives ▪ Based on the Comprehensive Transit-Oriented Development 2019 Final Report, the LRT Build Alternative's effect on development and redevelopment has been evaluated, forecasted, and quantified.	▪ Meets Project objectives

Table 6-7. Goal: Avoid or Minimize Adverse Community and Environmental Impacts

Objective: Avoid or minimize impacts to sensitive environmental resources, neighborhoods, and businesses. **Measure:** Draft EIS findings of adverse impacts	LRT Build Alternative	BRT Build Alternative
Transportation (Chapter 3)	▪ No adverse traffic impacts after proposed mitigation ▪ Impacts to existing driveways are anticipated, but are not expected to be adverse ▪ Impacts to existing local roadways from traffic diversions are anticipated, but are not expected to be adverse ▪ No adverse impacts to transit, parking, pedestrian and bicycles, or safety and security	▪ Four adverse traffic impacts during the Weekday PM peak with mitigation (3 unsignalized intersections, 1 signalized intersection) ▪ Four adverse traffic impacts during the Saturday Midday peak with mitigation (2 unsignalized intersections, 2 signalized intersections) ▪ Impacts to existing driveways are anticipated, but are not expected to be adverse ▪ Impacts to existing local roadways from traffic diversions are anticipated, but are not expected to be adverse ▪ No adverse impacts to transit, parking, pedestrian and bicycles, or safety and security
Property Acquisitions and Displacements (Section 4.1)[1]	▪ 192 total affected properties ▪ 14 full acquisitions ▪ 178 partial acquisitions ▪ 15 displacements ▪ 3.83 acres temporary construction easement	▪ 178 total affected properties ▪ 14 full acquisitions ▪ 164 partial acquisitions ▪ 15 displacements ▪ 4.13 acres temporary construction easement
Land Use (Section 4.2)	▪ No significant adverse impacts after proposed mitigation	▪ No adverse impacts
Socioeconomic Conditions (Section 4.3)	▪ No adverse impact to population, housing supply, employment, government, student population, or Transit-Oriented Development	▪ No adverse impact to population, housing supply, employment, government, student population, or Transit-Oriented Development
Neighborhoods and Communities (Section 4.4)	▪ No adverse impacts	▪ No adverse impacts

[1] The acquisition and relocation assistance program for both Build Alternatives will be conducted in accordance with the requirements and standards of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended or as may be amended, as authorized by Section 30 of New York's Highway Law and implementing Rules and Regulations (Part 101, Title 17, and NYCRR). Relocation assistance and just compensation is appropriate as a mitigation measure in accordance with the Uniform Act, which establishes a policy for the fair and equitable treatment of persons displaced as a result of federal and federally assisted programs (49 CFR part 24.1).

Objective: Avoid or minimize impacts to sensitive environmental resources, neighborhoods, and businesses. **Measure:** Draft EIS findings of adverse impacts	**LRT Build Alternative**	**BRT Build Alternative**
Visual Quality (Section 4.5)	▪ No adverse impacts	▪ No adverse impacts
Historic and Cultural Resources (Section 4.6)	▪ No adverse effects to built historic properties ▪ Findings of Phase 1B Archeological Field Investigation will be included in the Final EIS	▪ No adverse effects to built historic properties ▪ Findings of Phase 1B Archeological Field Investigation will be included in the Final EIS
Parklands and Recreational Resources (Section 4.7)	▪ No adverse impacts	▪ No adverse impacts
Geology, Soils, and Prime Farmlands (Section 4.8)	▪ Impacts resulting from construction of the tunnels on UB South Campus and the underground segment at Maple Road and Sweet Home Road	▪ No adverse impacts
General Ecology and Wildlife (Section 4.9)	▪ No adverse impacts to ecological communities, wildlife, invasive species, or threatened and endangered species after proposed mitigation	▪ No adverse impacts to ecological communities, wildlife, invasive species, or threatened and endangered species after proposed mitigation
Water Resources (Section 4.10)	▪ No adverse impacts to freshwater wetlands, surface waters, stormwater, and groundwater after proposed mitigation ▪ No adverse impacts to navigation and floodplains	▪ No adverse impacts to freshwater wetlands, surface waters, stormwater, and groundwater after proposed mitigation ▪ No adverse impacts to navigation and floodplains
Noise (Section 4.11)	▪ Adverse impacts to 16 residences with proposed mitigation strategies During final design of the LRT Build Alternative, horizontal alignment shifts will be considered to further reduce noise impacts. Specifically, along John James Audubon Parkway, an alignment shift west will be considered.	▪ No adverse impacts
Vibration (Section 4.12)	▪ No adverse impacts after proposed mitigation	▪ No adverse impacts
Air Quality (Section 4.13)	▪ No adverse impacts	▪ No adverse impacts
Energy (Section 4.14)	▪ No adverse impacts ▪ LRT Build Alternative operations and patronage benefits energy effects through a reduction in energy consumption	▪ BRT Build Alternative would result in a net increase in direct energy consumption

Objective: Avoid or minimize impacts to sensitive environmental resources, neighborhoods, and businesses. **Measure:** Draft EIS findings of adverse impacts	**LRT Build Alternative**	**BRT Build Alternative**
Hazardous Materials (Section 4.15)	▪ Five sites impacted by Project construction with hazardous waste or contaminated materials are present.	▪ Five sites impacted by Project construction with hazardous waste or contaminated materials are present.
Utilities (Section 4.16)	▪ No adverse impacts after proposed mitigation	▪ No adverse impacts after proposed mitigation
Construction Effects (Section 4.17)	▪ No significant adverse impacts after proposed mitigation	▪ No significant adverse impacts after proposed mitigation
Indirect and Cumulative Effects (Section 4.18)	▪ No adverse impacts	▪ No adverse impacts
Commitment of Resources (Section 4.19)	▪ No adverse impacts after proposed mitigation	▪ No adverse impacts after proposed mitigation
Section 4(f) (Chapter 5)	▪ Section 4(f) determinations will be included in the Final EIS	▪ Section 4(f) determinations will be included in the Final EIS
Ability to Meet Above Objectives	▪ Meets Project objectives after proposed mitigation except for property acquisitions and displacements, adverse traffic impact and adverse noise impacts ▪ Findings of Phase 1B Archeological Field Investigation will be included in the Final EIS ▪ Section 4(f) determinations will be included in the Final EIS	▪ Meets Project objectives after proposed mitigation except for property acquisitions and displacements and adverse traffic impacts ▪ Findings of Phase 1B Archeological Field Investigation will be included in the Final EIS ▪ Section 4(f) determinations will be included in the Final EIS