May 2018
Aaron Krolikowski, PhD

Insight Brief

Reviving Commuter Rail Services in Western New York

An overview of the commuter rail opportunity between Buffalo and Niagara Falls, NY

Much of the necessary infrastructure for a commuter rail line is already in place

Overview – Reviving Commuter Rail

Cost estimates indicate that a 27-mile commuter rail line between Buffalo and Niagara Falls could be successfully developed for less than $12 million, which would enable passenger rail services between Buffalo and Niagara Falls.

Even more, adding just one additional line of track between these two urban centers could increase local access to global economic opportunities by expanding social and economic ties with Southern Ontario and the Greater Toronto Area - one of the planet's powerhouse economies.

This overview of the commuter rail opportunity in WNY answers five core questions:

1. What is Commuter Rail?
2. Where could commuter rail be built in WNY?
3. How much would a commuter line cost?
4. Why build a commuter rail line in WNY?
5. What steps need to be taken?

1. What is commuter rail?

Commuter rail is a passenger rail transport service that operates between a city and nearby suburbs or other regional centers.

Passenger rail services can take many different forms: electrically-propelled high speed rail, diesel-powered inter-city services, heavy rail transit (metro rail), commuter rail, light rail transit, streetcars, and trolleys.[1]

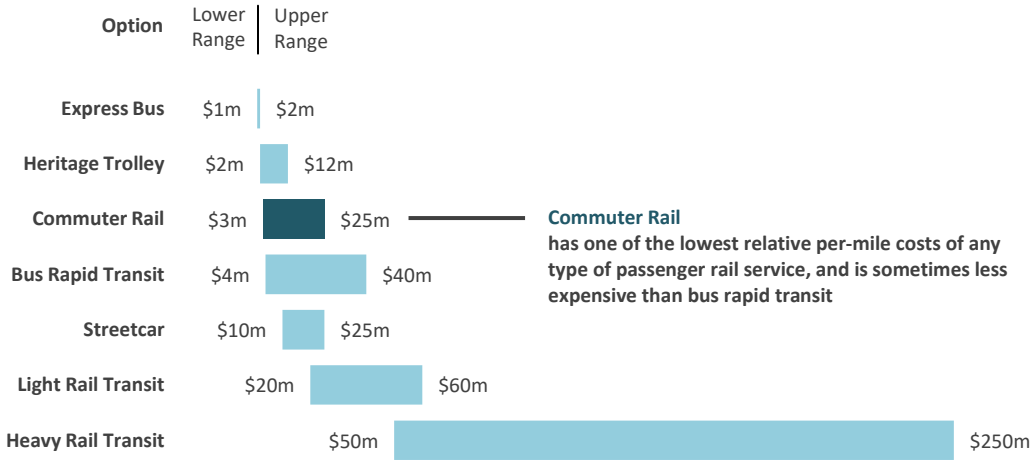
When compared with light rail or metro rail options, commuter rail typically features larger cars, lower service frequency, and the ability to share track with both intercity and freight trains.

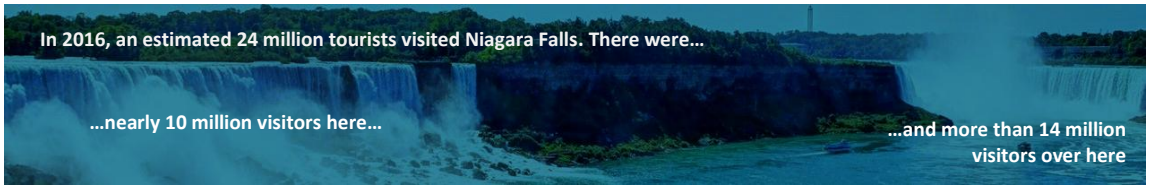
Commuter rail services have a top speed of approximately 60 mph and trains that run every 20 to 30 minutes. Commuter rail is also often much less expensive than light rail, metro rail, or even bus rapid transit. Costs per mile for new commuter rail typically range from $3m to $25m. Costs are reduced by using existing infrastructure and sharing railways with freight trains.

1 Transit Technologies Worksheet
Reconnecting America, 2009
https://bit.ly/2HAXVJq

Per-Mile Construction Costs for Passenger Transportation

Costs to develop new transportation options can range from as low as $1m per mile for express buses up to $250m per mile for some metro rail services





2. Where could commuter rail be built in WNY?

The route between Niagara Falls and Buffalo is the area's best opportunity to expand commuter rail services in WNY.

Given the region's rich history as a major American railroad hub with extensive local passenger rail services, there are many potential options when it comes to commuter rail in Western New York.

Known as the Niagara Branch of New York State's "Empire Corridor" this railway extends approximately 27 miles from an area east of Buffalo's Exchange Street Amtrak Station (near the Central Terminal) to the recently-constructed Niagara Falls Amtrak Station.[2]

The route runs through the Cities of Buffalo, Niagara Falls, Tonawanda, and North Tonawanda, as well as the Towns of Tonawanda, Wheatfield, and Niagara.

Commuter rail within this short corridor is constrained by 13 miles of single track, which is often responsible for both freight and Amtrak delays between Buffalo and Niagara Falls. This includes a 7.5-mile section in the City of Buffalo and a 5.5-mile section in the Town of Wheatfield.

It is important to note that the entire corridor was previously double-tracked and offered regular passenger rail services.

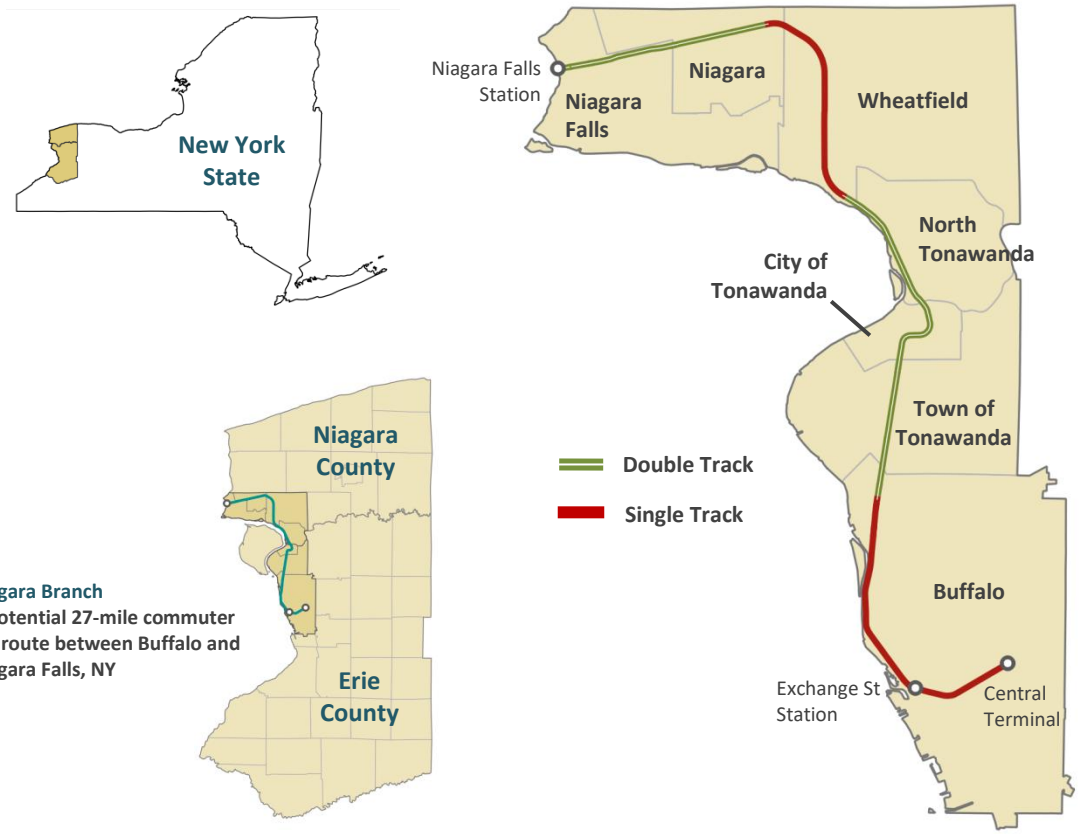
Findings of the 2014 New York State Draft Environmental Impact Statement on the Empire Corridor High Speed Rail Line describe this route as having sufficient railbed, bridge, and tunnel infrastructure to accommodate double tracking for passenger rail.

There are 41 bridges along the Niagara Branch, all of which still have provisions for two or more tracks. There are 12 public grade crossings, 14 private grade crossings, and two 500-ft tunnels running under the I-190 and Route 5 interchange in the City of Buffalo.

2 **High Speed Rail Empire Corridor. Tier 1 Draft EIS**
NYS DOT, 2014
https://on.ny.gov/2l4Kscn

Double-Tracking the Niagara Branch of the Empire Corridor

The potential for commuter rail on the Niagara Branch is constrained by 13 miles of single rail tracking



There are more than

661,000 people

and

337,000 jobs

located within five miles of the Niagara Branch

Source: US Census Bureau

$11.7 M

Estimated capital costs of ensuring double track on the route between Buffalo and Niagara Falls

3. How much would a commuter line cost?

Construction costs for a double-tracked shared railway along the 27-mile route between Buffalo and Niagara Falls are estimated at approximately $11.7 million.[3,4,5,6,7]

Because there is sufficient railbed and related infrastructure to accommodate double-tracking, costs for acquiring right of way and for the design & build of the railbed were removed the estimate. Other railway construction costs include materials and communications/signaling equipment. Labor costs are not included. The cost estimate for railway construction presented here has been increased by 50% to compensate for uncertainties.

Another potential cost is Positive Train Control (PTC), but there is no standard method for estimating costs, which range from $500,000 to $4m per mile. Given these figures, it may cost between $6.5m and $52m for PTC on new tracks.

Other costs related to providing commuter rail service include rolling stock, as well as operations and maintenance expenses (O&M).

Rolling stock refers to the engines and cars that make up a commuter train. Commuter rail often uses diesel or electric engines, and are increasingly featuring driverless vehicles. The costs for rolling stock can be reduced by obtaining used cars. Rolling stock costs are estimated at approximately $25.1 million per train.[8]

O&M costs typically include vehicle maintenance, vehicle operations, general administration, track maintenance, and yard/shop maintenance.[9] These costs vary with service frequency, daily service times, and the number of cars that make up each train. A commuter rail service on this 27-mile route with one train going in each direction every hour from 5am to 12am would have O&M costs of approximately $23.1 million per year.

4. Why build a commuter rail line in Western New York?

Commuter rail is a smart investment for Western New York to make to enhance regional transportation networks and bolster economic development efforts on multiple fronts.

Investing in our regional and inter-city rail network would increase the number of available **transportation options**, mitigate challenges related to transportation **logistics**, reduce rail **delays**, enhance **regional access**, and improve connectivity with **global markets** and talent.

Reviving commuter rail services and the underlying infrastructure will **strengthen social and economic ties** with Southern Ontario, home to **Toronto** - a dominant global center of commerce and the fourth-largest city in North America (after Mexico City, New York City, and Los Angeles). The Greater Toronto Area's **GO commuter rail service is currently being expanded** and will reach Niagara Falls by 2022.[10]

Expanding commuter rail between Niagara Falls and Buffalo is also a smart **economic development** strategy. The four cities and three towns along the route are **home to more than 450,000 people** and host **hundreds of thousands of jobs**. In addition to increasing **access to employment centers**, transit-oriented development along the route could help to **revive struggling downtown commercial districts**.

A revived commuter rail would also serve the more than **24 million tourists** that visit Niagara Falls each year. International tourists are more likely than ever to visit destinations like **Canalside**, Silo City, Buffalo City Hall, the **Richardson Olmsted Complex**, **HarborCenter**, **New Era Field**, **Key Bank Arena**, Albright Knox Gundlach Art Museum, **Darwin Martin House**, Buffalo Zoo, Buffalo Museum of Science, Buffalo History Museum, and emerging sites related to the **Central Terminal**, the **Underground Railroad**, and the scientific breakthroughs of Nikola Tesla.

An investment in commuter rail services in Western New York makes sense because **it has been done before**. One hundred years ago, the route between Buffalo and Niagara Falls featured double track and regular passenger rail services between the two cities. Reviving commuter rail services in WNY will also significantly **leverage recent and upcoming public investments** in rail stations in Niagara Falls and Buffalo.

3 Capital Cost Estimating Guidance for Project Sponsors
Federal Railroad Administration, 2016
https://bit.ly/2I0opDO

4 A Planning Methodology for Railway Construction Cost Estimation in North America
Iowa State University, 2011
https://bit.ly/2ruvfaU

5 An analogy cost estimation methodology was used, which applies the cost of similar projects to estimate the costs off a new project.

6 Cost estimates are presented in US Dollars (2017 est)

7 Railway construction projects used for reference include routes in California, Illinois, Minnesota, and New Mexico

8 High Speed Rail Empire Corridor. Tier 1 Draft EIS
NYS DOT, 2014
https://on.ny.gov/2I4Kscn

9 Operations and Maintenance Cost Estimating Methodology
Ramsey County Regional Railroad Authority, 2016
https://bit.ly/2JDgJUZ

10 Building Transit and Transportation
Annual Budget
Province of Ontario, 2017
https://bit.ly/2r9AM6H

Buffalo is the second-largest city in New York State - boasting world-class collections of historic architecture, cultural institutions, ecological resources, sports, and entertainment

"…Developing a new commuter rail service between Downtown Buffalo and…Niagara Falls could likely be implemented on a smaller scale, require less capital and operating investment, and be deployed on a much faster timeline than extensions of Metro Rail light rail, even though such expansions…are needed and would be beneficial."

Rich Sampson, 2012
Community Transportation Association of America
https://bit.ly/2FsGKUD

"When I was in the logistics business, I didn't like late freight trains any more than I like late passenger trains. The reality right now is that there isn't enough infrastructure to accommodate both on-time freight trains AND on-time passenger trains. It's easy to forget while we are so focused on passengers, but many of those freight trains are carrying raw material to, or finished products from, factories that employ our fellow citizens…Getting passenger trains to run on time isn't as easy as just telling CSX to move over because we need freight trains to be on-time too."

Pat Whalen, 2016
Niagara Global Tourism Institute
https://bit.ly/2HYREqn

5. What steps need to be taken to move ahead?

Ongoing discussions of commuter rail options in WNY should focus on the development of a feasibility study, formalizing partnerships and commitments, articulating necessary processes for approval, and the identification of potential commuter rail operators.

Convening and Collaboration

Moving a project of this scope and scale forward requires a considerable level of collaboration across local and state governments, the public and private sectors, transportation companies like CSXT, and other key stakeholders.

CSX Transportation currently owns the right of way between Buffalo and Niagara Falls and should be engaged as early as possible to discuss an extensive list of issues and considerations.

This list includes, but is not limited to the project scope, partner responsibilities, host railroad opportunities and constraints, utility changes, site access, use of facilities, labor costs, and any adverse impacts on regular business activities.

Cost Estimate and Feasibility Study

A full engineering build-up cost estimate will help project sponsors more accurately anticipate the additional costs that can be brought on by construction, site access, staging, and sequencing.

An estimate should also incorporate a risk review and articulate the institutional and organizational context surrounding the project, including the entities performing administrative, management, professional, and construction services.

Relevant Studies and Approvals

A comprehensive understanding of required approvals, public support, and relevant government processes is essential if commuter rail services will be revived in WNY.

Of particular note is the 2014 Draft Environmental Impact Study for the Empire Corridor, which has already examined double-tracking the Niagara Branch and may help expedite any related environmental review processes.

Starting points for these and other discussions should include Amtrak, the Greater Buffalo Niagara Regional Transportation Council (GBNRTC), Niagara Frontier Transportation Authority (NFTA), NYS Department of Transportation (NYSDOT), local elected officials in both Erie and Niagara Counties, and community groups in each host community.

Identification of Commuter Rail Operators

Potential commuter rail service operators should be engaged to gauge capacity and interest in operating a commuter rail service between Niagara Falls and Buffalo.

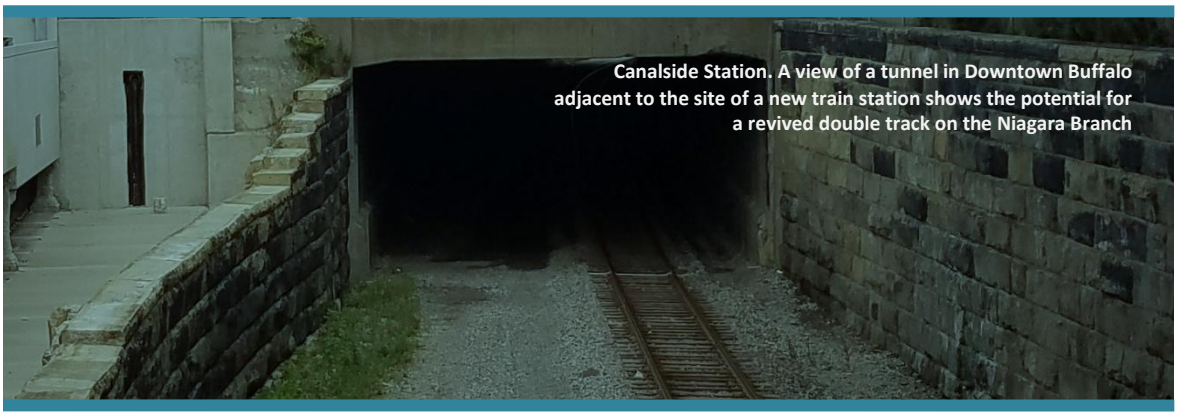
Such a service could take one of many different forms ranging from increased Amtrak service along the route, a new rail line operated by the NFTA, partnering with private-sector operators that have experience operating commuter rail, or supporting the establishment of a new local entity to operate the service.

For more information:

Aaron Krolikowski, PhD
Krolikowski Consulting

716-579-0922
aaron.krolikowski@gmail.com

@AKrolikowski



Canalside Station. A view of a tunnel in Downtown Buffalo adjacent to the site of a new train station shows the potential for a revived double track on the Niagara Branch