CHAPTER 2

WHERE WE ARE TODAY

Where we want to be in 2050
Where we are today
A framework for moving forward
Big moves to get us there
Taking action and measuring progress

WHERE WE ARE TODAY
Transportation has big impacts on our economy, communities and environment. These factors also affect our transportation system in important ways. As we plan for our transportation system, taking a close look at these dynamics is critical.

Understanding land use patterns helps predict traffic flows and travel modes. Knowing what industries are growing and where they are located can tell us where infrastructure improvements may be needed. Learning where public access to natural assets is being improved can help connect more people with recreational opportunities.
WHERE WE ARE TODAY

OUR ECONOMY

We’ve seen the most job growth in a generation.

We are growing jobs and attracting new businesses in a wider range of industries to build a 21st century economy and make our region competitive in an increasingly global marketplace. Our transportation system can be a catalyst for this growth and can help us share economic opportunities and prosperity with all residents in the region.

After decades of job loss, our economy had more private sector employment growth from 2010 to 2015 than at any other period since 1990. This job growth is taking place across many parts of the region, particularly near former industrial areas along the waterfront, in downtowns, and the suburbs closest to Buffalo.

Our transportation system needs to ensure that today’s workers have access to these emerging employment centers, along with those that already exist, via multiple, reliable modes. Our system also needs to keep goods and services flowing to, from and throughout our region, while helping to attract new workers and businesses to keep our economy growing.

Our dependence on vehicles has big economic impacts for households and the entire region.

To keep our economy moving, our transportation system needs to get workers to jobs and goods to consumers. Our region is noted for having some of the quickest commutes in the U.S., but this only truly applies to those who drive. For those that do not own a car, either by choice or for other reasons, access can be limited. There are a growing number of households, including those without a car, living in auto-dependent places where vehicles are required to get to most jobs and services.

The costs of owning a car far exceed the costs to take transit, bike or walk, and can make up a sizable portion of household income, especially for those in poverty. Many jobs and residents are in car-dependent places where most destinations are beyond walking distance.

As we become more spread out, we add roads which adds costs to local taxpayers. And the more we spread out, the less viable other transportation modes become, like biking and taking public transit. People move away from neighborhoods with walkable main streets. Transit stops in automobile-dependent places do not have the concentrations of people and jobs needed to make transit economically feasible, reliable or frequent. The net result is that transit use goes down. This makes the system harder to fund which in turn limits our ability to improve or expand transit service.


$8,698

National average annual cost to own a car

What that means for...

...households living in poverty

$36% of their income

...households earning the regional median

$17% of their income


From 1990 to 2010, over 525 miles of new roads were built in the region, costing $26M per year to maintain.

Annual transit trips in the region declined by 18% from 1991 to 2015.

Source: UBRI analysis of data from the U.S. Census Bureau, 1990 and 2010; and the NYS Office of the State Comptroller, 2011; Niagara Frontier Transportation Authority, 2016.
Our region’s economic development strategies are focusing on key sectors to support economic prosperity.

Our region is investing in a diverse range of industries to build off of local strengths and make us more competitive in a global economy. Our transportation system must ensure that these businesses have access to the transportation services they need in the places they are needed most.

**Agriculture**
Agriculture depends on multiple modes, like rail and commercial trucks, to move food locally and beyond. We need to maintain and enhance rural roads, railways, and intermodal distribution hubs.

**Advanced Manufacturing**
Manufacturers today use advanced technology to make high-tech goods. Connecting firms with experts, researchers, and skilled workers is essential for innovation.

**Energy**
Recent developments in solar, wind and biomass can help put our region at the forefront of renewable energy development. We need smart infrastructure and robust coordination to promote this sector.

**Health & Life Sciences**
Our region is home to many firms involved in pharmaceuticals, medical devices, and related products. We need to enable the transport of industry components and products for continued growth.

**Logistics**
Our region is a hub for logistics on the U.S.-Canada border. This will require coordinated, cross-border planning that expands multi-modal capacity to move, store and process foreign and domestic goods.

**Professional Services**
Low operating costs, like rents, labor and energy, can attract data centers and other firms to the region. Connected and diverse transportation options are vital to ensuring employers can draw from a large pool of skilled labor.

**Tourism**
Hotels, restaurants and local assets depend on transportation. We need new technologies and mobility services so visitors can get around the region efficiently, encouraging extended stays.
Western New York Regional Economic Development Council (REDC) Target Industries

- Agriculture
- Advanced Manufacturing
- Energy
- Health & Life Sciences
- Logistics
- Professional Services
- Tourism

Employees per firm, 2017

- 0-50
- 50+

* Tourism includes food service, accommodations, retail and other tourism support services.

We need bi-national transportation planning to support a bustling border economy.

The Greater Golden Horseshoe region that stretches around Lake Ontario and connects Toronto, Hamilton, Niagara Falls and Buffalo, represents one of the largest concentration of people in North America with a population of over 9 million.

Buffalo Niagara serves as a critical link in this megaregion. Fifteen percent of the trade between Canada and the U.S. moves across the Niagara River, making it the second largest port of entry on the U.S.-Canada border. Ensuring quick, effective and secure movement of freight and travelers through the region and along the border is imperative to building a robust, dynamic economy in Buffalo Niagara. This requires enhanced cross-border coordination, embracing innovative technologies and adaptive transportation management systems.

The Greater Golden Horseshoe includes over 9 million people.
We can capitalize on cross-border opportunities by...

Adding value to goods heading to and from Canada, as well as other countries, by encouraging foreign companies to ship components, instead of finished products, to the region for assembly with potentially locally-sourced components.

Supporting businesses in light manufacturing, assembly and logistics as these companies tend to locate near transportation and distribution hubs.

Promoting our “one day trip” access to major population centers like Toronto and cities along the East Coast. We are well-positioned to serve as an inland port to the Port of New York and New Jersey. Our proximity to major U.S. and Canadian metro areas also enables companies here to quickly grasp and adjust to changing market conditions.

Growing university support for logistics, supply chain, data management and providing workforce training for target industries like advanced manufacturing.

Leveraging our strong base in advanced manufacturing, logistics and other industries and our skilled, but underemployed, workforce to tap into this trade and build a more productive business environment and a dynamic, prosperous workforce.

Attracting tourists from Canada and around the globe and promoting longer trips for those who visit major attractions, like Niagara Falls, to experience all the sights of Western New York and Southern Ontario.

Realizing these opportunities will require coordination and innovation.

Today, we are building on a long history of coordination with partners across the border to improve how the bi-national transportation system operates and to promote regional economic prosperity.

This partnership of local governments and transportation agencies from both sides of the border is working to optimize traffic flows by identifying effective management strategies to limit congestion and related environmental impacts.

The cross-border collaborative is supporting policies and programs to optimize traffic flows, rather than adding costly infrastructure. These include promoting transit use, electronic pre-clearance programs and long-term solutions focused on reducing border delay with new technologies. For example, data-driven decision support tools could manage traffic on critical corridors by re-routing vehicles at anticipated and unexpected times of congestion.

Cross-border collaboration can also increase efficiencies and cut costs with innovative financing programs. One example is the Niagara International Transportation Technology Coalition (NITTEC) Revolving Loan Fund, an inventive financing device capitalized by a Federal Aid Grant and made available year-round to transportation agencies for projects throughout Western New York and Southern Ontario. This program lays out clear requirements to aid applicants and ensure that projects support a regional vision for transportation.

Moving forward, we will require enhanced collaboration through active participation by local citizens, and by coordination among state, county, and city governments in the U.S., and provincial and federal governments in Canada. Broad-based collaboration across various jurisdictional levels will be needed to establish innovative, effective financing programs, and to address highway capacity issues on both sides of the border while incorporating an inter-regional multi-modal transit network.
The economy is changing and so are travel demands.

New technologies enable a wider array of choices for locating the production, distribution, and consumption of goods and services. Ongoing shifts in regional, national, and global economies are also reconfiguring travel demands for workers and freight. The scale and pace of these changes will vary, but all point to a need to invest in new technologies and services to build a dynamic and diverse transportation system that is responsive to the needs of an increasingly global and high-tech economy.

Improvements in communication and information technology

Today, access to employment, education, and shopping is not always physical, and 24% of U.S. workers do some or all of their work at home. Telecommuting, telemedicine and online education have become pervasive across many sectors with the potential to reduce travel expenses and limit traffic congestion.

Rise in automation

About half of today’s jobs will likely be done by computers in a decade or two. Job automation could limit employment in some of today’s most common jobs, like in retail. Autonomous, self-driving vehicles could also reduce jobs in other sectors, like logistics, while presenting new employment opportunities in technology, business and maintenance. These vehicles can also expand mobility for workers and businesses.

Evolution of sharing and gig economies

Online ride-sharing platforms enabled by digital technology are dramatically expanding transportation options. These companies reflect a broader shift towards freelance employment characteristic of the “gig economy.” There are nearly 70 million of these “gig” workers estimated in the U.S., working non-traditional shifts and making more off-peak, non-rush hour trips, which might reduce road congestion during peak periods.

1 U.S. Census Bureau, American Community Survey, 1-year estimates, 2015.
Globalization, global trade, and cross-border freight flows

In today’s global economy, physical access to markets is essential to regional competitiveness. While trucks move more than two-thirds of all U.S. goods, air transportation is key to emerging sectors that emphasize innovative, high-value commodities. Investing in diverse transportation modes could support more efficient goods movement in tradable industries and emerging industry sectors.

Growth of e-commerce and changing consumer preferences

An estimated 50% of U.S. households have an account with Amazon Prime, which includes two-day shipping in the annual membership fee. As more consumers are expected to purchase goods via online shopping and home deliveries, warehouses and distribution centers may grow in urban areas to provide faster deliveries at lower prices.

Mobility as a service (MaaS) may reduce personal vehicle ownership

Personal mobility is becoming less dependent on personal vehicle ownership. Many people are now using a variety of on-demand services that can provide convenient access without the high costs of owning a personal vehicle. This shift to mobility as a service (MaaS) is fueled by emerging services, like transportation network companies, bike-sharing programs, and in the near future, autonomous and connected vehicles. Mobility as a service can be further enabled by digital platforms that integrate multiple modes of transport into seamless trip chains and provide end-to-end trip planning, booking and payment services.
For generations, our region spread out and added infrastructure, even as we lost population, resulting in a transportation system that is overbuilt and costly to maintain. But our region is rebounding, even in places that lost population for decades. Our transportation system can be an asset that helps all our communities build on this momentum. Our system is notably efficient for drivers, but we need to expand access using a variety of modes to turn recent signs of progress into lasting, shared prosperity.

Many communities that were once losing population are growing, including walkable places.

Buffalo Niagara is rebounding and communities across the region are being revitalized. Many places that lost population from 1990 to 2010 grew in recent years, including some of the region’s most walkable communities where residents can reach many daily needs by foot.

Source: U.S. Census, 1990, 2010; American Community Survey, 5-year estimates, 2015; UBRI analysis of walkability for “Local IMPACT: Strategies to Promote Mobility,” 2016 (see Data Sources & Notes).
Since 2010, the region’s population is stabilizing, and the young adult population is growing faster here than across the state and nation. More young adults are opt to live in walkable communities that provide access to a range of opportunities without having to own a car.

Our region has enough infrastructure to accommodate growth. We need to modernize and leverage our transportation system in ways that help attract young talent, revitalize communities and improve quality of life for residents. Focusing investments in existing communities while expanding transportation options will help. We also need collaboration between transportation providers to enable convenient multi-modal trips for travelers that open up opportunities while keeping congestion low.

### Change in Young Adult Population (Age 20-34), 2010-2015

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo Niagara</td>
<td>8.4%</td>
</tr>
<tr>
<td>NYS</td>
<td>5.4%</td>
</tr>
<tr>
<td>US</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

Source: U.S. Census, 2010; American Community Survey, 1-year estimates, 2015

### Communities are changing and so are their transportation preferences.

#### More people opting to do without a car and live in walkable neighborhoods

66% of young adults say access to high-quality transportation is a top criteria in deciding where to live. This may be related to cost savings, as individuals who commute via public transit save an average of over $9,000 a year. To meet this demand, and make the region more attractive, we need walkable communities connected to diverse transportation options that can limit the need to own a personal vehicle. Shifting preferences underscore the need for connected and diverse transportation options that provide access to key destinations throughout the region.

#### Smaller households and fewer children

Broad social trends, like young people delaying marriage and having children later in life, are changing the structure and function of households and housing needs. As neighborhoods offer more housing choices, these shifts will also have important implications for transportation. A growing diversity of households calls for a wider range of integrated transportation options.

#### More seniors with mobility concerns

Our population is aging with one in five residents over 60, and a greater share of seniors than the national average. This trend underscores the need for new, specialized transportation services and technologies like autonomous and connected vehicles to help maintain mobility and a high quality of life as we age. New forms of shared transportation, including ride-sharing and shuttle services, can play a crucial role in expanding mobility options for seniors. However, there remain gaps in use and awareness of shared mobility services across generations.

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We’re driving more.

Compared to 1970, we drive over twice as much every day on a per person basis. We also own more vehicles. From 1990 to 2015, our population declined by 5% while the number of vehicles in the region increased by that same margin (+5%). Our surging dependence on automobiles increased the mileage we travel on local roads, household transportation costs and our collective impact on the environment, even with fewer people living in the region.

Driving increases energy use and greenhouse gas emissions.

More driving has a big impact on the environment. Transportation is the largest contributor to GHG emissions in the region, and the majority of transportation-related emissions come from on-road vehicles.

Neighborhoods with greater traffic volumes have higher asthma rates.

Increased traffic has direct, detrimental impacts on the air we breathe and our health. Residents in our region that live in places where traffic volumes exceed the national average are 70% more likely to visit the ER due to asthma.
We added roads to connect new homes built on critical natural land.

The growing environmental impact of our transportation system has a lot to do with land use. For the most part, roads are built to connect homes with jobs, services and other amenities. From 1990 to 2010, over 40,000 homes were built in the region. Most homes were constructed on key environmental areas, like prime farmland, forests, wetlands and floodplains. These provide critical environmental services, like flood control, wildlife habitat, and fertile soils for farming. Likewise, many of the roads built over that time are in these areas. These paved surfaces cause untreated stormwater to flow into local waterways. In total, our road network covers over 45 square miles of paved surfaces.²

<table>
<thead>
<tr>
<th>What we have built on...</th>
<th># of new homes</th>
<th>miles of new roads</th>
</tr>
</thead>
<tbody>
<tr>
<td>prime farmland</td>
<td>23,613</td>
<td>345</td>
</tr>
<tr>
<td>forests and wetlands</td>
<td>10,936</td>
<td>42</td>
</tr>
<tr>
<td>floodplains</td>
<td>2,194</td>
<td>26</td>
</tr>
</tbody>
</table>


We are keeping up with broader trends that impact the future of transportation...

...by adding bike lanes and multi-use trails

Extending opportunities for residents and visitors to get around by bicycle has become a regional priority. Today, the total length of designated bike ways, bike routes and multi-use trails is nearly triple what it was in 2001. These pathways provide opportunities for all of us to enjoy our environment and lead healthy, active lifestyles.

Since 2001, Buffalo Niagara has added...

...110 miles of multi-use trails

...166 miles of bicycle lanes and routes

Source: Greater Buffalo Niagara Regional Transportation Council, 2017.

...and building alternative fueling stations.

In the future, transportation will not be entirely reliant on fossil fuels. Consumers and public transit agencies are increasingly switching to electric and other alternative fuels to cut fuel use and costs. To meet this trend, the number of electric charging and alternative fueling stations across the U.S. tripled since 2011, while in Buffalo Niagara, the number increased by over 5 times.

<table>
<thead>
<tr>
<th># of Electric and other Alternative Fueling Stations in Buffalo Niagara, 2011 and 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
</tr>
<tr>
<td>9</td>
</tr>
</tbody>
</table>
We are taking better care of our environment by reactivating waterfronts and riverways.

Our waterfronts are our greatest natural assets. However, our industrial economy was centered on the waterfront, leaving a legacy of contaminated sites along the Niagara River and Great Lakes. Recently, we have taken great strides in cleaning up these sites and reconnecting people with the waterfront by adding bike routes and multi-use trails along shorelines to increase public access.

We are working to connect waterways with other transportation options and recreational activities. Ongoing improvements are being made to the Shoreline Trail along Lake Erie and the Niagara River. Plans are being made for the Buffalo Blueway—a network of access sites along the city’s waterways to open up opportunities for paddlers. A portion of the Robert Moses Parkway in downtown Niagara Falls is being replaced with a multi-modal pathway for bicyclists and pedestrians to enjoy the Niagara River gorge. Other waterfront towns have taken big steps to remediate waterways and expand recreational trails, with more efforts underway.

Future trends in transportation could have transformative impacts on our environment.

New technologies and emerging trends offer unprecedented opportunities to build a transportation system that works better for our environment and our health. Electric vehicles, ride-sharing services, autonomous cars, and advances in information technology, as well as improved bicycling and pedestrian infrastructure, offer new ways to reduce greenhouse gas emissions, make land use more efficient and improve air quality.

Electric vehicles offer increased fuel efficiency for personal vehicle owners. Public transit vehicle fleets are also adopting electric vehicles and other alternative fuels to cut fuel use and costs. While these innovations could greatly reduce the future environmental impact of our transportation system, the adoption of cleaner fuels depends on what infrastructure and incentives are in place.

Transportation network companies (TNCs), such as Uber and Lyft, offer a viable, cost-effective alternative to driving and could encourage some to drive less or even give up their personal vehicle. Integrating these companies into a robust and modern transportation network, including fixed-route public transportation, can enhance the environmental benefits of TNCs.

Active transportation modes, such as walking and bicycling, reduce greenhouse gas emissions when they substitute for motorized travel. Multi-use trails, complete streets, and walkable places give residents and visitors the option of walking, biking, and taking public transportation in addition to driving. Active transportation also encourages healthy lifestyles and can enhance public health outcomes.