Metro Amherst-Buffalo Corridor

TIER 2 SCREENING RESULTS
TECHNICAL MEMORANDUM

Prepared for:

Niagara Frontier Transportation Authority (NFTA)

Prepared by:

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In Association with Wendel
May 2015

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1 INTRODUCTION

The Niagara Frontier Transportation Authority (NFTA) in coordination with the Federal Transit Administration (FTA) initiated the preparation of an Alternatives Analysis (AA) to evaluate alternative transit alignments that will connect the existing Metro Rail University Station to key destinations in Amherst to improve transit connections between downtown Buffalo and Amherst. The project is intended to provide faster, more reliable transit service, improve transit connections between major destinations in the Amherst Buffalo Corridor, better serve existing transit riders, and accommodate new transit patrons

This *Tier 2 Screening Results Working Draft Technical Memorandum* describes the second of three levels (or tiers) of alternatives screening and evaluation undertaken by NFTA in the AA process for the project. This memorandum includes a statement of the framework under which NFTA is undertaking this Alternatives Analysis, describes each alternative and the planning framework for the evaluation, summarizes the screening methodology, presents the results of the screening and evaluation, describes the input received upon sharing the results with the committees and the public, and makes recommendations for the alternatives to advance into the Tier 3 evaluation.

1.1 Overall Screening Approach

The alternatives development and evaluation process for the Metro Amherst Buffalo Corridor AA project consists of three distinct tiers of screening and evaluation. In each step, alternatives are examined and compared for their performance in terms of specific and progressively more detailed criteria along with increasingly more specific definition of alternatives. This process initially examines a large number of alternatives with the goal of reducing this “long list” of alternatives through screening and evaluation to only those that are reasonable (i.e., practical or feasible). In accordance with the Council on Environmental Quality’s (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA), this process enables FTA and NFTA to screen the full range of alternatives and arrive at a subset of reasonable alternatives to undergo detailed study in the AA. Even though this AA study is not being performed within NEPA, it is the intent of the NFTA and FTA to link this planning process with NEPA so that the full range of alternatives is analyzed so that eventually at the end of Tier 3, a Locally Preferred Alternative (LPA) can be identified and the NEPA phase of FTA’s Project Development process initiated.

Briefly, the three tiers of screening and evaluation process consist of:

- Tier 1: Preliminary Screening of the Long List of Alternatives ⟹ Preliminary Alternatives – *Tier 1 is completed and was documented in the Tier 1 Technical Memorandum.*

- Tier 2: Initial Screening of the Preliminary Alternatives ⟹ Final Build Alternatives – *the Tier 2 results are documented in this technical memorandum.*

- Tier 3: Final Screening and Evaluation of the Final Build Alternatives ⟹ Locally Preferred Alternative (LPA) – *the Tier 3 analysis will be documented in the Final AA report.*

NFTA's 2013 *Screening Methodology Technical Memorandum* for the Metro Amherst Buffalo Corridor project outlines in detail the entire screening methodology process for the AA.

2 REGULATORY SETTING

The Tier 1 and 2 screenings are elements of the AA study and were undertaken in accordance with the CEQ Regulations for Implementing NEPA (40 Code of Federal Regulations 1502.14), with federal requirements related to the environmental review (23 CFR Part 771 et seq.), and the requirements for project development and for New Starts funding (FTA Capital Investment Grant Program, 49 USC 5309). As applicable to the Tier 1 and 2 screenings, the following FTA rules and policy guidance were applied: Final Rules regarding the evaluating and rating major transit capital investments (January 9, 2013); *New and Small Starts Policy Guidance* (August, 2013); and Final Rules regarding environmental impact and related procedures (February 7, 2013). FTA recently released *Proposed Interim Policy Guidance* for their Capital Investment Grant Program in April 2015.

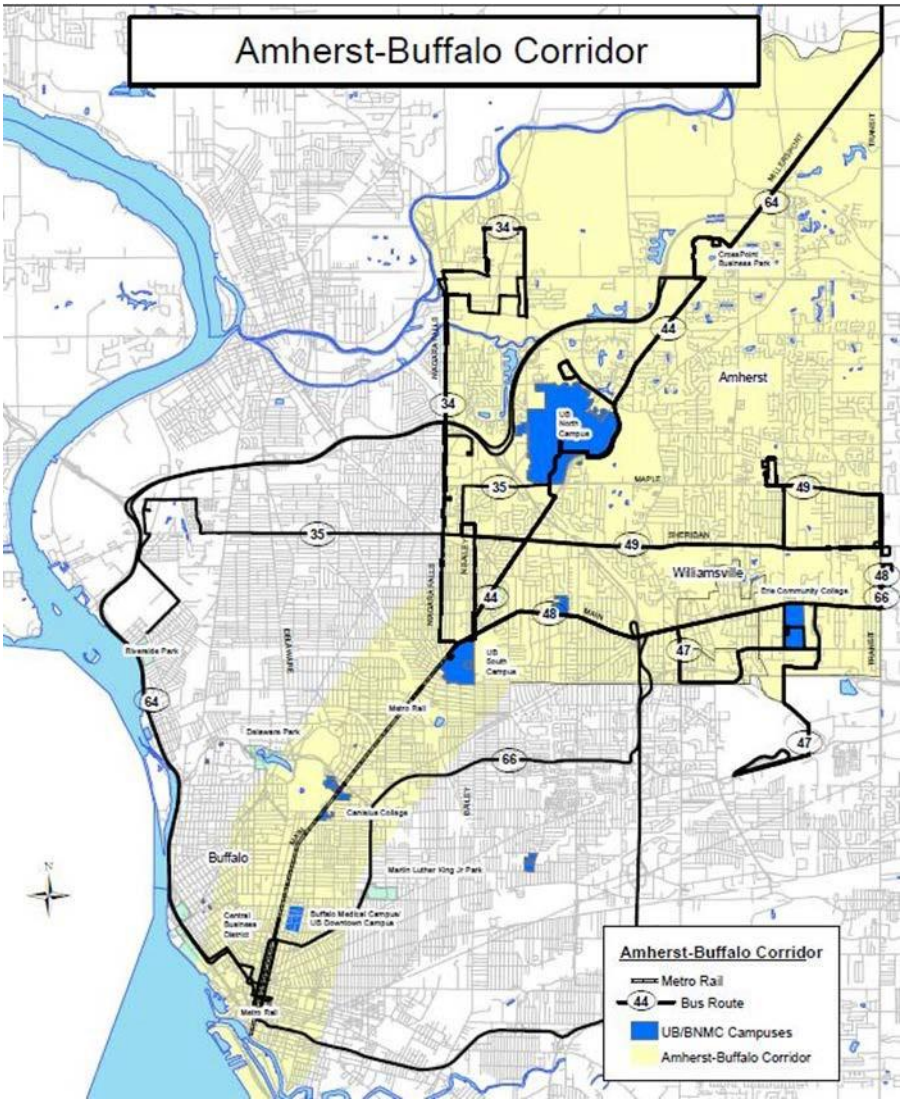
NFTA is conducting the alternatives screening and the AA to evaluate alternatives in terms of their transportation and environmental benefits and effects, and to aid in its decision- making on the course of action to take. In these activities, NFTA is complying with the Public Law 112-141 and its guidance for developing transportation projects using federal funds entitled, Moving Ahead for Progress in the 21st Century Act (MAP-21). In order to qualify for funding under the FTA New Starts program, 49 USC 5309 requires that projects be based upon the results of an environmental review. As stated early, the environmental review process (NEPA) will commence once NFTA identified an LPA. Under streamlining guidance, NFTA intends to link this AA study with the study that will occur under NEPA for study and evaluation on the LPA.

In addition, as a transportation infrastructure project for which NFTA may seek to use federal funds, the project will eventually be subject to other federal environmental review regulations during NEPA as defined by Section 4(f) and 6(f) of the Department of Transportation Act of 1966, Section 106 of the National Historic Preservation Act of 1966, the Clean Water Act and the Clean Air Act of 1970, along with other applicable federal, state and local regulations.

3 CONCEPTUAL ALTERNATIVES & PLANNING FRAMEWORK

NFTA's alternatives development and evaluation process is grounded in the project purpose and need and its goals. The overall goal of the project is to improve transit access between key activity centers in Buffalo with those in Amherst by extending the benefits of high quality transit into Amherst. It represents a way to serve a strong transit market, provide high quality transit services to existing and emerging activity centers, attract additional transit riders, provide a more efficient ride for existing transit riders between Amherst and Buffalo, help to bolster economic development, and link existing communities. The study area is depicted on the map in **Figure 1**.

Figure 1 Study Area



The purpose of the proposed project is to provide a fast, reliable, safe, and convenient transit ride in the Amherst-Buffalo Corridor linking established and emerging activity centers along the existing Metro Rail Line in the City of Buffalo with existing and emerging activity centers in the Town of Amherst. The project will better serve existing rail and bus riders, attract new transit patrons, improve connections to/from Buffalo and Amherst, and support redevelopment and other economic development opportunities. Importantly, it will serve to improve livability by increasing mobility and accessibility in communities throughout the project corridor. The project will:

- Serve increased travel demand generated by new development in downtown Buffalo and in Amherst.
- Provide high-quality transit service to and from key activity centers in the Amherst-Buffalo Corridor by providing a time-efficient transit option connecting and serving key destinations in the corridor (University at Buffalo (UB) campuses, Buffalo Niagara Medical Campus (BNMC), the Buffalo central business district (CBD), business parks, the Buffalo waterfront, among others).

- Better serve transit-dependent population segments and improve opportunities for participation of the workforce in the overall regional economy.
- Improve the system operating efficiency of the transit network.
- Support local and regional land use planning and transit-oriented design.
- Provide social benefits from transit investment that supports an array of economic and affordable housing development.
- Help meet the sustainability goals and measures as contained in state, regional, and local plans (One Region Forward-The Regional Plan for Sustainable Development, Buffalo Niagara 2050 - the Metropolitan Transportation Plan of the Greater Buffalo-Niagara Regional Transportation Council, Erie and Niagara Counties Framework for Regional Growth, the University at Buffalo 2020 Plan, the Western New York Regional Economic Development Council's (WNYREDC) Economic Development Strategic Plan , the City of Buffalo Comprehensive Plan, and the Town of Amherst Comprehensive Plan, among others).
- Help relieve parking constraints and capacity issues on the Buffalo Niagara Medical Campus and surrounding downtown area to minimize traffic and parking-related impacts on neighborhoods.

The alternatives under consideration within the AA consist of the following.

No Build Alternative: Represents future conditions in the AA analysis year of 2035 without the proposed project. The No Build Alternative includes the existing transit and transportation system in the region plus all projects in the region's fiscally constrained long range transportation plan. The No Build Alternative is included in the AA as a means of comparing and evaluating the impacts and benefits of the Build Alternatives.

Build Alternatives: Build Alternatives are future conditions in the AA analysis year of 2035 with the proposed project. The Build Alternatives are being developed through a tiered screening and alternatives definition process. The process began with a determination of a Long List of Alternatives.

NFTA developed the Long List of Alternatives from previous studies, new concepts NFTA and its engineering consultants developed, and ideas identified through agency, stakeholder and public outreach activities. Given the developed nature of the study area and an effort to avoid and minimize negative effects, the Long List of Alternatives that NFTA identified primarily use existing transportation rights of way.

Figure 2 is a map of the Long List of LRT Alternatives as displayed at the public and committee meetings. **Figure 3** is a map of the Long List of BRT Alternatives and **Figure 4** shows Preferred Bus Alternatives and **Figure 5** shows Enhanced Bus Alternatives.

The long list of alternatives consisted of thirty-seven (37) alternatives. The Tier 1 Evaluation: Long List of Alternatives report documents the results of the Tier 1 screening process. At the end of the Tier 1 screening process on the long list of alternatives, fifteen (15) alternatives were retained to take into Tier 2 alternative definition and screening (seven LRT; six BRT; Enhanced Bus; Preferred Bus).

There are two major categories of Build Alternatives under consideration in Tier 2: 1) fixed-guideway alternatives, meaning either Light Rail Transit (LRT) or Bus Rapid Transit (BRT), and 2) non-fixed guideway alternatives, meaning the alternatives that are less capital investment intensive and represent more modest improvement to transit services and are the Enhanced Bus Alternative and the Preferred Bus Alternative. Both the Enhanced Bus Alternative and the Preferred Bus Alternative are focused on improvements that are more incremental in nature and represent modest capital investment primarily employing transportation system management strategies rather than the introduction of higher quality, fixed guideway transit. These non-fixed guideway alternatives are not the subject of the Tier 2 screening process. Because of their more modest investment level, they will automatically be retained for the final Tier 3 evaluation of alternatives. This action will allow these more modest investment alternatives to be rigorously evaluated and compared and contrasted with the fixed-guideway alternatives retained for Tier 3. **Figure 6** depicts the Tier 1 and 2 screening process within the overall Alternatives Analysis study.

Figure 2 Long List of LRT Alternatives

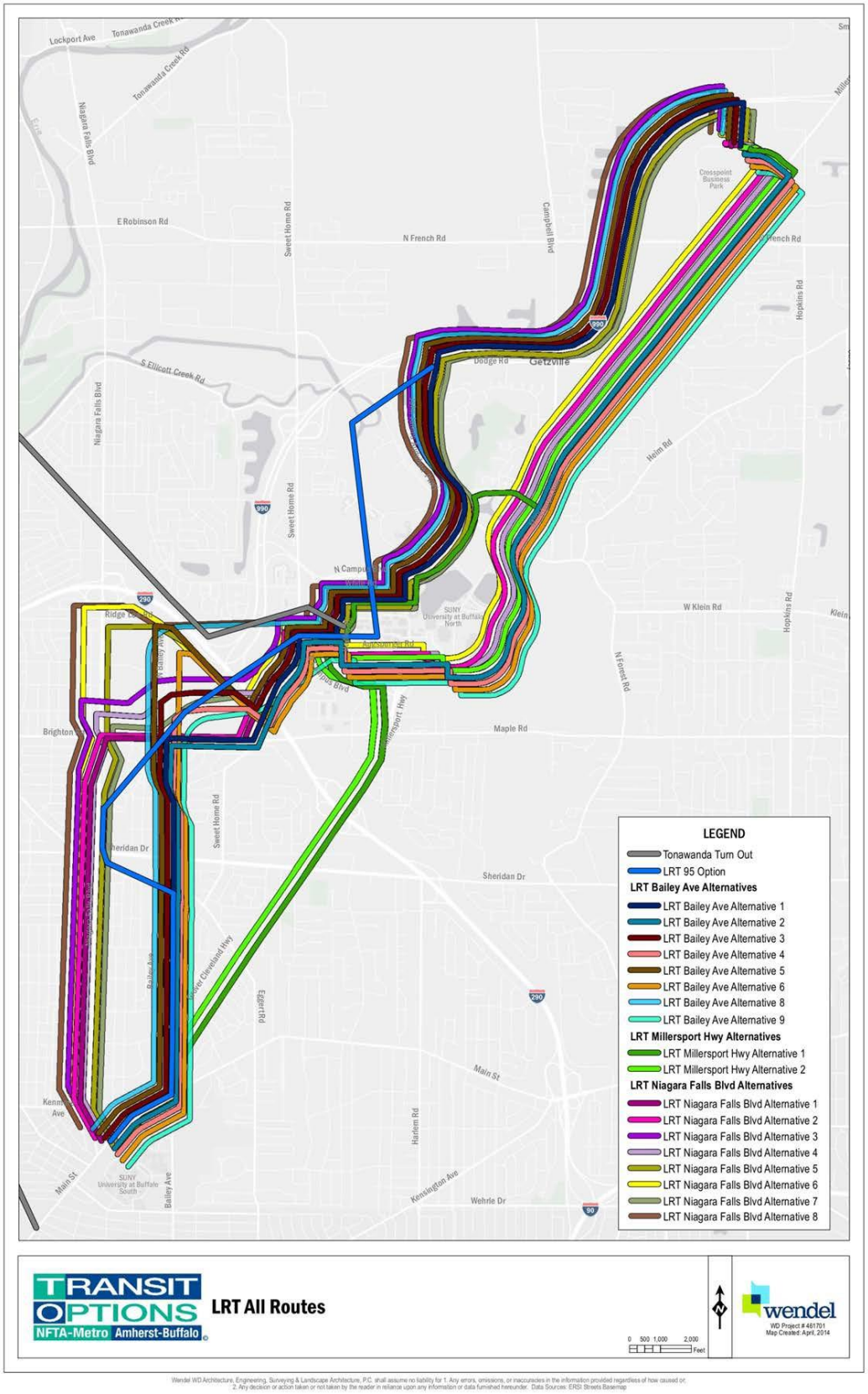


Figure 3 Long List of BRT Alternatives

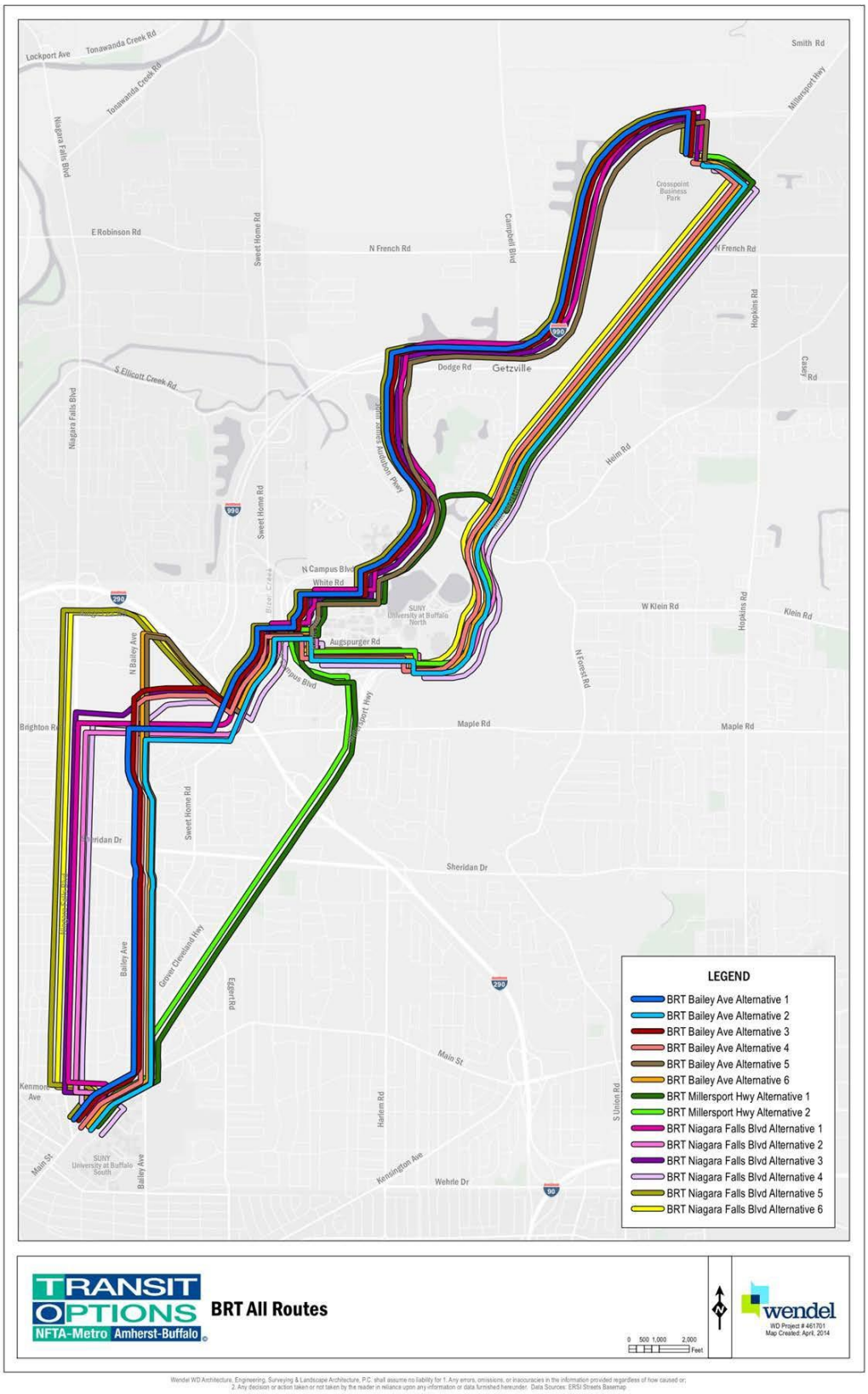


Figure 4 Preferred Bus Alternatives

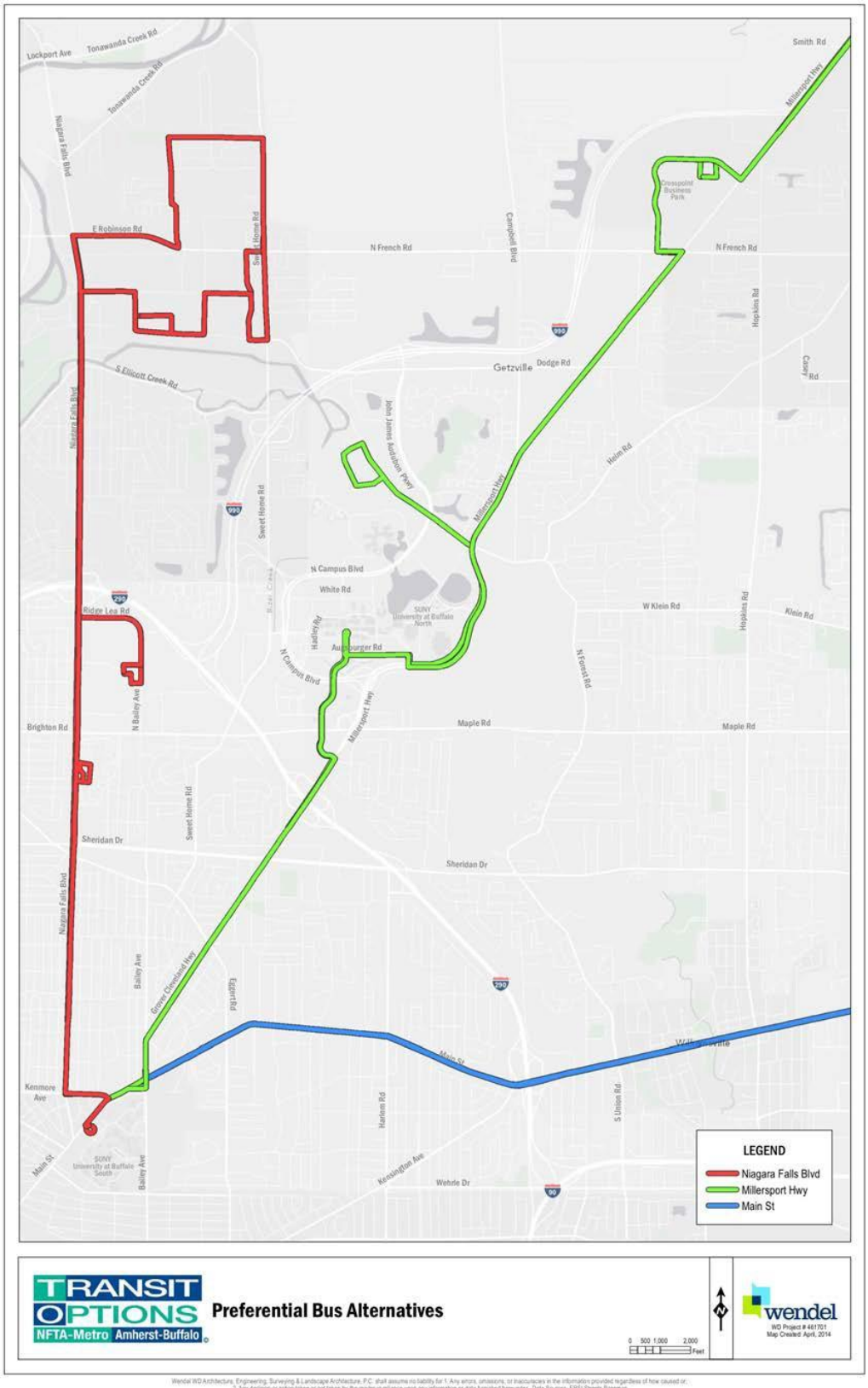


Figure 5 Enhanced Bus Alternatives

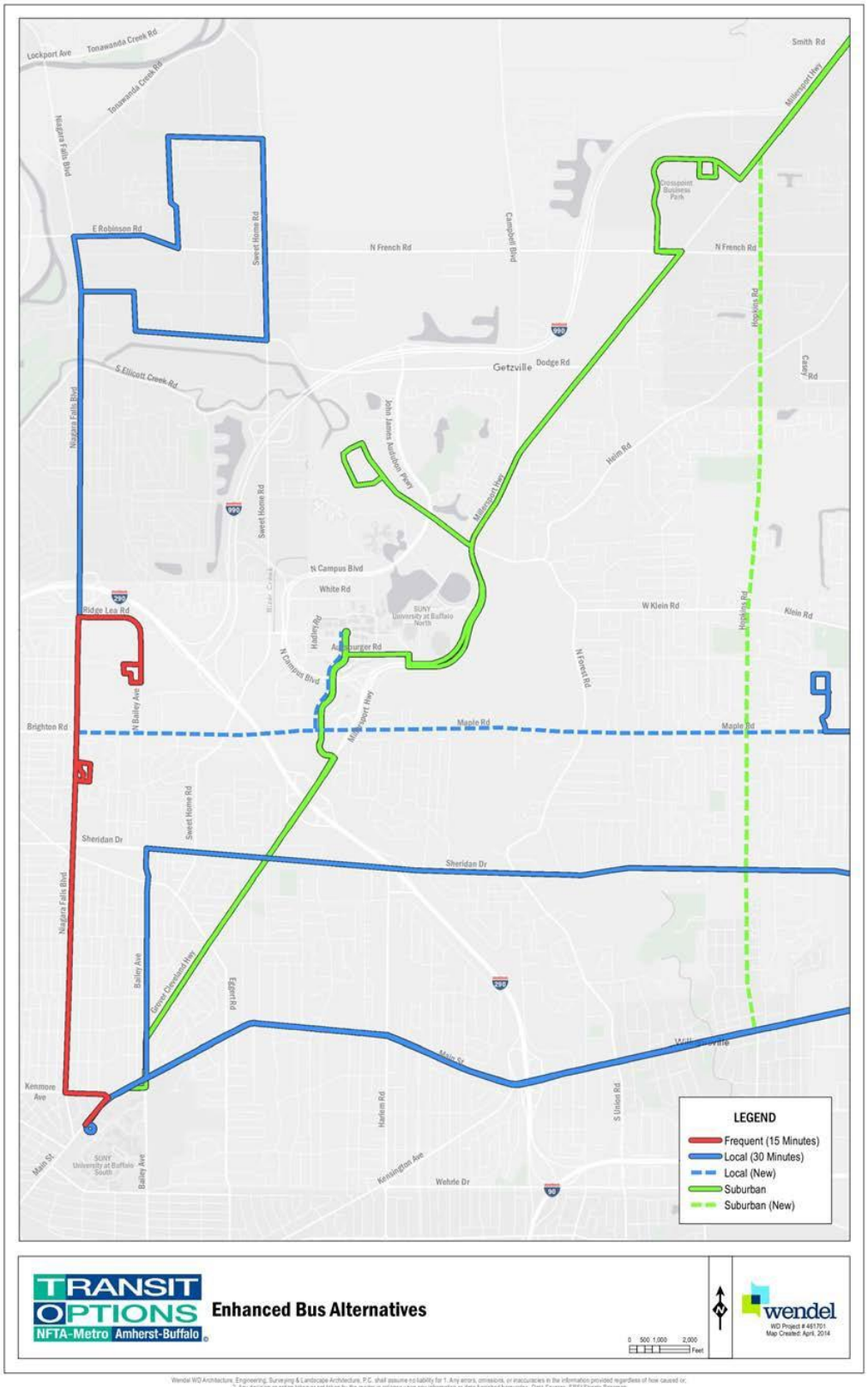
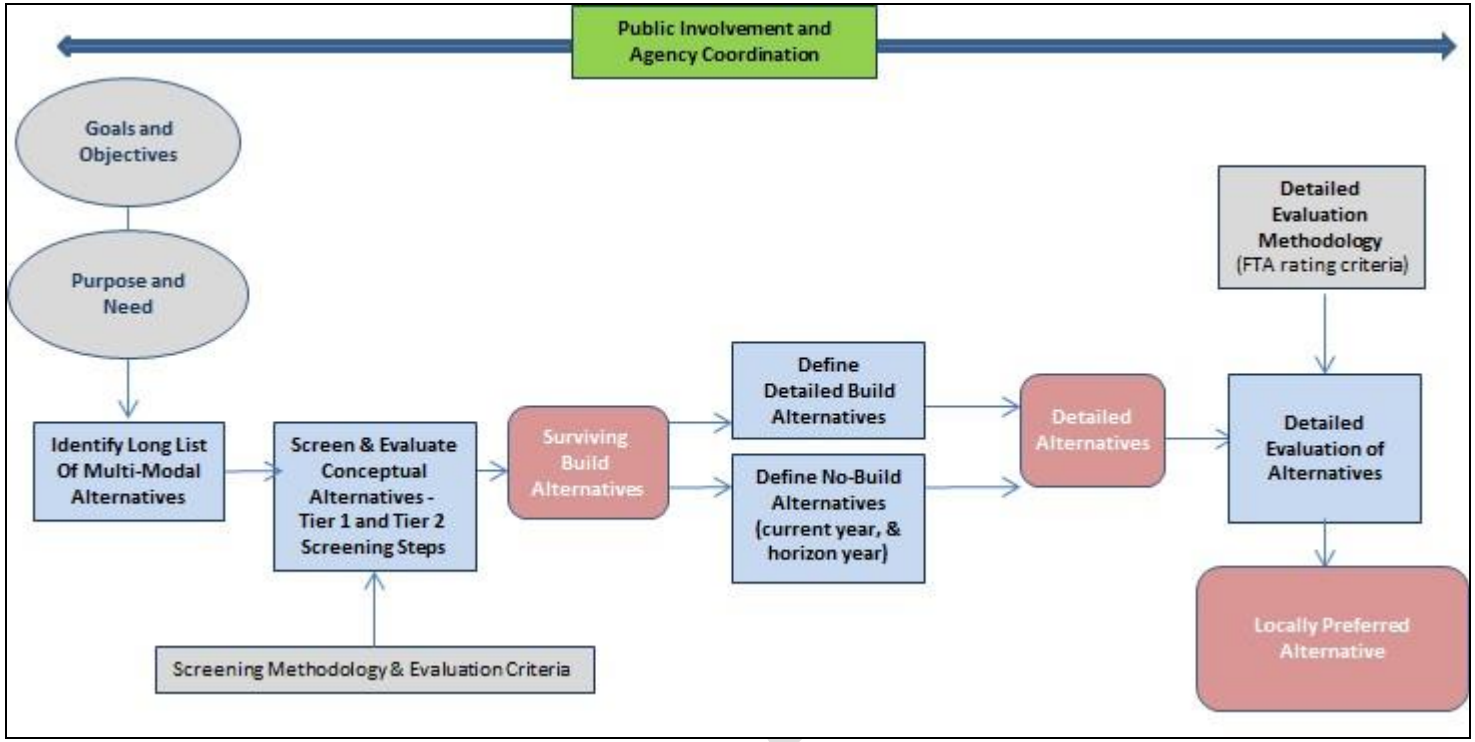


Figure 6 Alternatives Analysis Process



3.1 Preliminary Alternatives for Tier 2 Screen

In preparation for Tier 2 screening, NFTA developed the fixed-guideway (BRT and LRT) alternatives into Preliminary Alternatives by applying conceptual level engineering. The fixed-guideway alternatives were further defined, in consultation with key stakeholders and NFTA staff, to include the following elements:

- General alignments (primarily horizontal), and whether at-grade or below grade (for LRT),
- General operating speeds were determined based on alignments and conceptual level of engineering on horizontal curves,
- Preliminary stations or stop locations were identified and whether or not a station has park and ride capability and if a station is at-grade or not (thus allowing for the accounting of vertical access times where the station is below grade),
- An initial service plan with headway and station/stop level travel times was developed for each alternative (for the alternative's new transit service as well as an underlying service plan for existing (NFTA bus) transit services).

By further defining the Preliminary Alternatives, NFTA could subject them to a more rigorous and quantitative analysis in the Tier 2 screen compared to that which occurred under Tier 1. For example, conceptual level engineering enabled NFTA define an initial service strategy, and with that service strategy apply a validated travel demand model for estimating ridership forecasts.

The seven LRT alternatives advanced to Tier 2 screening include LRT alternatives using three primary travel corridors: 1) Bailey Avenue/Niagara Falls Boulevard, 2) Bailey Avenue, and 3) Millersport Highway. Initial definition of these LRT alternatives in Tier 1 (Long List of Alternatives) had more pronounced differences each alternative's alignment pathways. Similarly, the six BRT alternatives advanced to Tier 2 screening include BRT alternatives using three primary travel corridors: 1) Bailey Avenue/Niagara Falls Boulevard, 2) Bailey Avenue, and 3) Millersport Highway.

However, as a result of both the conceptual engineering conducted and on-going dialogue with key stakeholders, alignment pathways for the alternatives were refined. For example, to access Niagara Falls Boulevard using LRT from the underground Metro Rail UB South Campus University Station, conceptual engineering determined that the use of Main Street and Bailey Avenue was required as the curve radii at Kenmore Avenue could not be met and prevents direct access to Niagara Falls Boulevard from this location by light rail. Additionally, dialogue with UB officials resulted in one preferred common alignment pathway for LRT alternatives through the UB North Campus. This definition of one common LRT pathway through UB North Campus resulted in the elimination of one LRT alternative (Millersport LRT 2) as the only difference between Millersport LRT 1 and Millersport LRT 2 was how each traversed through UB North. And similarly a common alignment pathway for BRT alternatives through the UB North Campus also resulted from dialogue with UB officials. As a result, this also reduced the BRT alternatives using Millersport Highway to one.

Table 1 provides a description of the disposition of the alternatives that were carried forward from Tier 1 into Tier 2 based on dialogue with UB officials. Thirteen (13) alternatives were carried into Tier 2 with eleven (11) fixed-guideway alternatives subject to the Tier 2 screen.

Table 1 Disposition of Tier 2 Alternatives

Initial Count	Alternative	Disposition in Tier 2 per UB Dialogue	New Count
Fixed Guideway Alternatives			
Light Rail Transit			
1	Niagara Falls Blvd LRT 1	Continue Tier 2 screen	1
2	Niagara Falls Blvd LRT 2	Continue Tier 2 screen	2
3	Niagara Falls Blvd LRT 7	Continue Tier 2 screen	3
4	Bailey Avenue LRT 1	Continue Tier 2 screen	4
5	Bailey Avenue LRT 2	Continue Tier 2 screen	5
6	Millersport Hwy LRT 1	Continue Tier 2 screen	6
7	Millersport Hwy LRT 2	Removed from further analysis as only difference in Millersport Hwy LRT Alternatives 1 and 2 were their alignments thru UB North. With common alignment determination on UB, they are identical	n/a
Bus Rapid Transit			
8	Niagara Falls Blvd BRT 1	Continue Tier 2 screen	7
9	Niagara Falls Blvd BRT 2	Continue Tier 2 screen	8
10	Bailey Avenue BRT 1	Continue Tier 2 screen	9
11	Bailey Avenue BRT 2	Continue Tier 2 screen	10
12	Millersport Hwy BRT 1	Continue Tier 2 screen	11
13	Millersport Hwy BRT 2	Removed from further analysis as only difference in Millersport Hwy BRT Alternatives 1 and 2 were their alignments thru UB North. With common alignment determination, they are identical	n/a
Non-Fixed Guideway Alternatives			
14	Preferential Bus	Moves through Tier 2 for Analysis in Tier 3	12
15	Enhanced Bus	Moves through Tier 2 for Analysis in Tier 3	13

The eleven (11) resulting LRT and BRT Preliminary Alternatives are aligned along three corridors: the Niagara Falls Boulevard corridor, the Bailey Avenue corridor, and the Millersport Highway corridor. Using these similar pathways, NFTA grouped the Preliminary Alternatives by their common corridors. The eleven (11) Preliminary Alternatives retained for the Tier 2 screen are depicted on **Figures 6 and 7**. The eleven, fixed-guideway Preliminary Alternatives that will undergo the Tier 2 screen are listed in Tables 2 and 3.

Table 2 LRT Alternatives for the Tier 2 Screen

Alternative
Niagara Falls Blvd LRT 1
Niagara Falls Blvd LRT 2
Niagara Falls Blvd LRT 7
Bailey Avenue LRT 1
Bailey Avenue LRT 2
Millersport Hwy LRT 1

Table 3 BRT Alternatives for the Tier 2 Screen

Alternative
Niagara Falls Blvd BRT 1
Niagara Falls Blvd BRT 2
Bailey Avenue BRT 1
Bailey Avenue BRT 2
Millersport Hwy BRT 1

3.1.1 Development of Conceptual Alternatives for Tier 2 Screening

Engineering elements include the following:

- Establish design criteria for refinement of LRT and BRT Conceptual Alternatives.
- Develop refined horizontal alignments and typical cross section geometry for each alternative.
- Identify the location and quantity of tunnel, surface and elevated segments as well as locations for portals, bridges, transit priority signals, queue jumps and other infrastructure necessary to support LRT and BRT alternatives.
- Define locations and conceptual geometry for LRT and BRT passenger stations.
- Identify right of way needs for Conceptual Alternatives.

Conceptual engineering was used to support development of operating speed tables for the ridership forecasting and other data for use in the Tier 2 alternative evaluation matrix.

3.1.1.1 LRT and BRT Design Criteria

Conceptual design criteria were developed for LRT and BRT. This section describes the criteria.

Since the LRT vehicle will need to operate on existing and future guideway, the existing NFTA light rail vehicle was selected as the design vehicle. Design and operating parameters for the NFTA's existing LRT vehicles and system were used to develop design criteria set forth in **Table 4.**

Table 4 Light Rail Transit (LRT) Design Criteria

1. Design Vehicle - Existing NFTA light rail vehicle
2. Speeds
a. Below Ground Tunnel Segments– 50 mph
b. Above Ground Bridge Section – 50 mph
c. At Grade outside Street ROW- 50 mph
d. At Grade within Street ROW – Speed limit of adjacent roadway
e. At Grade mixed pedestrian – 15 mph
f. Yard – 5 mph
3. Horizontal Alignment
a. Minimum length of the tangent section between curves is 3 times the speed or 100 ft – whichever is larger
b. Minimum radius is governed by design speed
c. Minimum radius for yard and secondary track is 75 feet
d. Equilibrium super elevation maximum is 10 inches
e. Curvature in degrees – based on Ee of 10 inches, D = 6.1 degrees (maximum)
4. Vertical Alignment
a. Maximum grade shall be 5%
b. Changes in grade should be connected by parabolic curves
c. Minimum length of vertical curve (L) shall be larger of the following:
i. $L = 0.0134\ D\ V^2$
ii. L = 33D
L = length of curve
D = Algebraic difference of adjoining grades in percent
V = Design Speed in mph
d. Absolute minimum length (L) of vertical curve is 100 feet
e. The minimum length of constant grade between curves shall be 75 feet

These criteria were used to develop horizontal alignments and speed tables for Tier 2 LRT Preliminary Alternatives. Each LRT alternative is described further below.

Niagara Falls Boulevard – LRT Alternative # 1

Conceptual Alignment – Main Street – Bailey Avenue – Eggert Road- Niagara Falls Boulevard- Maple Road – Sweet Home Road – Rensch Road- UB North Campus Alignment – John James Audubon Parkway – I-990 – Crosspoint Business Park

The concept alignment would begin at the South Campus Station and utilize the existing run out tunnel to Bailey Avenue. The concept alignment will continue underground below Bailey Avenue and Eggert Road to a portal in near Alberta Drive. Once at the surface, the concept alignment would utilize a dedicated guideway in the center of Niagara Falls Boulevard ROW to the

Boulevard Mall. North of Sheridan Drive, the guideway would be constructed within the existing Niagara Falls Boulevard median and would continue in the center of Maple Road to Sweet Home Road. The concept alignment would utilize dedicated guideway rail lines in the center of Sweet Home Road to a point near the Rensch Road Entrance to the UB North Campus. On the campus the concept alignment would utilize surface lanes running parallel to and south of Putnam Way. The concept alignment would exit the UB campus utilizing a surface guideway and travel in the median of John James Audubon Parkway to the I-990. The LRT alignment would be located in the median of I-990 on newly constructed guideway to Crosspoint Business Park. New or widened bridges would be utilized at existing grade crossings. The guideway would be elevated on a new structure from the I-990 median into the Crosspoint Business Park.

Niagara Falls Boulevard – LRT Alternative # 2

Conceptual Alignment – Main Street – Bailey Avenue – Eggert Road- Niagara Falls Boulevard- Maple Road – Sweet Home Road – Rensch Road- UB North Campus Alignment – John James Audubon Parkway – Sylvan Parkway – Millersport Highway - Crosspoint Business Park

The concept alignment would begin at the South Campus Station and utilize the existing run out tunnel to Bailey Avenue. The concept alignment will continue underground below Bailey Avenue and Eggert Road to a portal in near Alberta Drive. Once at the surface, the concept alignment would utilize a dedicated guideway in the center of Niagara Falls Boulevard ROW to the Boulevard Mall. North of Sheridan Drive, the guideway would be constructed within the existing Niagara Falls Boulevard median and would continue in the center of Maple Road to Sweet Home Road. The concept alignment would utilize dedicated guideway rail lines in the center of Sweet Home Road to a point near the Rensch Road Entrance to the UB North Campus. On the campus the concept alignment would utilize surface lanes running parallel to and south of Putnam Way. The concept alignment would exit the UB campus utilizing a surface guideway and travel in the median of John James Audubon Parkway and Sylvan Parkway to Millersport Highway. The LRT would continue in the median of Millersport Highway to Crosspoint Business Park utilizing a dedicated surface guideway.

Niagara Falls Boulevard – LRT Alternative # 7

Conceptual Alignment – Main Street – Bailey Avenue – Eggert Road- Niagara Falls Boulevard- Meyers Road- I-290 Crossing – Sweet Home Road – Rensch Road- UB North Campus Alignment – John James Audubon Parkway – I-990 Median – Crosspoint Business Park

The concept alignment would begin at the South Campus Station and utilize the existing run out tunnel to Bailey Avenue. The concept alignment will continue underground below Bailey Avenue and Eggert Road to a portal in near Alberta Drive. Once at the surface, the concept alignment would utilize a dedicated guideway in the center of Niagara Falls Boulevard ROW to the Boulevard Mall. North of Sheridan Drive, the guideway would be constructed within the existing Niagara Falls Boulevard median and would continue in the center of Meyer Road. A shallow cut and cover tunnel would be used to provide a grade-separated, below grade crossing of the I-290 to Sweet Home Road. The concept alignment would utilize dedicated guideway in the center of Sweet Home Road to a point near the Rensch Road Entrance to the UB North Campus. On the campus the concept alignment would utilize surface lanes running parallel to and south of Putnam Way. The concept alignment would exit the UB campus utilizing a surface guideway and travel in the median of John James Audubon Parkway to the I-990. The LRT alignment would be located in the median of I-990 on newly constructed guideway to Crosspoint Business Park. New or widened bridges would be utilized at existing grade crossings. The

guideway would be elevated on a new structure from the I-990 median into the Crosspoint Business Park.

Bailey Avenue – LRT Alternative # 1

Conceptual Alignment – Main Street – Bailey Avenue – Maple Road – Sweet Home Road – Rensch Road- UB North Campus Alignment – John James Audubon Parkway – I-990 Median – Crosspoint Business Park

The concept alignment would begin at the South Campus Station and utilize the existing run out tunnel continuing underground to Bailey Avenue then surfacing through a portal on Maple Road. Once at the surface, dedicated lanes in the center of Maple Road would be utilized to Sweet Home Road. The concept alignment would utilize dedicated guideway in the center of Sweet Home Road to a point near the Rensch Road Entrance to the UB North Campus. On campus the concept alignment would utilize surface lanes running parallel to and south of Putnam Way. The concept alignment would exit the UB campus utilizing a surface guideway and travel in the median of John James Audubon Parkway to the I-990. The LRT alignment would be located in the median of I-990 on newly constructed guideway to Crosspoint Business Park. New or widened bridges would be utilized at existing grade crossings. The guideway would be elevated on a new structure from the I-990 median into the Crosspoint Business Park.

Bailey Avenue –LRT Alternative # 2

Conceptual Alignment – Main Street – Bailey Avenue – Maple Road – Sweet Home Road – Rensch Road- UB North Campus Alignment – John James Audubon Parkway – Sylvan Parkway – Millersport Highway - Crosspoint Business Park

The concept alignment would begin at the South Campus Station and utilize the existing run out tunnel continuing underground to Bailey Avenue then surfacing through a portal on Maple Road. Once at the surface, dedicated lanes in the center of Maple Road would be utilized to Sweet Home Road. The concept alignment would utilize dedicated guideway in the center of Sweet Home Road to a point near the Rensch Road Entrance to the UB North Campus. On the campus the concept alignment would utilize surface lanes running parallel to and south of Putnam Way. The concept alignment would exit the UB campus utilizing a surface guideway and travel in the median of John James Audubon Parkway and Sylvan Parkway to Millersport Highway. The LRT would continue in the median of Millersport Highway to Crosspoint Business Park utilizing a dedicated surface guideway.

Millersport Avenue – LRT Alternative # 1

Conceptual Alignment – Main Street – Bailey Avenue – Grover Cleveland Highway – Millersport Highway – Flint Road – UB North Campus Alignment – Putnam Way – John James Audubon Parkway – Sylvan Parkway – Millersport Highway - Crosspoint Business Park

The concept alignment would begin at the South Campus Station utilizing the existing run out tunnel and continue underground to Bailey Avenue and surface through a portal on Millersport Highway near Westfield Road. On Millersport Highway surface guideway would be constructed in the median to the intersection of Flint Road. A shallow cut and cover tunnel would be used to provide a grade separated crossing of the Maple Road and the UB North Campus circulatory road to a point south of Augsburger Road. On the campus the concept alignment would utilize

surface guideway and approximately follow Putnam Way. The concept alignment would exit the UB campus utilizing a surface guideway and travel in the median of John James Audubon Parkway and Sylvan Parkway to Millersport Highway. The LRT would continue in the median of Millersport Highway to Crosspoint Business Park utilizing a dedicated surface guideway.

Design criteria for BRT were developed based on guidance set forth in the American Association of State Highway and Transportation Officials (AASHTO) *Guide for Geometric Design of Transit Facilities on Highways and Streets*, AASHTO *Geometric Design of Highways and Streets* and New York State Department of Transportation *Highway Design Manual*. These documents provide criteria relative to horizontal and vertical alignment geometry, travel lane widths as well as geometry for intersections, queue jumps and other BRT design elements.

A standard low floor articulated bus was selected as the design vehicle. Geometric operating characteristics associated with that bus are illustrated in **Figure 7.** BRT design criteria are set forth in **Table 5.**

Table 5 Bus Rapid Transit (BRT) Design Criteria

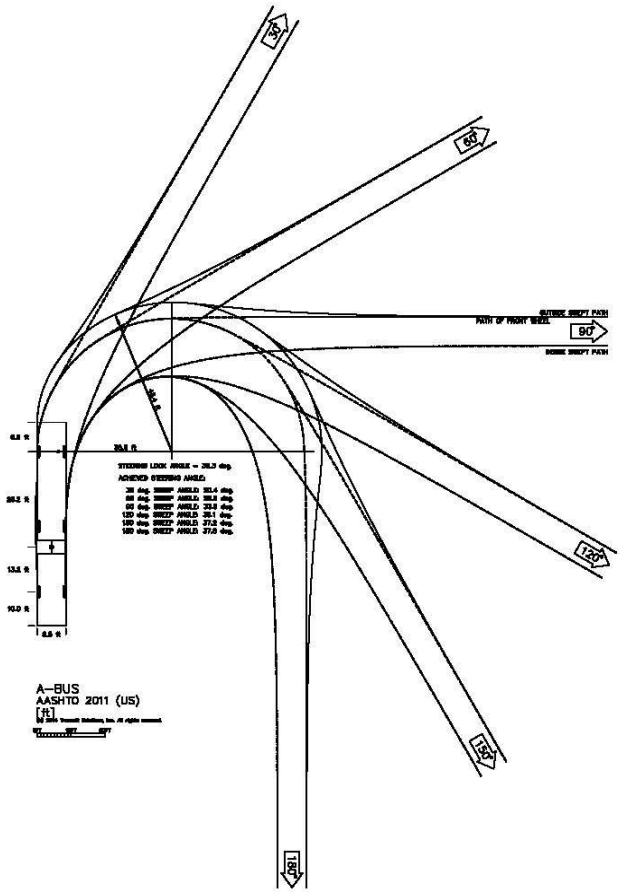
1. Design Vehicle – Articulated Bus
2. Speeds
a. At Grade outside Street ROW- 55 mph
b. At Grade within Street ROW – Speed limit of adjacent roadway
c. Above Ground Bridge Section – 45 mph
d. At Grade Mixed Pedestrian Section – 15 mph
3. Horizontal Alignment
a. Minimum radius is governed by design speed per AASHTO Geometric Design of Highways and Streets
b. Minimum radius at intersections is 20 feet based on Design Vehicle Turning Geometry
c. Maximum super elevation maximum is 4%
4. Vertical Alignment
a. Maximum grade shall be 5%
b. Changes in grade should be connected by simple curves
c. Minimum length of vertical curve (L) shall be 100 feet

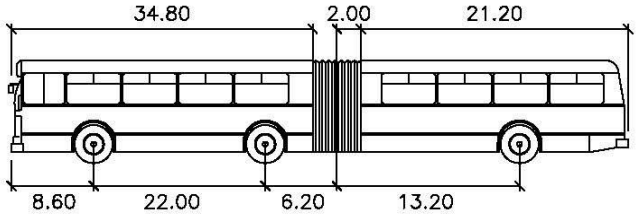
These criteria were used to develop horizontal alignments and speed tables for Tier 2 BRT Conceptual Alternatives. Each BRT alternative is described further below.

Niagara Falls Boulevard – BRT Alternative # 1

Conceptual Alignment – Main Street – Kenmore Avenue - Niagara Falls Boulevard –Ridge Lee Road – North Bailey Avenue – Maple Road – Sweet Home Road –Rensch Road – UB North Campus Alignment – John James Audubon Parkway – I-990 Expressway – Crosspoint Business Park

Figure 7 Articulated Bus Geometric Operating Characteristics





A–BUS
feet

Width : 8.50
Track : 8.50
Lock to Lock Time : 6.0
Steering Angle : 38.3
Articulating Angle : 50.0

TRANSIT OPTIONS NFTA-Metro Amherst-Buffalo ARTICULATED BUS TEMPLATE NOT TO SCALE wendel

BRT vehicles would arrive and depart from the existing South Campus Station bus loop and travel on Main Street, Kenmore Avenue and Niagara Falls Boulevard. BRT vehicles would operate in mixed use travel lanes to Niagara Falls Boulevard. BRT Vehicles then would travel north on Niagara Falls Boulevard in dedicated bus lanes past the Boulevard Mall to Ridge Lee Road and return south on North Bailey Avenue. From North Bailey Avenue BRT vehicles would travel east on Maple Road in dedicated bus lanes to Sweet Home Road. BRT vehicles would travel down Sweet Home Road in part time dedicated bus lanes to the Rensch Road Entrance at the UB North Campus. On campus, BRT vehicles would utilize Putnam Way and dedicated surface lanes running parallel to and south of Putnam Way. From the UB North Campus BRT vehicles would operate in dedicated outside lanes along the John James Audubon Parkway to the I-990. BRT vehicles would operate improved dedicated lanes constructed in the existing shoulder of I-990 to Crosspoint Business Park. A new interchange would be constructed from I-990 to provide access into the Crosspoint Business Park.

Niagara Falls Boulevard – BRT Alternative # 2

Conceptual Alignment – Main Street – Kenmore Avenue - Niagara Falls Boulevard –Ridge Lee Road – North Bailey Avenue – Maple Road – Sweet Home Road –Rensch Road – UB North Campus Alignment – John James Audubon Parkway – Sylvan Parkway – Millersport Highway - Crosspoint Business Park

BRT vehicles would arrive and depart from the existing South Campus Station bus loop and travel on Main Street, Kenmore Avenue and Niagara Falls Boulevard. BRT vehicles would operate in mixed use travel lanes to Niagara Falls Boulevard. BRT vehicles then would travel north on Niagara Falls Boulevard in dedicated bus lanes past the Boulevard Mall to Ridge Lee Road and return south on North Bailey Avenue. From North Bailey Avenue BRT vehicles would travel east on Maple Road in dedicated outside lanes to Sweet Home Road. BRT vehicles would travel down Sweet Home Road in part time dedicated lanes to the Rensch Road Entrance at the UB North Campus. On campus, BRT vehicles would utilize Putnam Way and dedicated surface lanes running parallel to and south of Putnam Way. From the UB campus BRT vehicles would operate in dedicated outside lanes along the John James Audubon Parkway and Sylvan Parkway to Millersport Highway. BRT Vehicles would travel down the median of Millersport Highway in newly constructed dedicated lanes into Crosspoint Business Park.

Bailey Avenue – BRT Alternative # 1

Conceptual Alignment – Main Street – Bailey Avenue – Maple Road – Sweet Home Road – Sweet Home Road – Rensch Road – UB North Campus Alignment – John James Audubon Parkway – I-990 Expressway – Crosspoint Business Park

BRT vehicles would arrive and depart from the existing South Campus Station bus loop and travel on Main Street to Bailey Avenue. From there, BRT vehicles would utilize the existing jug handle to turn left onto Bailey Avenue and continue past the Boulevard Mall to Maple Road. BRT vehicles would operate in mixed use travel lanes to Maple Road. BRT vehicles would travel down Maple Road in dedicated outside lanes to Sweet Home Road. BRT vehicles would utilize Sweet Home Road in part time dedicated outside lanes to the Rensch Road entrance to the UB North Campus. On the UB North Campus, BRT vehicles would utilize Putnam Way and dedicated surface lanes running parallel to and south of Putnam Way. From the UB North Campus BRT vehicles would operate in dedicated outside lanes along the John James

Audubon Parkway to the I-990. BRT vehicles would operate in improved dedicated lanes constructed in the existing shoulder of I-990 into Crosspoint Business Park. A new interchange would be constructed from I-990 to provide access in
to Crosspoint Business Park.

Bailey Avenue – BRT Alternative # 2

Conceptual Alignment – Main Street – Bailey Avenue – Maple Road – Sweet Home Road – Sweet Home Road – Rensch Road – UB North Campus Alignment – John James Audubon Parkway – John James Audubon Parkway – Sylvan Parkway – Millersport Highway - Crosspoint Business Park

BRT vehicles would arrive and depart from the existing South Campus Station bus loop and travel on Main Street to Bailey Avenue. From there, BRT vehicles would utilize the existing jug handle to turn left onto Bailey Avenue and continue past the Boulevard Mall to Maple Road. BRT vehicles would operate in mixed use travel lanes to Maple Road. BRT vehicles would travel down Maple Road in dedicated outside lanes to Sweet Home Road. BRT vehicles would utilize Sweet Home Road in part time dedicated outside lanes to the Rensch Road entrance to the UB North Campus. On the UB North Campus, BRT vehicles would utilize Putnam Way and dedicated surface lanes running parallel to and south of Putnam Way. From the UB North Campus BRT Vehicles would operate in dedicated outside lanes along the John James Audubon Parkway and Sylvan Parkway to Millersport Highway. BRT vehicles would travel down the median of Millersport Highway in newly constructed dedicated lanes into Crosspoint Business Park.

Millersport Avenue – BRT Alternative # 1

Conceptual Alignment – Main Street – Bailey Avenue – Millersport Road – Hadley Road – Putnam Way – John James Audubon Parkway – Sylvan Parkway – Millersport Highway - Crosspoint Business Park

BRT vehicles would arrive and depart from the existing South Campus Station bus loop and travel on Main Street to Bailey Avenue. From there, BRT vehicles would utilize the existing jug handle to turn left onto Bailey Avenue then turn right and continue on Grover Cleveland and Millersport Highway. BRT vehicles would operate in mixed use travel lanes to Sheridan Drive. North of Sheridan Drive, BRT vehicles would utilize dedicated median lanes to Flint Road. BRT vehicles would share the UB North Campus circulatory road ramps to access the UB North Campus on Flint Road. On campus, BRT vehicles would utilize Flint Road, Putnam Way and dedicated surface lanes running parallel to and south of Putnam Way. From the UB North Campus BRT vehicles would operate in dedicated outside lanes along the John James Audubon Parkway and Sylvan Parkway to Millersport Highway. BRT vehicles would travel down the median of Millersport Highway in newly constructed dedicated lanes to Crosspoint Business Park.

3.1.1.2 LRT and BRT Conceptual Cross Sections and ROW Determination

As part of the Tier 2 alternatives definition and evaluation process, conceptual cross sections were developed for both LRT and BRT Preliminary Alternatives. Conceptual cross section development is necessary to identify future ROW needs for development of each conceptual alternative.

LRT Alternatives

LRT vehicles would operate within dedicated guideways that are located in underground tunnels, within existing streets or at-grade surface off-street guideways. Representative cross sections were developed for LRT alternatives using the following criteria.

- All surface segments of LRT Preliminary Alternatives would operate in dedicated guideways. Vehicle traffic would be precluded from operating within LRT guideways.
- Within existing street rights-of-way, existing travel lanes and pedestrian facilities would be retained. Detailed traffic analysis would need to be performed to determine if travel lanes could be eliminated.
- Within existing street rights-of-way, existing turn lanes would be eliminated with turns being restricted to street intersections. Available snow storage as well as parkway and green space will be reduced to required minimum widths based on AASHTO and NYSDOT design criteria.
- In areas where guideway is located outside of existing street rights-of-way, the guideway width shall be 60 feet. This width will accommodate the LRT guideway as well as areas outside the guideway for construction and future maintenance.
- In tunnel sections, the minimum width for inbound and outbound tunnels shall be 100 feet. This width will accommodate the LRT tunnels as well as areas outside the tunnels for construction and future maintenance.
- In portal sections the maximum width of the portal shall be 50 feet. This width will accommodate the LRT guideway as well as areas outside the guideway for emergency egress, construction and future maintenance.

Conceptual cross sections have been developed using these criteria and representative cross sections for existing streets within the Bailey Avenue, Millersport Highway and Niagara Falls Boulevard corridors. Conceptual LRT cross sections are illustrated in **Figures 8 thru 15** and described below.

- **LRT CONCEPT SECTION 1**– The existing street includes four travel lanes and a center turn lane. This section represents an at-grade guideway located in the center of the travel lanes. The existing center turn lane would be eliminated and left turns now would be restricted to cross street intersections. Surface stations would incorporate separate staggered outside platforms for inbound and outbound trains. The additional width required for LRT development is 35 feet.
- **LRT CONCEPT SECTION 2** - The existing street includes three travel lanes and a center landscaped median. This section represents an at-grade guideway located outside of the travel lanes. The existing median would be eliminated and left turns would continue to be restricted to cross street intersections. Surface stations would incorporate separate staggered outside platforms for inbound and outbound trains. The additional width required for LRT development is 35 feet.
- **LRT CONCEPT SECTION 3-** The existing street includes four travel lanes and a center landscaped median. This section represents an at-grade guideway located in the center of the travel lanes. The existing median would be eliminated and left turns would continue to be restricted to cross street intersections. Surface stations would incorporate separate staggered outside platforms for inbound and outbound trains. The additional width required for LRT development is 35 feet.
- **LRT CONCEPT SECTION 4**– The existing street includes two travel lanes. This section represents an at-grade guideway located in the center of the travel lanes. Left turns now

would be restricted to cross street intersections. Surface stations would incorporate separate staggered outside platforms for inbound and outbound trains. The additional width required for LRT development is 35 feet.

- **LRT CONCEPT SECTION 5** – The existing street includes four travel lanes and a center turn lane. This section represents an at-grade guideway located in the center of the travel lanes. The existing center turn lane would be eliminated and left turns now would be restricted to cross street intersections. Surface stations would incorporate a center platform for use by both inbound and outbound trains. The additional width required for LRT development is 38 feet.
- **LRT CONCEPT SECTION 6 -** The existing street includes four travel lanes and a center landscaped median. This section represents an at-grade guideway located in the center of the travel lanes. The existing median would be eliminated and left turns would continue to be restricted to cross street intersections. Surface stations would incorporate a center platform for use by both inbound and outbound trains. The additional width required for LRT development is 38 feet.
- **LRT CONCEPT SECTION 7** –This section represents a below grade tunnel guideway that would be located in the center of the existing street ROW. Since this is a tunnel section, minimal modifications would be required to surface streets to accommodate station access. Below grade stations would have adjacent separate outside platforms for inbound and outbound trains. The overall width required for this cross section is dependent solely on the width necessary for tunnel and station construction. Therefore, the required width is 100 feet.
- **LRT CONCEPT SECTION 8** –This section represents a below grade tunnel guideway without a station. The tunnel would be located in the center of the existing street ROW. Since this is a tunnel section, minimal modifications would be required to surface streets. The overall width required for this cross section is dependent solely on the width necessary for tunnel construction. Therefore, the required width is 60 feet.

Concept cross sections were used to determine the ROW required for each segment of the LRT Preliminary Alternatives. Within each segment, the additional guideway width was added to the width of existing streets to determine the overall ROW width required for LRT development. Results of this determination were used for the Right of Way needs criteria of the Tier 2 Alternative Evaluation Matrix.

Results of these calculations are presented in Appendix A.

Figure 8 LRT Concept Section 1

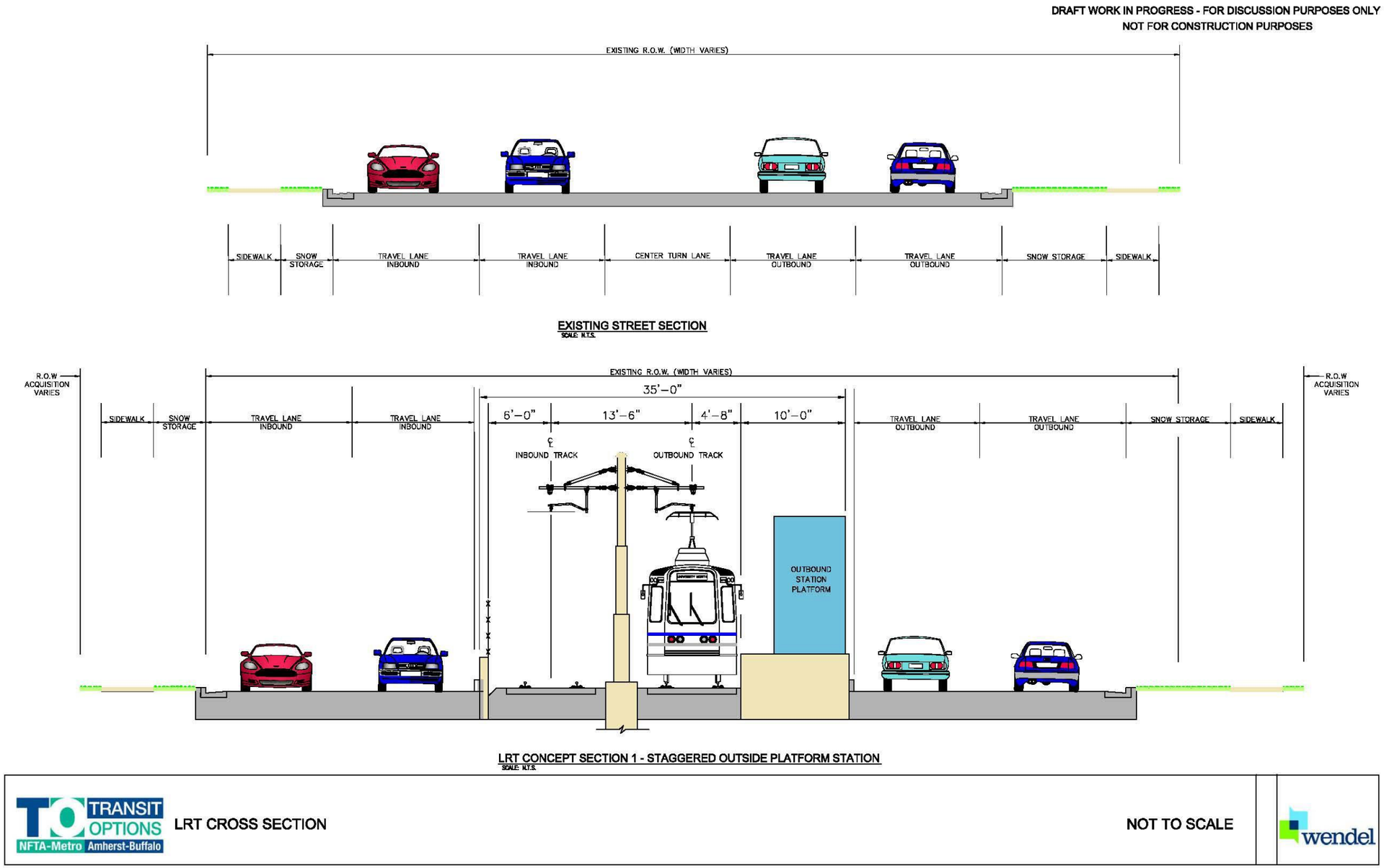


Figure 9 LRT Concept Section 2

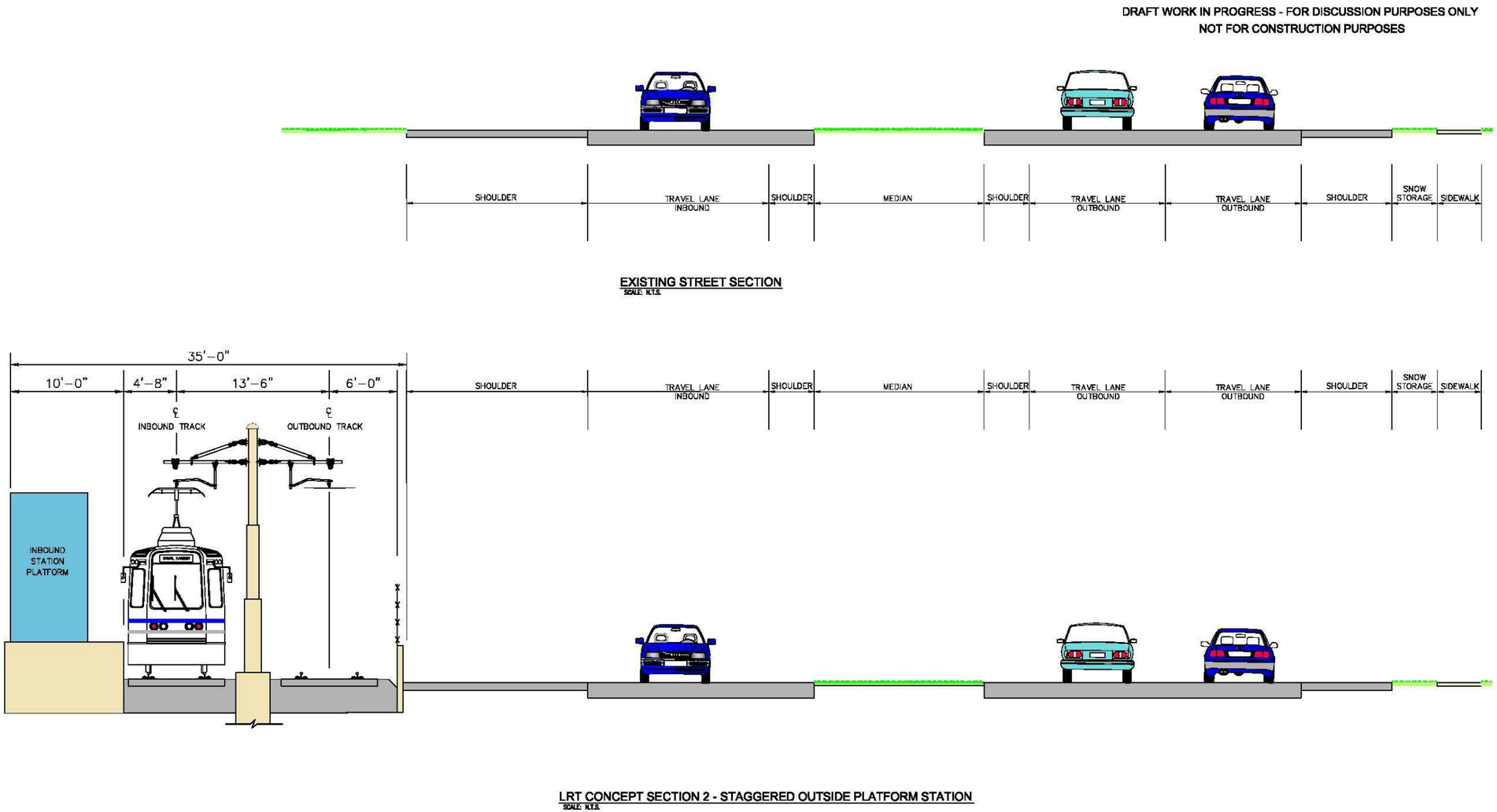


Figure 10 LRT Concept Section 3

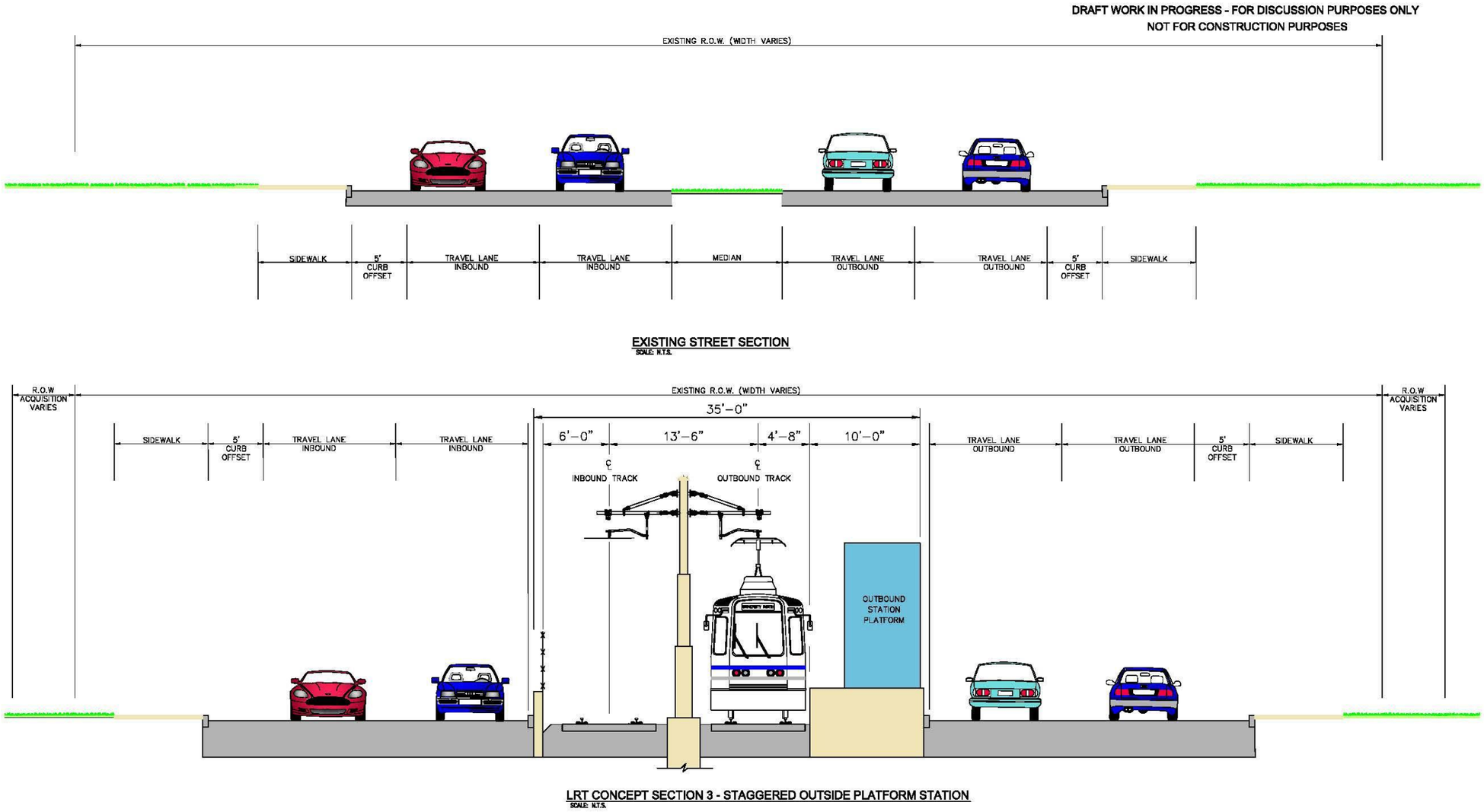


Figure 11 LRT Concept Section 4

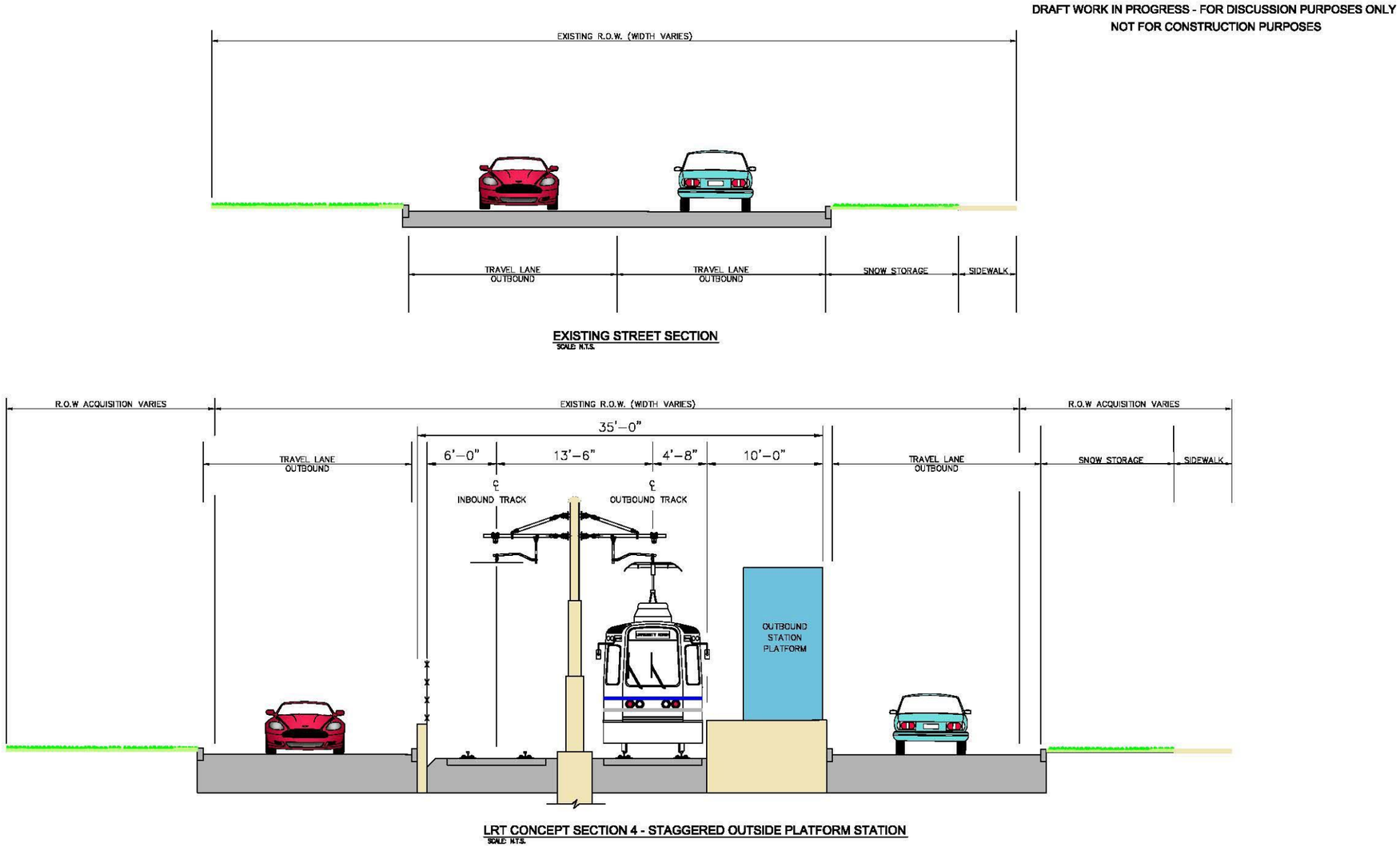


Figure 12 LRT Concept Section 5

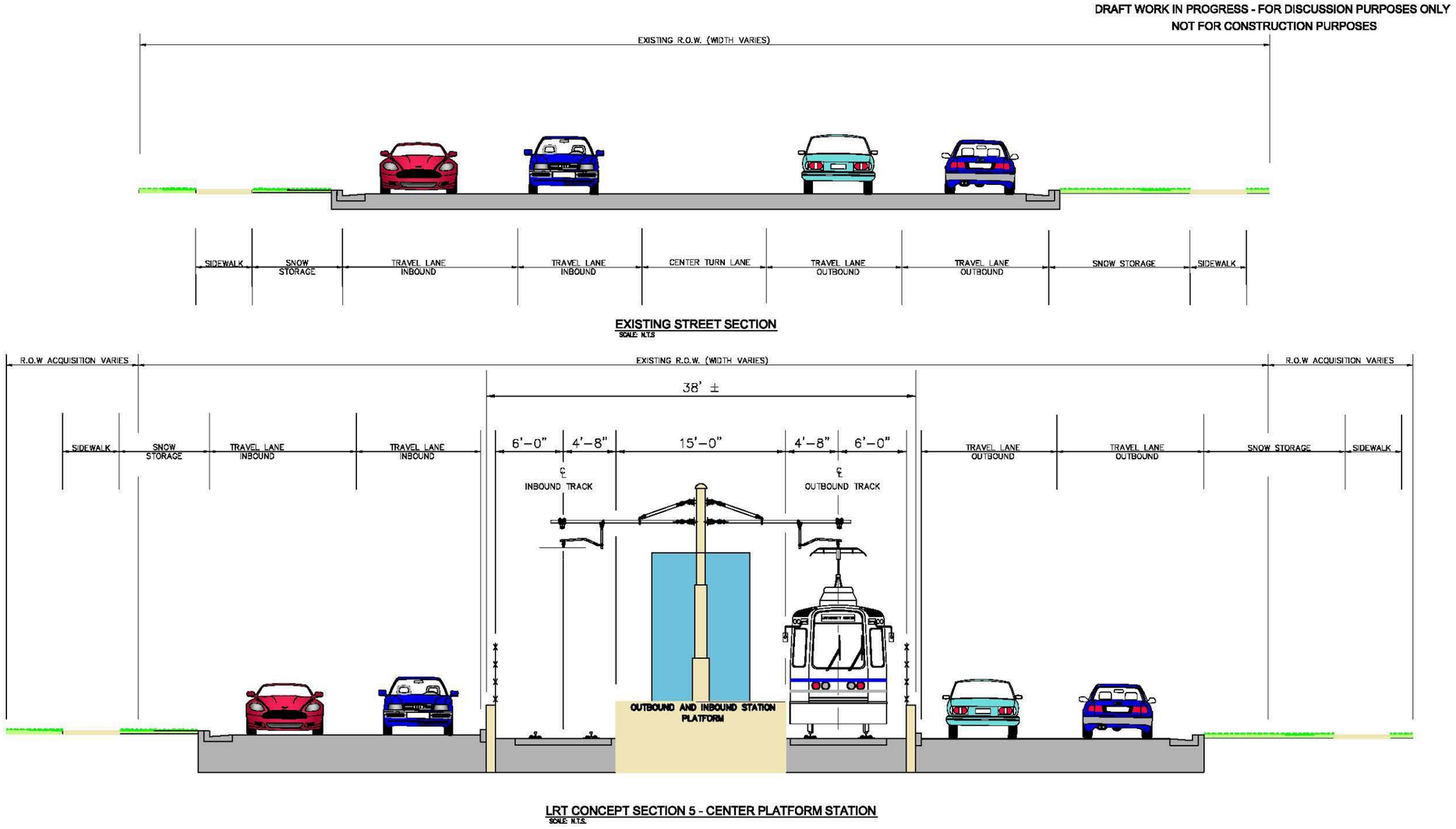


Figure 13 LRT Concept Section 6

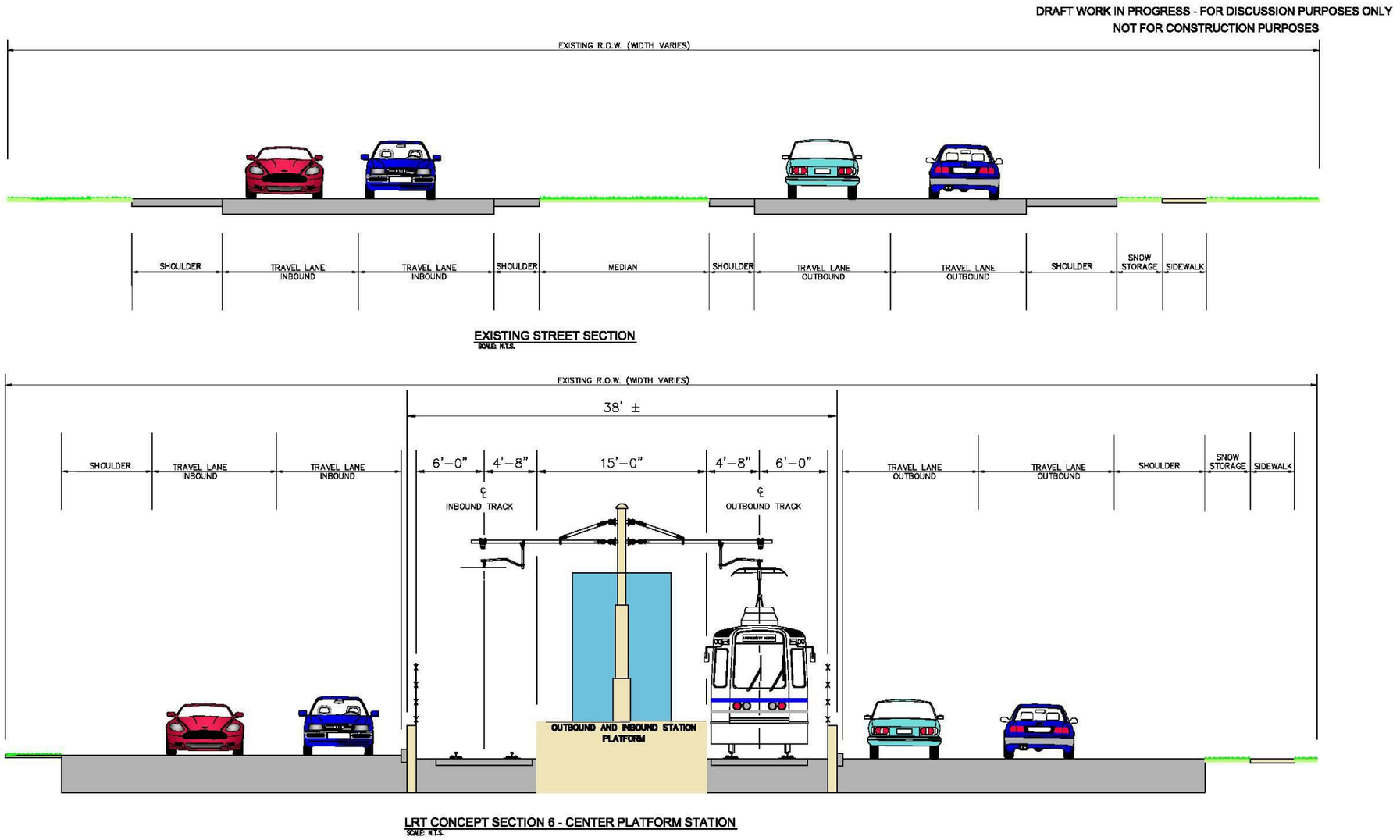


Figure 14 LRT Concept Section 7

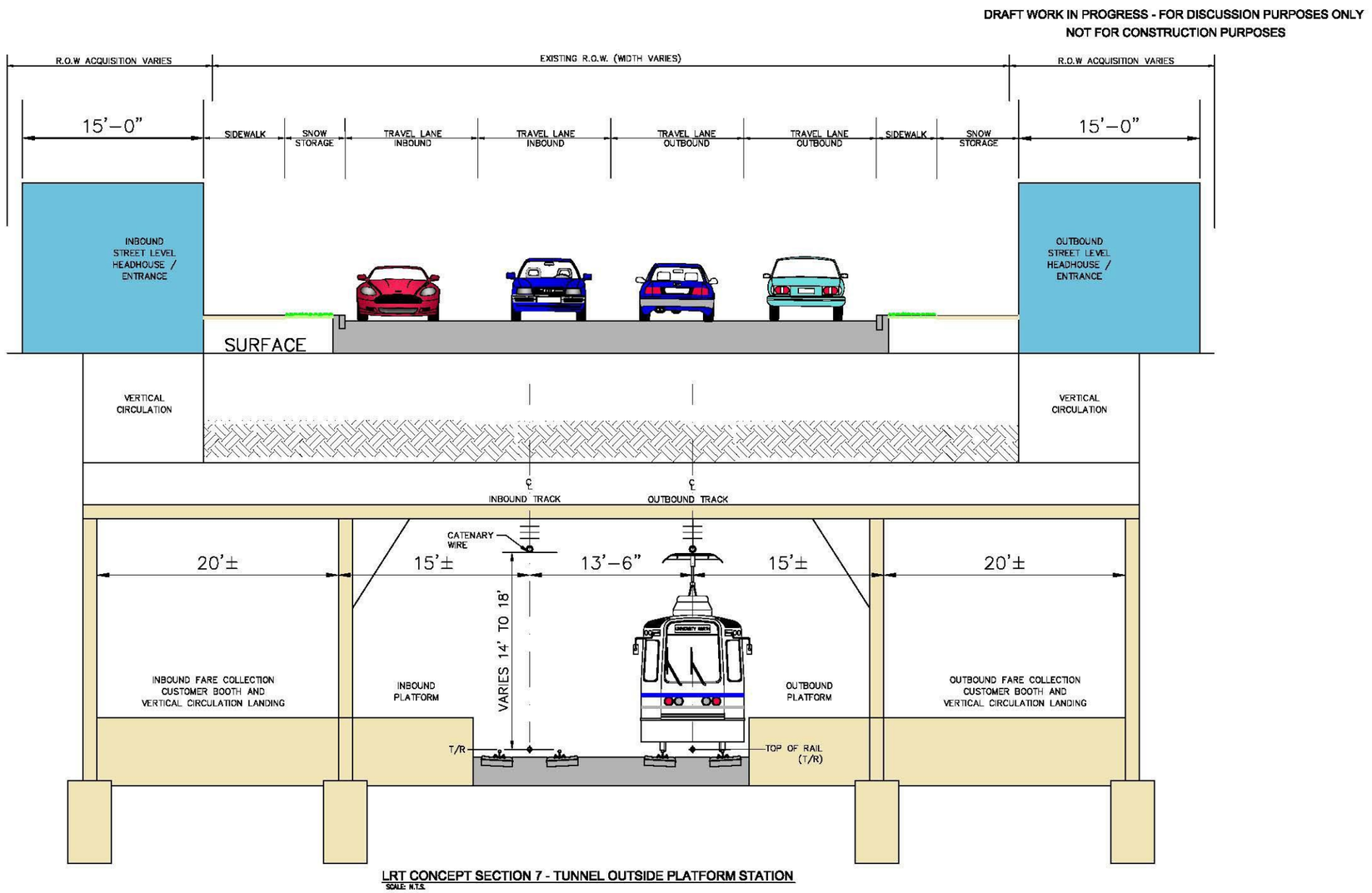
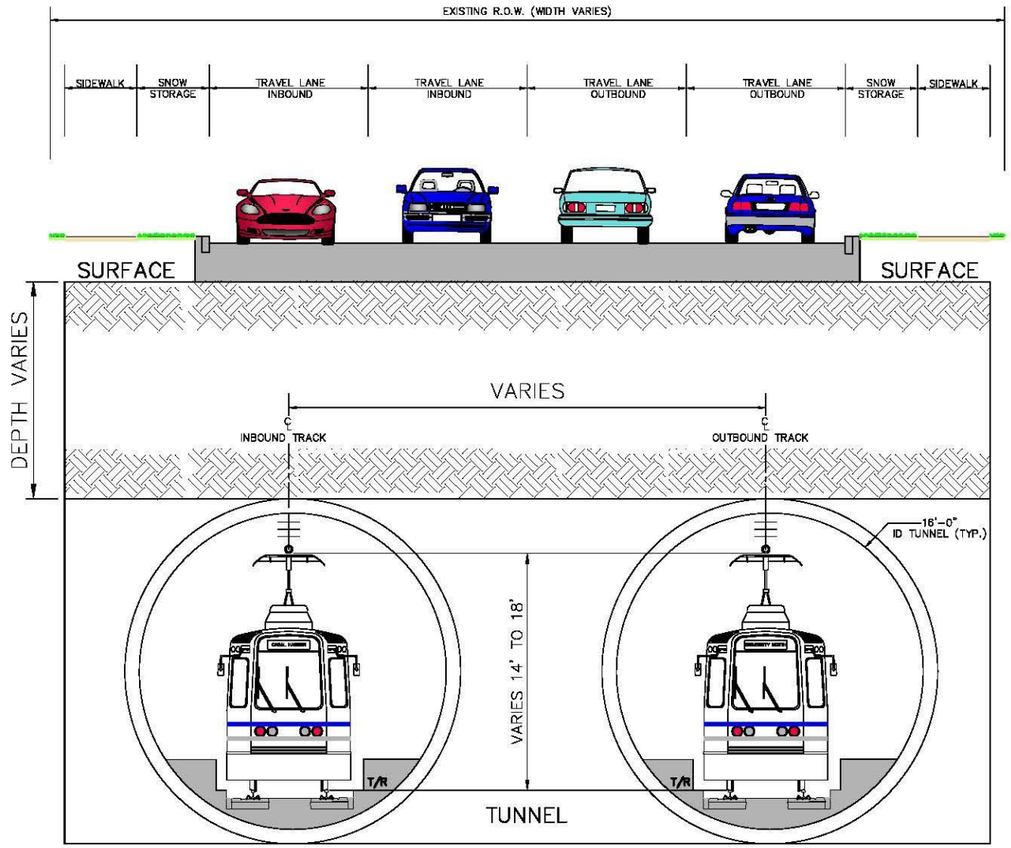


Figure 15 LRT Concept Section 8

DRAFT WORK IN PROGRESS - FOR DISCUSSION PURPOSES ONLY
NOT FOR CONSTRUCTION PURPOSES



LRT CONCEPT SECTION 8 - TUNNEL NO STATION
SCALE: N.T.S.

TRANSIT OPTIONS NFTA-Metro Amherst-Buffalo	LRT CROSS SECTION	NOT TO SCALE

BRT Alternatives

BRT vehicles would operate within existing travel lanes as mixed traffic, in dedicated travel lanes within existing streets or on dedicated off-street guideways.

Representative cross sections were developed for BRT alternatives using the following criteria.

- Within existing street rights-of-way, the number of existing travel and turn lanes as well as pedestrian facilities would be retained. Detailed traffic analysis would need to be performed to determine if travel lanes could be eliminated.
- Within existing street rights-of-way, available snow storage as well as parkway and green space will be reduced to accommodate dedicated BRT travel lanes. AASHTO and NYSDOT design criteria were used to determine minimum widths for snow storage and green space.
- In areas where the guideway is located outside of existing street rights-of-way, the guideway width shall be 34 feet. At stations, this guideway width would increase to 64 feet. This width will accommodate the BRT guideway as well as areas outside the guideway for construction and future maintenance.
- Stations would consist of level boarding platforms and be located adjacent to the BRT travel lane. The minimum station platform width would be 15 feet. For streets with parking lanes, the station would be located within the parking lane with BRT vehicles dwelling in the travel lane.
- Transit priority signals would be provided at all non-signalized intersections that have all-way stop sign control and at signalized intersections.
- Queue jumps would be provided at all major signalized intersections.

Conceptual cross sections have been developed using these criteria and representative cross sections for existing streets within the Bailey Avenue, Millersport Highway and Niagara Falls Boulevard corridors. Conceptual BRT cross sections are illustrated in **Figures 16 thru 19** and described below.

- **BRT CONCEPT SECTION 1**– The existing street includes two travel lanes. BRT vehicles would operate in mixed traffic within existing travel lanes. Existing parking lanes would be used to accommodate stations. Inbound and outbound stations would be staggered and incorporate level boarding platforms for service.
- **BRT CONCEPT SECTION 2**– The existing street includes four travel lanes and center turn lane. BRT vehicles would operate in dedicated BRT only travel lanes located at the outside of existing travel lanes. The existing center turn lane would be retained. Inbound and outbound stations would be staggered and incorporate level boarding platforms for service.
- **BRT CONCEPT SECTION 3**– The existing street includes two travel lanes and shoulders. BRT vehicles would operate in dedicated BRT only travel lanes located at the outside of existing travel lanes in the shoulder area. Inbound and outbound stations would be staggered and incorporate level boarding platforms for service.
- **BRT CONCEPT SECTION 4**– The existing street includes four travel lanes and center turn lane. BRT vehicles would operate in dedicated BRT only travel lanes located in the center of the existing street ROW. The existing center turn lane would be eliminated and left turns now would be restricted to cross street intersections. Inbound and outbound stations would be staggered and incorporate level boarding platforms for service.

Additional ROW needs for BRT development has been determined using concept sections on a segment by segment basis. Additional ROW is dependent on the existing ROW width. If the existing ROW width is greater than the minimum width necessary for BRT development, the more conservative existing width was used for the Right of Way Needs criteria of the Tier 2 Alternative Evaluation Matrix. Results of these calculations are presented in Appendix B.

3.1.1.3 Speed Limit Table Development

As part of the Tier 2 alternative development and evaluation process, speed limit tables were developed for both LRT and BRT Conceptual Alternatives. Speed limit tables reflect anticipated operating speeds for both LRT and BRT vehicles as they progress along the conceptual alignment through the corridor. This operating speed information was used as input to the development of running times in order to develop ridership forecasts.

LRT Alternatives

LRT vehicles would operate within dedicated guideways that are located in underground tunnels, within existing streets or at-grade surface off-street guideways. Factors that affect operating speeds for LRT vehicles include the following.

- Maximum operating speeds for the transit vehicle: NFTA's present LRT vehicles have a maximum operating speed limitation of 50 mph.
- Maximum operating speed limitations associated with horizontal and vertical curves.
- For surface guideway segments located in existing streets, the speed limit of the adjacent roadway.
- For surface guideway segments located in pedestrian corridors, the maximum operating speed has been established as 15 mph.
- For entry and exit to stations, a stop has been identified.

These factors were utilized to establish an operating speed limit for discrete segments along the conceptual LRT alignments. Results of this analysis were used to develop a speed limit table for each Preliminary Alternative. This information was then used as input into the ridership forecasting effort. These tables can be found in Appendix A.

BRT Alternatives

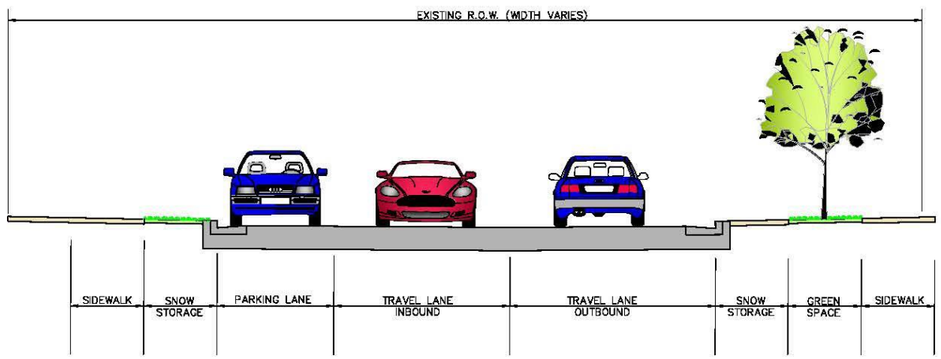
BRT vehicles would operate within existing travel lanes as mixed traffic, in dedicated travel lanes within existing streets or on dedicated off-street guideways. Factors that affect operating speeds for BRT vehicles include the following.

- Maximum operating speed limitations associated with horizontal and vertical curves.
- For operations in mixed traffic segments and segments located in existing streets, the speed limit of the adjacent roadway.
- For segments located in pedestrian corridors, the maximum operating speed has been established as 15 mph.
- For entry and exit to stations, a stop has been identified.

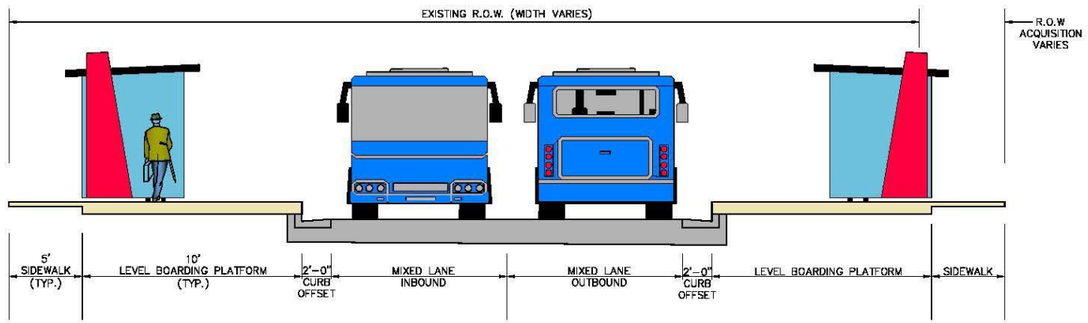
These factors were utilized to establish an operating speed limit for discrete segments along the BRT conceptual alignments. Results of this analysis were used to develop a speed limit table for each Preliminary Alternative. This information was then used as input into ridership forecasting effort. These tables can be found in Appendix B.

Figure 16 BRT Concept Section 1

DRAFT WORK IN PROGRESS - FOR DISCUSSION PURPOSES ONLY
NOT FOR CONSTRUCTION PURPOSES



EXISTING STREET SECTION
SCALE: N.T.S.



BRT CONCEPT SECTION 1 - MIXED TRAFFIC OPERATION
SCALE: N.T.S.

TRANSIT OPTIONS NFTA-Metro Amherst-Buffalo

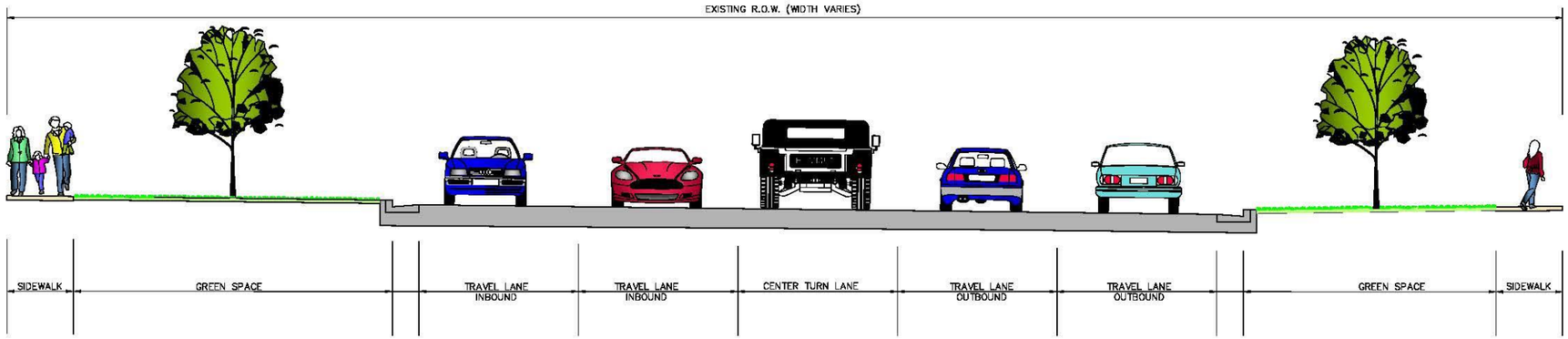
BRT CROSS SECTION

NOT TO SCALE

wendel

Figure 17 BRT Concept Section 2

DRAFT WORK IN PROGRESS - FOR DISCUSSION PURPOSES ONLY
NOT FOR CONSTRUCTION PURPOSES



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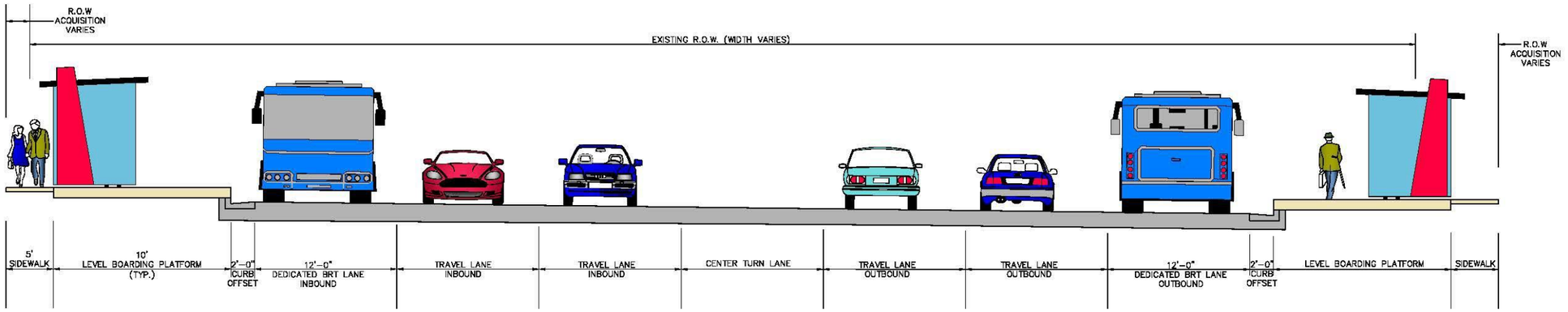


BRT CONCEPT SECTION 2 - DEDICATED OUTSIDE LANE
SCALE: N.T.S.

TRANSIT OPTIONS NFTA-Metro Amherst-Buffalo

BRT CROSS SECTION

NOT TO SCALE

wendel

Figure 18 BRT Concept Section 3

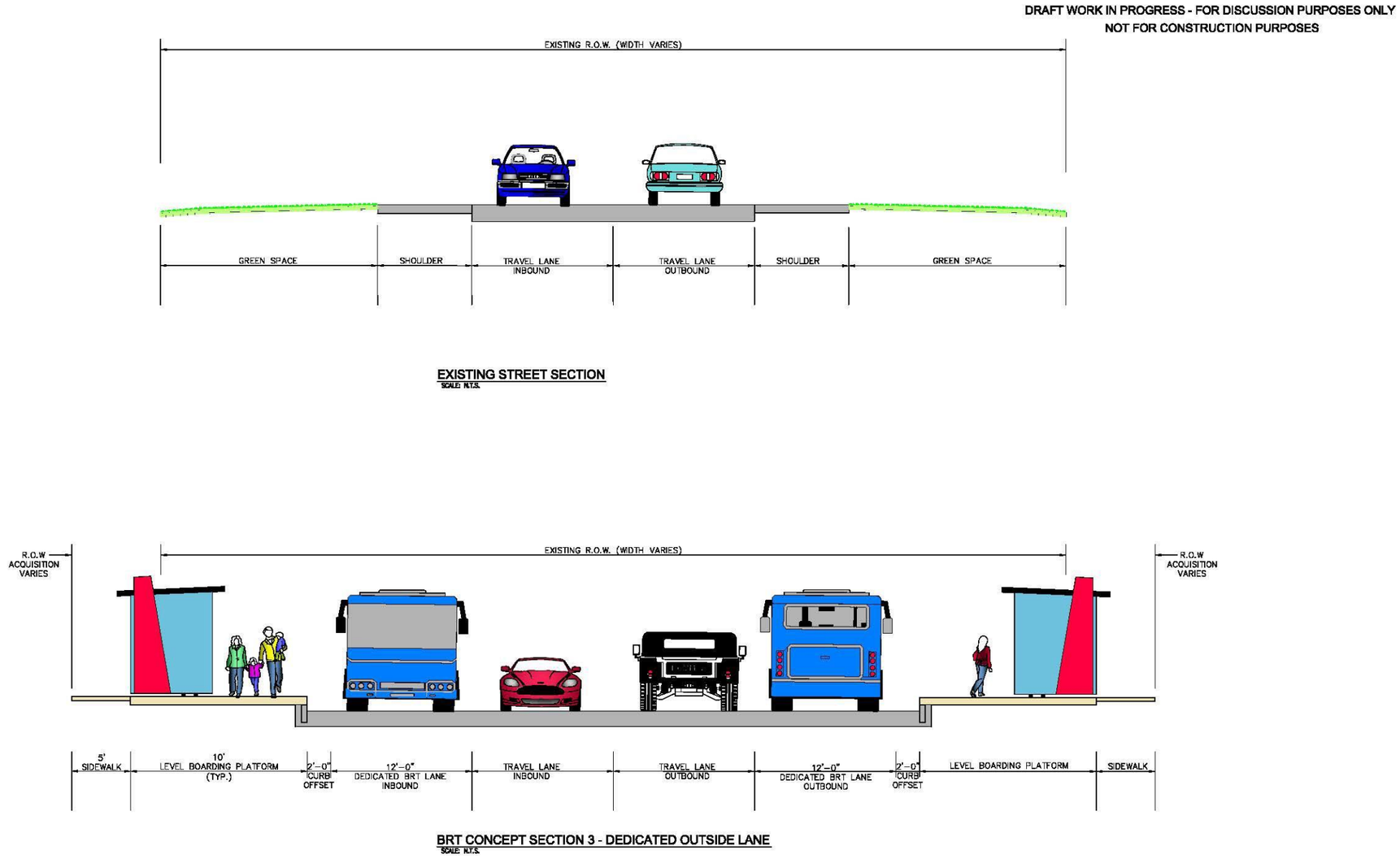
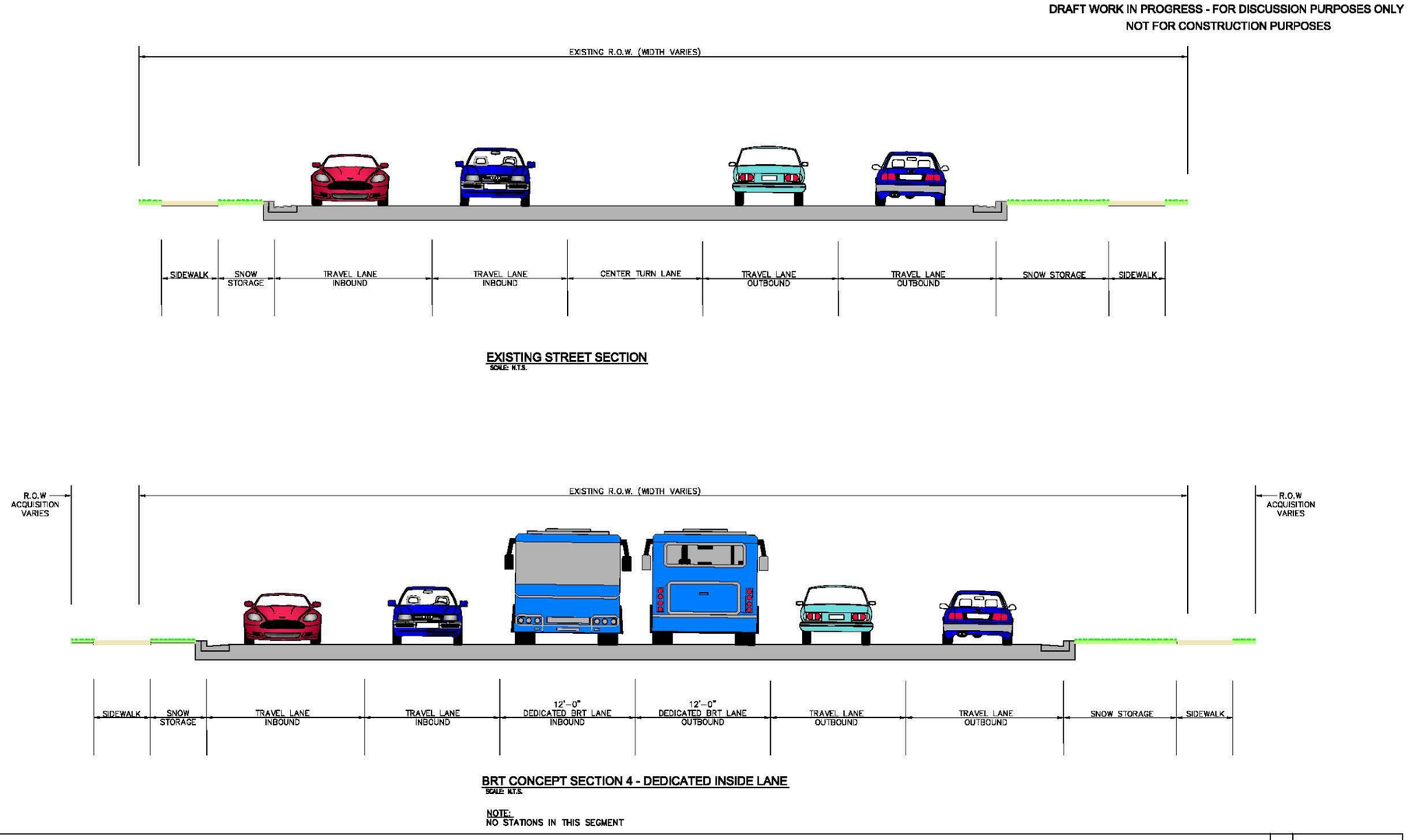


Figure 19 BRT Concept Section 4



3.2 Planning Framework

NFTA's Tier 2 screening criteria reflect FTA's framework for evaluating and rating major transit capital investments in FTA's New Starts program. New Starts projects are evaluated and rated according to criteria set forth in FTA's 2013 Final Rules and *New and Small Starts Policy Guidance*. As noted FTA recently released *Proposed Interim Policy Guidance* for their Capital Investment Grant Program in April 2015.The statutory project justification criteria and their associated measures include:

- *Mobility improvements* – total number of linked trips using the project with extra weight given to trips made by transit dependent persons (estimated annual trips);

- *Environmental benefits* – dollar value of anticipated direct and indirect benefits to human health, safety, energy, and the air quality environment scaled by the cost of the project and computed based on the change in vehicle miles traveled (VMT) resulting from the implementation of the proposed project (as calculated from estimates of change in automobile and transit vehicle miles traveled);

- *Congestion relief* – as per the recently released guidance (April 2015), FTA is proposing to use new transit trips resulting from implementation of the project. FTA proposed to calculate new transit trips by comparing total transit trips for the no-build alternative with total transit trips once the proposed project is implemented.

- *Economic development effects* – the extent to which a proposed project is likely to enhance additional, transit supportive development in the future is based on a qualitative examination of local plans and policies to support economic development proximate to the project;

- *Land use* – an examination of existing corridor and station area development; development character; existing station area pedestrian facilities; existing corridor and station area parking supply; and affordable housing in the corridor and station areas; and

- *Cost-effectiveness* – annual capital and operating cost per trip on the project.

The statute also requires FTA to examine the following when evaluating and rating a *local financial commitment*:

- Availability of reasonable contingency amounts;

- Availability of stable and dependable capital and operating funding sources; and

- Availability of local resources to recapitalize, maintain, and operate the overall existing and proposed public transportation system without requiring a reduction in existing services.

The statute requires FTA to give "comparable, but not necessarily equal" weight to their evaluation criteria. In the Guidance, FTA will give each of the project justification criteria equal weight. Because of changes made by MAP-21, the FTA's Final Rules do not address how FTA will develop overall New Starts project ratings. Instead, FTA has indicated that this will be the

subject of future, subsequent rulemaking. As an interim approach until that rulemaking process is complete, FTA has proposed to give 50 percent weight to the summary project justification rating and 50 percent to the summary local financial commitment rating to arrive at an overall rating. FTA also has proposed to continue requiring at least a medium rating on both project justification and local financial commitment to obtain a medium or better rating overall.

In the Tier 2 screen, NFTA developed criteria to measure the effectiveness of the Preliminary Alternatives at achieving the project purpose, need and goals. In doing so, NFTA considered several factors. First NFTA's Tier 2 screening criteria reflect FTA's statutory project justification criteria for which sufficient engineering and environmental detail has been developed to yield meaningful results. Second, some criteria were shaped by the planning, community involvement and stakeholder collaboration activities undertaken to date. Third, NFTA's criteria include other engineering and environmental factors that could be determined by the conceptual engineering undertaken to date.

By applying these several factors, NFTA examined the following five criteria categories in Tier 2: engineering/right-of-way needs; system connectivity; support for transit-oriented development; ridership/market served; and community and environmental impact assessment. **Table 6** lists the criteria for each category, and provides a description of the screening methodology for each criterion. Shaded criteria are reflective of FTA's statutory project justification criteria.

Table 6 Tier 2 Screening Criteria Matrix

Category	Criteria	Unit(s) of Measure(s)	Description of Methodology
Engineering / Right of Way Needs	Estimated right-of-way needs	Private area affected by guideway (acres)	Calculated from GIS analysis of the location of the proposed guideway for each alternative, and the Corridor Right of Way tables contained in Appendix A and B, relative to the location of individual parcels and the ownership of these parcels. Area includes properties other than those owned by public entities.
	Mixed traffic operations	Percentage of alternative operating in mixed traffic	Percentage of alternative's length where it would NOT operate in a dedicated guideway (NOT operating either full time or part-time during peak-periods in a special dedicated lane) compared to total alternative length.
	Signalized intersections	Percentage of signalized intersections to total intersections on alternative's alignment	Percentage of intersections that are signalized or would be signalized along an alternative compared to total intersections.
Ridership / Market Served	Ridership	Number of forecasted 2035 average weekday project boardings	From AECOM ridership forecasts using FTA STOPS model and UB ridership forecasting tool developed by AECOM.
	Transit Dependent Ridership	Number of forecasted 2035 average weekday project boardings by individuals in zero car households	From AECOM ridership forecasts using FTA STOPS model and UB ridership forecasting tool developed by AECOM.
	Travel Time between UB campuses	Estimated travel time from University Station at UB South Campus to northern most station (Greiner Hall) on UB North Campus	Based on station to station running times estimated by AECOM for use as input to the ridership forecasting work.
	Park and Ride Ridership	Number of forecasted 2035 park-and-ride boardings	From AECOM ridership forecasts using FTA STOPS model and UB ridership forecasting tool developed by AECOM.
	Commercial/retail area served	Number of acres zoned for commercial/retail use	Quantify the land area in acres within ½-mile station areas that is zoned for commercial and retail use for each alternative.
System Connectivity	Interface with other transit service	Number of potential bus route connections	Prepare map of alternatives and NFTA bus routes; determine how many connections can be potentially achieved.
	Access to parks, open space and recreational resources	Number of existing parks, and recreational areas potentially served	Prepare map of alternatives and these resources, determine how many resources lie within each ½-mile station area, and add station area totals for each alternative.
Support for Transit-Oriented Development (TOD)	Consistency with regional plans	Extent to which each alternative serves planned growth locations	Using the Amherst Comprehensive Plan and the New Way to Plan for Buffalo Niagara plan (referred to as the RPSD, for Regional Plan for Sustainable Development) tallied and summed the number of growth locations that an alternative would serve under each of these two plans.
	Existence of transit supportive land use adjacencies at station areas	Number of station areas with transit supportive zoning	Identify zoning classifications and identify high-density zones, use GIS to delineate ½-mile station areas, calculate the area of high-density zoning in each area, determine the high-density percentage of each station area, rate each area H-M-L, and count number of H-M areas.
Environmental and Community Impacts	Water resource impacts	Area of floodplains affected (in acres) Area of wetlands affected (in acres) Impacts to streams (in linear feet)	Calculated by GIS analysis of the location of the proposed guideway and ROW need relative to the location of 100-year floodplains, State and Federal wetlands, and DEC streams.
	Park impacts	Impacts to parks, recreation, and open space (in acres)	Calculated by GIS analysis of the location of the proposed guideway and ROW need relative to the location of parks, recreation, and open space resources (codes 500 – Recreation and Entertainment and 900 – Wild, Forested, Conservation Lands & Public Parks).
	Property impacts	Number of properties affected	Calculated from GIS analysis of the location of the proposed guideway and ROW need for each alternative relative to the location of individual parcels.

Note: Gray shading indicates reflection of FTA "New Starts" project justification criteria.

4 DETAILED TIER 2 RATING & CRITERIA METHODOLOGY

This section summarizes the Tier 2 rating and criteria methodology, focusing on the criteria NFTA applied to measure the effectiveness of each Preliminary Alternative in achieving the project purpose, needs and goals and which served as a primary step in the decision-making process to determine which alternatives should advance into Tier 3. The criteria are organized by category as shown in the matrix in **Table 4**; each criterion is described and the resulting data is presented.

Descriptive data about the alternatives under consideration for Tier 2 screening is provided first in the matrix when read left to right. The name of the alternative and a brief, shortened description of the alignment pathway is provided. The length of each alternative is then provided in miles and ranges from a low of 8.2 miles for Millersport LRT 1 followed closely by Millersport BRT 1 at 8.5 miles to the top of the range at 11.5 miles for Niagara Falls Blvd BRT 1.

4.1 Engineering/Right of Way Needs

4.1.1 Criteria: Estimated Right-of-way Needs

Measure: Private area affected by guideway

The measure, private area affected by right-of-way needs, quantifies the approximate area in acres of privately-owned property the guideway would directly impact. The analysis assumed a consistently applied guideway width and ROW need based on the data contained in Appendix A and B that were developed for the BRT and LRT alternatives. NFTA's consultant team calculated these land area values using GIS analysis of the location of the proposed guideway and ROW need for each BRT and LRT alternative relative to the location of privately owned land parcels and existing right-of-way. **Table 7** reports the approximate acreage of private land area required for each alternative. Publicly owned properties were excluded from the calculations (i.e., municipal and county owned land).

Table 7 Private Land Area Affected by Guideway

Alternative	Private Land Area Affected (Acres)
Niagara Falls Blvd LRT 1	11.0
Niagara Falls Blvd LRT 2	11.2
Niagara Falls Blvd LRT 7	10.7
Bailey Ave LRT 1	7.0
Bailey Ave LRT 2	8.3
Millersport Hwy LRT 1	4.7
Niagara Falls Blvd BRT 1	25.7
Niagara Falls Blvd BRT 2	25.8
Bailey Ave BRT 1	7.4
Bailey Ave BRT 2	6.8
Millersport Hwy BRT 1	4.1

The range is from a high of 25.8 acres for Niagara Falls Boulevard BRT 2, which was followed closely by 25.7 acres for Niagara Falls Boulevard BRT 1, to a low of 4.1 acres for Millersport Highway BRT 1.

4.1.2 Criteria: Percent of Mixed Traffic Operations

Measure: Percent Mixed Traffic Operations to Total Corridor Length
Percentage of alternative's length where it would not operate within a dedicated guideway (where it is operating in the traffic stream and is not in a special, dedicated lane either full time or part-time during peak-periods) was calculated compared to total alternative length. This is a critical factor for BRT operations as FTA's new Interim Guidance for Capital Investment indicates at least 50% of the corridor length of a BRT must be dedicated lanes to be considered eligible for federal funds. LRT is always operated within a dedicated guideway condition. **Table 8** presents the data.

Table 8: Percent Mixed Traffic Operations

Alternative	Percent Mixed Traffic
Niagara Falls Blvd LRT 1	0%
Niagara Falls Blvd LRT 2	0%
Niagara Falls Blvd LRT 7	0%
Bailey Ave LRT 1	0%
Bailey Ave LRT 2	0%
Millersport Hwy LRT 1	0%
Niagara Falls Blvd BRT 1	17%
Niagara Falls Blvd BRT 2	19%
Bailey Ave BRT 1	27%
Bailey Ave BRT 2	30%
Millersport Hwy BRT 1	35%

All the BRT alternatives will operate within some mixed traffic. The greatest percent is found on the Millersport Hwy BRT 1 at 35% and the lowest is Niagara Falls Blvd BRT 1 at 17%.

4.1.3 Criteria: Percent of Signalized Intersections to Total Intersections

Measure: Percent Signalized Intersections to Total Intersections
Percent of signalized intersections of total intersections along the length of the alternatives corridor is also provided in **Table 19.** This is an important measure to help understand potential traffic impacts from operations of the alternative. The higher the share of signalized intersections the better for the operation of the alternative and for the management of crossing traffic (unsignalized intersections along LRT would become T-intersections; unsignalized intersections along BRT would increase side friction thus potentially reducing BRT speeds and decreasing reliability of operations). Where an alternative crosses a signalized intersection at-grade, an impact on intersection operations would occur and may require mitigating improvements. LRT operations would pre-empt the traffic signal providing for the exclusive movement of LRT trains through the intersection. BRT vehicles would be equipped with

transponders that would provide for a green phase when a BRT vehicle is approaching.For BRT alternatives, it ranges from a low of 33 % to a high of 39% and for the LRT alternatives, a low of 28% to a high of 44%.

Table 9: Percent Signalized Intersections to Total Intersections

Alternative	Percent Signalized
Niagara Falls Blvd LRT 1	44%
Niagara Falls Blvd LRT 2	39%
Niagara Falls Blvd LRT 7	39%
Bailey Ave LRT 1	43%
Bailey Ave LRT 2	36%
Millersport Hwy LRT 1	28%
Niagara Falls Blvd BRT 1	35%
Niagara Falls Blvd BRT 2	33%
Bailey Ave BRT 1	39%
Bailey Ave BRT 2	36%
Millersport Hwy BRT 1	35%

4.2 Ridership/Markets Served

4.2.1 Criteria: Ridership

Measure: Number of Forecasted 2035 Project Boardings

The measure, number of forecasted 2035 average weekday project boardings, quantifies the forecasted ridership for each alternative for horizon year 2035. AECOM derived the forecasts using the FTA STOPS ridership forecasting model and the UB ridership forecasting tool developed by AECOM. **Table 10** presents the 2035 average daily project boardings.

Table 10 Forecasted 2035 Average Daily Project Boardings

Alternative	Number of Forecasted 2035 Average Daily Project Boardings
Niagara Falls Blvd LRT 1	24,000
Niagara Falls Blvd LRT 2	23,200
Niagara Falls Blvd LRT 7	24,100
Bailey Ave LRT 1	23,500
Bailey Ave LRT 2	22,800
Millersport Hwy LRT 1	22,900
Niagara Falls Blvd BRT 1	21,100
Niagara Falls Blvd BRT 2	20,800
Bailey Ave BRT 1	20,400
Bailey Ave BRT 2	20,400
Millersport Hwy BRT 1	17,800

4.2.2 Criteria: Transit Dependent Ridership

Measure: Number of Forecasted 2035 Project Boardings from Zero Car Households

The measure, number of 2035 average weekday project boardings from zero car households, quantifies the forecasted ridership from these types of households for each alternative for horizon year 2035. AECOM derived the forecasts using the FTA STOPS ridership forecasting model and the UB ridership forecasting tool developed by AECOM. **Table 11** presents the average daily project boardings in 2035 for each alternative from zero car households, as forecasted by AECOM. This measure demonstrates the attractiveness of the alternative for serving transportation disadvantaged households. Ridership generated from transportation disadvantaged households is weighted more heavily (2 times) by the FTA when evaluating projects for potential capital investment grants.

Table 11 Forecasted 2035 Average Daily Project Boardings From Zero Car Households

Alternative	Number of Forecasted 2035 Average Daily Project Boardings from Zero Car Households
Niagara Falls Blvd LRT 1	14,700
Niagara Falls Blvd LRT 2	14,700
Niagara Falls Blvd LRT 7	14,700
Bailey Ave LRT 1	14,600
Bailey Ave LRT 2	14,100
Millersport Hwy LRT 1	13,500
Niagara Falls Blvd BRT 1	13,800
Niagara Falls Blvd BRT 2	13,600
Bailey Ave BRT 1	13,300
Bailey Ave BRT 2	12,900
Millersport Hwy BRT 1	11,500

4.2.3 Criteria: Travel Time between UB Campuses

Measure: Travel Time between UB Campuses

As major activity centers in the study area, it is relevant to purpose and need to examine the time it is estimated to take to travel between the two campuses by each alternative. This measure is the estimated travel time from University Station at UB South Campus to northern most station (Greiner Hall) on UB North Campus. It is based on station to station running times estimated by AECOM's BRT and LRT service planners for use as input to the ridership forecasting work.

Table 12 Travel Time between UB Campuses (South Campus to North Campus)

Alternative	Travel Time (min)
Niagara Falls Blvd LRT 1	16
Niagara Falls Blvd LRT 2	16
Niagara Falls Blvd LRT 7	15
Bailey Ave LRT 1	15
Bailey Ave LRT 2	15
Millersport Hwy LRT 1	13
Niagara Falls Blvd BRT 1	30
Niagara Falls Blvd BRT 2	34
Bailey Ave BRT 1	23
Bailey Ave BRT 2	23
Millersport Hwy BRT 1	18

4.2.4 Criteria: Park and Ride Ridership

Measure: Projected Park-and-Ride Boardings in 2035
This is a measure of park-and-ride demand as forecasted for each alternative. It is the forecasted number of 2035 park-and-ride boardings. It is developed from AECOM ridership forecasts using FTA STOPS model and the UB ridership forecasting tool developed by AECOM.

Table 13 Projected Park-and-Ride Boardings, 2035

Alternative	Number 2035 Park and Ride Boardings
Niagara Falls Blvd LRT 1	343
Niagara Falls Blvd LRT 2	178
Niagara Falls Blvd LRT 7	357
Bailey Ave LRT 1	556
Bailey Ave LRT 2	407
Millersport Hwy LRT 1	976
Niagara Falls Blvd BRT 1	132
Niagara Falls Blvd BRT 2	167
Bailey Ave BRT 1	135
Bailey Ave BRT 2	266
Millersport Hwy BRT 1	251

4.2.5 Criteria: Commercial Areas Served

Measure: Commercial/Retail Area Served
The measure, commercial areas potentially served, quantifies the land area in acres within ½-mile station areas that is zoned for commercial and retail use for each alternative. NFTA's consultant team calculated the values for this measure using GIS to identify the acreage of land zoned for commercial or retail uses within ½ radius of stations. The process involved using GIS mapping to delineate a ½-mile radius around station areas and determine the amount acres zoned for these uses within that radius at each station area. For each alternative, the station area sub-totals were added together to obtain the total existing commercial/retail area potentially served by each alternative. **Table 14** displays the data.

Table 14 Commercial/Retail Areas Served

Alternative	Commercial Areas Served (acres)
Niagara Falls Blvd LRT 1	821
Niagara Falls Blvd LRT 2	786
Niagara Falls Blvd LRT 7	860
Bailey Ave LRT 1	825
Bailey Ave LRT 2	790
Millersport Hwy LRT 1	398
Niagara Falls Blvd BRT 1	961
Niagara Falls Blvd BRT 2	958
Bailey Ave BRT 1	846
Bailey Ave BRT 2	844
Millersport Hwy BRT 1	432

4.3 System Connectivity

4.3.1 Criteria: Access to Parks and Recreational Resources

Measure: Number of existing parks and recreational areas potentially served
The measure, number of existing parks and recreational areas potentially served, quantifies the number of these resources within ½ mile of a proposed station area. The total number of these resources is summed. NFTA's consultant team calculated the values for this measure by delineating the ½-mile radius around proposed station areas, tabulating the number of existing resources within each station area radius, and adding the station area sub-totals to calculate the total for each alternative. **Table 15** displays the data. This measure included access to resources at more than one station area along the same alternative.

Table 15 Number of Existing Parks and Recreational Resources Served

Alternative	Number of Parks
Niagara Falls Blvd LRT 1	6
Niagara Falls Blvd LRT 2	5
Niagara Falls Blvd LRT 7	5
Bailey Ave LRT 1	6
Bailey Ave LRT 2	5
Millersport Hwy LRT 1	7
Niagara Falls Blvd BRT 1	5
Niagara Falls Blvd BRT 2	5
Bailey Ave BRT 1	5
Bailey Ave BRT 2	5
Millersport Hwy BRT 1	7

4.3.2 Criteria: Interface with Other Transit Services

Measure: Number of bus connections

This measure quantifies the number of intersecting bus services at the proposed station areas along each alternative. NFTA's consultant team understands that when the project is operational, modifications to existing bus routes will be made to reduce redundancy, particularly where routes parallel the selected alternative alignment. NFTA's consultant team used GIS mapping showing the alignment of each alternative relative to the location of the bus routes, counted the number of routes that intersect each alternative at each station area, and totaled the station area numbers. **Table 16** displays the data.

Table 16 Number of Bus Connections

Alternative	Number of Bus Connections
Niagara Falls Blvd LRT 1	16
Niagara Falls Blvd LRT 2	14
Niagara Falls Blvd LRT 7	17
Bailey Ave LRT 1	16
Bailey Ave LRT 2	13
Millersport Hwy LRT 1	8
Niagara Falls Blvd BRT 1	17
Niagara Falls Blvd BRT 2	17
Bailey Ave BRT 1	23
Bailey Ave BRT 2	23
Millersport Hwy BRT 1	21

Available mapping shows NFTA Bus Routes (34, 35, 44, 47, 48, 49, and 64) that serve the study area. This measure shows the total number of bus route connections at all proposed stations along each alternative. A connection is assumed if the bus route is within¼ mile of a station. The tabulation assumes future modifications to Route 44 if Millersport Hwy LRT 1 is implemented or modifications to Route 34 if Niagara Falls Blvd BRT 1 or 2 are implemented.

4.4 Support for Transit-Oriented Development (TOD)

4.4.1 Criteria: Consistency with Regional Plans

Measure: Plan Consistency

This measure quantifies the extent to which each alternative serves planned growth locations. Using the Amherst Comprehensive Plan and the New Way to Plan for Buffalo Niagara plan (referred to as the RPSD, for Regional Plan for Sustainable Development), the consultant team tallied and summed the number of growth locations that an alternative would serve under each of these two plans. **Table 17** displays the data.

Table 17 Consistency with Regional Plans

Alternative	Consistent with # of Plans
Niagara Falls Blvd LRT 1	6
Niagara Falls Blvd LRT 2	6
Niagara Falls Blvd LRT 7	6
Bailey Ave LRT 1	6
Bailey Ave LRT 2	6
Millersport Hwy LRT 1	5
Niagara Falls Blvd BRT 1	4
Niagara Falls Blvd BRT 2	6
Bailey Ave BRT 1	4
Bailey Ave BRT 2	6
Millersport Hwy BRT 1	5

Criteria: Existence of Transit Supportive Land Use Adjacencies to Station Areas

Measure: Number of station areas with transit-supportive zoning

The measure, number of station areas with transit-supportive zoning, quantifies the number of station areas that occur within areas currently zoned to support transit service. NFTA's consultant team assessed the Township of Amherst's zoning ordinance for transit-supportive provisions, including allowable density, provisions for pedestrians, and parking policies; these provisions reflect FTA's evaluation process in their "New Starts" guidelines related to transit-oriented development. Using GIS analysis, the amount of each station area within the ½-mile radius having high-density zoning was identified and converted to a percentage of the total station area. On the basis of this percentage of high-density zoning, each station area was rated high (over 60%), medium (30-60%), or low (below 30%). **Table 18** reports the number of station areas with high and medium ratings.

Table 18 Number of Station Areas with Transit Supportive Zoning

Alternative	Number of Stations with Transit Supportive Zoning (Sum of High and Medium Ratings)
Niagara Falls Blvd LRT 1	12
Niagara Falls Blvd LRT 2	10
Niagara Falls Blvd LRT 7	12
Bailey Ave LRT 1	12
Bailey Ave LRT 2	10
Millersport Hwy LRT 1	7
Niagara Falls Blvd BRT 1	17
Niagara Falls Blvd BRT 2	16
Bailey Ave BRT 1	14
Bailey Ave BRT 2	13
Millersport Hwy BRT 1	8

4.5 Community and Environmental Impact Assessment

4.5.1 Criteria: Impacts to Water Resources

Measure: Areas of floodplains and wetlands affected; impacts to streams

The measure, areas of floodplains and wetlands affected and impacts to streams, quantifies the amounts of floodplains, wetlands and streams that would potentially be directly impacted by each alternative. NFTA's consultant team calculated the values of these measures using GIS analysis of the location of each alternative guideway and ROW need relative to the location of floodplains, wetlands, and streams, relative to the location of 100-year floodplains, State and Federal wetlands, and DEC streams. **Table 19** presents the impacts to water resources. The areas of floodplains and wetlands are the acres of each resource within the footprint of an alternative using the cross-section established and ROW need. The linear feet of streams, or longitudinal impact, were measured by the parallel overlapping distances of an alternative's alignment and ROW need and a stream's alignment.

Table 19 Impacts to Water Resources

Alternative	Water Resources Impacts		
	Floodplains (acres)	Wetlands (acres)	Streams (linear feet)
Niagara Falls Blvd LRT 1	13.8	1.3	419.0
Niagara Falls Blvd LRT 2	21.1	1.4	495.9
Niagara Falls Blvd LRT 7	11.7	0.8	398.8
Bailey Ave LRT 1	11.0	0.7	385.8
Bailey Ave LRT 2	20.4	1.4	462.8
Millersport Hwy LRT 1	21.2	1.5	629.4
Niagara Falls Blvd BRT 1	15.3	2.2	782.1
Niagara Falls Blvd BRT 2	21.3	1.9	854.3
Bailey Ave BRT 1	15.6	1.9	559.8
Bailey Ave BRT 2	21.3	1.5	632.1
Millersport Hwy BRT 1	21.2	1.5	564.0

4.5.2 Criteria: Impacts to Parks

Measure: Impacts to parks, recreation areas and open space

The measure, impacts to parks, recreation areas, and open space, quantifies the amounts of these resources, in acres, that would be potentially directly impacted by each alternative. NFTA's consultant team calculated the values of this measure using GIS analysis, based on the location of the resources as identified by mapping provided for the Township of Amherst. It is based the location of the proposed guideway and ROW need relative to the location of parks, recreation, and open space resources (codes 500 – Recreation and Entertainment and 900 – Wild, Forested, Conservation Lands & Public Parks). It measures the areas of parks, recreational land and open space in terms of total number of acres of these resources within the footprint (guideway and ROW need) of an alternative. **Table 20** presents the impacts to parks, recreation areas, and open space.

Table 20 Impacts to Parks, Recreation Areas and Open Space

Alternative	Impacts to Parks, Recreation Areas and Open Space (acres)
Niagara Falls Blvd LRT 1	0.0
Niagara Falls Blvd LRT 2	0.0
Niagara Falls Blvd LRT 7	0.1
Bailey Ave LRT 1	0.0
Bailey Ave LRT 2	0.0
Millersport Hwy LRT 1	0.0
Niagara Falls Blvd BRT 1	0.4
Niagara Falls Blvd BRT 2	0.4
Bailey Ave BRT 1	0.0
Bailey Ave BRT 2	0.0
Millersport Hwy BRT 1	0.0
Niagara Falls Blvd LRT 1	0.0

4.5.3 Criteria: Property Impacts

Measure: Number of properties affected

The measure, number of properties affected, quantifies the number of properties potentially directly impacted by each alternative. NFTA's consultant team calculated this number in GIS by overlaying each alternative and ROW need on parcel maps and calculating the number of individual parcels within the footprint of each alternative. **Table 21** presents the number of properties affected.

Table 21 Number of Properties Affected

Alternative	Number of Properties Affected
Niagara Falls Blvd LRT 1	211
Niagara Falls Blvd LRT 2	254
Niagara Falls Blvd LRT 7	244
Bailey Ave LRT 1	189
Bailey Ave LRT 2	232
Millersport Hwy LRT 1	194
Niagara Falls Blvd BRT 1	305
Niagara Falls Blvd BRT 2	366
Bailey Ave BRT 1	207
Bailey Ave BRT 2	262
Millersport Hwy BRT 1	201

5 TIER 2 SCREENING RESULTS & DECISION METHODOLOGY

The results of the Tier 2 screening are described in this section, beginning with a presentation of the analysis findings. This section then details the decision process employed to identify the subset of alternatives to retain for detailed evaluation in Tier 3 and to be documented in the AA and concludes with the recommendation of the alternatives to advance to Tier 3.

5.1 Tier 2 Screening Results

The quantified data for each criteria measure and each alternative are presented in the tables in Section 4 of this technical memorandum. This data and the Tier 2 screening process are based on the current understanding by NFTA's consultant team of the transportation needs within the study area, the data that was available at the time of the screening including the level of engineering undertaken, and relies on guidance provided by the FTA regarding the analysis of alternatives, on NEPA environmental review, and the FTA New Starts program evaluation and rating processes.

The consultant team scored each the data within each measure using color-coded scoring of high (**green**), moderate (**yellow**) and low (**red**) in terms of relative performance of a measure within each mode (meaning scores developed for BRT alternatives and scores developed for LRT alternatives). The team calculated terciles for how the scoring (within a measure) should be allocated—meaning what data values are high, medium or low. Most measures had data values in each tercile. However not all measures have representation in each tercile—for a few there are only high and low scores as no values fell within the middle tercile. The scored data appear on **Table 22.**

Table 22 Scored Results of the Tier 2 Evaluation Matrix

NFTA Tier 2 Alternatives Evaluation Matrix

Scored by Color within each Mode for LRT and BRT Preliminary Alternatives

		DESCRIPTIVE		ENGINEERING / RIGHT OF WAY NEEDS			RIDERSHIP / MARKET					SYSTEM CONNECTIVITY		SUPPORT FOR TOD		ENVIRONMENTAL / COMMUNITY IMPACTS				
																IMPACTS TO WATER RESOURCES				
		ALTERNATIVE	LENGTH OF ALT (miles)	PRIVATE LAND AREA AFFECTED BY GUIDEWAY (acres)	Percent Mixed Traffic Operations	Percent Signalized Intersections of Total Intersections	2035 Total Project Boardings (Average Weekday)	2035 Total Boardings by 0 Car HH (Average Weekday)	Travel Time between UB Campuses (UB South - UB North), min.	Projected Park-and-Ride Patrons, 2035	COMMERCIAL / RETAIL AREA SERVED (acres) - 1/2 mile station radius	# OF PARK AND RECREATION AREAS SERVED	CONNECTING NFTA BUS ROUTES	Consistency with local and regional plans and strategies	# OF STATIONS WITH TRANSIT SUPPORTIVE ZONING - 1/2 mile station radius - total of high and medium stations	Flood-plains (acres)	Wet-lands (acres)	Streams (feet)	IMPACTS TO PARKS / RECREATION / OPEN SPACE (acres)	# OF PROPERTIES AFFECTED
LIGHT RAIL		**Niagara Falls Blvd LRT 1 (via Bailey, Eggert, Niagara Falls Blvd, Maple and I-990)**	**10.2**	**11.0**	**0%**	**44%**	**24,000**	**14,700**	**16**	**343**	**821**	**6**	**16**	**6**	**12**	**13.8**	**1.3**	**419.0**	**0.0**	**211**
		Niagara Falls Blvd LRT 2 (via Bailey, Eggert, Niagara Falls Blvd, Maple, John James Audubon Parkway and Millersport)	**9.6**	**11.2**	**0%**	**39%**	**23,200**	**14,700**	**16**	**178**	**786**	**5**	**14**	**6**	**10**	**21.1**	**1.4**	**495.9**	**0.0**	**254**
		Niagara Falls Blvd LRT 7 (via Bailey, Eggert, Niagara Falls Blvd, Meyer Rd, under I-290, I-990)	**10.2**	**10.7**	**0%**	**39%**	**24,100**	**14,700**	**15**	**357**	**860**	**5**	**17**	**6**	**12**	**11.7**	**0.8**	**398.8**	**0.1**	**244**
		Bailey Ave LRT 1 (via Bailey, Maple, I-990)	**9.3**	**7.0**	**0%**	**43%**	**23,500**	**14,600**	**15**	**556**	**825**	**6**	**16**	**6**	**12**	**11.0**	**0.7**	**385.8**	**0.0**	**189**
		Bailey Ave LRT 2 (via Bailey, Maple, John James Audubon Parkway and Millersport)	**8.7**	**8.3**	**0%**	**36%**	**22,800**	**14,100**	**15**	**407**	**790**	**5**	**13**	**6**	**10**	**20.4**	**1.4**	**462.8**	**0.0**	**232**
		Millersport Hwy LRT 1 (via Bailey, Grover Cleveland, Millersport, Flint, John James Audubon Parkway, Millersport)	**8.2**	**4.7**	**0%**	**28%**	**22,900**	**13,500**	**13**	**976**	**398**	**7**	**8**	**5**	**7**	**21.2**	**1.5**	**629.4**	**0.0**	**194**
BUS RAPID TRANSIT		**Niagara Falls Blvd BRT 1 (via Niagara Falls Blvd, Maple, I-990)**	**11.5**	**25.7**	**17%**	**35%**	**21,100**	**13,800**	**30**	**132**	**961**	**5**	**17**	**4**	**17**	**15.3**	**2.2**	**782.1**	**0.4**	**305**
		Niagara Falls Blvd BRT 2 (via Niagara Falls Blvd, Maple, John James Audubon Parkway, Millersport)	**10.9**	**25.8**	**19%**	**33%**	**20,800**	**13,600**	**34**	**167**	**958**	**5**	**17**	**6**	**16**	**21.3**	**1.9**	**854.3**	**0.4**	**366**
		Bailey Ave BRT 1 (via Bailey, Maple, I-990)	**9.8**	**7.4**	**27%**	**39%**	**20,400**	**13,300**	**23**	**135**	**846**	**5**	**23**	**4**	**14**	**15.6**	**1.9**	**559.8**	**0.0**	**207**
		Bailey Ave BRT 2 (via Bailey, Maple, John James Audubon Parkway, Millersport)	**9.0**	**6.8**	**30%**	**36%**	**20,400**	**12,900**	**23**	**266**	**844**	**5**	**23**	**6**	**13**	**21.3**	**1.5**	**632.1**	**0.0**	**262**
		Millersport Hwy BRT 1 (via Bailey, Grover Cleveland, Millersport, Flint, John James Audubon Parkway, Millersport)	**8.5**	**4.1**	**35%**	**35%**	**17,800**	**11,500**	**18**	**251**	**432**	**7**	**21**	**5**	**8**	**21.2**	**1.5**	**564.0**	**0.0**	**201**

5.2 Recommendations for Advancement into Tier 3 Screening

In this section, the consultant team provides its recommendations regarding the alternatives considered in the Tier 2 screening. Its recommendations take into consideration the quantified results of the Tier 2 screening shown in the matrix in **Table 22** along with consideration given to achieving geographic balance of corridors under study for detailed evaluation in Tier 3. This process is consistent with input that NFTA has received since the start of the AA study from the study's committees, project stakeholders, and the public. The following section provides additional details on the decision-making process and resulting recommendations.

5.2.1 Tier 2 Decision Methodology and Results

The main steps in the decision-making process were the following:

- Identify the top performing BRT alternatives based upon the individual criteria measures in the matrix.
- Determine if these BRT alternatives encompass all main travel corridors in the study area, and, if not, revise the selected alternatives.
- Identify the top performing LRT alternative based upon the individual criteria measures in the matrix.
- Determine the selected LRT alternative is consistent with the selected BRT alternatives.

Step 1: Tier 2 Rating/Criteria Assessment for BRT Alternatives

The preliminary alternatives were subject to a quantitative assessment, using five evaluation categories and the individual criteria measures as described in previous sections. The evaluation categories are Engineering/Right-of-Way Needs, Ridership/Markets Served, System Connectivity, Support for TOD, and Environmental/Community Impacts. .

This quantitative screening analysis enabled NFTA to compare clearly the differences among the alternatives. Specific scores were determined for each criterion for each alternative. The results of the screening showed that several preliminary alternatives had a high number of superior performing measures in each of the criteria compared to the other alternatives.

The team organized the process to evaluate all BRT alternatives compared to each other and all LRT alternatives compared to each other. The first step was to evaluate the BRT alternatives. For BRT, the assessment identified the highest-performing alternatives as Bailey Avenue 1, Bailey Avenue 2, and Millersport Highway 1.

Step 2: Review for Geographic Balance – Main Travel Corridors

The team decided to retain a diversity of BRT alternatives that cover all travel corridors, as the study advances to Tier 3 analysis. This approach will enrich the comparative evaluation process and provide NFTA with flexibility in future decision-making. By taking this step, NFTA will have a reasonable range of alternatives and corridors retained for detailed analysis in Tier 3. Doing so allows multiple travel corridors to remain under study. Further study under Tier 3 could reveal fatal flaws or significant issues in a particular corridor; thus keeping a wide range under study for Tier 3 is prudent and reasonable. For example, there is a need to conduct a more detailed traffic impact assessment in Tier 3. The results of that traffic assessment in Tier 3 may lead NFTA to abandon any further consideration of a particular corridor. Thus retaining representation of all corridors for detailed study in Tier 3 is prudent.

In reviewing the results of the quantitative assessment for the BRT Preliminary Alternatives, the consultant team examined the results by looking at how well the top alternatives encompass the

main travel corridors in the study area. Between UB-South and UB-North, the three main corridors are Niagara Falls Boulevard, Bailey Avenue, and Millersport Highway; and between UB-North and points farther north, the two main corridors are Millersport Highway and I-990.

Based upon this review, the team decided to replace the Bailey Avenue BRT 2 alternative with the Niagara Falls Boulevard BRT 1 alternative as the third BRT alternative to advance to Tier 3 screening. Thus, the three advancing BRT alternatives (Niagara Falls Boulevard 1, Bailey Avenue 1, and Millersport Highway 1) will cover all the main travel corridors. Since BRT is technically a "new" mode to NFTA, having representation of all corridors in the more rigorous and detailed Tier 3 work is prudent and reasonable.

Step 3: Tier 2 Rating/Criteria Assessment for LRT Alternatives

The next step was to review the results of the quantitative Tier 2 screening process for the LRT Preliminary Alternatives. Due to the high cost of LRT compared to BRT, it is prudent to recommend that only one LRT alternative advance to Tier 3. The quantitative assessment found that the highest performing alternative is Niagara Falls Boulevard LRT 1.

Step 4: LRT Consistency with BRT Alternatives

The final step in the process was to compare the top performing LRT alternative with the selected BRT alternatives. NFTA intends that an LRT alignment should be consistent with a BRT counterpart, so that it has a potential long-term opportunity to phase a BRT alternative into an LRT alternative. A BRT alternative possibly could evolve into an LRT system if more funding is available and if transit-oriented development continues to occur and a market grows for high-quality transit. Thus it is recommended for this reason as well that the Niagara Falls Boulevard LRT 1 alternative is advanced to Tier 3 because it was also recommended that the Niagara Falls Boulevard BRT 1 alternative is advanced.

Table 23 provides a summary of the recommended decision-making process.

Table 23 Summary of Decision Assessment Process

Mode	Alternative	Screening Assessment - BRT	Review for Geographic Balance	Screening Assessment - LRT	Consistency with BRT Alternatives	Alternatives to Advance to Tier 3
BUS RAPID TRANSIT	Niagara Falls Blvd 1			N/A		Niagara Falls Blvd 1
	Niagara Falls Blvd 2		Eliminated	N/A		
	Bailey Ave 1			N/A		Bailey Ave 1
	Bailey Ave 2		Eliminated	N/A		
	Millersport Hwy 1			N/A		Millersport Hwy 1
LIGHT RAIL TRANSIT	Niagara Falls Blvd 1					Niagara Falls Blvd 1
	Niagara Falls Blvd 2				Eliminated	
	Niagara Falls Blvd 7				Eliminated	
	Bailey Ave 1				Eliminated	
	Bailey Ave 2				Eliminated	
	Millersport Hwy 1				Eliminated	

APPENDIX A

LIGHT RAIL TRANSIT

LRT BAILEY AVENUE - ALTERNATIVE 1

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

LIGHT RAIL VEHICLE - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Vertical Location Within Corridor	Streetname (Where Applicable)	Speed Controlling Element	Light Rail Vehicle Speed Limit (mph.)
University At Buffalo - South Campus Station	**N/A**	**2372+000**	**Tunnel**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	2372+000	2372+738	Tunnel	N/A	Horizontal Curve BL1-1	45
N/A	2372+738	2373+635	Tunnel	N/A	LRV Maximum Operating Speed	50
N/A	2373+635	2374+926	Tunnel	N/A	Horizontal Curve BL1-2	45
N/A	2374+926	2375+500	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
Bailey At Grover Cleveland Highway Station	**2375+500**	**2375+825**	**Tunnel**	**Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	2375+825	2380+911	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
N/A	2380+911	2381+100	Tunnel	Bailey Ave.	Horizontal Curve BL1-6	30
Bailey At Eggert/Sheridan	**2381+100**	**2381+425**	**Tunnel**	**Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	2381+425	2381+622	Tunnel	Bailey Ave.	Horizontal Curve BL1-7	30
N/A	2381+622	2383+570	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
N/A	2383+570	2384+649	Tunnel	Bailey Ave.	Both Curves BL1-10 and BL1-11	25
N/A	2384+649	2384+900	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
N/A	2384+900	2385+375	At-Grade	Adjacent to Bailey Ave.	LRV Maximum Operating Speed	50
Bailey At Maple Station	**2385+375**	**2385+700**	**At-Grade**	**Adjacent to Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	2385+700	2385+932	At-Grade	Maple Road	Horizontal Curve BL1-12	10
N/A	2385+932	2388+563	At-Grade	Maple Road	Roadway Speed Limit	45mph 35mph M-F 7A to 6P
N/A	2388+563	2388+719	At-Grade	Maple Road	Horizontal Curve BL1-14	10
Maple At Sweet Home Station	**2388+719**	**2389+044**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	2389+044	2390+277	At-Grade	Sweet Home Road	Roadway Speed Limit	45
N/A	2390+277	2390+791	At-Grade	Sweet Home Road	Horizontal Curve BL1-15	40
N/A	2390+791	2391+145	At-Grade	Sweet Home Road	Roadway Speed Limit	45
N/A	2391+145	2391+960	At-Grade	Sweet Home Road	Horizontal Curve BL1-16	40
Sweet Home At Rensch Road	**2391+960**	**2392+285**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	2392+285	2392+474	At-Grade	Rensch Road	Horizontal Curve BL1-17	10
N/A	2392+474	2393+186	At-Grade	Rensch Road	Roadway Speed Limit	30
N/A	2393+186	2393+572	At-Grade	Rensch Road	Both Curves BL1-18 and BL1-19	10
N/A	2393+572	2394+740	At-Grade	N/A	Campus At-Grade Speed	15
UB North Campus - Capen Hall Station	**2394+740**	**2395+065**	**At-Grade**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	2395+065	2396+100	At-Grade	Putnam Way	Campus At-Grade Speed	15
UB North Campus - Library Station	**2396+100**	**2396+425**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2396+425	2396+449	At-Grade	Putnam Way	Campus At-Grade Speed	15
N/A	2396+449	2396+880	At-Grade	Putnam Way	Both Horizontal Curves BL1-24 and BL1-25	10
UB North Campus - Commons Building Station	**2396+880**	**2397+205**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2397+205	2397+681	At-Grade	Lee Entrance	Roadway Speed Limit	30
N/A	2397+681	2398+100	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve BL1-26	20
N/A	2398+100	2398+309	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve BL1-27	10
UB North Campus - Greiner Hall Station	**2398+309**	**2398+634**	**At-Grade**	**N/A**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2398+634	2399+278	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve BL1-28	15
N/A	2399+278	2399+692	At-Grade	J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	2399+692	2400+837	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve BL1-29	40
N/A	2400+837	2400+900	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve BL1-30	25
J.J.A. Parkway At Sylvan Parkway Station	**2401+075**	**2401+400**	**At-Grade**	**J.J. Audubon Pkwy.**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2401+400	2401+822	At-Grade	J.J. Audubon Pkwy.	Horizontal Curve BL1-30	25
N/A	2401+822	2405+680	At-Grade	J.J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	2405+680	2406+060	At-Grade	J.J. Audubon Pkwy.	Horizontal Cuve BL1-34	25
I-990 Interchange Station	**2406+060**	**2406+385**	**At-Grade**	**J.J. Audubon Pkwy.**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2406+385	2406+632	At-Grade	I-990 Median	Horizontal Curve BL1-35	10
N/A	2406+632	2414+500	At-Grade	I-990 Median	LRV Maximum Operating Speed	50
North French Road Station	**2414+500**	**2414+825**	**At-Grade**	**I-990 Median**	**325' Long Station Platform**	**STATION STOP**
N/A	2414+825	2420+140	At-Grade	I-990 Median	LRV Maximum Operating Speed	50
N/A	2420+140	2421+100	Tunnel	N/A	Horiztonal Curve BL1-40	25
N/A	2421+100	2421+628	At-Grade	N/A	Horiztonal Curve BL1-40	25
N/A	2421+628	2421+809	At-Grade	N/A	Coming into station	40
Crosspoint Business Park Station	**2421+809**	**2422+134**	**At-Grade**	**Crosspoint Parkway**	**325' Long Station Platform**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

LRT BAILEY AVE - ALTERNATIVE 1

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data							
Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Vertical Location Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1,2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
2372+000	2374+500	Main Street at Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath University at Buffalo South Campus and the NW corner of private property at Main and Bailey	Property Owned by the State of New York	No Station: 100'	100ft ROW width is required to connect to the existing South Campus Station
2374+500	2380+800	Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW	66' ±	Station: 100' No Station: 66'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
2380+800	2382+340	North Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW - With some deviance from center of ROW to smooth out curves and increase operating speed.	75' ±	Station: 100' No Station: 75'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
2382+340	2384+300	North Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW - With some deviance from center of ROW to smooth out curves and increase operating speed.	66' ±	Station: 100' No Station: 66'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
2384+300	2384+900	N/A	Tunnel	In this corridor: Tracks would be inside the green space immediately west of N. Bailey Ave. Climbing to Grade at 3.33% for 900'. Portal near Sta. 2384+900	66' ±	No Station: 100'	Proposed tunnel section would be constructed outside of the existing ROW.
2384+900	2385+800	N/A	At-Grade	In this corridor: Tracks would be inside the green space immediately west of N. Bailey.	66' ±	No Station: 96'	Additional 30ft of ROW required for portal construction
2385+800	2388+650	Maple Road	At-Grade	In this corridor: Tracks would be in the center of the street	100' to 115' ±	No Station: 115' Staggered Station:135'	Additional ROW required for Station Construction. Reduce existing snow storage width from a total of 30ft wide to 10ft. Balance of existing ROW (20ft) gained is put towards reducing the proposed ROW width.
2388+650	2392+370	Sweet Home Road	At-Grade	In this corridor: Tracks would be in the center of the street	150' MIN.	No Station: 150' Staggered Station: 185'	Additional ROW required for Station Construction. Proposed at-grade section can be constructed in the existing ROW.
2392+370	2393+183 = 9396+900	Rensch Entrance Rd.	At-Grade	In this corridor: Tracks would be in center of street, jogging to just north of the street - Alignment terminates prior to entering University at Buffalo North	Property Owned by the State of New York	No Station: 27'	A Transfer of Juridiction would be required between the two State Agencies.
2393+183 = 9396+900	9399+800	Putnam Way (East-West)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way on the south side of the street and along the south side of the Flint loop and Jacobs Center building.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
9399+800	9400+051= 2397+183	Putnam Way (North-South)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
9400+051= 2397+183	2398+100	Lee Entrance	At-Grade	In this corridor: Tracks would run adjacent to the Lee Entrance or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
2398+100	2399+100	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run adjacent to (and just north of) the John James Audubon Parkway	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies. New bridge structure required
2399+100	2406+566	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run in the median of the John James Audubon Parkway	Varies-Variance to 160' MIN	Station: 160' No Station: 160'	Existing median utilized and snow storage decreased to accommodate rail
2406+566	2420+140	I-990	At-Grade	In this corridor: The tracks would run in the median of I-990. Portal at Station 2420+140	Varies- 270' to 750' ±	No Station: 27'	No additional ROW required
2420+140	2421+100	N/A	Tunnel	In this corridor: The tracks would run in a tunnel beneath I-990. Portals at Station 2420+140 and 2421+100	Varies-600' to Variance to property	No Station: 27'	No additional ROW required
2421+100	2422+134	Crosspoint Parkway	At-Grade	In this corridor: The tracks would run at-grade through undeveloped land.	TBD - Variance of property ROW	No Station: 27' Staggered Station: 35'	Additional ROW Required for Construction

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.
2. ROW dimensions are typical, and vary in specific locations along the roadways.
3. All ROW Needed as noted refers to Tangent running sections.
4. UB Alignment Stationing equality- begins at: 2393+183 (BL1) = 6396+900 (UB), ends at 9400+051 (UB) = 2397+183 (BL1)

LRT BAILEY AVENUE - ALTERNATIVE 2

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS AND DEIS

LIGHT RAIL VEHICLE - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Vertical Location Within Corridor	Streetname (Where Applicable)	Speed Controlling Element	Light Rail Vehicle Speed Limit (mph.)
University At Buffalo - South Campus Station	**N/A**	**2372+000**	**Tunnel**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	2372+000	2372+738	Tunnel	N/A	Horizontal Curve BL2-1	45
N/A	2372+738	2373+635	Tunnel	N/A	LRV Maximum Operating Speed	50
N/A	2373+635	2374+926	Tunnel	N/A	Horizontal Curve BL2-2	45
N/A	2374+926	2375+500	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
Bailey At Grover Cleveland Highway Station	**2375+500**	**2375+825**	**Tunnel**	**Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	2375+825	2380+911	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
N/A	2380+911	2381+100	Tunnel	Bailey Ave.	Horizontal Curve BL2-6	30
Bailey At Eggert/Sheridan	**2381+100**	**2381+425**	**Tunnel**	**Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	2381+425	2381+622	Tunnel	Bailey Ave.	Horizontal Curve BL2-7	30
N/A	2381+622	2383+570	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
N/A	2383+570	2384+649	Tunnel	Bailey Ave.	Both Curves BL2-10 and BL2-11	25
N/A	2384+649	2384+900	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
N/A	2384+900	2385+375	At-Grade	Adjacent to Bailey Ave.	LRV Maximum Operating Speed	50
Bailey At Maple Station	**2385+375**	**2385+700**	**At-Grade**	**Adjacent to Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	2385+700	2385+932	At-Grade	Maple Road	Horizontal Curve BL2-12	10
N/A	2385+932	2388+563	At-Grade	Maple Road	Roadway Speed Limit	45mph 35mph M-F 7A to 6P
N/A	2388+563	2388+719	At-Grade	Maple Road	Horizontal Curve BL2-14	10
Maple At Sweet Home Station	**2388+719**	**2389+044**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	2389+044	2390+277	At-Grade	Sweet Home Road	Roadway Speed Limit	45
N/A	2390+277	2390+791	At-Grade	Sweet Home Road	Horizontal Curve BL2-15	40
N/A	2390+791	2391+145	At-Grade	Sweet Home Road	Roadway Speed Limit	45
N/A	2391+145	2391+960	At-Grade	Sweet Home Road	Horizontal Curve BL2-16	40
Sweet Home At Rensch Road	**2391+960**	**2392+285**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	2392+285	2392+474	At-Grade	Rensch Road	Horizontal Curve BL2-17	10
N/A	2392+474	2393+186	At-Grade	Rensch Road	Roadway Speed Limit	30
N/A	2393+186	2393+572	At-Grade	Rensch Road	Both Curves BL2-18 and BL2-19	10
N/A	2393+572	2394+740	At-Grade	N/A	Campus At-Grade Speed	15
UB North Campus - Capen Hall Station	**2394+740**	**2395+065**	**At-Grade**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	2395+065	2395+810	At-Grade	Putnam Way	Campus At-Grade Speed	15
UB North Campus - Library Station	**2395+810**	**2396+135**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2396+135	2396+449	At-Grade	Putnam Way	Campus At-Grade Speed	15
N/A	2396+449	2396+710	At-Grade	Putnam Way	Both Horizontal Curves BL2-24 and BL2-25	10
UB North Campus - Commons Building Station	**2396+710**	**2397+035**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2397+035	2397+681	At-Grade	Lee Entrance	Roadway Speed Limit	30
N/A	2397+681	2398+100	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve BL2-26	20
N/A	2398+100	2398+309	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve BL2-27	10
UB North Campus - Greiner Hall Station	**2398+309**	**2398+634**	**At-Grade**	**N/A**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2398+634	2399+278	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve BL2-28	15
N/A	2399+278	2399+692	At-Grade	J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	2399+692	2400+837	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve BL2-29	40
N/A	2400+837	2400+900	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve BL2-30	25
J.J.A. Parkway At Sylvan Parkway Station	**2401+075**	**2401+400**	**At-Grade**	**J.J. Audubon Pkwy.**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	2401+400	2401+561	At-Grade	J. J. Audubon Pkwy. / Sylvan	Horizontal Curve BL2-31	10
N/A	2401+561	2401+700	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	2401+700	2401+898	At-Grade	Sylvan Parkway	Horizontal Curve BL2-32	15
N/A	2401+898	2402+570	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	2402+570	2402+982	At-Grade	Sylvan Parkway	Horizontal Curve BL2-33	25
N/A	2402+982	2403+662	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	2403+662	2403+866	At-Grade	Sylvan Parkway / Millersport	Horizontal Curve BL2-34	10
N/A	2403+866	2404+222	At-Grade	Millersport Hwy.	Horizontal Curve BL2-35	30
N/A	2404+222	2405+365	At-Grade	Millersport Hwy.	Roadway Speed Limit	45
N/A	2405+365	2406+102	At-Grade	Millersport Hwy.	Horizontal Curve BL2-36	35
N/A	2406+102	2409+400	At-Grade	Millersport Hwy.	Roadway Speed Limit	45
N/A	2409+400	2413+900	At-Grade	Millersport Hwy.	LRV Maximum Operating Speed	50
North French Road Station	**2413+900**	**2414+225**	**At-Grade**	**Millersport Hwy.**	**325' Long Station Platform**	**STATION STOP**
N/A	2414+225	2417+264	At-Grade	Millersport Hwy.	LRV Maximum Operating Speed	50
N/A	2417+264	2417+463	At-Grade	Millersport / Crosspoint Pkwy.	Horizontal Curve BL2-38	10
N/A	2417+463	2418+012	At-Grade	Crosspoint Parkway	Roadway Speed Limit	30
N/A	2418+012	2418+756	At-Grade	Crosspoint Parkway	Horizontal Curve BL2-39	30
Crosspoint Business Park Station	**2418+756**	**2419+081**	**At-Grade**	**Crosspoint Parkway**	**Terminal Station**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

LRT BAILEY AVE - ALTERNATIVE 2

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data							
Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Vertical Location Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1,2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
2372+000	2374+500	Main Street at Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath University at Buffalo South Campus and the NW corner of private property at Main and Bailey	Property Owned by the State of New York	No Station: 100'	100ft ROW width is required to connect to the existing South Campus Station
2374+500	2380+800	Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW	66' ±	Station: 100' No Station: 66'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
2380+800	2382+340	North Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW - With some deviance from center of ROW to smooth out curves and increase operating speed.	75' ±	Station: 100' No Station: 75'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
2382+340	2384+300	North Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW - With some deviance from center of ROW to smooth out curves and increase operating speed.	66' ±	Station: 100' No Station: 66'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
2384+300	2384+900	N/A	Tunnel	In this corridor: Tracks would be inside the green space immediately west of N. Bailey Ave. Climbing to Grade at 3.33% for 900'. Portal near Sta. 2384+900	66' ±	No Station: 100'	Proposed tunnel section would be constructed outside of the existing ROW.
2384+900	2385+800	N/A	At-Grade	In this corridor: Tracks would be inside the green space immediately west of N. Bailey.	66' ±	No Station: 96'	Additional 30ft of ROW required for portal construction
2385+800	2388+650	Maple Road	At-Grade	In this corridor: Tracks would be in the center of the street	100' to 115' ±	No Station: 115' Staggered Station:135'	Additional ROW required for Station Construction. Reduce existing snow storage width from a total of 30ft wide to 10ft. Balance of existing ROW (20ft) gained is put towards reducing the proposed ROW width.
2388+650	2392+370	Sweet Home Road	At-Grade	In this corridor: Tracks would be in the center of the street	150' MIN.	No Station: 150' Staggered Station: 185'	Additional ROW required for Station Construction. Proposed at-grade section can be constructed in the existing ROW.
2392+370	2393+183 = 9396+900	Rensch Entrance Rd.	At-Grade	In this corridor: Tracks would be in center of street, jogging to just north of the street - Alignment terminates prior to entering University at Buffalo North	Property Owned by the State of New York	No Station: 27'	A Transfer of Juridiction would be required between the two State Agencies.
2393+183 = 9396+900	9399+800	Putnam Way (East-West)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way on the south side of the street and along the south side of the Flint loop and Jacobs Center building.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
9399+800	9400+051= 2397+183	Putnam Way (North-South)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
9400+051= 2397+183	2398+100	Lee Entrance	At-Grade	In this corridor: Tracks would run adjacent to the Lee Entrance or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
2398+100	2399+100	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run adjacent to (and just north of) the John James Audubon Parkway	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies. New bridge structure required
2399+100	2401+500	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run in the median of the John James Audubon Parkway	Varies-Variance to 160' MIN	Station: 160' No Station: 160'	Existing median utilized and snow storage decreased to accommodate rail
2401+500	2403+800	Sylvan Parkway	At-Grade	In this corridor: The tracks would run in the center of Sylvan Parkway.	100'	No Station: 100' Staggered Station: 100'	Existing snow storage area decreased to accommodate rail
2403+800	2405+540	Millersport Highway	At-Grade	In this corridor: The tracks would run in the center of Millersport Highway	100' ±	No Station: 100'	No additional ROW required
2405+540	2417+340	Millersport Highway	At-Grade	In this corridor: The tracks would run in the center of Millersport Highway	100'	No Station: 100' Staggered Station: 100'	No additional ROW required
2417+340	2419+081	Crosspoint Parkway	At-Grade	In this corridor: The tracks would run in the center of Crosspoint Parkway	75'	Station: 110' No Station: 102'	Additional ROW required

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.
2. ROW dimensions are typical, and vary in specific locations along the roadways.
3. All ROW Needed as noted refers to Tangent running sections.
4. UB Alignment Stationing equality- begins at: 2393+183 (BL1) = 6396+900 (UB), ends at 9400+051 (UB) = 2397+183 (BL1)

LRT MILLERSPORT HIGHWAY - ALTERNATIVE 1

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

LIGHT RAIL VEHICLE - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Vertical Location Within Corridor	Streetname (Where Applicable)	Speed Controlling Element	Light Rail Vehicle Speed Limit (mph.)
University At Buffalo - South Campus	**N/A**	**5372+000**	**Tunnel**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	5372+000	5372+738	Tunnel	N/A	Horizontal Curve MH1-1	45
N/A	5372+738	5373+680	Tunnel	N/A	LRV Maximum Operating Speed	50
N/A	5373+680	5374+887	Tunnel	N/A	Horizontal Curve MH1-2	45
N/A	5374+887	5375+156	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
N/A	5375+156	5376+135	Tunnel	Bailey / G. Cleveland	Horizontal Curve MH1-3	45
Bailey At Grover Cleveland Highway	**5376+135**	**5376+460**	**Tunnel**	**G. Cleveland Hwy.**	**325' Long Station Platform**	**STATION STOP**
N/A	5376+460	5379+400	Tunnel	G. Cleveland Hwy.	LRV Maximum Operating Speed	50
Eggert At Millersport Highway	**5379+400**	**5379+725**	**Tunnel**	**Millersport Hwy.**	**325' Long Station Platform**	**STATION STOP**
N/A	5379+725	5380+900 (Portal)	Tunnel	Millersport Hwy.	LRV Maximum Operating Speed	50
N/A	5380+900 (Portal)	5382+400	At-Grade	Millersport Hwy.	Roadway Speed Limit	35
Sheridan Drive At Millersport Highway	**5382+400**	**5382+725**	**At-Grade**	**Millersport Hwy.**	**325' Long Station Platform**	**STATION STOP**
N/A	5382+725	5386+441	At-Grade	Millersport Hwy.	Roadway Speed Limit	35
Millersport Highway At Flint Road	**5386+441**	**5386+766**	**At-Grade**	**Millersport Hwy.**	**325' Long Station Platform**	**STATION STOP**
N/A	5386+766	5386+988	At-Grade	N/A	Both Curve MH1-8 and MH1-9	10
N/A	5386+988	5387+845	At-Grade / Tunnel	N/A	Horizontal Curve MH1-10	40
N/A	5387+845	5389+645	Tunnel	N/A	LRV Maximum Operating Speed	50
N/A	5389+645	5390+173	Tunnel / At-Grade	Flint Entrance	Horizontal Curve MH1-11	15
N/A	5390+173	5390+404	At-Grade	Flint Entrance	Horizontal Curve MH1-12	10
N/A	5390+404	5390+775	At-Grade	Flint Entrance	Roadway Speed Limit	30
UB North Campus - Capen Hall Station	**5390+775**	**5391+100**	**At-Grade**	**Flint Entrance / Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	5391+100	5392+400	At-Grade	Putnam Way	Campus At-Grade Speed	15
UB North Campus - Library Station	**5392+400**	**5392+725**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	5392+725	5392+741	At-Grade	Putnam Way	Campus At-Grade Speed	15
N/A	5392+741	5393+180	At-Grade	Putnam Way	Both Horizontal Curves MH1-16 and MH1-17	10
UB North Campus - Commons Building Station	**5393+180**	**5393+505**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	5393+505	5393+973	At-Grade	Lee Entrance	Roadway Speed Limit	30
N/A	5393+973	5394+400	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve MH1-18	20
N/A	5394+400	5394+602	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve MH1-19	10
UB North Campus - Greiner Hall Station	**5394+602**	**5394+927**	**At-Grade**	**N/A**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	5394+927	5395+570	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve MH1-20	15
N/A	5395+570	5395+984	At-Grade	J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	5395+984	5397+129	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve MH1-21	40
N/A	5397+129	5397+200	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve MH1-22	25
Sylvan Parkway Station	**5397+200**	**5397+525**	**At-Grade**	**J. J. Audubon Pkwy.**	**325' Long Station Platform**	**STATION STOP**
N/A	5397+525	5397+853	At-Grade	J. J. Audubon Pkwy. / Sylvan	Horizontal Curve MH1-23	10
N/A	5397+853	5397+992	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	5397+992	5398+190	At-Grade	Sylvan Parkway	Horizontal Curve MH1-24	15
N/A	5398+190	5398+862	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	5398+862	5399+274	At-Grade	Sylvan Parkway	Horizontal Curve MH1-25	25
N/A	5399+274	5399+955	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	5399+955	5400+159	At-Grade	Sylvan Parkway / Millersport	Horizontal Curve MH1-26	10
N/A	5400+159	5400+514	At-Grade	Millersport Hwy.	Horizontal Curve MH1-27	30
N/A	5400+514	5401+657	At-Grade	Millersport Hwy.	Roadway Speed Limit	45
N/A	5401+657	5402+394	At-Grade	Millersport Hwy.	Horizontal Curve MH1-28	35
N/A	5402+394	5405+700	At-Grade	Millersport Hwy.	Roadway Speed Limit	45
N/A	5405+700	5410+700	At-Grade	Millersport Hwy.	LRV Maximum Operating Speed	50
North French Road Station	**5410+700**	**5411+025**	**At-Grade**	**Millersport Hwy.**	**325' Long Station Platform**	**STATION STOP**
N/A	5411+025	5413+556	At-Grade	Millersport Hwy.	LRV Maximum Operating Speed	50
N/A	5413+556	5413+756	At-Grade	Millersport / Crosspoint Pkwy.	Horizontal Curve MH1-30	10
N/A	5413+756	5414+304	At-Grade	Crosspoint Parkway	Roadway Speed Limit	30
N/A	5414+304	5414+967	At-Grade	Crosspoint Parkway	Horizontal Curve MH1-31	30
Crosspoint Business Park Station	**5414+967**	**5415+374**	**At-Grade**	**Crosspoint Parkway**	**Terminal Station**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

LRT MILLERSPORT HIGHWAY - ALTERNATIVE 1

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data							
Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Vertical Location Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1, 2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
5372+000	5374+500	Main Street at Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath University at Buffalo South Campus and the NW corner of private property at Main an Bailey	Property Owned by the State of New York	No Station: 100'	100ft ROW width is required to connect to the existing South Campus Station
5374+500	5375+500	Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW	66' ±	Station: 100' No Station: 66'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
5375+500	5379+500	Grover Cleveland Highway	Tunnel	In this corridor: Tracks would be beneath street in center of ROW.	100' ±	Station: 100' No Station: 100'	Existing ROW width is adequate. The snow storage area within this corridor can be reduced by 30ft (15ft each side) to locate street level entrance
5379+500	5380+900	Millersport Highway	Tunnel	In this corridor: Tracks would be beneath the street in the center of the ROW. Tracks would climb at 4.0% from tunnel to at-grade with a portal near Station 5380+900.	100' ±	Station: 100' No Station: 100'	Existing ROW width is adequate. The snow storage area within this corridor can be reduced by 30ft (15ft each side) to locate street level entrance
5380+900	5382+900	Millersport Highway	At-Grade	In this corridor: Tracks would be in the center of the street.	100' ±	Center Station: 115' No Station: 107'	Additional ROW required for Station Construction. The snow storage area within this corridor can be reduced by 20ft. No Station: ((100'+27')-20'=107'),Station ((100'+35')-20'=115')
5382+900	5386+900	Millersport Highway	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 94'±, 88'±, 100'±, 110'±	Center Station: 145' No Station: 137'	Additional ROW required for Construction.
5386+900	5387+440	Not in Any Roadway	At-Grade	In this corridor: Tracks would first run adjacent to Millersport Highway in greenfield. Tracks would decline at 4.0% down into a tunnel with the portal near Station 5387+440.	TBD - Variance of property ROW	No Station: 27' Staggered Station: 35'	Additional ROW required for Construction.
5387+440	5389+960	Not in Any Roadway	Tunnel	In this corridor: Tracks would proceed northward in a tunnel, and climb to grade at 4.0% with a portal near Station 5389+96 after clearing beneath the access ramps between Maple Road and Millersport Highway and after clearning beneath the John James Audubon Parkway.	TBD - Variance of property ROW	No Station: 45'	Additional ROW required for Construction.
5389+960	5390+173	Flint Entrance	At-Grade	In this corridor: Tracks would run in the median of the Flint Entrance	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
5390+173	5390+172= 5390+172	Flint Entrance	At-Grade	In this corridor: Tracks would run in the median of the Flint Entrance.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
5390+172= 5390+172	5391+900	Putnam Way (East-West)	At-Grade	In this corridor: Tracks would run in along the south side of the Jacobs Center building	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
5391+900	5392+177- 5392+595	Putnam Way (North-South)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
5392+177- 5392+595	5393+040	Putnam Way (North-South)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
5393+040	5394+340	Lee Entrance	At-Grade	In this corridor: Tracks would run adjacent to the Lee Entrance or in the Center of the street. Some realignment of the street ma be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
5394+340	5395+100	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run adjacent to (and just north of) the John James Audubon Parkway	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	New bridge structure required
5395+100	5397+760	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run in the median of the John James Audubon Parkway	Varies-Variance to 160' MIN	No Station: 160' Center Station: 160'	Existing median utilized and snow storage area decreased to accommodate rail
5397+760	5400+060	Sylvan Parkway	At-Grade	In this corridor: The tracks would run in the center of Sylvan Parkway.	100'	No Station: 100' Staggered Station: 100'	Existing snow storage area decreased to accommodate rail
5400+060	5401+800	Millersport Highway	At-Grade	In this corridor: The tracks would run in the center of Millersport Highway	100' ±	No Station: 100'	No additional ROW required
5401+800	5413+600	Millersport Highway	At-Grade	In this corridor: The tracks would run in the center of Millersport Highway	100'	No Station: 100' Staggered Station: 100'	No additional ROW required
5413+600	5415+374	Crosspoint Parkway	At-Grade	In this corridor: The tracks would run in the center of Crosspoint Parkway	75'	Station: 110' No Station: 102'	Additional ROW required

2. ROW dimensions are typical, and vary in specific locations along the roadways.

3. All ROW Needed as noted refers to Tangent running sections.

4. UB Alignment Stationing equality- begins at: 2393+183 (BL1) = 6396+900 (UB), ends at 9400+051 (UB) = 2397+183 (BL1)

LRT NIAGARA FALLS BLVD. - ALTERNATIVE 1

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

LIGHT RAIL VEHICLE - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Vertical Location Within Corridor	Streetname (Where Applicable)	Speed Controlling Element	Light Rail Vehicle Speed Limit (mph.)
University At Buffalo - South Campus	**N/A**	**6372+000**	**Tunnel**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	6372+000	6372+740	Tunnel	N/A	Horizontal Curve NFB1-1	45
N/A	6372+740	6373+635	Tunnel	N/A	LRV Maximum Operating Speed	50
N/A	6373+635	6374+930	Tunnel	Bailey Ave.	Horizontal Curve NFB1-2	45
N/A	6374+930	6375+575	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
Bailey Ave At Grover Cleveland Highway	**6375+575**	**6375+900**	**Tunnel**	**Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	6375+900	6381+145	Tunnel	Bailey Ave and Eggert Road	Both Curves NFB1-6 and NFB1-7	10
N/A	6381+145	6381+700	Tunnel	Eggert Road	LRV Maximum Operating Speed	10
Eggert and Carmen Road	**6381+700**	**6382+005**	At-Grade	**Eggert Road**	**325' Long Station Platform**	**STATION STOP**
N/A	6382+005	6383+336	At-Grade	Eggert Road	Roadway Speed Limit	35
N/A	6383+336	6383+500	At-Grade	Eggert Rd and Niagara Falls Blvd.	Horizontal Curve NFB1-8	10
N/A	6383+500	6387+000	At-Grade	Niagara Falls Blvd.	Roadway Speed Limit	40
Boulevard Mall	**6387+000**	**6387+325**	At-Grade	**Niagara Falls Blvd.**	**325' Long Station Platform**	**STATION STOP**
N/A	6387+325	6387+580	At-Grade	Niagara Falls Blvd. and Maple Rd.	Horizontal Curve NFB1-10	10
N/A	6387+580	6388+300	At-Grade	Maple Rd.	Roadway Speed Limit	45
N/A	6388+300	6391+875	At-Grade	Maple Rd.	Roadway Speed Limit	45mph 35mph M-F 7A to 6P
Maple At Sweet Home Station	**6391+875**	**6392+200**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	6392+200	6392+440	At-Grade	Sweet Home Road	Horizontal Curve NFB1-13	10
N/A	6392+440	6393+990	At-Grade	Sweet Home Road	Roadway Speed Limit	45
N/A	6393+990	6395+668	At-Grade	Sweet Home Road	Both Horizontal Curves NFB1-14 and NFB1-15	40
Sweet Home At Rensch Road	**6395+668**	**6395+993**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	6395+993	6396+191	At-Grade	Rensch Road	Horizontal Curve NFB1-15	10
N/A	6396+191	6396+904	At-Grade	Rensch Road	Roadway Speed Limit	30
N/A	6396+904	6397+290	At-Grade	Rensch Road	Both Curves NFB1-17 and NFB1-18	10
N/A	6397+290	6398+500	At-Grade	N/A	Campus At-Grade Speed	15
UB North Campus - Capen Hall Station	**6398+500**	**6398+825**	**At-Grade**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	6398+825	6399+800	At-Grade	Putnam Way	Campus At-Grade Speed	15
UB North Campus - Library Station	**6399+800**	**6400+125**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6400+125	6400+160	At-Grade	Putnam Way	Campus At-Grade Speed	15
N/A	6400+160	6400+625	At-Grade	Putnam Way	Both Horizontal Curves NFB1-23 and NFB1-24	10
UB North Campus - Commons Building Station	**6400+625**	**6400+950**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6400+950	6401+390	At-Grade	Lee Entrance	Roadway Speed Limit	30
N/A	6401+390	6401+800	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve NFB1-25	20
N/A	6401+800	6402+030	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve NFB1-26	10
UB North Campus - Greiner Hall Station	**6402+030**	**6402+355**	**At-Grade**	**N/A**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6402+355	6402+996	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB1-27	15
N/A	6402+996	6403+410	At-Grade	J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	6403+410	6404+555	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB1-28	40
N/A	6404+555	6404+805	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB1-29	25
J.J.A. Parkway At Sylvan Parkway Station	**6404+805**	**6405+130**	**At-Grade**	**J.J. Audubon Pkwy.**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6405+130	6405+540	At-Grade	J.J. Audubon Pkwy.	Horizontal Curve NFB1-30	25
N/A	6405+540	6409+395	At-Grade	J.J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	6409+395	6409+740	At-Grade	J.J. Audubon Pkwy.	Horizontal Cuve NFB1-33	25
I-990 Interchange Station	**6409+740**	**6410+075**	**At-Grade**	**J.J. Audubon Pkwy.**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6410+075	6410+350	At-Grade	I-990 Median	Horizontal Curve NFB1-34	10
N/A	6410+350	6418+220	At-Grade	I-990 Median	LRV Maximum Operating Speed	50
North French Road Station	**6418+220**	**6418+545**	**At-Grade**	**I-990 Median**	**325' Long Station Platform**	**STATION STOP**
N/A	6418+545	6423+860	At-Grade	I-990 Median	LRV Maximum Operating Speed	50
N/A	6423+860	6424+820	Tunnel	N/A	Horiztonal Curve NFB1-39	25
N/A	6424+820	6425+345	At-Grade	N/A	Horiztonal Curve NFB1-39	25
N/A	6425+345	6425+520	At-Grade	N/A	Coming into station	40
Crosspoint Business Park Station	**6425+520**	**6425+850**	**At-Grade**	**Crosspoint Parkway**	**325' Long Station Platform**	**STATION STOP**
N/A	6425+850	6426+050	At-Grade	Crosspoint Parkway	Horizontal Cuve NFB1-40	10
N/A	6426+050	6426+930	At-Grade	Crosspoint Parkway	Horizontal Cuve NFB1-41	30
Millersport Highway Terminal Station	**6426+930**	**6427+522**	**At-Grade**	**Crosspoint Parkway**	**325' Long Station Platform**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

LRT NIAGARA FALLS BLVD. - ALTERNATIVE 1

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data							
Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Vertical Location Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1, 2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
6372+000	6374+220	Main Street at Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath University at Buffalo South Campus and the corner of private property at Main and Bailey	Property Owned by the State of New York	No Station: 100	100ft ROW width is required to connect to the existing South Campus Station
6374+220	6380+800	Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW and beneath private property at the corner of Main and Bailey	66'	Station: 100' No Station: 60'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
6380+800	6381+700	Eggert Road	Tunnel	In this corridor: Tracks would be beneath street in center of ROW. Tracks would climb at 4.0% up to grade with a portal near Station 6381+700	66'	Station: 100' No Station: 60'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
6381+700	6383+430	Eggert Road	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 66 to 85'	Station:123' No Station:112'	Additional ROW Required for Construction
6383+430	6387+500	Niagara Falls Blvd.	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 85 to 125'	Station:163' No Station:152'	Additional ROW Required for Construction
6387+500	6388+300	Maple Road	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 100'±	No Station: 127'	Additional ROW Required for Construction
6388+300	6392+370	Maple Road	At-Grade	In this corridor: The tracks remain at-grade running in the center/median of the street.	Varies: 97'±, 100'± to 115' ±	No Station: 115' Staggered Station:135'	Reduce existing snow storage width from a total of 30ft wide to 10ft. Balance of existing ROW (20ft) gained is put towards reducing the proposed ROW width.
6392+370	6396+116	Sweet Home Road	At-Grade	In this corridor: Tracks would be in the center of the street	150' MIN.	No Station: 150' Staggered Station: 185'	Additional ROW required for Station Construction. Proposed at-grade section can be constructed in the existing ROW.
6396+116	6396+900 = 9396+900	Rensch Entrance Road	At-Grade	In this corridor: Tracks would be in center of street - Alignment terminates prior to entering University at Buffalo North	Property Owned by the State of New York	No Station: 27'	A Transfer of Juridiction would be required between the two State Agencies.
6396+900 = 9396+900	9399+800	Putnam Way (East-West)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way on the south side of the street and along the south side of the Flint loop and Jacobs Center building.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
9399+800	9400+051= 6400+000	Putnam Way (North-South)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
6400+000	6401+900	Lee Entrance	At-Grade	In this corridor: Tracks would run adjacent to the Lee Entrance or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
6401+900	6402+600	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run adjacent to (and just north of) the John James Audubon Parkway	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies. New bridge structure required
6402+600	6410+300	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run in the median of the John James Audubon Parkway	Varies-Variance to 160' MIN	Station: 160' No Station: 160'	Existing median utilized and snow storage decreased to accommodate rail
6410+300	6423+800	I-990	At-Grade	In this corridor: The tracks would run in the median of I-990. Portal at Station 6423+800	Varies- 270' to 750' ±	No Station: 27'	No additional ROW required
6423+800	6424+800	N/A	Tunnel	In this corridor: The tracks would run in a tunnel beneath I-990. Portals at Station 6423+800 and 6424+800	Varies-600' to Variance to property	No Station: 27'	No additional ROW required
6424+800	6425+850	Crosspoint Parkway	At-Grade	In this corridor: The tracks would run at-grade through undeveloped land.	TBD - Variance of property ROW	No Station: 27' Staggered Station: 35'	Additional ROW Required for Construction

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.
2. ROW dimensions are typical, and vary in specific locations along the roadways.
3. All ROW Needed as noted refers to Tangent running sections.
4. UB Alignment Stationing equality- begins at: 6396+900 (NFB1) = 6396+900 (UB), ends at 9400+051 (UB) = 6400+900 (NFB1)

LRT NIAGARA FALLS BLVD. - ALTERNATIVE 2

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS AND DEIS

LIGHT RAIL VEHICLE - SPEED LIMIT TABLE*						
Station Stop Name	**Speed Limit Begin Stationing**	**Speed Limit End Stationing**	**Vertical Location Within Corridor**	**Streetname (Where Applicable)**	**Speed Controlling Element**	**Light Rail Vehicle Speed Limit (mph.)**
University At Buffalo - South Campus	**N/A**	**6372+000**	**Tunnel**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	6372+000	6372+740	Tunnel	N/A	Horizontal Curve NFB2-1	45
N/A	6372+740	6373+635	Tunnel	N/A	LRV Maximum Operating Speed	50
N/A	6373+635	6374+930	Tunnel	Bailey Ave.	Horizontal Curve NFB2-2	45
N/A	6374+930	6375+575	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
Bailey Ave At Grover Cleveland Highway	**6375+575**	**6375+900**	**Tunnel**	**Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	6375+900	6381+145	Tunnel	Bailey Ave and Eggert Road	Both Curves NFB2-6 and NFB2-7	10
N/A	6381+145	6381+700	Tunnel	Eggert Road	LRV Maximum Operating Speed	10
Eggert and Carmen Road	**6381+700**	**6382+005**	At-Grade	**Eggert Road**	**325' Long Station Platform**	**STATION STOP**
N/A	6382+005	6383+336	At-Grade	Eggert Road	Roadway Speed Limit	35
N/A	6383+336	6383+500	At-Grade	Eggert Rd and Niagara Falls Blvd.	Horizontal Curve NFB1-8	10
N/A	6383+500	6387+000	At-Grade	Niagara Falls Blvd.	Roadway Speed Limit	40
Boulevard Mall	**6387+000**	**6387+325**	At-Grade	**Niagara Falls Blvd.**	**325' Long Station Platform**	**STATION STOP**
N/A	6387+325	6387+580	At-Grade	Niagara Falls Blvd. and Maple Rd.	Horizontal Curve NFB2-10	10
N/A	6387+580	6388+300	At-Grade	Maple Rd.	Roadway Speed Limit	45
N/A	6388+300	6391+875	At-Grade	Maple Rd.	Roadway Speed Limit	45mph 35mph M-F 7A to 6P
Maple At Sweet Home Station	**6391+875**	**6392+200**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	6392+200	6392+440	At-Grade	Sweet Home Road	Horizontal Curve NFB2-13	10
N/A	6392+440	6393+990	At-Grade	Sweet Home Road	Roadway Speed Limit	45
N/A	6393+990	6395+668	At-Grade	Sweet Home Road	Both Horizontal Curves NFB2-14 and NFB2-15	40
Sweet Home At Rensch Road	**6395+668**	**6395+993**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	6395+993	6396+191	At-Grade	Rensch Road	Horizontal Curve NFB2-15	10
N/A	6396+191	6396+904	At-Grade	Rensch Road	Roadway Speed Limit	30
N/A	6396+904	6397+290	At-Grade	Rensch Road	Both Curves NFB2-17 and NFB2-18	10
N/A	6397+290	6398+500	At-Grade	N/A	Campus At-Grade Speed	15
UB North Campus - Capen Hall Station	**6398+500**	**6398+825**	**At-Grade**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	6398+825	6399+530	At-Grade	Putnam Way	Campus At-Grade Speed	15
UB North Campus - Library Station	**6399+530**	**6399+865**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6399+865	6400+160	At-Grade	Putnam Way	Campus At-Grade Speed	15
N/A	6400+160	6400+415	At-Grade	Putnam Way	Both Horizontal Curves NFB2-23 and NFB2-24	10
UB North Campus - Commons Building Station	**6400+415**	**6400+750**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6400+750	6401+390	At-Grade	Lee Entrance	Roadway Speed Limit	30
N/A	6401+390	6401+800	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve NFB2-25	20
N/A	6401+800	6402+030	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve NFB2-26	10
UB North Campus - Greiner Hall Station	**6402+030**	**6402+355**	**At-Grade**	**N/A**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6402+355	6402+996	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB2-27	15
N/A	6402+996	6403+410	At-Grade	J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	6403+410	6404+555	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB2-28	40
N/A	6404+555	6404+805	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB2-29	25
J.J.A. Parkway At Sylvan Parkway Station	**6404+805**	**6405+130**	**At-Grade**	**J.J. Audubon Pkwy.**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6405+130	6405+278	At-Grade	J. J. Audubon Pkwy. / Sylvan	Horizontal Curve NFB2-30	10
N/A	6405+278	6405+417	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	6405+417	6405+615	At-Grade	Sylvan Parkway	Horizontal Curve NFB2-31	15
N/A	6405+615	6406+287	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	6406+287	6406+699	At-Grade	Sylvan Parkway	Horizontal Curve NFB2-32	25
N/A	6406+699	6407+379	At-Grade	Sylvan Parkway	Roadway Speed Limit	30
N/A	6407+379	6407+583	At-Grade	Sylvan Parkway / Millersport	Horizontal Curve NFB2-33	10
N/A	6407+583	6407+939	At-Grade	Millersport Hwy.	Horizontal Curve NFB2-34	30
N/A	6407+939	6409+082	At-Grade	Millersport Hwy.	Roadway Speed Limit	45
N/A	6409+082	6409+819	At-Grade	Millersport Hwy.	Horizontal Curve NFB2-35	35
N/A	6409+819	6413+100	At-Grade	Millersport Hwy.	Roadway Speed Limit	45
N/A	6413+100	6418+100	At-Grade	Millersport Hwy.	LRV Maximum Operating Speed	50
North French Road Station	**6418+100**	**6418+425**	**At-Grade**	**Millersport Hwy.**	**325' Long Station Platform**	**STATION STOP**
N/A	6418+425	6420+981	At-Grade	Millersport Hwy.	LRV Maximum Operating Speed	50
N/A	6420+981	6421+180	At-Grade	Millersport / Crosspoint Pkwy.	Horizontal Curve NFB2-37	10
N/A	6421+180	6421+729	At-Grade	Crosspoint Parkway	Roadway Speed Limit	30
N/A	6421+729	6422+473	At-Grade	Crosspoint Parkway	Horizontal Curve NFB2-38	30
Crosspoint Business Park Station	**6422+473**	**6422+798**	**At-Grade**	**Crosspoint Parkway**	**325' Long Station Platform**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

LRT NIAGARA FALLS BLVD. - ALTERNATIVE 2

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data

Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Vertical Location Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1, 2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
6372+000	6374+220	Main Street at Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath University at Buffalo South Campus and the corner of private property at Main and Bailey	Property Owned by the State of New York	No Station: 100	100ft ROW width is required to connect to the existing South Campus Station
6374+220	6380+800	Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW and beneath private property at the corner of Main and Bailey	66'	Station: 100' No Station: 66'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
6380+800	6381+700	Eggert Road	Tunnel	In this corridor: Tracks would be beneath street in center of ROW. Tracks would climb at 4.0% up to grade with a portal near Station 6381+700	66'	Station: 100' No Station: 60'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
6381+700	6383+430	Eggert Road	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 66 to 85'	Station:123' No Station:112'	Additional ROW Required for Construction
6383+430	6387+500	Niagara Falls Blvd.	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 85 to 125'	Station:163' No Station:152'	Additional ROW Required for Construction
6387+500	6388+300	Maple Road	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 100'±	No Station: 127'	Additional ROW Required for Construction
6388+300	6392+370	Maple Road	At-Grade	In this corridor: The tracks remain at-grade running in the center/median of the street.	Varies: 97'±, 100'± to 115' ±	No Station: 115' Staggered Station:135'	Reduce existing snow storage width from a total of 30ft wide to 10ft. Balance of existing ROW (20ft) gained is put towards reducing the proposed ROW width.
6392+370	6396+116	Sweet Home Road	At-Grade	In this corridor: Tracks would be in the center of the street	150' MIN.	No Station: 150' Staggered Station: 185'	Additional ROW required for Station Construction. Proposed at-grade section can be constructed in the existing ROW.
6396+116	6396+900 = 9396+900	Rensch Entrance Road	At-Grade	In this corridor: Tracks would be in center of street - Alignment terminates prior to entering University at Buffalo North	Property Owned by the State of New York	No Station: 27'	A Transfer of Juridiction would be required between the two State Agencies.
6396+900 = 9396+900	9399+800	Putnam Way (East-West)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way on the south side of the street and along the south side of the Flint loop and Jacobs Center building.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
9399+800	9400+051= 6400+000	Putnam Way (North-South)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
6400+000	6401+900	Lee Entrance	At-Grade	In this corridor: Tracks would run adjacent to the Lee Entrance or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
6401+900	6402+600	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run adjacent to (and just north of) the John James Audubon Parkway	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies. New bridge structure required
6402+600	6405+200	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run in the median of the John James Audubon Parkway	Varies-Variance to 160' MIN	Station: 160' No Station: 160'	Existing median utilized and snow storage decreased to accommodate rail
6405+200	6407+500	Sylvan Parkway	At-Grade	In this corridor: The tracks would run in the center of Sylvan Parkway.	100'	No Station: 100' Staggered Station: 100'	Existing snow storage area decreased to accommodate rail
6407+500	6409+240	Millersport Highway	At-Grade	In this corridor: The tracks would run in the center of Millersport Highway	100' ±	No Station: 100'	No additional ROW required
6409+240	6421+040	Millersport Highway	At-Grade	In this corridor: The tracks would run in the center of Millersport Highway	100'	No Station: 100' Staggered Station: 100'	No additional ROW required
6421+040	6422+798	Crosspoint Parkway	At-Grade	In this corridor: The tracks would run in the center of Crosspoint Parkway	75'	Station: 110' No Station: 102'	Additional ROW required

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.
2. ROW dimensions are typical, and vary in specific locations along the roadways.
3. All ROW Needed as noted refers to Tangent running sections.
4. UB Alignment Stationing equality- begins at: 6396+900 (NFB2) = 6396+900 (UB), ends at 9400+051 (UB) = 6400+900 (NFB2)

LRT NIAGARA FALLS BLVD. - ALTERNATIVE 7

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

LIGHT RAIL VEHICLE - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Vertical Location Within Corridor	Streetname (Where Applicable)	Speed Controlling Element	Light Rail Vehicle Speed Limit (mph.)
University At Buffalo - South Campus	**N/A**	**6372+000**	**Tunnel**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	6372+000	6372+740	Tunnel	N/A	Horizontal Curve NFB1-1	45
N/A	6372+740	6373+635	Tunnel	N/A	LRV Maximum Operating Speed	50
N/A	6373+635	6374+930	Tunnel	Bailey Ave.	Horizontal Curve NFB1-2	45
N/A	6374+930	6375+575	Tunnel	Bailey Ave.	LRV Maximum Operating Speed	50
Bailey Ave At Grover Cleveland Highway	**6375+575**	**6375+900**	**Tunnel**	**Bailey Ave.**	**325' Long Station Platform**	**STATION STOP**
N/A	6375+900	6381+145	Tunnel	Bailey Ave and Eggert Road	Both Curves NFB1-6 and NFB1-7	10
N/A	6381+145	6381+700	Tunnel	Eggert Road	LRV Maximum Operating Speed	10
Eggert and Carmen Road	**6381+700**	**6382+005**	At-Grade	**Eggert Road**	**325' Long Station Platform**	**STATION STOP**
N/A	6382+005	6383+336	At-Grade	Eggert Road	Roadway Speed Limit	35
N/A	6383+336	6383+500	At-Grade	Eggert Rd and Niagara Falls Blvd.	Horizontal Curve NFB1-8	10
N/A	6383+500	6387+000	At-Grade	Niagara Falls Blvd.	Roadway Speed Limit	40
Boulevard Mall	**6387+000**	**6387+325 (NFB7)**	At-Grade	**Niagara Falls Blvd.**	**325' Long Station Platform**	**STATION STOP**
N/A	6387+325 (NFB7)	6388+037 (NFB7)	At-Grade	Niagara Falls Blvd.	Roadway Speed Limit	45
N/A	6388+037 (NFB7)	6388+242 (NFB7)	At-Grade	Niagara Falls Blvd. and Meyer Rd.	Horizontal Curve NFB7-1	10
N/A	6388+242 (NFB7)	6389+508 (NFB7)	At-Grade	Meyer Rd.	Roadway Speed Limit	30
N/A	6389+508 (NFB7)	6389+782 (NFB7)	At-Grade	Meyer Rd.	Horizontal Curve NFB7-2	10
N/A	6389+782 (NFB7)	6389+840(NFB7)	At-Grade	Meyer Rd.	LRV Operating Speed	10
Meyer at N. Bailey Station	**6389+840(NFB7)**	**6390+165 (NFB7)**	**At-Grade**	**Meyer Rd.**	**325' Long Station Platform**	**STATION STOP**
N/A	6390+165 (NFB7)	6390+681 (NFB7)	At-Grade	Meyer Rd.	Roadway Speed Limit	30
N/A	6390+681 (NFB7)	6390+920 (NFB7)	At-Grade	Meyer Rd.	Horizontal Curve NFB7-3	10
N/A	6390+920 (NFB7)	6391+206 (NFB7)	At-Grade	Meyer Rd.	Roadway Speed Limit	30
N/A	6391+206 (NFB7)	6391+300 (NFB7)	At-Grade	Meyer Rd.	Horizontal Curve NFB7-4	30
N/A	6391+300 (NFB7)	6391+514 (NFB7)	Tunnel	Meyer Rd.	Horizontal Curve NFB7-4	30
N/A	6391+514 (NFB7)	6393+280 (NFB7)	Tunnel	Meyer Rd.	LRV Maximum Operating Speed	55
N/A	6393+280 (NFB7)	6393+942 (NFB7)	Tunnel	Meyer Rd. and Sweet Home Rd.	Horizontal Curve NFB7-5	30
N/A	6393+942 (NFB7)	6394+784 (NFB7)	Tunnel	Sweet Home Road	LRV Maximum Operating Speed	55
N/A	6394+784 (NFB7)	6395+400 (NFB7)	Tunnel	Sweet Home Road	Horizontal Curve NFB7-6	35
N/A	6395+400 (NFB7)	6395+586 (NFB&7) = 6395+668 (NFB1)	At-Grade	Sweet Home Road	Horizontal Curve NFB7-6/ NFB1-15	35
Sweet Home At Rensch Road	**6395+586 (NFB&7) = 6395+668 (NFB1)**	**6395+993**	**At-Grade**	**Sweet Home Road**	**325' Long Station Platform**	**STATION STOP**
N/A	6395+993	6396+191	At-Grade	Rensch Road	Horizontal Curve NFB1-16	10
N/A	6396+191	6396+904	At-Grade	Rensch Road	Roadway Speed Limit	30
N/A	6396+904	6397+290	At-Grade	Rensch Road	Both Curves NFB1-17 and NFB1-18	10
N/A	6397+290	6398+500	At-Grade	N/A	Campus At-Grade Speed	15
UB North Campus - Capen Hall Station	**6398+500**	**6398+825**	**At-Grade**	**N/A**	**325' Long Station Platform**	**STATION STOP**
N/A	6398+825	6399+800	At-Grade	Putnam Way	Campus At-Grade Speed	15
UB North Campus - Library Station	**6399+800**	**6400+125**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6400+125	6400+160	At-Grade	Putnam Way	Campus At-Grade Speed	15
N/A	6400+160	6400+625	At-Grade	Putnam Way	Both Horizontal Curves NFB1-23 and NFB1-24	10
UB North Campus - Commons Building Station	**6400+625**	**6400+950**	**At-Grade**	**Putnam Way**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6400+950	6401+390	At-Grade	Lee Entrance	Roadway Speed Limit	30
N/A	6401+390	6401+800	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve NFB1-25	20
N/A	6401+800	6402+030	At-Grade	Lee / J. J. Audubon Pkwy.	Horizontal Curve NFB1-26	10
UB North Campus - Greiner Hall Station	**6402+030**	**6402+355**	**At-Grade**	**N/A**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6402+355	6402+996	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB1-27	15
N/A	6402+996	6403+410	At-Grade	J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	6403+410	6404+555	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB1-28	40
N/A	6404+555	6404+805	At-Grade	J. J. Audubon Pkwy.	Horizontal Curve NFB1-29	25
J.J.A. Parkway At Sylvan Parkway Station	**6404+805**	**6405+130**	**At-Grade**	**J.J. Audubon Pkwy.**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6405+130	6405+540	At-Grade	J.J. Audubon Pkwy.	Horizontal Curve NFB1-30	25
N/A	6405+540	6409+395	At-Grade	J.J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	6409+395	6409+740	At-Grade	J.J. Audubon Pkwy.	Horizontal Cuve NFB1-33	25
I-990 Interchange Station	**6409+740**	**6410+075**	**At-Grade**	**J.J. Audubon Pkwy.**	**325' Long Station - Low Level Platform**	**STATION STOP**
N/A	6410+075	6410+350	At-Grade	I-990 Median	Horizontal Curve NFB1-34	10
N/A	6410+350	6418+220	At-Grade	I-990 Median	LRV Maximum Operating Speed	50
North French Road Station	**6418+220**	**6418+545**	**At-Grade**	**I-990 Median**	**325' Long Station Platform**	**STATION STOP**
N/A	6418+545	6423+860	At-Grade	I-990 Median	LRV Maximum Operating Speed	50
N/A	6423+860	6424+820	Tunnel	N/A	Horiztonal Curve NFB1-39	25
N/A	6424+820	6425+345	At-Grade	N/A	Horiztonal Curve NFB1-39	25
N/A	6425+345	6425+520	At-Grade	N/A	Coming into station	40
Crosspoint Business Park Station	**6425+520**	**6425+850**	**At-Grade**	**Crosspoint Parkway**	**325' Long Station Platform**	**STATION STOP**
N/A	6425+850	6426+050	At-Grade	Crosspoint Parkway	Horizontal Cuve NFB1-40	10
N/A	6426+050	6426+930	At-Grade	Crosspoint Parkway	Horizontal Cuve NFB1-41	30
Millersport Highway Terminal Station	**6426+930**	**6427+522**	**At-Grade**	**Crosspoint Parkway**	**325' Long Station Platform**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.
3. NFB7 Alignement Stationing equality- begins at: 6387+300 (NFB1) = 6387+300 (NFB7), ends at 6395+822 (NFB7) = 6395+900 (NFB1)

LRT NIAGARA FALLS BLVD. - ALTERNATIVE 7

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data

Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Vertical Location Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1, 2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
6372+000	6374+220	Main Street at Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath University at Buffalo South Campus and the corner of private property at Main and Bailey	Property Owned by the State of New York	No Station: 100	100ft ROW width is required to connect to the existing South Campus Station
6374+220	6380+800	Bailey Ave.	Tunnel	In this corridor: Tracks would be beneath street in center of ROW and beneath private property at the corner of Main and Bailey	66'	Station: 100' No Station: 66'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
6380+800	6381+700	Eggert Road	Tunnel	In this corridor: Tracks would be beneath street in center of ROW. Tracks would climb at 4.0% up to grade with a portal near Station 6381+700	66'	Station: 100' No Station: 66'	Additional ROW required for Station Construction. Proposed tunnel section can be constructed in the existing ROW.
6381+700	6383+430	Eggert Road	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 66 to 85'	Station:123' No Station:112'	Additional ROW Required for Construction
6383+430	6387+300 (NFB1) = 6387+300 (NFB7)	Niagara Falls Blvd.	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 85 to 125'	Station:163' No Station:152'	Additional ROW Required for Construction
6387+300 (NFB1) = 6387+300 (NFB7)	6388+160 (NFB7)	Niagara Falls Blvd.	At-Grade	In this corridor: Tracks would be in the center of the street	125'	No Station: 152'	Additional ROW Required for Construction
6388+160 (NFB7)	6391+300 (NFB7)	Meyer Road	At-Grade	In this corridor: Tracks would be in the center of the street	Varies: 50'± to 66'	No Station: 93' Staggered Station:101'	Additional ROW Required for Construction
6391+300 (NFB7)	6392+900 (NFB7)	Meyer Road	Tunnel	In this corridor: Tracks would be beneath street in center of ROW. Tracks would climb at 4.0% down to with a portal near Station 6391+300 (NFB7)	50'	No Station: 60'	Additional ROW Required for Construction. A transfer of jurisdication would be required for tunnel under I-290
6392+900 (NFB7)	6394+200 (NFB7)	I-290	Tunnel	In this corridor: Tracks would be beneath the I-290	Varies	No Station: 60'	A Transfer of Juridiction would be required between the two State Agencies.
6394+200 (NFB7)	6395+400 (NFB7)	Sweet Home Road	Tunnel	In this corridor: Tracks would be beneath street in center of ROW. Tracks would climb at 4.0% up to with a portal near Station 6395+400 (NFB7)	150' MIN.	No Station: 150' Staggered Station: 185'	Additional ROW required for Station Construction. Proposed at-grade section can be constructed in the existing ROW.
6395+400 (NFB7)	6395+822 (NFB7)= 6395+900 (NFB1)	Sweet Home Road	At-Grade	In this corridor: Tracks would be in the center of the street	150' MIN.	No Station: 150' Staggered Station: 185'	Additional ROW required for Station Construction. Proposed at-grade section can be constructed in the existing ROW.
6395+900	6396+116	Sweet Home Road	At-Grade	In this corridor: Tracks would be in the center of the street	150' MIN.	No Station: 150' Staggered Station: 185'	Additional ROW required for Station Construction. Proposed at-grade section can be constructed in the existing ROW.
6396+116	6396+900 = 9396+900	Rensch Entrance Road	At-Grade	In this corridor: Tracks would be in center of street - Alignment terminates prior to entering University at Buffalo North	Property Owned by the State of New York	No Station: 27'	A Transfer of Juridiction would be required between the two State Agencies.
6396+900 = 9396+900	9399+800	Putnam Way (East-West)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way on the south side of the street and along the south side of the Flint loop and Jacobs Center building.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
9399+800	9400+051= 6400+000	Putnam Way (North-South)	At-Grade	In this corridor: Tracks would run adjacent to Putnam way or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
6400+000	6401+900	Lee Entrance	At-Grade	In this corridor: Tracks would run adjacent to the Lee Entrance or in the Center of the street. Some realignment of the street may be needed to accommodate the LRV curvature.	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies.
6401+900	6402+600	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run adjacent to (and just north of) the John James Audubon Parkway	Property Owned by the State of New York	No Station: 27' Staggered Station: 35'	A Transfer of Juridiction would be required between the two State Agencies. New bridge structure required
6402+600	6410+300	John James Audubon Parkway	At-Grade	In this corridor: The tracks would run in the median of the John James Audubon Parkway	Varies-Variance to 160' MIN	Station: 160' No Station: 160'	Existing median utilized and snow storage decreased to accommodate rail
6410+300	6423+800	I-990	At-Grade	In this corridor: The tracks would run in the median of I-990. Portal at Station 6423+800	Varies- 270' to 750' ±	No Station: 27'	No additional ROW required
6423+800	6424+800	N/A	Tunnel	In this corridor: The tracks would run in a tunnel beneath I-990. Portals at Station 6423+800 and 6424+800	Varies-600' to Variance to property	No Station: 27'	No additional ROW required
6424+800	6425+850	Crosspoint Parkway	At-Grade	In this corridor: The tracks would run at-grade through undeveloped land.	TBD - Variance of property ROW	No Station: 27' Staggered Station: 35'	Additional ROW Required for Construction

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.
2. ROW dimensions are typical, and vary in specific locations along the roadways.
3. All ROW Needed as noted refers to Tangent running sections.
4. NFB7 Alignment Stationing equality- begins at: 6387+300 (NFB1) = 6387+300 (NFB7), ends at 6395+822 (NFB7) = 6395+900 (NFB1)

APPENDIX A

BUS RAPID TRANSIT

BRT BAILEY AVENUE - ALTERNATIVE 1 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

BUS - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Traffic Signal Modifications	Streetname (Where Applicable)	Speed Controlling Element	Bus Speed Limit (mph.)
University At Buffalo - South Campus Station	**N/A**	**2372+000**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2372+000	2374+150		Main St	Roadway Speed Limit	30
Bailey At Loop Station	**2374+150**	**2374+280**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2374+280	2374+550	1 queue jump- Bailey Rd	Bailey Ave.	Horizontal Curve BL1-2	10
N/A	2374+550	2376+250		Bailey Ave.	Roadway Speed Limit	35
Bailey At Grover Cleveland Highway Station	**2376+250**	**2376+380**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2376+380	2377+550		Bailey Ave.	Roadway Speed Limit	35
Bailey At Cambridge Rd Station	**2377+550**	**2377+680**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2377+680	2381+325	1 new priority signal- Longmeadow Rd (Sta 2379+400)	Bailey Ave.	Roadway Speed Limit	35
Bailey At Eggert Station	**2381+325**	**2381+455**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2381+455	2382+650	1 queue jump	Bailey Ave.	Roadway Speed Limit	35
Bailey At Sheridan Station	**2382+650**	**2382+780**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2382+780	2384+530	1 new priority signal- Henel Rd (Sta 2383+200) 1 new priority signal- Emerson Rd (Sta 2384+400)	Bailey Ave.	Roadway Speed Limit	35
Bailey At Emerson Dr Station	**2384+530**	**2384+660**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2384+660	2386+050		Bailey Ave.	Roadway Speed Limit	35
N/A	2386+050	2386+255		Maple Road	Horizontal Curve BBx-xx	10
N/A	2386+255	2386+325		Maple Road	Roadway Speed Limit	10
Bailey at Maple Station	**2386+325**	**2386+455**	**1 queue jump at Maple**	**Maple Road**	**130' Long Station Platform**	**STATION STOP**
N/A	2386+455	2388+650	1 queue jump- Bowmart Pkwy Rd (Sta 2386+900) 1 queue jump- Hill Crest Dr (Sta 2387+400)	Maple Road	Roadway Speed Limit	45
N/A	2388+650	2389+100	1 queue jump- Sweet Home Rd	Sweet Home Road	Horizontal Curve BBx-xx	10
N/A	2389+100	2389+250		Sweet Home Road	Roadway Speed Limit	10
Maple At Sweet Home Station	**2389+250**	**2389+380**		**Sweet Home Road**	**130' Long Station Platform**	**STATION STOP**
N/A	2389+380	2392+600		Sweet Home Road	Roadway Speed Limit	45
N/A	2392+600	2392+925	1 queue jump- Rensch	Sweet Home Road	Horizontal Curve BBx-xx	10
Sweet Home at Rensch Station	**2392+925**	**2393+055**		**Rensch**	**130' Long Station Platform**	**STATION STOP**
N/A	2393+055	2393+500	1 queue jump- N. Campus Blvd 1 priority signal Rensch	Rensch	Roadway Speed Limit	30
N/A	2393+500	2393+900		Rensch	Horizontal Curves BBx-xx	25
N/A	2393+900	2395+025		Putnam Way	Roadway Speed Limit	30
UB North Campus - Capen Hall Station	**2395+025**	**2395+155**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2395+155	2396+150		Putnam Way	Roadway Speed Limit	10
UB North Campus - Library Station	**2396+150**	**2396+280**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2396+280	2396+780		Putnam Way	Horizontal Curves/ Roadway Speed Limit	10
UB North Campus - Commons Building Station	**2396+780**	**2396+910**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2396+910	2398+200		Lee Entrance	Roadway Speed Limit	30
N/A	2398+200	2398+400		Lee / J. J. Audubon Pkwy.	Horizontal Curve BBx-xx	10
N/A	2398+400	2398+450		Lee / J. J. Audubon Pkwy.	Roadway Speed Limit	10
UB North Campus - Greiner Hall Station	**2398+450**	**2398+580**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2398+580	2401+925	1 priority signal Frontier Rd 1 priority signal- N. Forest Rd	J. J. Audubon Pkwy.	Roadway Speed Limit	45
J.J.A. Parkway At Sylvan Parkway Station	**2401+925**	**2402+055**		**J.J. Audubon Pkwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2402+055	2406+500	1 priority signal- Town Hall 1 priority signal Dodge Rd	J.J. Audubon Pkwy.	Roadway Speed Limit	45
I-990 Interchange Station	**2406+500**	**2406+630**		**J.J. Audubon Pkwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2406+630	2406+800		I-990	Horizontal Curve BBx-xx	10
N/A	2406+800	2415+200		I-990	BRT Maximum Operating Speed	50
North French Road Station	**2415+200**	**2415+330**	**1 priority signal- N. French**	I-990	**130' Long Station Platform**	**STATION STOP**
N/A	2415+330	2420+140		I-990	BRT Maximum Operating Speed	50
N/A	2420+140	2421+625		N/A	Horizontal Curve BBx-xx	30
N/A	2421+625	2422+550		N/A	Roadway Speed Limit	30
Crosspoint Business Park Station	**2422+550**	**2422+680**		**Crosspoint Parkway**	**325' Long Station Platform**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

BRT BAILEY AVE - ALTERNATIVE 1 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data							
Corridor Beginning Station	**Corridor Ending Station**	**Street Name of Corridor (if applicable)**	**Traffic Signal Locations With Queue Jumps Within Corridor**	**Horizontal Location Within Corridor**	**Existing Right-of-Way (ROW) Width[1, 2]**	**Proposed Right-of-Way (ROW) Width[3]**	**Notes/ Assumptions**
2372+000	2374+550	Main Street at Bailey Ave.	1 queue jump- Bailey Rd	Mixed - In Traffic	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2374+550	2382+400	Bailey Ave.	1 new priority signal- Longmeadow Rd (Sta 2379+400)	Mixed - In Traffic	66' ±	Station: 71' No Station: 66'	The additional 5ft of ROWis required at the outbound Station side only
2382+400	2386+200	North Bailey Ave.	1 queue jump, 1 new priority signal - Henel Rd (Sta 2383+200), 1 new priority signal- Emerson Rd (Sta 2384+400)	Mixed - In Traffic	75' ±	Station: 139' No Station: 75'	Additional ROW required for Station Construction
2386+200	2389+000	Maple Road	1 queue jump at Maple, 1 queue jump- Bowmart Pkwy Rd (Sta 2386+900), 1 queue jump- Hill Crest Dr (Sta 2387+400), 1 queue jump- Sweet Home Rd	Full Time Dedicated- Outside lane	100' to 115' ±	Station:153' No Station: 123'	Additional ROW required. The snow storage area within this corridor can be reduced by 20ft. No Station: ((115'+ 28')-20'=123'),Station ((115'+28+30')-20'=153')
2389+000	2392+750	Sweet Home Road	1 queue jump- Rensch	Part Time Dedicated (AM and PM peak)	150' MIN.	Station: 180' No Station: 150'	Additional ROW required for Station Construction
2392+750	2393+519= 2393+519	Rensch Entrance Rd.	1 queue jump- N. Campus Blvd, 1 priority signal Rensch	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2393+519= 2393+519	2396+300	Putnam Way (East-West)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+300	2396+572= 2396+378	Putnam Way (North-South)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+378	2396+800	Putnam Way (North-South)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+800	2398+500	Lee Entrance	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2398+500	2406+700	John James Audubon Parkway	1 priority signal- Town Hall 1 priority signal Dodge Rd	Full Time Dedicated- Outside lane	Varies-Variance to 160' MIN	Station: 190' No Station: 160'	No additional ROW required for running lanes- Utilize existing outside lanes. Additional ROW required for Station Construction
2406+700	2420+140	I-990	1 priority signal- N. French	Full Time Dedicated - shoulder	Varies- 270' to 750' ±	Station: 64' No Station: 34'	No additional ROW required for running lanes. ROW would likely be required for Station at N. French
2420+140	2423+805	Crosspoint Parkway	none	Full Time Dedicated- Outside lane	Varies- 60 to 70'	Station: 134' No Station: 70'	Additional ROW required for Station Construction

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.
2. ROW dimensions are typical, and vary in specific locations along the roadways.
3. All ROW Needed as noted refers to Tangent running sections.

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BRT BAILEY AVENUE - ALTERNATIVE 2 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

BUS - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Traffic Signal Modifications	Streetname (Where Applicable)	Speed Controlling Element	Bus Speed Limit (mph.)
University At Buffalo - South Campus Station	**N/A**	**2372+000**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2372+000	2374+150		Main St	Roadway Speed Limit	30
Bailey At Loop Station	**2374+150**	**2374+280**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2374+280	2374+550	1 queue jump- Bailey Rd	Bailey Ave.	Horizontal Curve BL1-2	10
N/A	2374+550	2376+250		Bailey Ave.	Roadway Speed Limit	35
Bailey At Grover Cleveland Highway Station	**2376+250**	**2376+380**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2376+380	2377+550		Bailey Ave.	Roadway Speed Limit	35
Bailey At Cambridge Rd Station	**2377+550**	**2377+680**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2377+680	2381+325	1 new priority signal- Longmeadow Rd (Sta 2379+400)	Bailey Ave.	Roadway Speed Limit	35
Bailey At Eggert Station	**2381+325**	**2381+455**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2381+455	2382+650	1 queue jump	Bailey Ave.	Roadway Speed Limit	35
Bailey At Sheridan Station	**2382+650**	**2382+780**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2382+780	2384+530	1 new priority signal- Henel Rd (Sta 2383+200) 1 new priority signal- Emerson Rd (Sta 2384+400)	Bailey Ave.	Roadway Speed Limit	35
Bailey At Emerson Dr Station	**2384+530**	**2384+660**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2384+660	2386+050		Bailey Ave.	Roadway Speed Limit	45
N/A	2386+050	2386+255		Maple Road	Horizontal Curve BBx-xx	10
N/A	2386+255	2386+325		Maple Road	Roadway Speed Limit	10
Bailey at Maple Station	**2386+325**	**2386+455**	**1 queue jump**	**Maple Road**	**130' Long Station Platform**	**STATION STOP**
N/A	2386+455	2388+650	1 queue jump- Bowmart Pkwy Rd (Sta 2386+900) 1 queue jump- Hill Crest Dr (Sta 2387+400)	Maple Road	Roadway Speed Limit	45
N/A	2388+650	2389+100	1 queue jump- Sweet Home Rd	Sweet Home Road	Horizontal Curve BBx-xx	10
N/A	2389+100	2389+250		Sweet Home Road	Roadway Speed Limit	10
Maple At Sweet Home Station	**2389+250**	**2389+380**		**Sweet Home Road**	**130' Long Station Platform**	**STATION STOP**
N/A	2389+380	2392+600		Sweet Home Road	Roadway Speed Limit	30
N/A	2392+600	2392+925	1 queue jump- Rensch	Sweet Home Road	Horizontal Curve BBx-xx	10
Sweet Home at Rensch Station	**2392+925**	**2393+055**		**Rensch**	**130' Long Station Platform**	**STATION STOP**
N/A	2393+055	2393+500	1 queue jump- N. Campus Blvd 1 priority signal Rensch	Rensch	Roadway Speed Limit	30
N/A	2393+500	2393+900		Rensch	Horizontal Curves BBx-xx	25
N/A	2393+900	2395+025		Putnam Way	Roadway Speed Limit	30
UB North Campus - Capen Hall Station	**2395+025**	**2395+155**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2395+155	2396+150		Putnam Way	Roadway Speed Limit	10
UB North Campus - Library Station	**2396+150**	**2396+280**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2396+280	2396+780		Putnam Way	Horizontal Curves/ Roadway Speed Limit	10
UB North Campus - Commons Building Station	**2396+780**	**2396+910**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2396+910	2398+200		Lee Entrance	Roadway Speed Limit	30
N/A	2398+200	2398+400		Lee / J. J. Audubon Pkwy.	Horizontal Curve BBx-xx	10
N/A	2398+400	2398+450		Lee / J. J. Audubon Pkwy.	Roadway Speed Limit	10
UB North Campus - Greiner Hall Station	**2398+450**	**2398+580**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2398+580	2401+780	1 priority signal Frontier Rd 1 priority signal- N. Forest Rd	J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	2401+780	2401+900		Sylvan Parkway	Horizontal Curve BBx-xx	10
J.J.A. Parkway At Sylvan Parkway Station	**2401+900**	**2402+030**	1- priority signal- Sylvan	Sylvan Parkway	**130' Long Station Platform**	**STATION STOP**
N/A	2402+030	2404+050		Sylvan Parkway	Roadway Speed Limit	30
N/A	2404+050	2404+325	new priority signal- Millersport Hwy	Sylvan Parkway	Horizontal Curve BBx-xx	10
Millersport Hwy Station	**2404+325**	**2404+455**		**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2404+455	2409+800	1- priority signal- Campbell	Millersport Hwy.	Roadway Speed Limit	45
N/A	2409+800	2414+850	2- priority signals	Millersport Hwy.	Roadway Speed Limit	50
North French Road Station	**2414+850**	**2414+980**		**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2414+980	2417+750		Millersport Hwy.	Roadway Speed Limit	50
N/A	2417+750	2417+850	1 queue jump- Crosspoint Pkwy	Crosspoint Parkway	Horizontal Curve BL2-39	10
N/A	2417+850	2419+600		Crosspoint Parkway	Roadway Speed Limit	30
Crosspoint Business Park Station	**2419+600**	**2419+730**		**Crosspoint Parkway**	**Terminal Station**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.

2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

BRT BAILEY AVE - ALTERNATIVE 2 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data							
Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Traffic Signal Locations Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width[1, 2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
2372+000	2374+550	Main Street at Bailey Ave.	1 queue jump- Bailey Rd	Mixed - In Traffic	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2374+550	2382+400	Bailey Ave.	1 new priority signal- Longmeadow Rd (Sta 2379+400)	Mixed - In Traffic	66' ±	Station: 71' No Station: 66'	The additional 5ft of ROWis required at the outbound Station side only
2382+400	2386+200	North Bailey Ave.	1 queue jump, 1 new priority signal- Henel Rd (Sta 2383+200), 1 new priority signal- Emerson Rd (Sta 2384+400)	Mixed - In Traffic	75' ±	Station: 139' No Station: 75'	Additional ROW required for Station Construction
2386+200	2389+000	Maple Road	1 queue jump at Maple, 1 queue jump- Bowmart Pkwy Rd (Sta 2386+900), 1 queue jump- Hill Crest Dr (Sta 2387+400), 1 queue jump- Sweet Home Rd	Full Time Dedicated- Outside lane	100' to 115' ±	Station:153' No Station: 123'	Additional ROW required. The snow storage area within this corridor can be reduced by 20ft. No Station: ((115'+ 28')-20'=123'),Station ((115'+28+30')-20'=153')
2389+000	2392+750	Sweet Home Road	1 queue jump- Rensch	Part Time Dedicated (AM and PM peak)	150' MIN.	Station: 180' No Station: 150'	Additional ROW required for Station Construction
2392+750	2393+519= 2393+519	Rensch Entrance Rd.	1 queue jump- N. Campus Blvd, 1 priority signal Rensch	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2393+519= 2393+519	2396+300	Putnam Way (East-West)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+300	2396+572= 2396+378	Putnam Way (North-South)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+378	2396+800	Putnam Way (North-South)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+800	2398+500	Lee Entrance	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2398+500	2401+850	John James Audubon Parkway	1 priority signal- Town Hall 1 priority signal Dodge Rd	Full Time Dedicated- Outside lane	Varies-Variance to 160' MIN	Station: 190' No Station: 160'	No additional ROW required for running lanes- Utilize existing outside lanes. Additional ROW required for Station Construction
2401+850	2404+00	Sylvan Pkwy	1 priority signal Sylvan Pkwy	Full Time Dedicated- Outside lane	100'	Station: 130' No Station: 100'	No additional ROW required for running lanes- Utilize existing outside lanes. Additional ROW required for Station Construction
2404+00	2417+850	Millersport Hwy	new priority signal- Millersport Hwy, 1- priority signal- Campbell, 2- priority signals, 1 queue jump- Crosspoint Pkwy	Full Time Dedicated- Outside lane	100' ±	Station: 130' No Station: 100'	BRT assumed to run on reconstructed shoulders. Additional ROW required for Station Construction.
2417+850	2419+750	Crosspoint Pkwy	none	Full Time Dedicated- Outside lane	75'	Station: 139' No Station: 75'	Additional ROW required for Station Construction

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.

2. ROW dimensions are typical, and vary in specific locations along the roadways.

3. All ROW Needed as noted refers to Tangent running sections.

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BRT MILLERSPORT HIGHWAY - ALTERNATIVE 1 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

BUS - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Vertical Location Within Corridor	Streetname (Where Applicable)	Speed Controlling Element	Bus Speed Limit (mph.)
University At Buffalo - South Campus Station	**N/A**	**2372+000**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2372+000	2374+140		Main St	Roadway Speed Limit	30
Bailey At Loop Station	**2374+140**	**2374+270**		**Bailey Ave.**	**130' Long Station Platform**	**STATION STOP**
N/A	2374+270	2374+525	1 queue jump- Bailey Rd	Bailey Ave.	Horizontal Curve MHX-X	10
N/A	2374+525	2376+000		Bailey Ave.	Roadway Speed Limit	35
N/A	2376+000	2376+140		Bailey / G. Cleveland	Horizontal Curve MHX-X	10
Bailey At Grover Cleveland Highway	**2376+140**	**2376+270**		**G. Cleveland Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2376+270	2378+410	1 queue jump	Millersport Hwy.	Roadway Speed Limit	35
Rosedale Blvd. At Millersport Highway	**2378+410**	**2378+540**		**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2378+540	2379+600	1 queue jump- Eggert Rd	Millersport Hwy.	Roadway Speed Limit	35
Eggert At Millersport Highway	**2379+600**	**2379+730**		**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2379+730	2382+900		Millersport Hwy.	Roadway Speed Limit	35
Sheridan Drive At Millersport Highway	**2382+900**	**2383+030**	**1 queue jump**	**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2383+030	2387+370		Millersport Hwy.	Roadway Speed Limit	45
Millersport Highway At Flint Road	**2387+370**	**2387+500**	**1 queue jump- Flint Rd**	**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2387+500	2389+500		Millersport Hwy.	Roadway Speed Limit	45
N/A	2389+500	2391+800		Millersport Hwy. fly over	Horizontal Curve MHX-X	30
N/A	2391+800	2392+350		Flint Entrance	Horizontal Curve MHX-X	25
N/A	2392+350	2393+400	1 priority signal	Flint Entrance	Roadway Speed Limit	30
UB North Campus - Capen Hall Station	**2393+400**	**2393+530**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2393+530	2394+450		Putnam Way	Horizontal Curves/ Roadway Speed Limit	10
UB North Campus - Library Station	**2394+450**	**2394+580**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2394+580	2395+075		Putnam Way	Horizontal Curves/ Roadway Speed Limit	10
UB North Campus - Commons Building Station	**2395+075**	**2395+205**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2395+205	2396+500		Lee Entrance	Roadway Speed Limit	30
N/A	2396+500	2396+700		Lee / J. J. Audubon Pkwy.	Horizontal Curve MHx-xx	10
N/A	2396+700	2396+750		Lee / J. J. Audubon Pkwy.	Roadway Speed Limit	10
UB North Campus - Greiner Hall Station	**2396+750**	**2396+880**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2396+880	2400+075		J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	2400+075	2400+175		J. J. Audubon Pkwy.	Horizontal Curve MHx-xx	10
J.J.A. Parkway At Sylvan Parkway Station	**2400+175**	**2400+305**		**Sylvan Parkway**	**130' Long Station Platform**	**STATION STOP**
N/A	2400+305	2402+375	1 priority signal- Frontier Rd 1 priority signal- N. Forest Rd 1 priority signal- Sylvan Pkwy.	Sylvan Parkway	Roadway Speed Limit	30
N/A	2402+375	2402+625	new priority signal- Millersport Hwy	Sylvan Parkway	Horizontal Curve MHx-xx	10
Millersport Hwy Station	**2402+625**	**2402+755**		**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2402+755	2408+100	1- priority signal- Campbell	Millersport Hwy.	Roadway Speed Limit	45
N/A	2408+100	2413+150	2- priority signals	Millersport Hwy.	Roadway Speed Limit	50
North French Road Station	**2413+150**	**2413+280**		**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2413+280	2416+000		Millersport Hwy.	Roadway Speed Limit	50
N/A	2416+000	2416+125	1 queue jump- Crosspoint Pkwy	Crosspoint Parkway	Horizontal Curve MHx-xx	10
N/A	2416+125	2417+900		Crosspoint Parkway	Roadway Speed Limit	30
Crosspoint Business Park Station	**2417+900**	**2418+030**		**Crosspoint Parkway**	**Terminal Station**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

BRT MILLERSPORT HIGHWAY - ALTERNATIVE 1 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data

Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Traffic Signal Locations With Queue Jumps Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1, 2]	Proposed Right-of-Way (ROW) Width [3]	Notes/ Assumptions
2372+000	2374+550	Main Street at Bailey Ave.	1- Bailey Ave.	Mixed - In Traffic	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2374+550	2376+100	Bailey Ave.	1- Millersport Hwy.	Mixed - In Traffic	66' ±	Station: 71' No Station: 66'	The additional 5ft of ROWis required at the outbound Station side only
2376+100	2383+300	Millersport Hwy	2 New Priority Signals 1 queue jump at Eggert Rd. 1 queue jump at Sheridan Dr.	Mixed - In Traffic	100' ±	Station: 100' No Station: 100'	The snow storage area within this corridor can be reduced by 30ft. Therefore no additional ROW required.
2383+300	2387+200	Millersport Hwy	none	Full Time Dedicated- Center	Varies: 94'±, 88'±, 100'±, 110'±	No Station: 140'	Additional ROW required for Construction
2387+200	2391+800	Millersport Hwy/ Flint fly-over	1- Flint Rd.	Mixed - In Traffic	Variance of property ROW	Varies	No additional ROW required
2391+800	2393+111= 2393+111	Flint/ Putnam	1- Flint Rd. Entrance	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2393+111= 2393+111	2394+426= 2396+670	Flint/ Putnam	1- Flint Rd. Entrance	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+670	2400+100	J. J. Audubon Pkwy	1 priority signal- Frontier Rd 1 priority signal- N. Forest Rd 1 priority signal- Sylvan Pkwy.	Full Time Dedicated- Outside lane	Varies-Variance to 160' MIN	Station: 190' No Station: 160'	No additional ROW required for running lanes- Utilize existing outside lanes. Additional ROW required for Station Construction
2400+100	2402+300	Sylvan Pkwy	1 New Priority Signal Millersport Hwy.	Full Time Dedicated- Outside lane	100'	Station: 130' No Station: 100'	No additional ROW required for running lanes- Utilize existing outside lanes. Additional ROW required for Station Construction
2402+300	2416+125	Millersport Hwy	5 signals	Full Time Dedicated- Outside lane	100' ±	Station: 130' No Station: 100'	No additional ROW required for running lanes. ROW would likely be required for Station at N. French
2416+125	2417+050	Crosspoint Pkwy	none	Full Time Dedicated- Outside lane	75'	Station: 139' No Station: 75'	Additional ROW required for Station Construction

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.

2. ROW dimensions are typical, and vary in specific locations along the roadways.

3. All ROW Needed as noted refers to Tangent running sections.

BRT MILLERSPORT HIGHWAY - ALTERNATIVE 1 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

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BRT NIAGARA FALLS BLVD. - ALTERNATIVE 1 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

BUS - SPEED LIMIT TABLE*

Station Stop Name	Speed Limit Begin Stationing	Speed Limit End Stationing	Vertical Location Within Corridor	Streetname (Where Applicable)	Speed Controlling Element	Bus Speed Limit (mph.)
University At Buffalo - South Campus	**N/A**	**2372+000**		**Main St**	**130' Long Station Platform**	**STATION STOP**
N/A	2372+000	2373+000	1 queue jump- Main St	N/A	Roadway Speed Limit	15
N/A	2373+000	2373+350		Kenmore Ave	Horizontal Curve NFB1x-xx	15
N/A	2373+350	2374+600		Kenmore Ave	Roadway Speed Limit	30
N/A	2374+600	2374+750	1 queue jump- Kenmore Ave	Kenmore Ave	Horizontal Curve NFB1x-xx	10
Niagara Falls Blvd at Kenmore ave	**2374+750**	**2374+880**		**Niagara Falls Blvd**	**130' Long Station Platform**	**STATION STOP**
N/A	2374+880	2376+550		Niagara Falls Blvd	Roadway Speed Limit	35
Niagara Falls Blvd at Cambridge Ave	**2376+550**	**2376+680**		Niagara Falls Blvd	**130' Long Station Platform**	**STATION STOP**
N/A	2376+680	2378+700	1 queue jump- Decatur Rd	Niagara Falls Blvd	Roadway Speed Limit	35
Niagara Falls Blvd at Decatur Rd	**2378+700**	**2378+830**		**Niagara Falls Blvd.**	**130' Long Station Platform**	**STATION STOP**
N/A	2378+830	2382+250	1 queue jump- Longmeadow Rd.	Niagara Falls Blvd	Roadway Speed Limit	35
Niagara Falls Blvd At Eggert Rd Station	**2382+250**	**2382+380**		**Niagara Falls Blvd. and Eggert Rd.**	**130' Long Station Platform**	**STATION STOP**
N/A	2382+380	2385+000		Niagara Falls Blvd	Roadway Speed Limit	40
N/A	2385+000	2385+300	1 queue jump	Niagara Falls Blvd	Horizontal Curve NFB1x-xx	10
Niagara Falls Blvd At Mall 1	**2385+300**	**2385+430**		**Niagara Falls Blvd.**	**130' Long Station Platform**	**STATION STOP**
N/A	2385+430	2386+350		Niagara Falls Blvd	Roadway Speed Limit	40
Niagara Falls Blvd At Mall 2	**2386+350**	**2386+480**		**Niagara Falls Blvd.**	**130' Long Station Platform**	**STATION STOP**
N/A	2386+480	2386+625	1 queue jump- Maple Rd	Niagara Falls Blvd	Horizontal Curve NFB1x-xx	10
N/A	2386+625	2389+075	1 queue jump- Romney Rd	Niagara Falls Blvd	Roadway Speed Limit	40
Niagara Falls Blvd at Romney Rd	**2389+075**	**2389+205**		**Romney Rd**	**130' Long Station Platform**	**STATION STOP**
N/A	2389+205	2390+350	1 queue jump- Plaza Entrance	Niagara Falls Blvd	Roadway Speed Limit	40
N/A	2390+350	2390+450	1 queue jump- Ridge Lea	Niagara Falls Blvd and Ridge Lea	Horizontal Curve NFB1x-xx	10
N/A	2390+450	2390+950		Ridge Lea	Roadway Speed Limit	35
Ridge Lea Station	2390+950	**2391+080**		**Ridge Lea**	**130' Long Station Platform**	**STATION STOP**
N/A	2391+080	2394+100		Ridge Lea	Roadway Speed Limit	35
Ridge Lea at Meyer Rd Station	**2394+100**	**2394+230**		**Ridge Lea**	**130' Long Station Platform**	**STATION STOP**
N/A	2394+230	2395+700	1 queue jump- Meyer Rd	Ridge Lea	Roadway Speed Limit	35
N/A	2395+700	2396+000		Ridge Lea at Maple Rd	Horizontal Curve NFB1x-xx	10
N/A	2396+000	2396+125		Maple Road	Roadway Speed Limit	10
Bailey at Maple	**2396+125**	**2396+255**	**1 queue jump**	**Maple Road**	**130' Long Station Platform**	**STATION STOP**
N/A	2396+255	2398+750	1 queue jump- Bowmart Pkwy Rd (Sta 2386+900) 1 queue jump- Hill Crest Dr (Sta 2387+400)	Maple Road	Roadway Speed Limit	45
N/A	2398+750	2398+900	1 queue jump- Sweet Home Rd	Sweet Home Road	Horizontal Curve BBx-xx	10
N/A	2398+900	2399+050		Sweet Home Road	Roadway Speed Limit	10
Maple At Sweet Home Station	**2399+050**	**2399+180**		**Sweet Home Road**	**130' Long Station Platform**	**STATION STOP**
N/A	2399+180	2402+520		Sweet Home Road	Roadway Speed Limit	45
N/A	2402+520	2402+725	1 queue jump- Rensch	Sweet Home Road	Horizontal Curve BBx-xx	10
Sweet Home at Rensch Station	**2402+725**	**2402+855**		**Rensch**	**130' Long Station Platform**	**STATION STOP**
N/A	2402+855	2403+300	1 queue jump- N. Campus Blvd 1 priority signal Rensch	Rensch	Roadway Speed Limit	30
N/A	2403+300	2403+700		Rensch	Horizontal Curves BBx-xx	25
N/A	2403+700	2404+825		Putnam Way	Roadway Speed Limit	30
UB North Campus - Capen Hall Station	**2404+825**	**2404+955**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2404+955	2405+955		Putnam Way	Roadway Speed Limit	15
UB North Campus - Library Station	**2405+955**	**2406+085**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2406+085	2406+575		Putnam Way	Horizontal Curves/ Roadway Speed Limit	10
UB North Campus - Commons Building Station	**2406+575**	**2406+705**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2406+705	2408+000		Lee Entrance	Roadway Speed Limit	30
N/A	2408+000	2408+200		Lee / J. J. Audubon Pkwy.	Horizontal Curve BBx-xx	10
N/A	2408+200	2408+260		Lee / J. J. Audubon Pkwy.	Roadway Speed Limit	10
UB North Campus - Greiner Hall Station	**2408+260**	**2408+390**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2408+390	2411+725	1 priority signal Frontier Rd 1 priority signal- N. Forest Rd	J. J. Audubon Pkwy.	Roadway Speed Limit	45
J.J.A. Parkway At Sylvan Parkway Station	**2411+725**	**2411+855**		**J.J. Audubon Pkwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2411+855	2416+300	1 priority signal- Town Hall 1 priority signal- Dodge Rd	J.J. Audubon Pkwy.	Roadway Speed Limit	45
I-990 Interchange Station	**2416+300**	**2416+430**		**J.J. Audubon Pkwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2416+430	2416+560		I-990	Horizontal Curve BBx-xx	10
N/A	2416+560	2425+000		I-990	BRT Maximum Operating Speed	50
North French Road Station	**2425+000**	**2425+130**	**1 priority signal- N. French**	I-990	**130' Long Station Platform**	**STATION STOP**
N/A	2425+130	2430+850		I-990	BRT Maximum Operating Speed	50
N/A	2430+850	2431+425		N/A	Horizontal Curve BBx-xx	30
N/A	2431+425	2432+350		N/A	Roadway Speed Limit	30
Crosspoint Business Park Station	**2432+350**	**2432+480**		**Crosspoint Parkway**	**130' Long Station Platform**	**STATION STOP**

*Notes:

1. This speed limit table is conceptual in nature and does not present speed limits imposed by vertical/profile elements.
2. This speed limit table is intended for use in running time models and is not intended for detailed operations analysis or finalized operations plans.

BRT NIAGARA FALLS BLVD. - ALTERNATIVE 1 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data							
Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Traffic Signal Locations With Queue Jumps Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1, 2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
2372+000	2373+300	Main St. at Kenmore Ave.	1 - Main St	Mixed - In Traffic	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2373+300	2374+700	Kenmore Ave	1- Niagara Falls Blvd	Mixed - In Traffic	80' ±	Station: 85' No Station: 80'	The additional 5ft of ROW is required at the inbound Station side only
2374+700	2377+900	Niagara Falls Blvd	2 New	Mixed - In Traffic	83' ±	Station: 88' No Station: 83'	Additional 5ft of ROW is required at the inbound Station side only from Kenmore Ave to Chalmers Ave (Sta 2377+900).
2377+900	2382+301	Niagara Falls Blvd	1- Longmeadow Rd	Mixed - In Traffic	Varies: 83 to 100'	No Station: 100'	No additional ROW required
2382+301	2390+400	Niagara Falls Blvd	1- Eggert Rd, 1- Sheridan Dr. 6 New	Full Time Dedicated- Outside lane	Varies: 100 to 125'	Station: 189' No Station: 159'	Additional ROW required. ROW width from 2385+100 to 2386+500 (Boulevard Mall property) 64'
2390+400	2395+900	Ridge Lea	1- Meyer Rd	Full Time Dedicated- Outside lane	Varies: 50 to 100'	Station: 188' No Station: 134'	Additional ROW required
2395+900	2398+900	Maple Road	1- Sweet Home Rd bypass	Full Time Dedicated- Outside lane	100' to 115' ±	Station:153' No Station: 123'	Additional ROW required. The snow storage area within this corridor can be reduced by 20ft. No Station: ((115'+ 28')-20'=123'),Station ((115'+28+30')-20'=153')
2398+900	2402+550	Sweet Home Road	1- Rensch Rd bypass	Part Time Dedicated (AM and PM peak)	150' MIN.	Station: 214' No Station: 150'	Additional ROW required for Station Construction
2402+550	2403+319= 2393+519	Rensch Entrance Rd.	1- Campus Rd bypass	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2403+319= 2393+519	2396+300	Putnam Way (East-West)	1- Campus Rd bypass	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+300	2396+572= 2406+183	Putnam Way (North-South)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2406+183	2406+700	Putnam Way (North-South)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2406+700	2408+300	Lee Entrance	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2408+300	2416+500	John James Audubon Parkway	4 signals	Full Time Dedicated- Outside lane	Varies-Variance to 160' MIN	Station: 190' No Station: 160'	Additional ROW required for Station Construction
2416+500	2431+340	I-990	none	Full Time Dedicated - shoulder	Varies- 270' to 750' ±	Station: 64' No Station: 34'	BRT assumed to run on reconstructed shoulders Additional ROW required for Station Construction
2431+340	2432+475	Crosspoint Parkway	none	Full Time Dedicated- Outside lane	Varies- 60 to 70'	Station: 134' No Station: 70'	Additional ROW required for Station Construction

NOTES:

1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.
2. ROW dimensions are typical, and vary in specific locations along the roadways.
3. All ROW Needed as noted refers to Tangent running sections.

BRT NIAGARA FALLS BLVD. - ALTERNATIVE 2 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

BUS - SPEED LIMIT TABLE*						
Station Stop Name	**Speed Limit Begin Stationing**	**Speed Limit End Stationing**	**Vertical Location Within Corridor**	**Streetname (Where Applicable)**	**Speed Controlling Element**	**Bus Speed Limit (mph.)**
University At Buffalo - South Campus	**N/A**	**2372+000**		**Main St**	**130' Long Station Platform**	**STATION STOP**
N/A	2372+000	2373+000	1 queue jump- Main St	N/A	Roadway Speed Limit	15
N/A	2373+000	2373+350		Kenmore Ave	Horizontal Curve NFB1x-xx	15
N/A	2373+350	2374+600		Kenmore Ave	Roadway Speed Limit	30
N/A	2374+600	2374+750	1 queue jump- Kenmore Ave	Kenmore Ave	Horizontal Curve NFB1x-xx	10
Niagara Falls Blvd at Kenmore Ave	**2374+750**	**2374+880**		**Niagara Falls Blvd**	**130' Long Station Platform**	**STATION STOP**
N/A	2374+880	2376+550		Niagara Falls Blvd	Roadway Speed Limit	35
Niagara Falls Blvd at Cambridge Ave	**2376+550**	**2376+680**		Niagara Falls Blvd	**130' Long Station Platform**	**STATION STOP**
N/A	2376+680	2378+700	1 queue jump- Decatur Rd	Niagara Falls Blvd	Roadway Speed Limit	35
Niagara Falls Blvd at Decatur Rd	**2378+700**	**2378+830**		**Niagara Falls Blvd.**	**130' Long Station Platform**	**STATION STOP**
N/A	2378+830	2382+250	1 queue jump- Longmeadow Rd.	Niagara Falls Blvd	Roadway Speed Limit	35
Niagara Falls Blvd At Eggert Rd Station	**2382+250**	**2382+380**		**Niagara Falls Blvd. and Eggert Rd.**	**130' Long Station Platform**	**STATION STOP**
N/A	2382+380	2385+000		Niagara Falls Blvd	Roadway Speed Limit	40
N/A	2385+000	2385+300	1 queue jump	Niagara Falls Blvd	Horizontal Curve NFB1x-xx	10
Niagara Falls Blvd At Mall 1	**2385+300**	**2385+430**		**Niagara Falls Blvd.**	**130' Long Station Platform**	**STATION STOP**
N/A	2385+430	2386+350		Niagara Falls Blvd	Roadway Speed Limit	40
Niagara Falls Blvd At Mall 2	**2386+350**	**2386+480**		**Niagara Falls Blvd.**	**130' Long Station Platform**	**STATION STOP**
N/A	2386+480	2386+625	1 queue jump- Maple Rd	Niagara Falls Blvd	Horizontal Curve NFB1x-xx	10
N/A	2386+625	2389+075	1 queue jump- Romney Rd	Niagara Falls Blvd	Roadway Speed Limit	40
Niagara Falls Blvd at x ave	**2389+075**	**2389+205**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2389+205	2390+350	1 queue jump- Mall Entrance	Niagara Falls Blvd	Roadway Speed Limit	40
N/A	2390+350	2390+450	1 queue jump- Ridge Lea	Niagara Falls Blvd and Ridge Lea	Horizontal Curve NFB1x-xx	10
	2390+450	2390+950		Ridge Lea	Roadway Speed Limit	35
Ridge Lea Station	2390+950	**2391+080**		**Ridge Lea**	**130' Long Station Platform**	**STATION STOP**
N/A	2391+080	2394+100		Ridge Lea	Roadway Speed Limit	35
Ridge Lea at Meyer Rd Station	**2394+100**	**2394+230**		**Ridge Lea**	**130' Long Station Platform**	**STATION STOP**
N/A	2394+230	2395+700	1 queue jump- Meyer Rd	Ridge Lea	Roadway Speed Limit	35
N/A	2395+700	2396+000		Ridge Lea at Maple Rd	Horizontal Curve NFB1x-xx	10
N/A	2396+000	2396+125		Maple Road	Roadway Speed Limit	10
Bailey at Maple	**2396+125**	**2396+255**	**1 queue jump**	**Maple Road**	**130' Long Station Platform**	**STATION STOP**
N/A	2396+255	2398+750	1 queue jump- Bowmart Pkwy Rd (Sta 2386+900) 1 queue jump- Hill Crest Dr (Sta 2387+400)	Maple Road	Roadway Speed Limit	45
N/A	2398+750	2398+900	1 queue jump- Sweet Home Rd	Sweet Home Road	Horizontal Curve BBx-xx	10
N/A	2398+900	2399+050		Sweet Home Road	Roadway Speed Limit	10
Maple At Sweet Home Station	**2399+050**	**2399+180**		**Sweet Home Road**	**130' Long Station Platform**	**STATION STOP**
N/A	2399+180	2402+520		Sweet Home Road	Roadway Speed Limit	45
N/A	2402+520	2402+725	1 queue jump- Rensch	Sweet Home Road	Horizontal Curve BBx-xx	10
Sweet Home at Rensch Station	**2402+725**	**2402+855**		**Rensch**	**130' Long Station Platform**	**STATION STOP**
N/A	2402+855	2403+300	1 queue jump- N. Campus Blvd 1 priority signal Rensch	Rensch	Roadway Speed Limit	30
N/A	2403+300	2403+700		Rensch	Horizontal Curves BBx-xx	25
N/A	2403+700	2404+825		Putnam Way	Roadway Speed Limit	30
UB North Campus - Capen Hall Station	**2404+825**	**2404+955**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2404+955	2405+955		Putnam Way	Roadway Speed Limit	15
UB North Campus - Library Station	**2405+955**	**2406+085**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2406+085	2406+575		Putnam Way	Horizontal Curves/ Roadway Speed Limit	10
UB North Campus - Commons Building Station	**2406+575**	**2406+705**		**Putnam Way**	**130' Long Station Platform**	**STATION STOP**
N/A	2406+705	2408+000		Lee Entrance	Roadway Speed Limit	30
N/A	2408+000	2408+200		Lee / J. J. Audubon Pkwy.	Horizontal Curve BBx-xx	10
N/A	2408+200	2408+260		Lee / J. J. Audubon Pkwy.	Roadway Speed Limit	10
UB North Campus - Greiner Hall Station	**2408+260**	**2408+390**		**N/A**	**130' Long Station Platform**	**STATION STOP**
N/A	2408+390	2411+575	1 priority signal Frontier Rd 1 priority signal- N. Forest Rd	J. J. Audubon Pkwy.	Roadway Speed Limit	45
N/A	2411+575	2411+680		J. J. Audubon Pkwy.	Horizontal Curve BBx-xx	10
J.J.A. Parkway At Sylvan Parkway Station	**2411+680**	**2411+810**	**1- priority signal- Sylvan**	**Sylvan Parkway**	**130' Long Station Platform**	**STATION STOP**
N/A	2411+810	2413+875		Sylvan Parkway	Roadway Speed Limit	30
N/A	2413+875	2414+125	new priority signal- Millersport Hwy	Sylvan Parkway	Horizontal Curve BBx-xx	10
Millersport Hwy Station	**2414+125**	**2414+255**		**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2414+255	2419+600	1- priority signal- Campbell	Millersport Hwy.	Roadway Speed Limit	45
N/A	2419+600	2424+650	2- priority signals	Millersport Hwy.	Roadway Speed Limit	50
North French Road Station	**2424+650**	**2424+780**		**Millersport Hwy.**	**130' Long Station Platform**	**STATION STOP**
N/A	2424+780	2427+550		Millersport Hwy.	Roadway Speed Limit	50
N/A	2427+550	2427+650	1 queue jump- Crosspoint Pkwy	Crosspoint Parkway	Horizontal Curve BBx-xx	10
N/A	2427+650	2429+400		Crosspoint Parkway	Roadway Speed Limit	30
Crosspoint Business Park Station	**2429+400**	**2429+530**		**Crosspoint Parkway**	**Terminal Station**	**STATION STOP**

*Notes:

BRT NIAGARA FALLS BLVD. - ALTERNATIVE 2 (NORTHBOUND)

METRO AMHERST - BUFFALO CORRIDOR: ALTERNATIVES ANALYSIS

CORRIDOR: Right-of-Way Data

Corridor Beginning Station	Corridor Ending Station	Street Name of Corridor (if applicable)	Traffic Signal Locations With Queue Jumps Within Corridor	Horizontal Location Within Corridor	Existing Right-of-Way (ROW) Width [1, 2]	Proposed Right-of-Way (ROW) Width[3]	Notes/ Assumptions
2372+000	2373+300	Main St. at Kenmore Ave.	1 - Main St	Mixed - In Traffic	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2373+300	2374+700	Kenmore Ave	1- Niagara Falls Blvd	Mixed - In Traffic	80' ±	Station: 144' No Station: 80'	The additional 5ft of ROW is required at the inbound Station side only
2374+700	2377+900	Niagara Falls Blvd	2 New 1- Eggert Rd	Mixed - In Traffic	83' ±	Station: 147' No Station: 83'	Additional 5ft of ROW is required at the inbound Station side only from Kenmore Ave to Chalmers Ave (Sta 2377+900).
2377+900	2382+301	Niagara Falls Blvd	1- Longmeadow Rd	Mixed - In Traffic	Varies: 83 to 100'	No Station: 100'	No additional ROW required
2377+900	2390+400	Niagara Falls Blvd	1- Sheridan Dr. 6 New	Full Time Dedicated- Outside lane	Varies: 100 to 125'	Station: 189' No Station: 159'	Additional ROW required. ROW width from 2385+100 to 2386+500 (Boulevard Mall property) 64'
2390+400	2395+900	Ridge Lea	1- Meyer Rd	Full Time Dedicated- Outside lane	Varies: 50 to 100'	Station: 188' No Station: 134'	Additional ROW required
2395+900	2398+900	Maple Road	1- Sweet Home Rd bypass	Full Time Dedicated- Outside lane	100' to 115' ±	Station:153' No Station: 123'	Additional ROW required. The snow storage area within this corridor can be reduced by 20ft. No Station: ((115'+ 28')-20'=123'),Station ((115'+28+30')-20'=153')
2398+900	2402+550	Sweet Home Road	1- Rensch Rd bypass	Part Time Dedicated (AM and PM peak)	150' MIN.	Station: 214' No Station: 150'	Additional ROW required for Station Construction
2402+550	2403+319= 2393+519	Rensch Entrance Rd.	1- Campus Rd bypass	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2403+319= 2393+519	2396+300	Putnam Way (East-West)	1- Campus Rd bypass	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2396+300	2396+572= 2406+183	Putnam Way (North-South)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2406+183	2406+700	Putnam Way (North-South)	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2406+700	2408+300	Lee Entrance	none	Full Time Dedicated- Outside lane	Property Owned by the State of New York	Station: 64' No Station: 34'	Minimum ROW widths assumed
2408+300	2411+650	John James Audubon Parkway	2 signals	Full Time Dedicated- Outside lane	Varies-Variance to 160' MIN	Station: 190' No Station: 160'	No additional ROW required for running lanes- Utilize existing outside lanes. Additional ROW required for Station Construction
2411+650	2413+850	Sylvan Pkwy	none	Full Time Dedicated- Outside lane	100'	Station: 130' No Station: 100'	No additional ROW required for running lanes- Utilize existing outside lanes. Additional ROW required for Station Construction
2413+850	2427+650	Millersport Hwy	5 signals	Full Time Dedicated- Outside lane	100' ±	Station: 130' No Station: 100'	No additional ROW required for running lanes. ROW would likely be required for Station at N. French
2427+650	2429+550	Crosspoint Pkwy	none	Full Time Dedicated- Outside lane	75'	Station: 139' No Station: 75'	Additional ROW required for Station Construction

NOTES: 1. Right-of-way (ROW) dimensions are approximate and are measured from back of sidewalk to back of sidewalk using aerial photography.