THE IMPACTS OF MOVING FORWARD
The strategies of Moving Forward 2050 will take big strides in making our regional transportation system more innovative, reliable and efficient. While unforeseen and outside factors will play a large role in determining the ultimate impacts of our strategies, based on our current understanding, the Moving Forward approach will produce a number of meaningful and far-reaching benefits for our communities, economy and environment.
The impacts of Moving Forward are dependent on how our region grows from now until 2050. A range of empirical data projections were examined to forecast the total number of homes and jobs that will exist in the region by 2050. The total increases in people and jobs were allocated to different areas across the region using the land use patterns of the shared vision for the region's future as expressed by citizens through One Region Forward.

This vision concentrates population and employment growth near existing communities where we already have built infrastructure. Ultimately, this land use vision is not a certainty, we cannot predict precisely how the region will grow, but achieving the vision of One Region Forward will largely depend on the transportation investments of Moving Forward 2050.

### Projected Change in Population and Employment, 2015-2050

**Our economy will continue to grow and provide more opportunities by focusing jobs near existing communities.**

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2050 Vision</th>
<th>Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPLOYMENT</td>
<td>657,702</td>
<td>768,693</td>
<td>110,991</td>
<td>+16.9%</td>
</tr>
<tr>
<td>POPULATION</td>
<td>1,131,664</td>
<td>1,152,111</td>
<td>20,447</td>
<td>+1.8%</td>
</tr>
</tbody>
</table>

Source: Cambridge Systematics, 2050 Projections by Block Group (2016).
Should we stand still or move forward?

The transportation investments we make today will shape how we live, work and play in 2050. If we stand still and stay on our current path, sprawl—while slower than in previous decades—will continue, and our choices for getting around will remain limited. In addition, further stress will be placed on infrastructure maintenance budgets, taking away needed resources for the region to achieve the full potential of innovative technologies for AV, new mobility, transit and freight.

The Moving Forward approach embraces a pattern of development that will make more efficient use of our existing infrastructure. Going beyond maintenance, it will create a modern multi-modal transportation system that attracts visitors, connects residents to a wider variety of job opportunities and improves the on-time delivery of goods for businesses.

### WHAT EACH APPROACH MEANS FOR... | THE STANDING STILL APPROACH | THE MOVING FORWARD APPROACH
---|---|---
### ROADS & HIGHWAYS | Maintain existing roadways in a piecemeal fashion. Build new roads to accommodate new development and extend infrastructure. | Systematically maintain, but also enhance regional roadways by integrating new technologies and using more sustainable and impervious surface materials. |
### MOBILITY & TRANSIT | Rely on one public transit provider by extending service routes to follow sprawling land use patterns. Owning a car is a necessity in most communities. | Mobility as a service supplements the public transit provider, filling in service gaps and connecting with other modes so that owning a car is not necessary for most of the region's communities. |
### BICYCLE & PEDESTRIAN NETWORK | Build bike lanes and add pedestrian features where they fit, in a disconnected fashion. The bike and pedestrian network is not well-linked with other transportation modes. | Complete a regional network of pedestrian and bicycle infrastructure, fully connected with technologies and efficient links with other transportation modes and services. |
### FREIGHT | Prolong a conventional freight network, reliant on fossil fuels with commercial trucks experiencing border delays. | Develop a diverse, robust freight network with freight hubs, electric and other alternative fuels, autonomous trucks, local, last mile deliveries and faster border crossings to propel the economy. |
### TECHNOLOGY | Use older technologies where appropriate to maintain our traditional network without looking ahead to enhance transportation. | Harness improvements in technology to enhance our transportation network in order to improve our communities, economy and environment. |
### FINANCING & DECISION MAKING | Making piecemeal decisions without much collaboration between jurisdictions. Depending on federal and state dollars for transportation improvements. | Leverage technology, data, and public engagement to make smarter decisions and investments. Use diverse funds and financing mechanisms to pay for projects. |
## How our strategies meet our objectives

Utilizing a performance-based planning approach, transportation strategies were designed to achieve our goals and objectives. The tables above show the potential for each strategy to meet the objectives based on a preliminary assessment and best practices research. Going forward, individual projects will be designed, evaluated and prioritized based on their ability to meet Moving Forward 2050’s goals. An ideal suite of projects will act to collectively reach these goals.

### ECONOMY

<table>
<thead>
<tr>
<th>OUR GOALS</th>
<th>OUR OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise the region’s standard of living</td>
<td>Support REDC target sectors</td>
</tr>
<tr>
<td></td>
<td>Increase Gross Regional Product</td>
</tr>
<tr>
<td></td>
<td>Improve connectivity in the Greater Golden Horseshoe</td>
</tr>
<tr>
<td>Support efficient freight movement</td>
<td>Reduce freight delays</td>
</tr>
<tr>
<td>Strengthen the fiscal health of local governments</td>
<td>Minimize local governments’ infrastructure costs and maximize benefits from infrastructure investments</td>
</tr>
</tbody>
</table>

### COMMUNITIES

<table>
<thead>
<tr>
<th>OUR GOALS</th>
<th>OUR OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support focused growth in urban, rural and suburban communities</td>
<td>Maximize investments in community centers</td>
</tr>
<tr>
<td>Ensure access to opportunities and services</td>
<td>Increase multi-modal access to neighborhood services</td>
</tr>
<tr>
<td></td>
<td>Improve equitable access to employment centers</td>
</tr>
<tr>
<td>Support healthy and safe communities</td>
<td>Increase active transportation options</td>
</tr>
<tr>
<td></td>
<td>Improve transportation system safety for pedestrians, cyclists and vehicle drivers</td>
</tr>
</tbody>
</table>
### ENVIRONMENT

**OUR GOALS**

- Preserve and protect a healthy environment and accessible open spaces and waterways
- Maximize infrastructure resiliency

**OUR OBJECTIVES**

- Reduce negative impacts of local transportation on the region’s air quality and GHG emissions
- Increase diversity and sustainability of energy supply system for transportation uses
- Maximize region’s watershed quality
- Improve public access to parks, greenways, and waterfronts
- Reduce transportation infrastructure land use
- Improve the ability of infrastructure to respond to weather and other extreme events

### INNOVATION

**OUR GOALS**

- Create a fully integrated and seamless transportation environment

**OUR OBJECTIVES**

- Fully build out a system of connected corridors throughout the region
- Establish a Smart Ecosystem of data acquisition and management for transportation efficiency
- Create a robust Mobility Marketplace that assures mobility on demand and integrates delivery technology
- Create and deploy new models of transportation finance and project delivery

For more details on how our strategies meet our objectives, see the appendix.
What Moving Forward 2050 means for Our Transportation System

Better ways to get around
In addition to investments in the regional network, Moving Forward 2050 includes upgrades to streets, sidewalks, and paths that will improve safety and connectivity for people walking and biking. Along with an improved transit network and new options for vehicle sharing and ride sharing, people will have more choices for getting to their daily destinations. If we implement the investments in Moving Forward 2050, households may choose to own fewer cars—or no cars at all.

Transformed, more efficient transit service
Improving transit by running buses and trains more frequently, reducing the time they are stuck in traffic or at stoplights, and giving riders better information about arrival times will help people who depend on transit to get around and attract new riders who might otherwise drive themselves. If we are successful at concentrating future growth around our highest capacity transit routes and we upgrade transit technology to reduce operating costs and fares, our entire transportation system will become more efficient.

Less time traveling to work, school, appointments, stores and recreation
Moving Forward 2050 will help the region maintain relatively low levels of congestion, helping people spend less time and money on transportation each day. Investments in the regional freeway network, other roads that connect communities, and an extension of the light rail to Amherst are projected to reduce the hours people spend traveling each day. That’s time people can spend with their families and friends or generating more economic value for the region.

More options to move goods around
We’ll continue to need freight rail lines, seaports, and waterways—and ways to access them—to move bulk commodities like construction materials. Investments in freight terminals and intermodal connections between modes will reduce transit times for freight and make rail and water transportation competitive. In the future, to support first-mile and last-mile delivery and pickup of smaller, higher value packages, we’ll need innovative options like community-scale freight mobility hubs to complement people-oriented mobility hubs.

More efficient flow of goods
Moving Forward 2050 doesn’t just impact people. Overall truck travel times in the region are expected to decrease as we make investments in border crossings, Interstate Highways, and major regional freight corridors, helping existing businesses become more productive and making the region more attractive to new industry.2

Streets that facilitate first and last-mile connections
Adapting our major arterial roadways and commercial streets to enable safer and more efficient delivery of goods at appropriate times of day will help lower the price of consumer goods and help more packages arrive more quickly—while maintaining safe spaces for people walking, biking, using transit, and driving.

Green Freight Corridor Improves Bi-National Trade
As Buffalo Niagara expands its position as a Logistics Gateway, opportunities exist to stimulate economic growth and provide contemporary solutions for an array of benefits to the region. Identifying primary freight corridors and Ontario linkages will help focus efforts to manage autonomous truck platoons to reduce congestion, maximize efficiency and enhance border clearance. Upgrading the corridor to shift trucks to alternative fuel sources and supporting the infrastructure with green elements will strengthen environmental improvements.

1 Cambridge Systematics, Buffalo Niagara 2050 Regional Transportation Model, 2018.
2 Ibid.
What Moving Forward 2050 means for Our Economy

Enhanced access to jobs and educational opportunities
As we focus growth where we have existing infrastructure and make improvements to the transportation services operating on that infrastructure, people will be able to access universities, community colleges, and jobs more quickly and at lower cost. The investment package in Moving Forward 2050 will improve the freeways and major arterials that connect our region’s economic engines, and more frequent, high-capacity transit services will help move people efficiently.

Households and businesses spend less on transportation costs
Just the region-wide improvements in Moving Forward 2050 are projected to save people and businesses in the region more than $100,000 per day in costs related to travel and congestion. Households could save even more as vehicle and ride sharing options expand and we invest in sidewalks and bike infrastructure, reducing vehicle ownership, operating, and maintenance costs.

Improved safety and public health
A combination of technology enhancements, better design, education, and enforcement will reduce the long-term social and economic costs associated with fatalities and serious injuries on our roadways. With the dramatic reduction in crashes associated with the spread of automated and connected vehicles, vehicle liability and collision insurance costs could plummet.

Growth in target industries
A robust and diverse transportation system can attract growing businesses and younger workers, especially in the region’s target industries like professional services, and health and life sciences. Having more reliable ways to get around will also bolster tourism in the region. Promoting electric and other alternative fuels can expand the region’s energy sector. Concentrating transportation investments near existing infrastructure can steer development away from farmland and support agriculture. The future freight system, with more diverse and efficient ways of getting goods to consumers, can expand all industries, particularly logistics. The future transportation system will also make it easier for residents to access training opportunities and jobs in target industries and other emerging sectors.

Dollars invested in transportation go further
Moving forward with our transportation system can lead to more economic activity than merely repairing and maintaining current infrastructure—$1 spent on infrastructure can spur up to $3 in economic activity. The transportation improvements in Moving Forward 2050 can concentrate development near transit, which is more fiscally productive than development along automobile oriented corridors. For instance, the dense development along the Metro-rail corridor in Buffalo has a net taxable value of over $1M per acre, while a similar sized retail corridor along Transit Road in Amherst is valued at about one-third that price, or $347,556 per acre.

Creating complete streets can be a catalyst for private investment. One recent local example is Niagara Street in Buffalo where a $28.7 million streetscape project that began in 2016 followed nearly $50 million in private investments from 2013 through 2016. The completion of this and similar initiatives, like SEMAs, can stimulate further private investment to build our economy and revitalize communities.

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3 Ibid.
What Moving Forward 2050 means for Our Communities

Communities are more walkable
Moving forward takes huge steps to promote walking in all communities. Adding pedestrian amenities and integrating technology with safety features on SEMAs, village Main Streets and other roadways will make walking safer and more convenient on automobile-oriented streets. Focusing transportation investments, like Mobility Hubs, near existing infrastructure can better connect pedestrians to other transportation options and bring more jobs and services within walking distance for residents. Moving forward approach also shows that the population of walkable communities would grow three times more than in car-dependent places.

Communities are more bike-friendly
Moving forward will accelerate the region’s recent progress in promoting bicycling by expanding bikeways to more communities and connecting bike lanes together and to other transportation modes. Transportation improvements, such as the Next Generation Shoreline Trail, additional bicycle amenities, and safety enhancements from new technologies, will make bicycling a much more reliable mode of transportation while land use patterns shift to place more services and jobs within reach by bicycle.

Communities are revitalized
Concentrating transportation investments where we already have infrastructure can spark revitalization in communities. Better data and governance mechanisms that engage more diverse stakeholders in decisions on how to improve the region’s transportation system can also strengthen communities while ensuring that our strategies are effective for the entire population.

Communities are healthier with more active and safer transportation options
In addition to economic benefits of safety improvements, as we invest in active transportation options and reduce transport-sector emissions, households and employers in the region could see improvements in public health, including lower obesity rates and improvements in chronic conditions like asthma and diabetes.

Amenities and services are more accessible
The investments in Moving Forward 2050 and accompanying changes in development patterns are designed to give people better access to opportunities: jobs, education, social services, and other daily needs. Our communities will be stronger if our residents feel connected to each other and to institutions that are the foundation of our society.
What Moving Forward 2050 means for Our Environment

Air quality is improved and GHGs are reduced

Providing more ways to get around will limit how much we need to drive and improve air quality. The estimated reduction in annual vehicle miles traveled due to the Moving Forward approach equates to a decrease in greenhouse gas emissions of over 76 metric tons of CO₂ equivalents per year. Promoting the use of electric vehicles and alternative fuels will further limit the impact transportation has on our environment. By burning less fossil fuels, air quality will improve, specifically near highways and bottlenecks, while greenhouse gas emissions from transportation will fall drastically.

Water quality is improved

Using road surface materials that are permeable, or let rainwater seep into the ground, will reduce the amount of water entering our combined sewer system during rainfall events. This prevents sewer overflows from happening when rainwater or snow melt exceeds the capacity of sewer treatment facilities. It also can reduce on-road contaminants, like oil and gas, from reaching waterways. Incorporating green infrastructure on street rights-of-way can also have a substantial impact on water quality. For instance, retrofitting just 60% of streets in the City of Buffalo to control stormwater could prevent over 38 megagallons of run-off entering the sewer system in a 1” rainfall event.

Access to natural assets is enhanced

Moving forward not only improves the environment, but improves our access to our natural assets, like parks, shorelines and waterways. Concentrating transportation investments near existing communities will encourage new development in these places, adding more jobs and homes within walking distance of existing parks and open spaces while limiting sprawl to preserve natural areas in rural communities. Many transportation investments of Moving Forward will significantly enhance access to natural assets. Developing a Regional Cycle Network will connect more neighborhoods, particularly in smaller cities and village centers, to bike lanes that extend to neighborhood parks and shorelines. Providing mobility as a service, will provide residents and visitors with more ways to access the region’s world class natural assets.

Infrastructure is more resilient to climate

A range of new threats means that standard designs for public infrastructure may no longer be adequate to withstand the effects of climate change. To boost system resiliency, local officials should work together to anticipate changing environmental and operational conditions and to update design standards accordingly, including pavement requirements and maintenance protocols. Climate change-induced design factors, which have both short-term and long-term implications, include temperature change, precipitation and water levels, wind loads, storm surges and wave heights. These factors may require the retrofit of existing facilities as well as the redesign of new, replacement, or renovated capital items.

Our region will work to meet the goals of the Paris Climate Agreement

Moving Forward 2050 works hand in hand with Erie County’s Commitment to meeting the GHG reduction goals set by the Paris Climate Agreement. Recognizing that transportation accounts for the largest share of GHGs emitted in the region, Erie County’s plan, “Erie County Commits to Paris,” includes a variety of targeted transportation strategies that set out to reduce emissions from vehicles, like incentivizing the use of public transportation. The plan also calls for enhanced coordination between Erie County Department of Environment & Planning, GBNRTC, NFTA, and other partners within the county and beyond, which will help the region meet Erie County’s commitment to the Paris Climate Agreement while also accomplishing the goals of Moving Forward 2050.

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Better access to jobs, education, training, and services for communities of concern

The integration of multiple travel modes through MaaS and at mobility hubs near communities of concern can improve the ability to get to work, school, medical appointments and other services. Partnerships between TNCs and transit providers will help fill gaps in communities of concern, and subsidies will keep fares affordable. More frequent traditional transit will improve travel times for those in the urban core and first-ring suburbs. The regional cycling network can help link communities of concern with jobs, school and services. AVs are expected to improve access for those who do not own or cannot operate a vehicle.

Supporting investment in communities of concern

SEMs and Secondary Corridors will use many of the underutilized roadways in communities of concern that have seen disinvestment. Similarly, the Knowledge Corridor and transit-oriented development (TOD) can help spur reinvestment. Complete streets projects in the Smaller Cities and village centers can help revitalize these communities.

Better health outcomes for communities of concern

Mobility hubs, SEMs and Secondary Arterials, and complete streets support active transportation options like biking, walking and transit, which have both physical and mental health benefits for communities of concern. Getting around by bike will be easier through a connected regional cycle network that includes communities of concern. SEMs, Secondary Arterials, complete streets, AVs, and rural roadway safety projects will all make communities of concern safer places to live.

Defining Communities of Concern

Our region has concentrations of residents living near or below poverty levels, a growing refugee population with limited English skills, and a legacy of disinvestment in communities of color. To help guide equity in transportation planning, we define our communities of concern as:

- Areas with significant concentrations of residents with low incomes, people of color, foreign born residents, individuals with disabilities, senior citizens and children, and limited English proficiency (LEP) speakers.

Moving Forward 2050 Equity and Environmental Justice Analysis

In compliance with Title VI of the Civil Rights Act of 1964, GBNRTC overlayed mappable Moving Forward projects against communities of concern. This helps identify any disproportionate distributions among projects in terms of location and spending. The analysis showed no such impacts (see the Appendix for more detail).

Next Steps for Equity and Environmental Justice in Transportation Planning

- Evaluate and prioritize projects with equity in mind
  Projects will be assessed and prioritized with performance measures that compare access to opportunities between communities of concern with the rest of the population.

- Monitor impacts on communities of concern
  Including: access and travel time to jobs, education, services, and parks and waterways; air quality; traffic density; and safety.

- Monitor regional trends in communities of concern
  Including: commuting and travel behavior; residential locations; population size, age, and employment; housing and transportation costs.

- Continue working with regional partners and stakeholders
  Including community organizations involved in One Region Forward, and the Racial Equity Roundtable.

- Continue to refine equity analysis
  Incorporate new indicators, data and methods as they become available.
How we’ll measure our progress moving forward

To better understand the impacts of our approach in the future, we will track these measurable indicators to evaluate how well we are meeting our objectives and achieving our goals. Project evaluation measures are included in Data Sources & Notes.

...ON OUR ECONOMY

INCREASE employment in a Regional Economic Development Council target sector
INCREASE Gross Regional Product
DECREASE in freight delays in the region
DECREASE border delays for freight and passengers
INCREASE in return-on-investment (ROI) of local governments

...IN OUR COMMUNITIES

INCREASE concentration of investment where we already have infrastructure*
INCREASE in job growth around our main streets, downtowns and former industrial sites*
INCREASE in share of commuting trips taken via alternative transportation modes*
DECREASE in commuting time
(by different modes, and compare communities of concern vs. rest of population)
DECREASE in number of reported motor vehicle crashes with pedestrians, cyclists or motorists
INCREASE in dedicated bike paths, shared bike lanes and multi-use/recreational trails*

...ON OUR ENVIRONMENT

DECREASE vehicle miles traveled (VMT) per capita*
DECREASE the area of impervious surfaces
INCREASE in share of residents with access to public parks and recreation areas
(by different modes, and compare communities of concern vs. rest of population)*
DECREASE the number of lane miles with underutilized, excess road capacity in the region
INCREASE the number of lane miles that utilize resilient paving materials

...ON THE WAYS WE INNOVATE

INCREASE lane miles of connected corridors
INCREASE the acquisition and availability of data
INCREASE options for on-demand mobility with integrated technology
INCREASE the use of new models of finance
INCREASE the use of new models of implementation and project delivery

*Performance measures from One Region Forward, A New Way to Plan for Buffalo Niagara