



Executive Summary and Staff Recommendation

January 2017

Project Background

In 2010, NFTA completed an update to our 2001 Strategic Assessment. This assessment identified four corridors for potential rail extension, including Amherst, the Airport, Southtowns and Tonawandas. The assessment set a priority on the Amherst corridor for various reasons including service productivity; population and employment projections; development opportunities and connections to activity centers; and travel patterns including existing transit usage.

In response to the update, the Transit Options Amherst-Buffalo (TOAB) Alternatives Analysis was initiated to evaluate potential major transit improvement alternatives to improve transit connections between Downtown Buffalo, Buffalo's Main Street Metro Rail Corridor and the Town of Amherst. The Amherst-Buffalo Corridor with a high concentration of the region's population and jobs, currently supports NFTA Metro's highest transit ridership in the region and demand for improved transit service is expected to grow.

An Alternatives Analysis is a Federal Transit Administration (FTA) program that includes the assessment of a wide range of public transportation or multimodal alternatives to address transportation issues in a corridor; provides enough information for project justification to support a locally preferred alternatives (LPA) and enables the local Metropolitan Planning Organization to adopt the LPA as part of the long-range transportation plan. In other words, it is the identification of an investment strategy to be advanced for more focused study and development.

The study area is generally defined as the Town of Amherst and the corridor along the existing light rail system in the City of Buffalo as shown in Figure 1. The study area:

- Boasts the region's highest transit ridership with over 30,000 weekday riders using NFTA and about 24,000 riders using the University at Buffalo's Stampede daily.
- The population in the study area is 228,000 and over 211,000 jobs mostly concentrated around the existing Metro rail and the western and southeastern portions of Amherst.

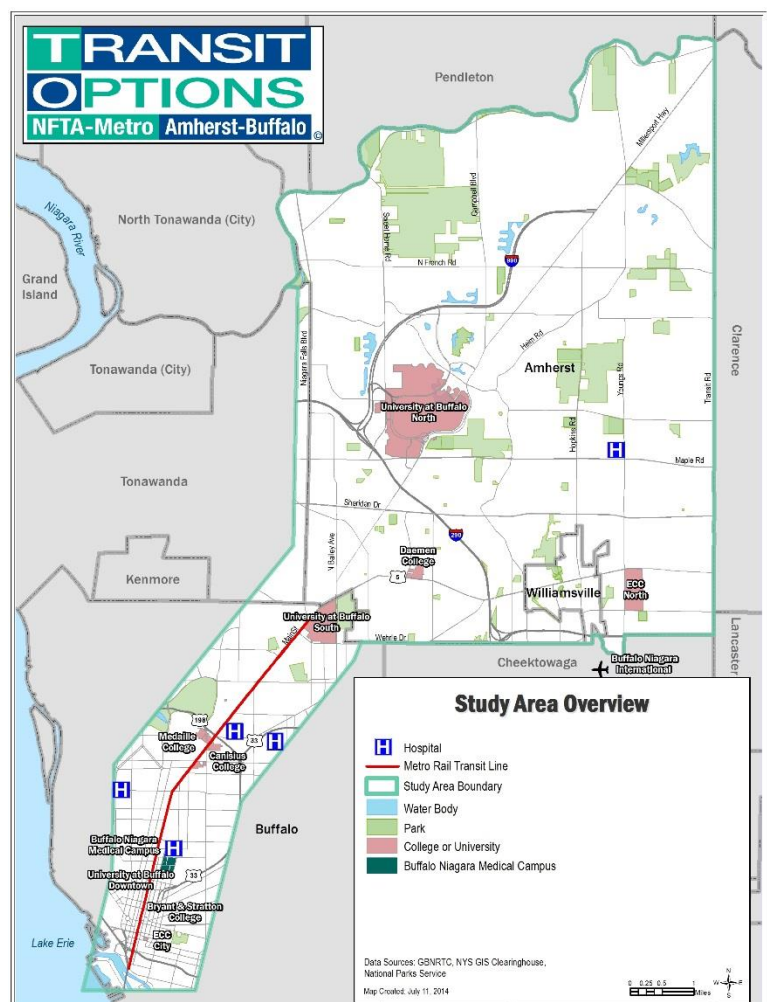


Figure 1 - Study Area

- There are many existing activity centers that would benefit from enhanced transit access including: jobs; education and research; recreation; medical; housing; shopping and entertainment. There are other opportunities for additional redevelopment.

Project Purpose and Goals

The overall goal of the Transit Options Amherst-Buffalo project is to improve transit access between key activity centers in Buffalo with those in Amherst by extending the benefits of high quality transit services into Amherst. Importantly, it will serve to improve livability by increasing mobility and accessibility throughout the entire project corridor connecting people to jobs, schools, medical services, shopping, entertainment and recreation. The following project purpose and need was established to guide the Alternatives Analysis:

- Provide a fast, reliable, safe and convenient transit ride in the Amherst-Buffalo Corridor
- Link established and emerging activity centers
- Serve increased travel demand
- Support redevelopment and other economic development opportunities, and stabilize existing neighborhoods
- Better serve transit-dependent population segments

More specifically the project has the potential to:

- Serve increased travel demand generated by new development in Buffalo and 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.
- Stabilize property values in real estate markets where values have been falling and increase property values for residential and commercial land in already stable real estate markets.

Alternatives Analysis Process and Public Involvement

The TOAB AA has been a collaborative effort between the Niagara Frontier Transportation Authority and the Greater Buffalo Niagara Regional Transportation Council and was funded by the Federal Transit Administration (FTA). The alternatives development and evaluation process consisted of three distinct tiers or steps of screening and evaluation. The methodology was developed in accordance with FTA guidelines and regulations for implementing the National Environmental Policy Act and New York State Environmental Quality Review in subsequent steps of the process. Prior to identifying the alternatives, the study team developed a technical memo “Screening Methodology and Preliminary Criteria,” the purpose was to describe the evaluation framework and process for screening alternatives for new transit service in the corridor. It described in detailed the proposed three-tier process for screening the long list of alternatives, evaluating conceptual alternatives, and subsequently evaluating the detailed final “build” alternatives.

In each screening and evaluation tier or step, alternatives were examined and compared under progressively more detailed criteria and definition. Tier 1 developed a “long-list” of 36 alternatives which were then narrowed to 15 in Tier 2 and then to 7 for detailed evaluation in Tier 3. The results of the Tier 3 screening were used by NFTA to recommend a Locally Preferred Alternative (LPA).

A Project Steering Committee (PSC) and Project Advisory Committee (PAC) consisting of representatives of key stakeholders in the corridor, including the Town of Amherst, University at Buffalo, City of Buffalo, Erie County, Town of Tonawanda, New York State Department of Transportation, as well as community and business groups were formed at the start of the project and each met 4 times at key points of the process to review results of the analysis, help guide the process and provide comments and feedback. In addition, the project team has conducted 3 rounds of public informational meetings and over 75 meetings and presentations to various stakeholders in order to keep the community informed and gain valuable input. A project website was also established and maintained throughout the process and a telephone opinion survey conducted in early 2016.

A majority of the participants at the public informational meetings were engaged and supportive of developing an LPA. Some of the comments we received included the importance of a one-seat ride, connecting activity centers, supporting TOD opportunities, and providing multi-modal connectivity with bicycle and pedestrian amenities. Some respondents were concerned about supporting sprawl by investing a capital project to CrossPoint and some respondents are not supportive due to the impacts at the neighborhood level.

Siena College Research Institute (SRI) interviewed over 1,600 Erie and Niagara County residents in May 2016 and found that the most significant problem related to transportation on the two counties was how difficult it is for those that use public transit to get where they need to go and on time. The second most significant probable was the degree to which public transportation routes service all areas.

- When asked about potential transportation improvements in the two counties, 47 percent of Amherst residents were strongly in favor of expanding light rail service and 27 percent were somewhat in favor.
- When asked about the most important public transit service improvement that could be made, Town of Amherst residents ranked light rail expansion first.

- And when asked how important it is to have a first class system of light rail here 83 percent of Town of Amherst residents said that it is very or somewhat important.

As the project moves into environmental review and further design development, there will be additional opportunities for outreach including but certainly not limited to scoping meetings.

Determining the Alternatives

The Alternatives Analysis process is a 3-tier screening process. Screening criteria and evaluation measures were developed to reflect the project goals and purpose as well as to be consistent with FTA's framework for evaluating and rating major transit capital investments in their New Starts Program. The FTA project justification criteria are mobility improvements, cost-effectiveness, economic development effects, congestion relief, environmental benefits, and land use. During the Tier 3 screening process, measures were identified for each criteria category and each alternative was measured and rated in terms of their effectiveness in achieving the project goals and purpose. The results for each alternative were also comparatively evaluated against each other to determine the best performing alternative and the Locally Preferred Alternative.

Tier 1

In Tier 1, the long list of alternatives was developed. This list was meant to be the universe of potential options for enhancing transit in the corridor. During this stage modes and alignments were established for future development and consideration.

Modes

Four modes were identified as options for this corridor including Light Rail Transit (LRT), Bus Rapid Transit (BRT), Preferential Bus and Enhanced Bus. A description of each is as follows.

LRT:

An example of Light Rail Transit (LRT) is our existing Metro Rail system. For the purpose of the evaluation the following details are assumed for LRT:

- 8 to 8.5 mile alignments serving 12 to 14 stations between University Station and CrossPoint Business Park
- Operating in exclusive transit only fixed guideway
- Maximum of four-car electric trains that carry up to 480 passengers
- Advanced fare collection in coordination with upcoming fare system upgrade
- Full length platforms with level boarding at all doors
- 10 – 15 minute frequency weekdays, 15-20 minute frequency weekends
- Span of service 5am – 1am weekdays; 7am – 1am Saturdays; 8am – 12 am Sundays
- New park and ride lots
- Improved bike and pedestrian access to stations

BRT:

NFTA does not currently operate Bus Rapid Transit (BRT), however one example of a successful BRT line is the Cleveland Health Line BRT. BRT is a high-quality bus-based transit system that delivers fast, comfortable, and cost-effective services at Metro Rail level capacities. It does this through the provision of dedicated lanes, with busways and enhanced, off-board fare collection, and fast and frequent operations.

For the purpose of this evaluation the following details are assumed for BRT:

- 8.5 to 11.5 mile alignments serving 15 – 18 stations between University Station and CrossPoint Business Park
- Operating in partial fixed guideway
- 60 foot articulated buses that carry up to 90 passengers (fuel type to be determined)
- Advanced fare collection in coordination with upcoming fare system upgrade
- Unique BRT branding
- 10 – 15 minute frequency weekdays, 15 minute frequency weekends
- Span of service 5am – 1am weekdays; 7am – 1am Saturdays; 8am – 12 am Sundays
- New park and ride lots
- Improved bike and pedestrian access to stations

Preferential Bus:

Bus preferential treatments consist of a limited number of the elements of the BRT alternatives. It includes an improved service plan with intersection-specific improvements such as Transit Signal Prioritization (TSP) and queue jumps. Preferential bus includes enhanced passenger amenities such as improved stops with next bus technology. For the purpose of this evaluation the following details are assumed for preferential bus:

- 8.5 to 11.5 mile alignments serving 15 – 18 stations between University Station and CrossPoint Business Park
- Operating in mixed traffic
- 60 foot articulated buses that carry up to 90 passengers (fuel type to be determined)
- 10 – 15 minute frequency weekdays, 15 minute frequency weekends
- Span of service 5am – 1am weekdays; 7am – 1am Saturdays; 8am – 12 am Sundays
- Enhanced passenger amenities at stops
- Intersection specific improvements

Enhanced Bus:

Enhanced bus consists of improving existing bus routes by increasing frequencies, adjusting bus stop locations and providing route extensions. Enhanced bus could be considered the “do nothing alternative.”

- Frequency/span/coverage improvements to existing bus service in the study area
- Operating in mixed traffic
- 40 foot traditional bus
- Varied frequencies
- Varied span of service

- Enhanced passenger information at stops

Alignments

Essentially three main alignments were established at the onset of the analysis. The alignments generally follow Niagara Falls Boulevard, Bailey Avenue and Millersport Highway. The 36 alternatives follow various pathways on each of the main alignments, and multiple pathways on North Campus (that was eventually narrowed down to one after discussions with the University at Buffalo) and include: Niagara Falls Boulevard with 8 route alternatives; Bailey Avenue with 9 route alternatives, including the LRT 1995 alternative from Citizens for Regional Transit; Millersport Highway with 2 route alternatives; and Tonawanda Corridor.

The alignments started very broad with the understanding that as a general alignment is chosen as the LPA, it will be further detailed during the environmental and engineering process. Alignments differ based on the mode, a description of each is as follows. Two assumptions should be noted, although each alignment extends to Crosspoint, we're assuming a Minimally Operable Segment (MOS) that would truncate service at the intersection of the Audubon Parkway and I-990, also enhanced Bus alignments will follow improvements on exiting bus routes.

The result of the Tier 1 process was the identification of 36 alternatives, or the "long list," a more detailed description of Tier 1 can be found in the technical report: Tier 1 Evaluation: Long List of Alternatives. The Long List was evaluated and narrowed down to those ideas that could reasonably be built and would not have significant impact to the community or environment that could not be overcome. The final result was 15 remaining alternatives to advance to the Tier 2 evaluation.

Tier 2

Tier 2 evaluation represents the initial screening of preliminary alternatives. The alternatives conceptualized and evaluated in this tier included 7 LRT, 6 BRT, and preferential bus and enhanced bus. During Tier 2, conceptual level engineering was applied and included:

- Establish design criteria for LRT and BRT alternatives
- Identify general alignments and whether at-grade or below grade for LRT
- Identify preliminary station and stop locations and determination of potential park and ride capability
- Identify passenger station cross-sections and right-of-way needs for each alternative
- Develop an initial service plan with headway and station/stop level travel times was developed for each build alternative.
- Apply a travel demand model to estimate ridership forecasts

The preliminary alternatives were subject to a quantitative assessment, using five evaluation categories including Engineering/Right-of-Way Needs, Ridership/Markets Served, System Connectivity, Support for TOD, and Environmental/Community Impacts. In Tier 2, alternatives were compared across modes to determine the best performing. The result of the Tier 2 evaluation was 7 remaining alternatives to advance into Tier 3. The detailed process and results can be found in two technical memos, Tier 2 Screening Results and Tier 2 Final Recommendations.

Tier 3

Tier 3 evaluated the 7 remaining alternatives measurable categories for evaluation including land use, mobility and cost effectiveness. Based on these categories, we can narrow the alternatives down into the measurable criteria to help choose an LPA. The measures include: Travel time between campuses; employment served; number of activity centers served; operating and maintenance costs; capital costs; growth locations served; number of projected daily project boardings; number of projected UB boardings; and total projected revenue. Each measure was given a value and then was rated high, medium high, medium low, or low.

Seven alternatives were evaluated in Tier 3. Six of the alternatives are a combination of three modes, Light Rail Transit (LRT), Bus Rapid Transit (BRT), or Preferential Bus, and two primary alignments, Niagara Falls Boulevard and Millersport Highway as shown below and on the following maps. These 6 alternatives would all begin at NFTA's University Station Metro Rail Station, serve the North Campus of University at Buffalo and then terminate at Crosspoint Development Park however over different pathways.

Niagara Falls Boulevard

- Light Rail Transit
- Bus Rapid Transit
- Preferential Bus

Millersport Highway

- Light Rail Transit
- Bus Rapid Transit
- Preferential Bus

The seventh alternative is Enhanced Bus which would involve improvements in service and/or realignment of existing Metrobus routes plus new routes. Also, along with these build alternatives there is always the option of a no build or do-nothing alternative.

The result of the Tier 3 evaluation was a matrix based on the measures required by FTA and the study purpose and need. A detailed discussion of Tier 3 can be found in the Technical Memo: Tier 3 Screening Results.

Evaluating the Alternatives

The results for several key criteria and measures are shown in Figure 2 below.

| Alternative | Travel Time Between Campuses (UB South and UB North) | Employment Served (2035) | Number of Activity Centers | O&M Cost (\$ millions) | Capital Cost (\$ millions) | Growth Locations | Number of Forecasted 2035 Average Daily Project Boardings | Number 2035 UB Boardings | Total Operating Revenue (\$ millions) |
|----------------------------------|--|--------------------------|----------------------------|------------------------|----------------------------|------------------|---|--------------------------|---------------------------------------|
| Niagara Falls Blvd LRT 1 | 17 | 31,755 | 5 | \$15.80 | \$1,249.00 | 6 | 22,600 | 13,300 | \$6.20 |
| Millersport Hwy LRT 1 | 11 | 18,992 | 2 | \$12.50 | \$1,274.00 | 5 | 20,900 | 12,700 | \$5.60 |
| Niagara Falls Blvd BRT 1 | 29 | 37,377 | 5 | \$9.50 | \$266.00 | 4 | 20,000 | 12,900 | \$5.80 |
| Millersport Hwy BRT 1 | 17 | 23,825 | 2 | \$7.30 | \$167.00 | 5 | 17,800 | 12,600 | \$5 |
| Niagara Falls Blvd Preferred Bus | 32 | 37,377 | 5 | \$15.20 | \$94.00 | 4 | 18,200 | 12,100 | \$5.20 |
| Millersport Hwy Preferred Bus | 19 | 23,825 | 2 | \$11.40 | \$63.00 | 5 | 16,700 | 11,700 | \$4.70 |
| Enhanced Bus | 36 | N/A | 2 | \$14.20 | \$18.00 | 3 | 5,200 | 5,000 | \$1.20 |

Figure 2- Tier 3 Results

In addition to the technical analysis what was heard from stakeholders and the public throughout the process was considered as well. A representative summary of the comments received follows:

- LRT is the preferred mode over BRT or Enhanced Bus.
- LRT provides a one-seat-ride which is preferred over the transfers required with BRT. A seamless connection between existing transit service and the new project was considered very important.
- BRT will be slower than LRT because it operates in mixed traffic at times
- The Niagara Falls Blvd alignment is preferred because it connects to more activity centers and provides more opportunity for transit supportive development.
- A frequent question was how the region will be able to pay for a large transit investment
- There is some concern that building the investment to CrossPoint encourages sprawl
- Is there potential to phase the project and build a shorter segment?
- Multimodal connections are important and the project must be supportive of and include bike and pedestrian amenities
- Neighborhood concerns about any transit investment in regard to temporary construction impacts and long term neighborhood character changes.
- Survey respondents ranked Metrorail expansion and bus system improvements very favorably.

The NFTA and GBNRTC also embarked on a Transit Oriented Development (TOD) study of the corridor, the study is currently on-going, but early work has produced additional insights regarding economic develop potential of a major transit investment and some artistic renderings of potential station locations.

The TOD study supports many of the findings of the Alternatives Analysis and has found that there is a significant opportunity to enhance economic development, jobs and the quality of life in the corridor.

- Employment in the corridor represents about a fifth of all regional jobs, and almost a fourth of all office and health, education, and government jobs in the region.
- Employment growth is projected to be stronger, on average, in the corridor than in the total region, particularly for office jobs.

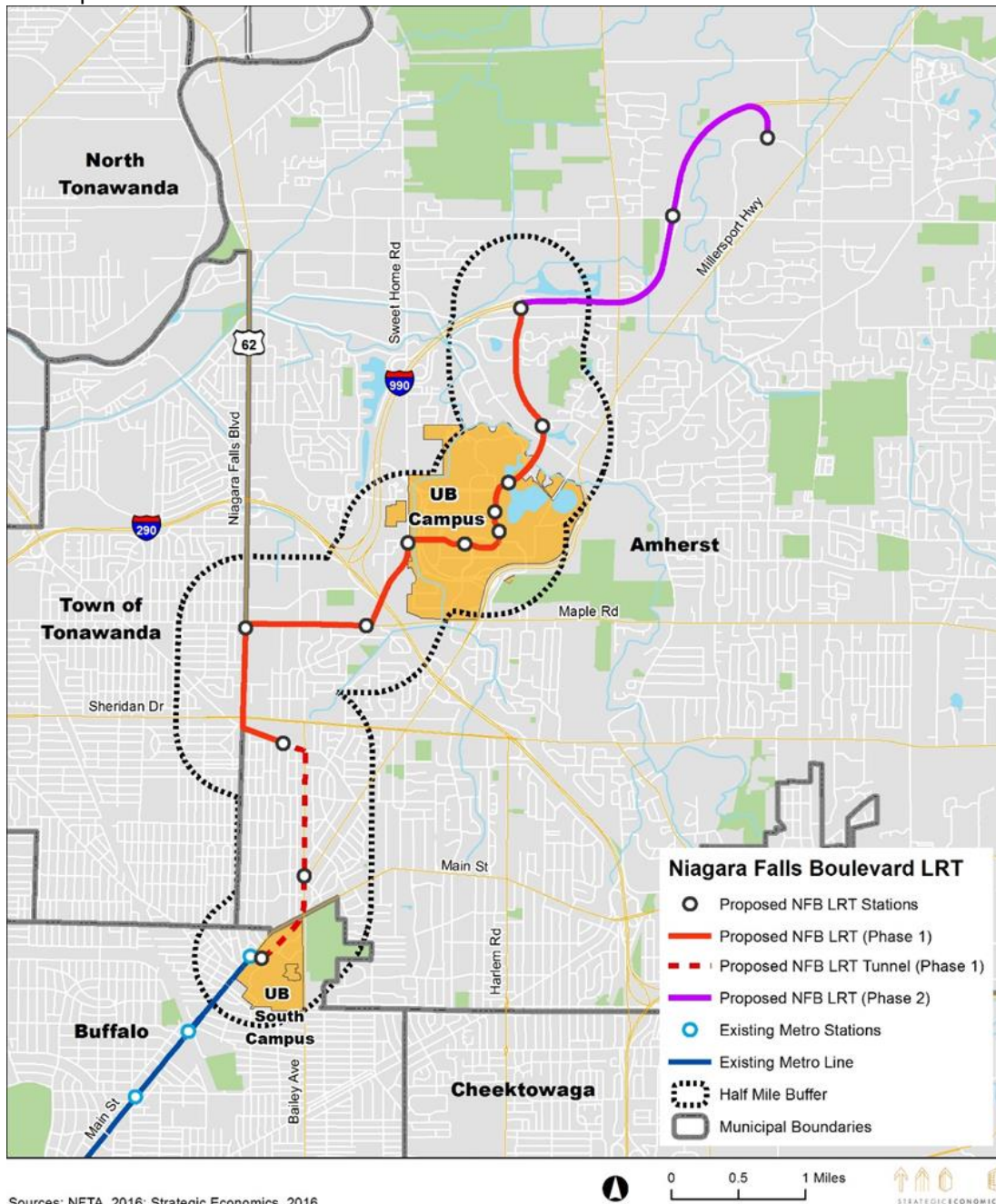
- The land supply of available vacant, underutilized, and/or redevelopment parcels in the corridor is more than sufficient to accommodate the projected household and employment growth expected to occur in the corridor through 2040.
- Future development as a result of the transit investment is expected to add approximately 8.4 million square feet of commercial (office and retail) and residential space throughout the corridor, worth a total assessed valuation of approximately \$1.7 billion. Existing properties where the current buildings and uses are expected to remain should see their cumulative assessed value increase by upwards of \$310 million as a result of their proximity to the Metro Rail extension.
- With the investment in the LPA, the City of Buffalo and the Town of Amherst would collect approximately \$61.5 million in property tax revenues from properties in the corridor, 32 percent more than in a scenario without the LPA.
- The retail development linked to the construction of the LPA would lead to approximately \$8.7 million in sales tax revenues for the State of New York and \$10.3 million in sales tax revenues for Erie County.
- Employed residents both living and working within the corridor could benefit from a significant reduction in transportation costs. Currently, almost 5,000 employed residents living in the existing Metro Rail corridor also work in the corridor. With the construction of the LPA, this number could increase by 3,656. Moreover, based on projected future growth, and conservatively assuming current patterns of location of workers, an additional 1,339 workers could both live and work in the corridor by 2040, reaching a total of 9,942. This number is likely to be higher as residential and commercial development intensifies within half a mile of Metro Rail stations.

Locally Preferred Alternative Recommendation – Niagara Falls Boulevard Light Rail

After reviewing the technical results and taking into account the feedback from the project committees and the public, as well as the early work produced from the TOD study, the NFTA recommends the Niagara Falls Blvd. LRT alternative to I-990, shown in Figure 3, as the strongest alternative to advance as the Locally Preferred Alternative for the Amherst-Buffalo Corridor. Although the Niagara Falls Blvd LRT alternative has the highest capital cost of all alternatives, it rates as best meeting the project goals, purpose and key criteria. In short, the recommended LPA is the best performing alternative in providing the greatest level of access, jobs, and economic development.

It has the highest number of project boardings, provides the greatest capacity, shortest travel time between key destinations in the corridor, requires no transfer at University Station, results in the largest positive change in vehicle miles traveled, and provides access to the second highest number of jobs and highest number of activity centers among all alternatives. The Niagara Falls Blvd LRT alternative also rated highest in terms of consistency with local and regional plans and strategies, serves the most projected growth locations and has the most opportunities to encourage and support transit supportive

development.



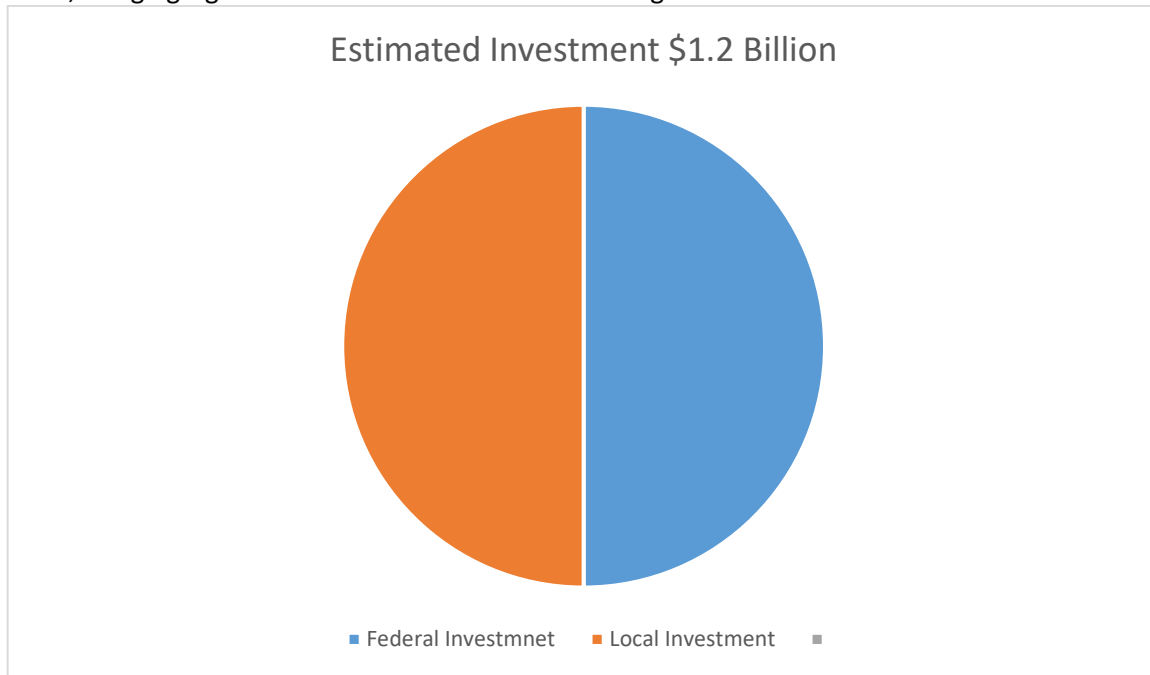
Sources: NFTA, 2016; Strategic Economics, 2016.
Figure 3- Recommended LPA: LRT Niagara Falls Blvd.

Next Steps

Completing the Alternatives Analysis is really the first step of the process. The NFTA staff recommendation will be reviewed with the Project Committees, key stakeholders and the general public. Upon reaching consensus on the LPA, the GBNRTC will adopt the LPA into the region's long range transportation plan, it will be included in and prioritized in NFTA-Metro's internal Comprehensive Development Plan. An

environmental review process under NEPA and SEQR will be initiated and NFTA will formally request entry into the Federal Transit Administration Project Development process for New Starts. During this two year process, the LPA will be further refined and designed to minimize any community and environmental impacts identified.

While funding a major transit investment of this magnitude will be a challenge, up to 50% of the capital cost could be funded by the Federal Capital Investment Grant Program with the remaining from a variety of State and local sources. In order to move through the project development process all non-federal funding commitments must be identified. Funding scenarios have been developed and will be discussed further with state and local leaders to gain commitment. All of the funding sources assume a 50% Federal Share, bringing significant federal investment to the region.



It is anticipated that the initiation of the environmental review process will occur in early 2017, it will likely take 16 months to complete. An anticipated timeframe is show in Figure 5.

| Milestone | Schedule |
|---|--------------|
| Present LPA to NFTA Board of Commissioners | January 2017 |
| Vote to approve LPA with GBNRTC | March 2017 |
| Secure NEPA/SEQR Completion Funding from New York State | April 2017 |
| Complete NEPA/SEQR Process | June 2019 |
| Secure 30 percent of non-Capital Investment Program Grant project funding from Federal, State, Local or Value Capture Sources (20 percent can be federal funding controlled by NYS) | June 2019 |

| | |
|--|---------------|
| Request Entry into Project Engineering with Federal Transit's Capital Investment Program Grant Process | August 2019 |
| Project Engineering Complete and Secure remaining 10 percent of non-Capital Investment Program project funding | December 2023 |
| Secure Federal Transit Full Funding Grant Agreement for 60 percent of project funding | June 2024 |
| Construction Start | July 2024 |

Figure 4 - Timeframe