



MOVING FORWARD 2050

A Regional Transportation Plan for Buffalo Niagara
NYSAMPO Conference, Syracuse, NY
July 16, 2019





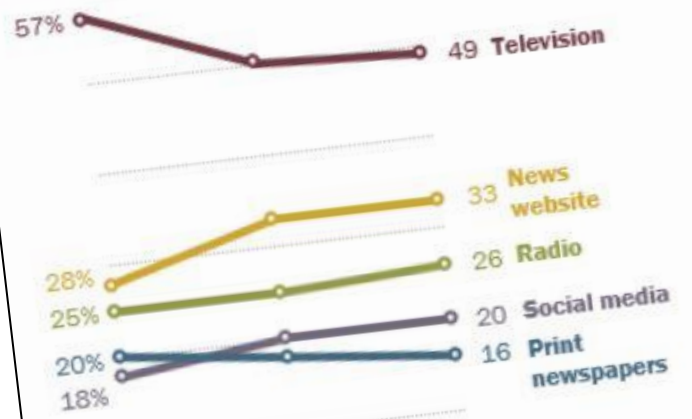
“What if we don’t change at all ...
and something magical just happens?”

Source: Cartoonstock

MOVING
FORWARD
2050

Changes in Communication

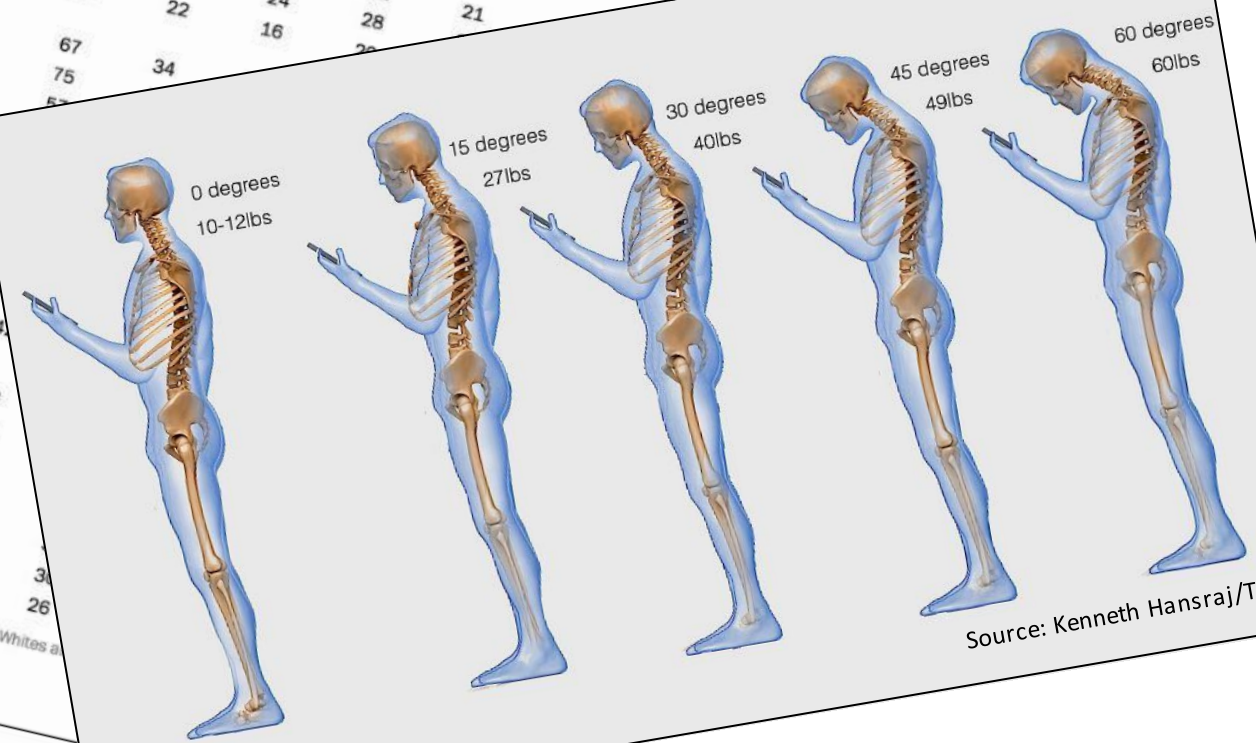
More Americans get news often from social media than print newspapers
 % of U.S. adults who get news often on each platform



Note: The difference between social media and print newspapers in 2017 was not statistically significant.
 Source: Survey conducted July 30-Aug. 12, 2018.
PEW RESEARCH CENTER

Use of different online platforms by demographic groups
 % of U.S. adults who say they ever use the following online platforms or messaging apps

	YouTube	Facebook	Instagram	Pinterest	LinkedIn	Snapchat	Twitter	WhatsApp	Reddit
U.S. adults	73%	69%	37%	28%	27%	24%	22%	20%	11%
Men	78	63	31	15	29	24	24	21	15
Women	68	75	43	42	24	24	21	19	8
White	71	70	33	27	28	22	21	19	15
Black	77	70	40	33	24	24	21	19	15
Hispanic	78	69	51	27	16	22	21	19	15
Ages 18-29	91	79	67	75	34	28	21	19	15
18-24	90	76	67	75	34	28	21	19	15
25-29	93	84	75	75	34	28	21	19	15
30-39	87	79	68	68	34	28	21	19	15
40-49	70	68	68	68	34	28	21	19	15
50-59	38	46	46	46	34	28	21	19	15
60-69	68	69	69	69	34	28	21	19	15
70-79	75	72	72	72	34	28	21	19	15
80-89	83	74	74	74	34	28	21	19	15
90-99	64	61	61	61	34	28	21	19	15
100+	79	75	75	75	34	28	21	19	15
Never	80	74	74	74	34	28	21	19	15
Often	77	73	73	73	34	28	21	19	15
Sometimes	74	69	69	69	34	28	21	19	15
Never	64	66	66	66	34	28	21	19	15



Source: Kenneth Hansraj/Time

Source: Pew

An aerial, grayscale photograph of a highway interchange. A car is visible on one of the ramps. The text 'A NEW WAY OF PLANNING FOR TRANSPORTATION' is overlaid in large, white, sans-serif capital letters on the left side of the image.

A NEW WAY OF PLANNING FOR TRANSPORTATION

Where we are starting from.

ONE REGION FORWARD

A New Way to Plan for Buffalo Niagara
2010-2015



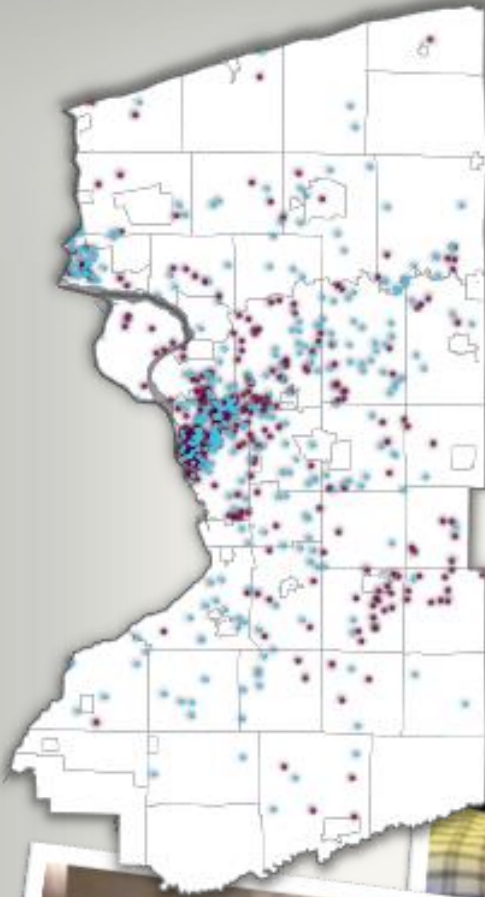
MOVING FORWARD 2050

A New Way to Plan for Transportation
2016-2018



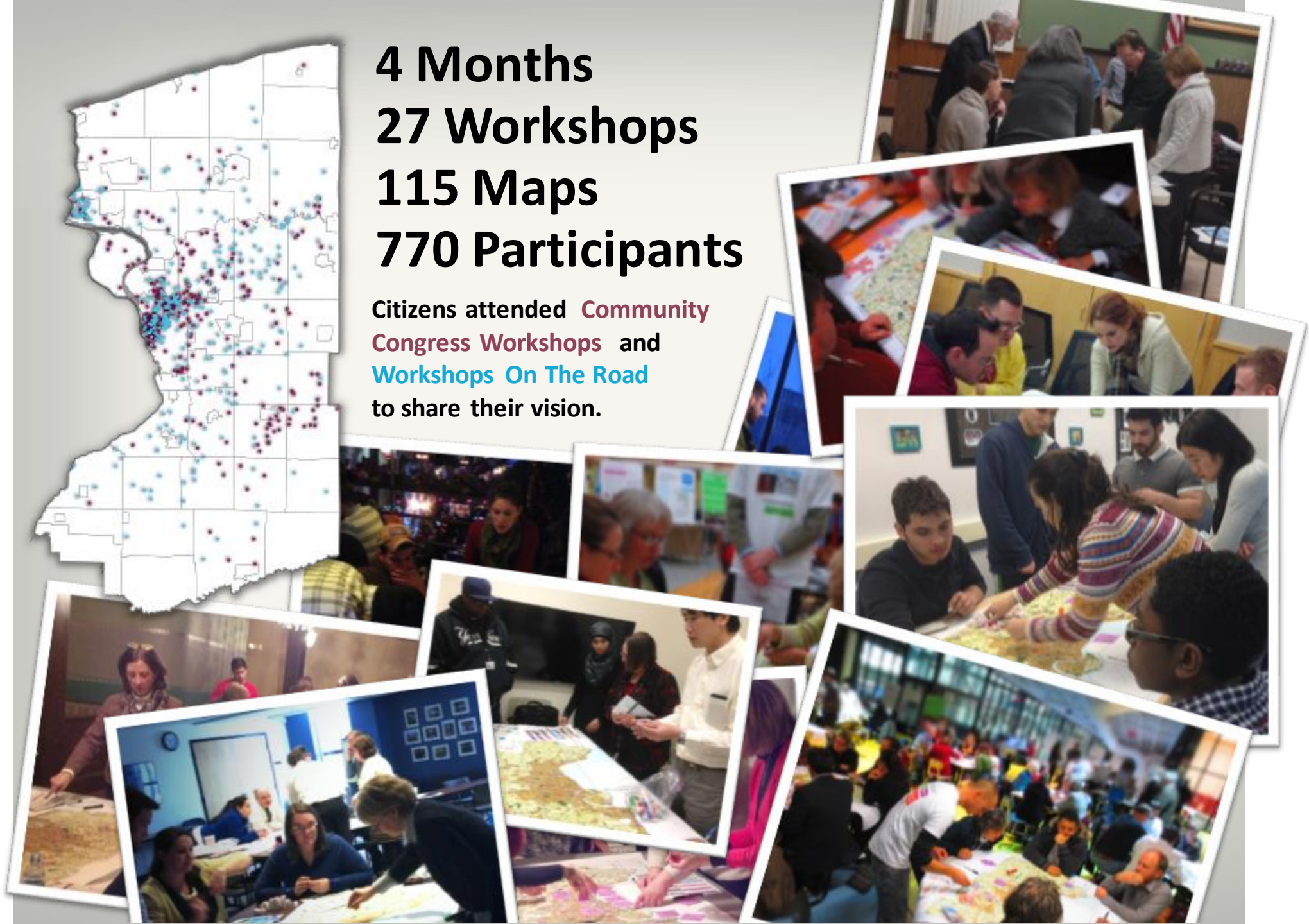
**This input guides our
transportation investments,
today and into the future.**





4 Months
27 Workshops
115 Maps
770 Participants

Citizens attended **Community Congress Workshops** and **Workshops On The Road** to share their vision.



WHAT COULD WE DO DIFFERENTLY?

Working Teams focused on defining performance metrics, establishing goals for the future and developing strategies aimed at reaching those goals.

100+
Subject matter experts
and stakeholders

Our
Values

Working
Teams

TRANSLATING
COMMUNITY
VALUES
INTO
STRATEGIES
AND ACTIONS

Create Great
Places and a
**Thriving
Economy**
through Efficient
Land Use

Connect Our
Places by
Expanding and
Diversifying Our
**Transportation
Options**

5 Big
Ideas

and dozens of potential
strategies and actions
to get us there

Provide
**Housing
Choices**
in Neighborhoods
that are Great
Places to Live

Conserve Our
Energy

Promote Renewables
and Prepare for the
Impacts of
**Climate
Change**

Strengthen
Our **Food
Systems**
for a Healthier
Population and
Economy



HOW WILL WE KNOW WE'RE MAKING PROGRESS?








How will we know if our collective efforts are working?

There is no single barometer that can tell us that, but if we commit to continue asking the question, we can reflect on our performance as a region. Through its partnership with the UB Regional Institute, One Region Forward will commit to measuring the indicators on the following pages over time. The numbers aren't the only way we will measure progress, but they offer an objective way for us to continue the conversation about the future we seek to create for Buffalo Niagara.



MEASURING OUR PROGRESS WILL TELL US IF OUR ACTIONS ARE MOVING US TOWARD OUR VALUES

HOW WILL WE KNOW WE'RE GETTING THERE?

		WHERE WE ARE TODAY	WHERE WE WANT TO GO
	Are we concentrating new development where we already have infrastructure?	68% of all developed land is within the urbanized area and serviced by a sewer district.	↑
	Are we focusing job growth around our main streets, downtowns and former industrial sites?	26% of all regional jobs are in downtowns, Brownfield Opportunity areas, or near main streets.	↑
	Are we conserving natural, open spaces?	693 square miles of open space are conserved from development.	↑
	Are we increasing public access to our waterfronts?	83.5 linear miles of shoreline with public access.	↑
	Are we reducing the miles we travel?	17.9 daily vehicle miles traveled per person.	↓
	Are more workers commuting via alternative modes of transportation?	18% of the region's workers commute via alternative modes of transportation.	↑
	Are we building new homes and job centers that are connected by public transit?	26% region's homes are within areas accessible to transit stops. 32% region's jobs	↑

A new way of planning for transportation in Buffalo Niagara is grounded in values and based on performance.

A vision
for our economy,
communities,
environment,
and innovation in
transportation



Where we want to be in 2050

Our regional **vision** is grounded in the community values of One Region Forward.

What the data says about
our economy,
communities,
environment,
transportation
and innovation



Where we are today

We use **performance measures** to evaluate how we are doing today.

Defining our goals and objectives for
our economy,
communities,
environment,
and innovation



Developing how we'll measure progress on our goals and objectives.



A framework for moving forward

To achieve our vision, we set **goals** for our **economy, communities** and **environment** and for **innovation** in transportation.

Our **performance measures** tell us how close we are to reaching our goals.



A FRAMEWORK TO GUIDE DECISIONS MOVING FORWARD

Where we want to be in 2050

Our Economy

In 2050, our economy will be globally competitive with shared prosperity that spreads economic opportunities and benefits to all residents in the region.

Our Communities

In 2050, our communities will be brimming with opportunities, providing residents with various lifestyle choices and attracting new, diverse residents, businesses and investments from all over the world.

Our Environment

In 2050, our environment will be ecologically healthy and easily accessible so that all residents and visitors have abundant opportunities to enjoy our region's world class waterways and open spaces.

Innovation

By 2050, we will be making transformative changes to the way we plan, fund and implement the region's transportation investments through harnessing technological advances, making data-driven decisions and utilizing creative and diverse partnerships and funding sources.

TODAY — INNOVATION — TOMORROW

TRANSPORTATION



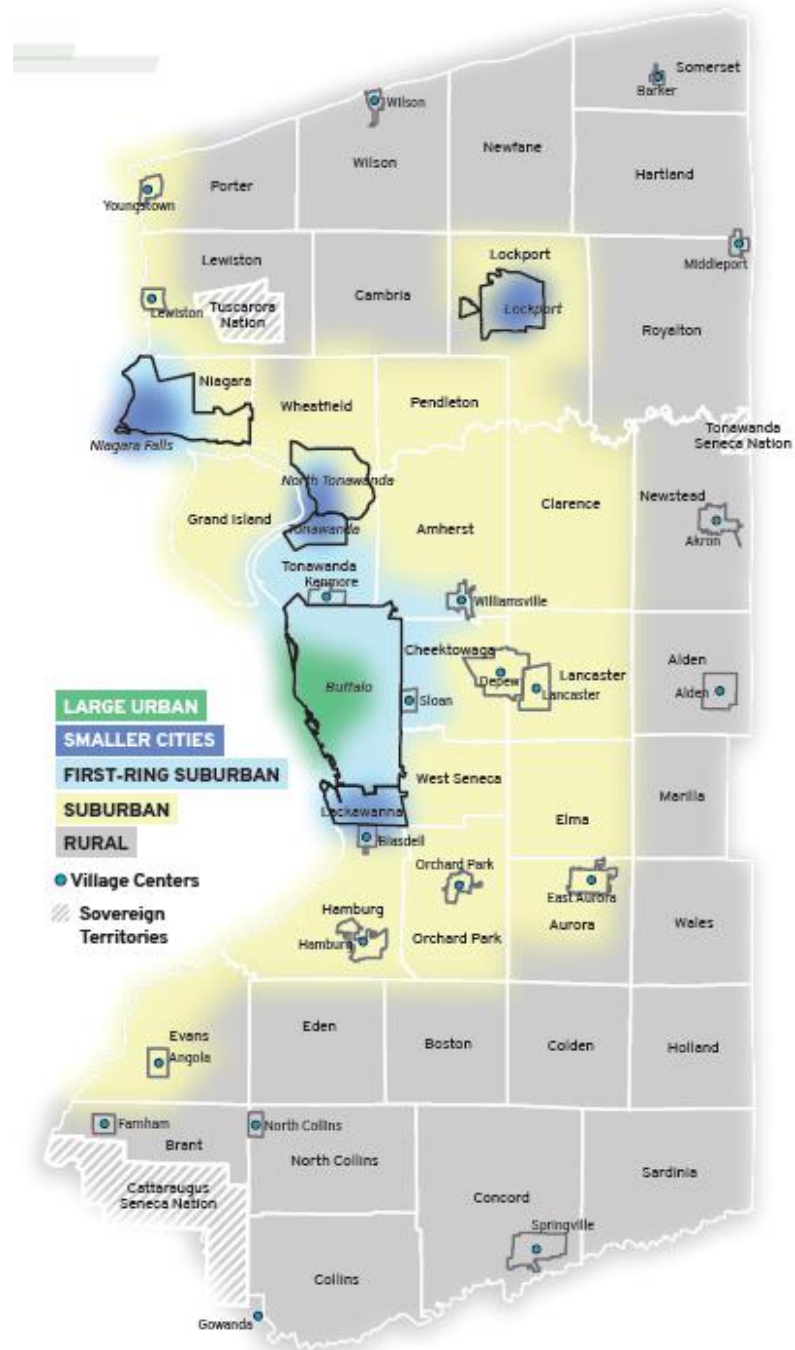
TODAY—INNOVATION—TOMORROW
TRANSPORTATION



TODAY — INNOVATION — TOMORROW
TRANSPORTATION

A FRAMEWORK TO
GUIDE DECISIONS

Different places, different needs



An aerial photograph of a city street intersection, overlaid with a semi-transparent purple filter. The text "WHERE WE ARE TODAY" is written in large, white, sans-serif capital letters across the center. In the background, a black pickup truck is parked on the left, and several cars are in motion on the right, appearing blurred. A pedestrian crossing with white stripes is visible in the foreground. A cyclist is riding on the right side of the road. There are also some colored rectangular markers on the road surface: a blue one and a green one in the lower right, and a red one further up on the right.

WHERE WE
ARE TODAY

Our region's economic development strategies are focusing on key sectors to support economic prosperity.

**Western New York Regional
Economic Development
Council (REDC) Target
Industries**

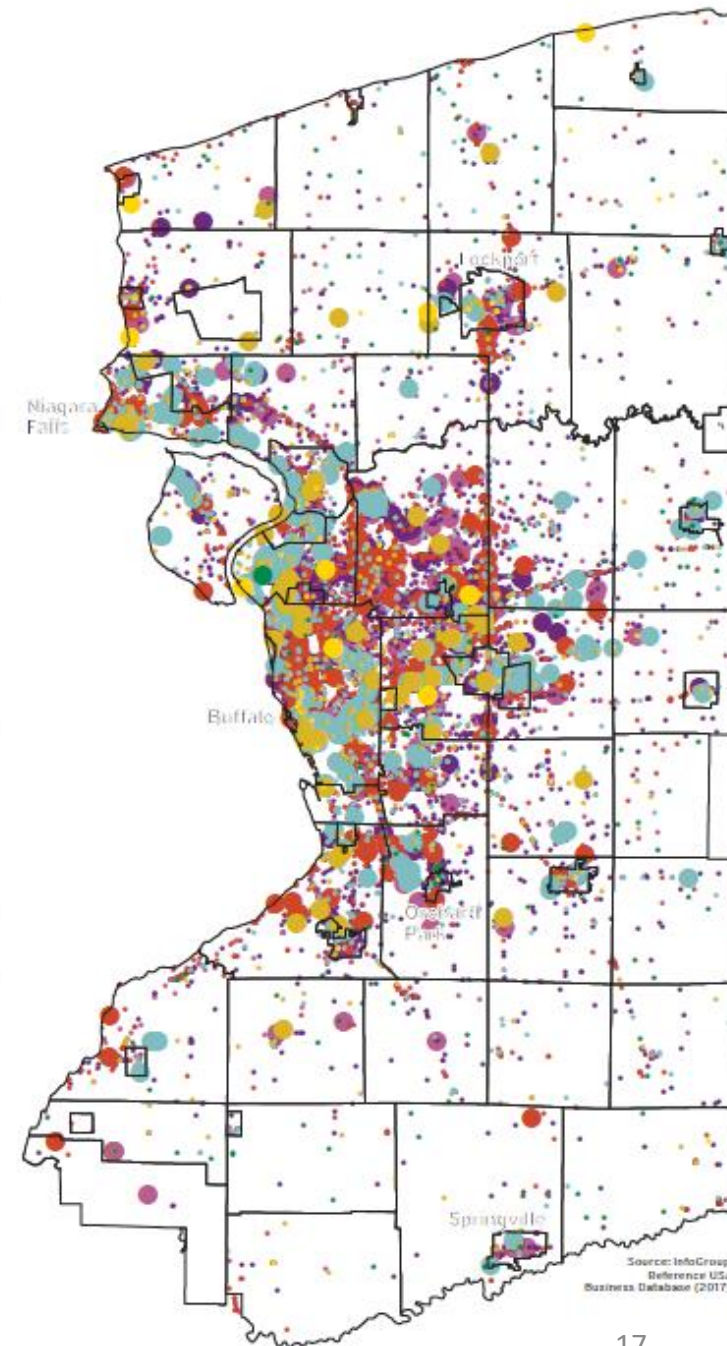
- Agriculture
- Advanced Manufacturing
- Energy
- Health & Life Sciences
- Logistics
- Professional Services
- Tourism

Employees per firm, 2017

- 0-50
- 50+

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

Source: InfoGroup, ReferenceUSA Business Database, 2017.



Source: InfoGroup,
Reference USA
Business Database (2017).

The economy is changing and so are travel demands.



**Improvements in communication
and information technology**



Rise in automation



**Evolution of sharing and
gig economies**



**Globalization, global trade, and
cross-border freight flows**



**Growth of e-commerce and
changing consumer preferences**



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

TRANSPORTATION
CONNECTS

OUR COMMUNITIES

Communities are
changing and so are their
transportation preferences.



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



Smaller households and
fewer children

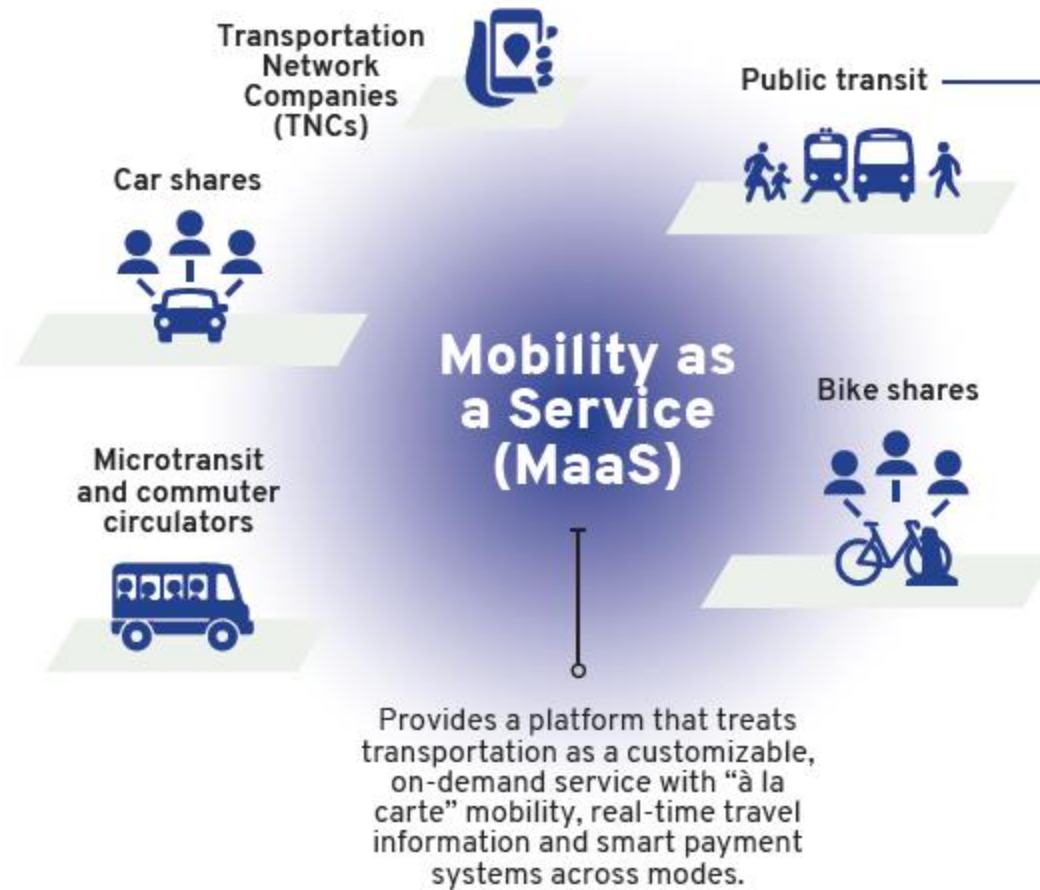


More seniors with mobility
concerns

TRANSPORTATION AND *INNOVATION*

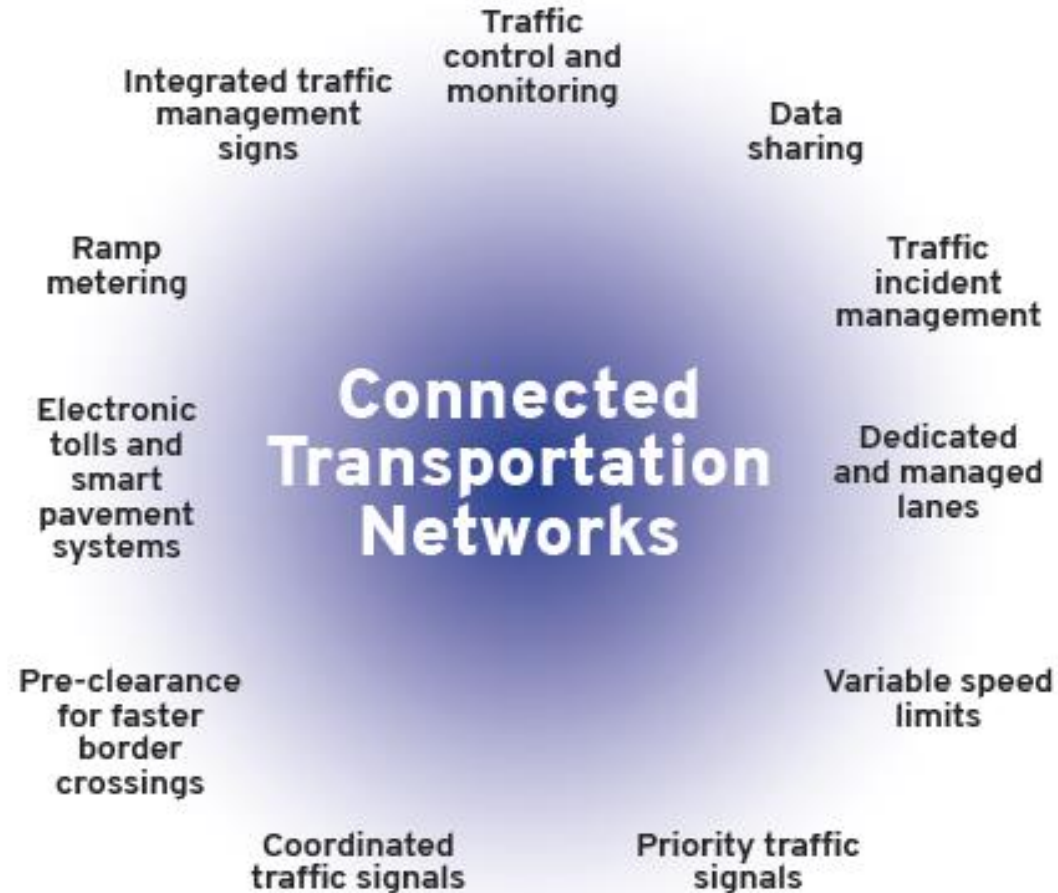
The future of mobility

Transportation built on access, not ownership



Data is the new infrastructure

“Person flow” traffic management technology





Mobility hubs



Mobility hubs conveniently connect all these services at one location.

Real-time travel information

- Kiosks, trip planners and message signs for real-time navigation
- Wi-fi access for on-demand trip planning on mobile devices

MaaS transportation options

- TNCs
- Bike shares
- Car shares
- Microtransit
- Public transit
- Smart parking

Mobility amenities

- Electric vehicle charging stations
- Bike repair stations
- Proximity to services, shops, restaurants and more

The future of vehicles

Automobiles of the future

Electric Vehicles (EVs)



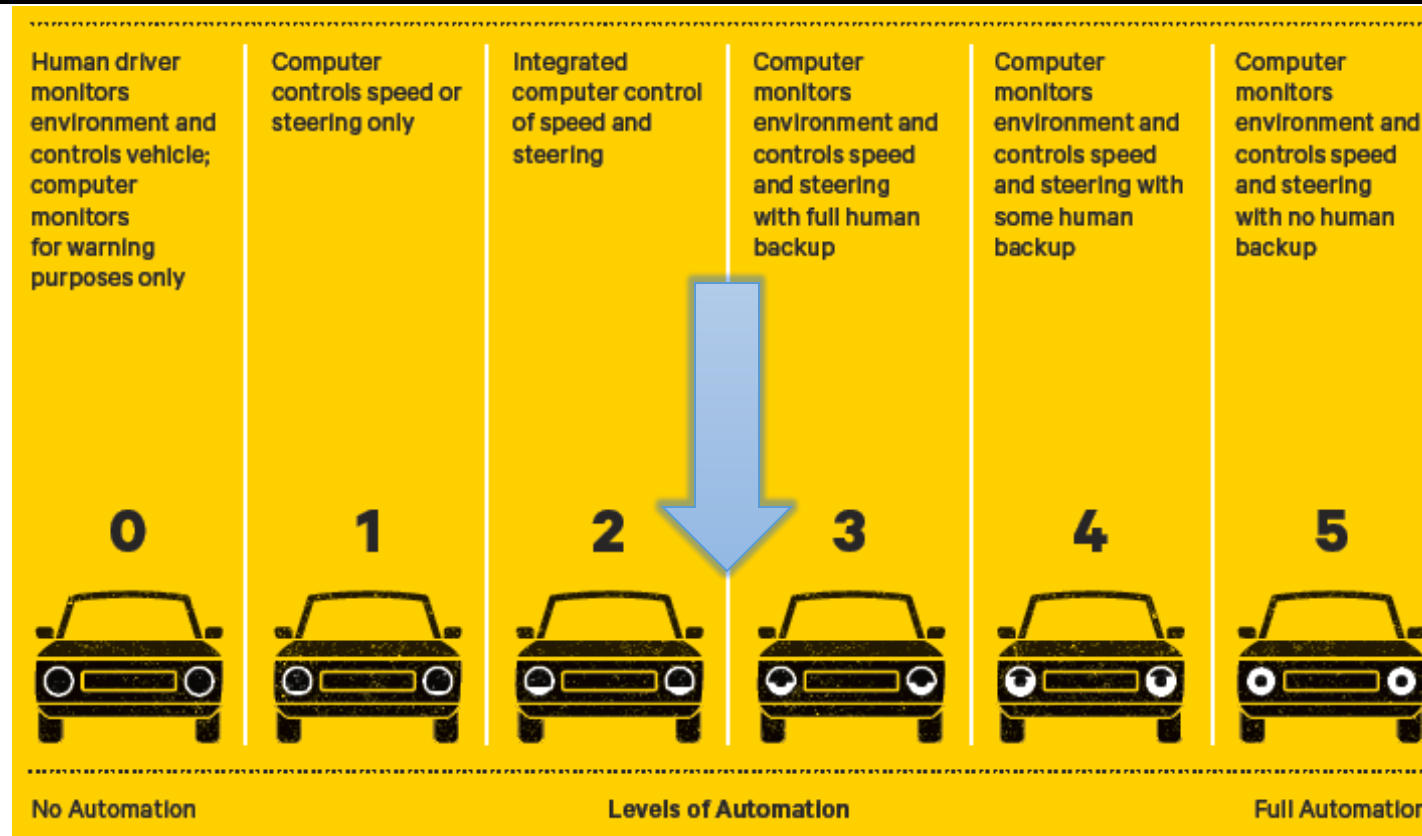
Connected Vehicles (CVs)



Autonomous Vehicles (AVs)

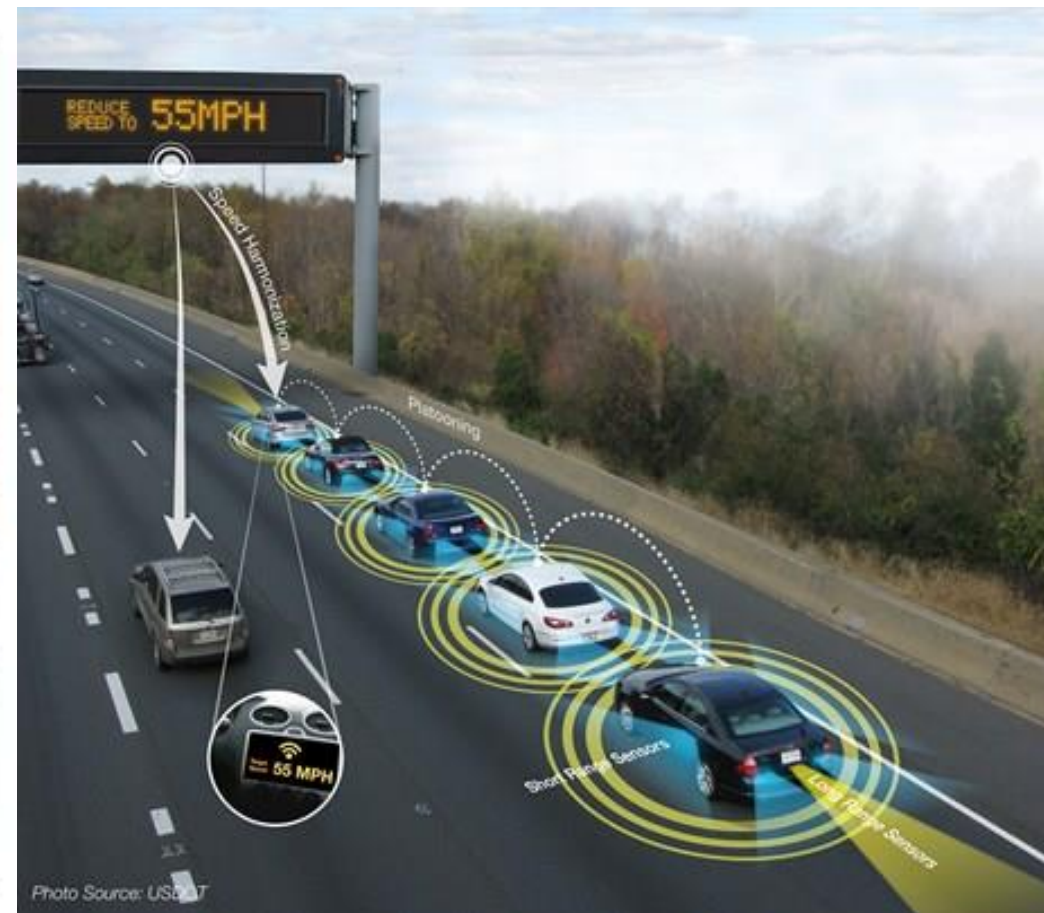
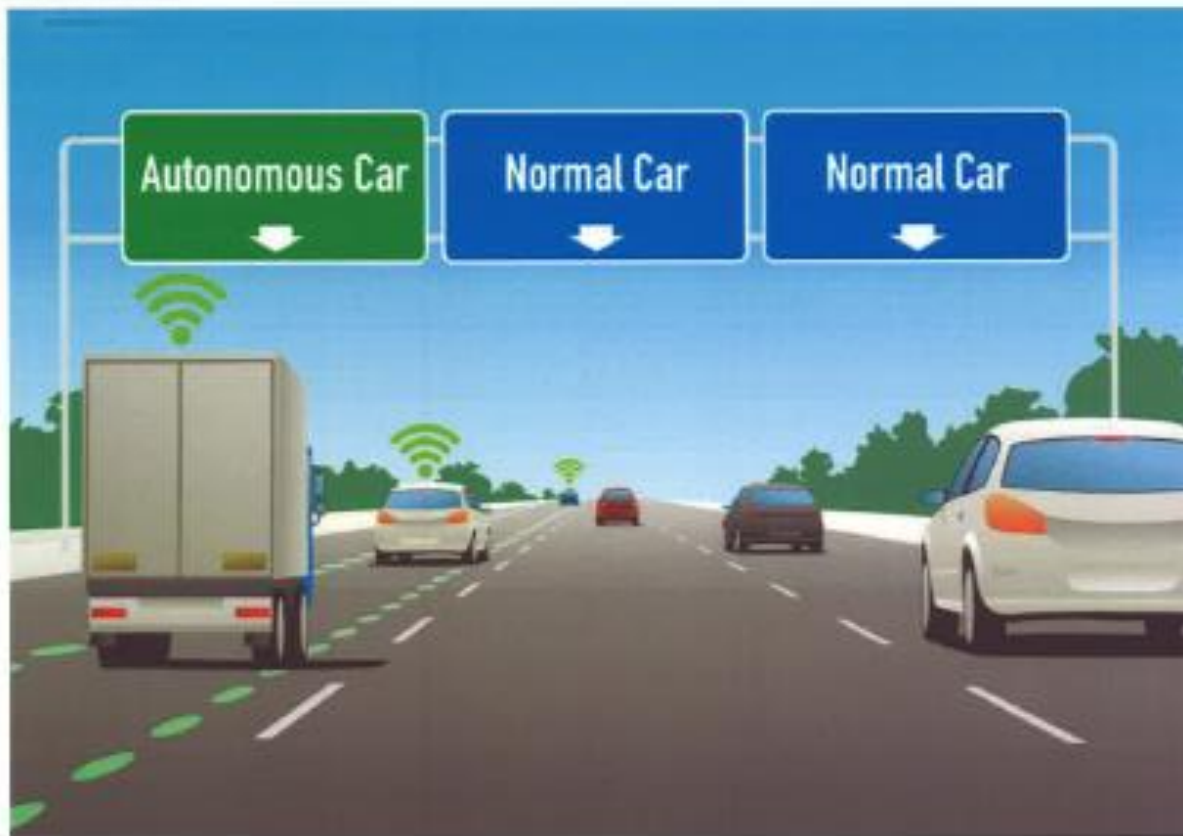


The future of vehicles: Autonomous, shared and electric



24

Bloomberg, 2018



MOVING
FORWARD
2050

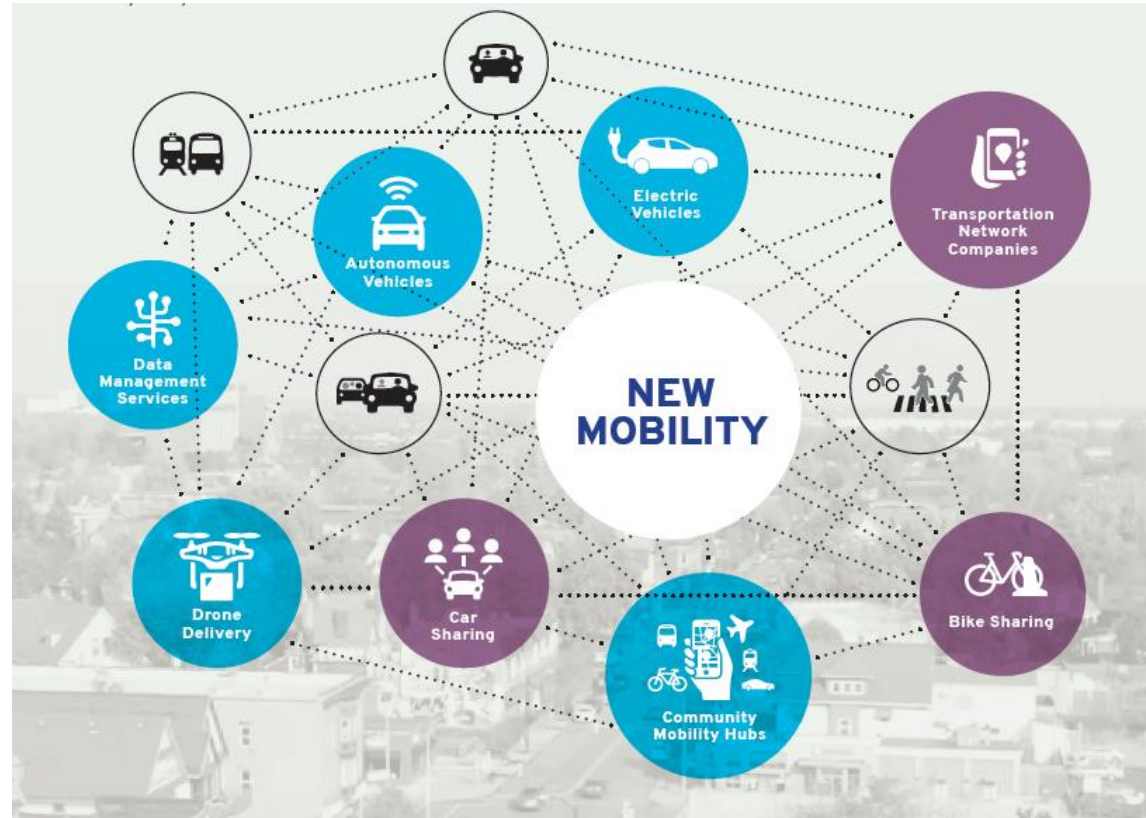
An aerial photograph of a city street intersection, overlaid with a semi-transparent purple rectangle. The text "STRATEGIES TO MOVE US FORWARD" is written in large, white, sans-serif capital letters across the center of the purple area. The background image shows a street with a dashed white line, a crosswalk, and some trees on the left side.

STRATEGIES TO MOVE US FORWARD

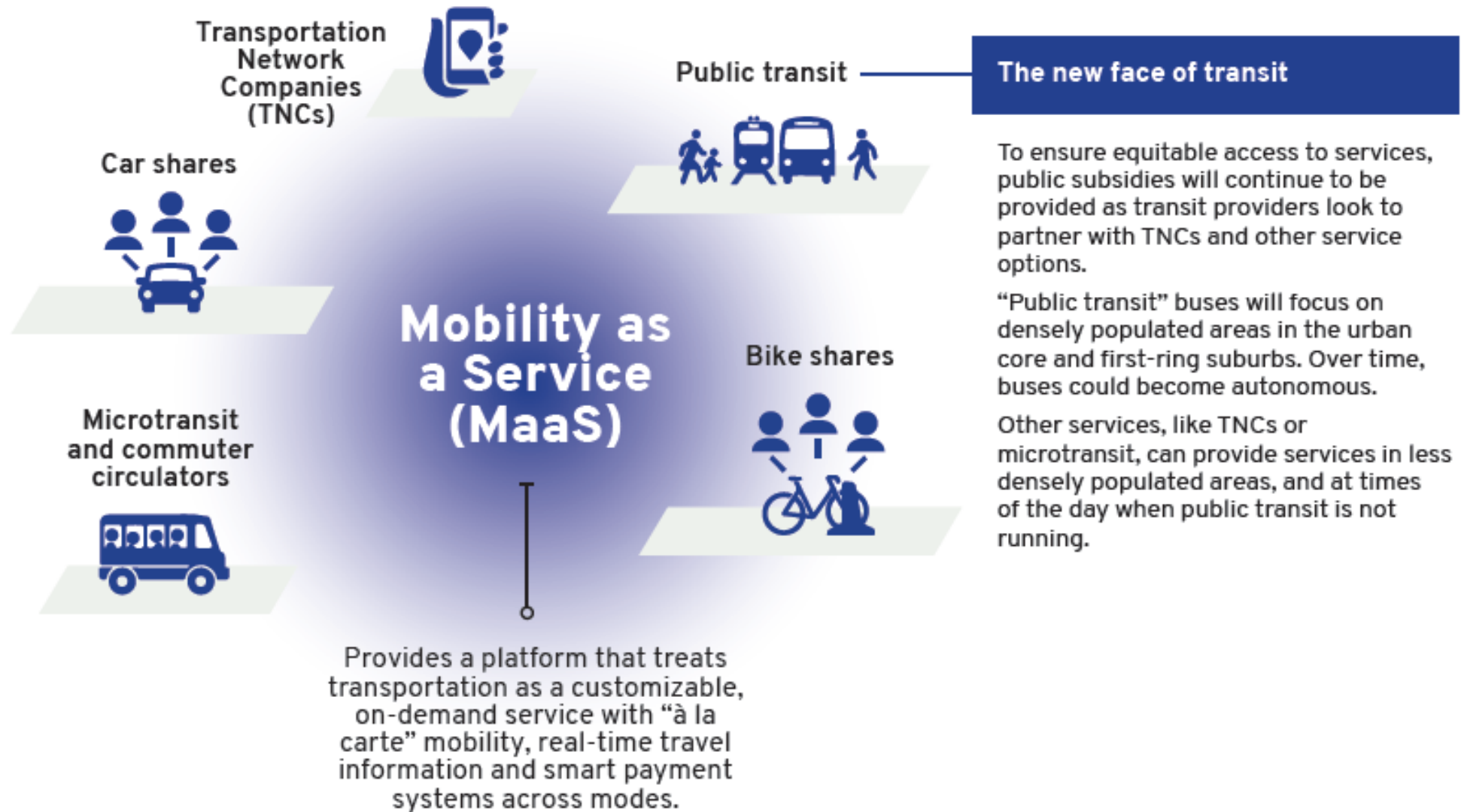
STRATEGIES TO MOVE US FORWARD

NEW MOBILITY & TRANSIT

**A fully
connected
region
with more
options and
opportunities**



Transportation built on access, not ownership

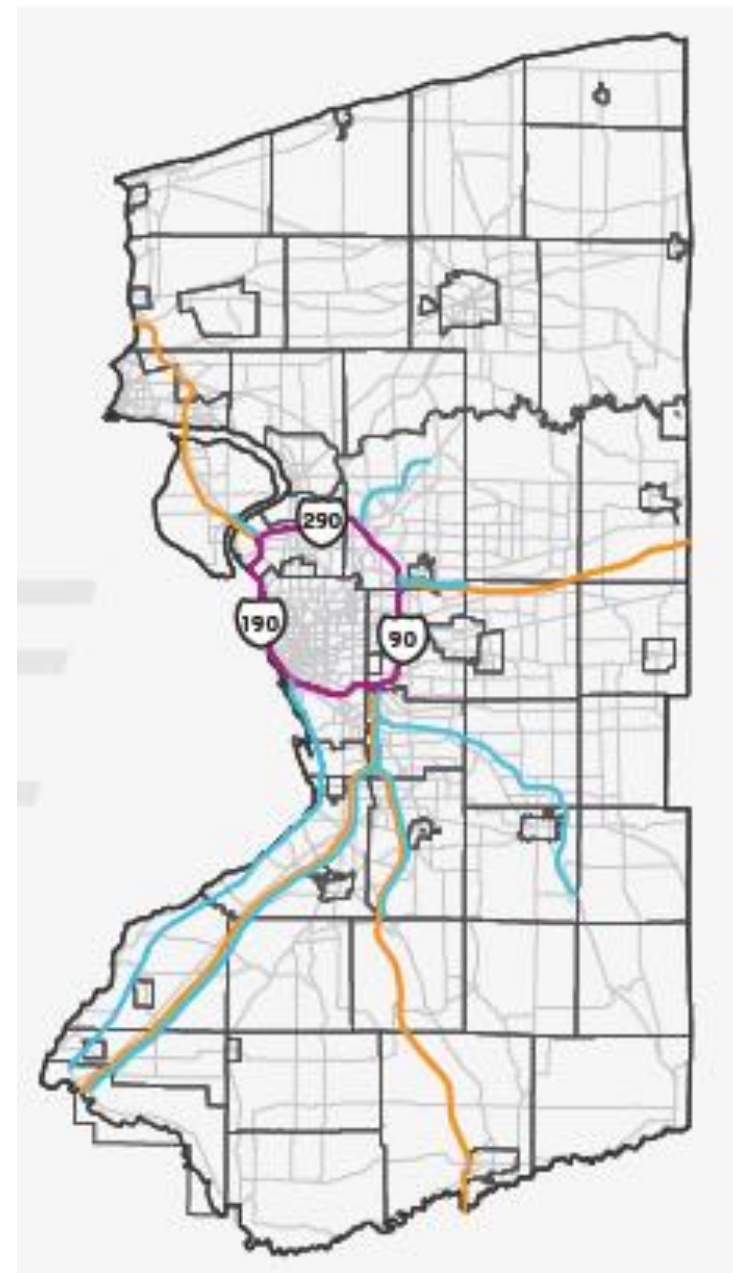
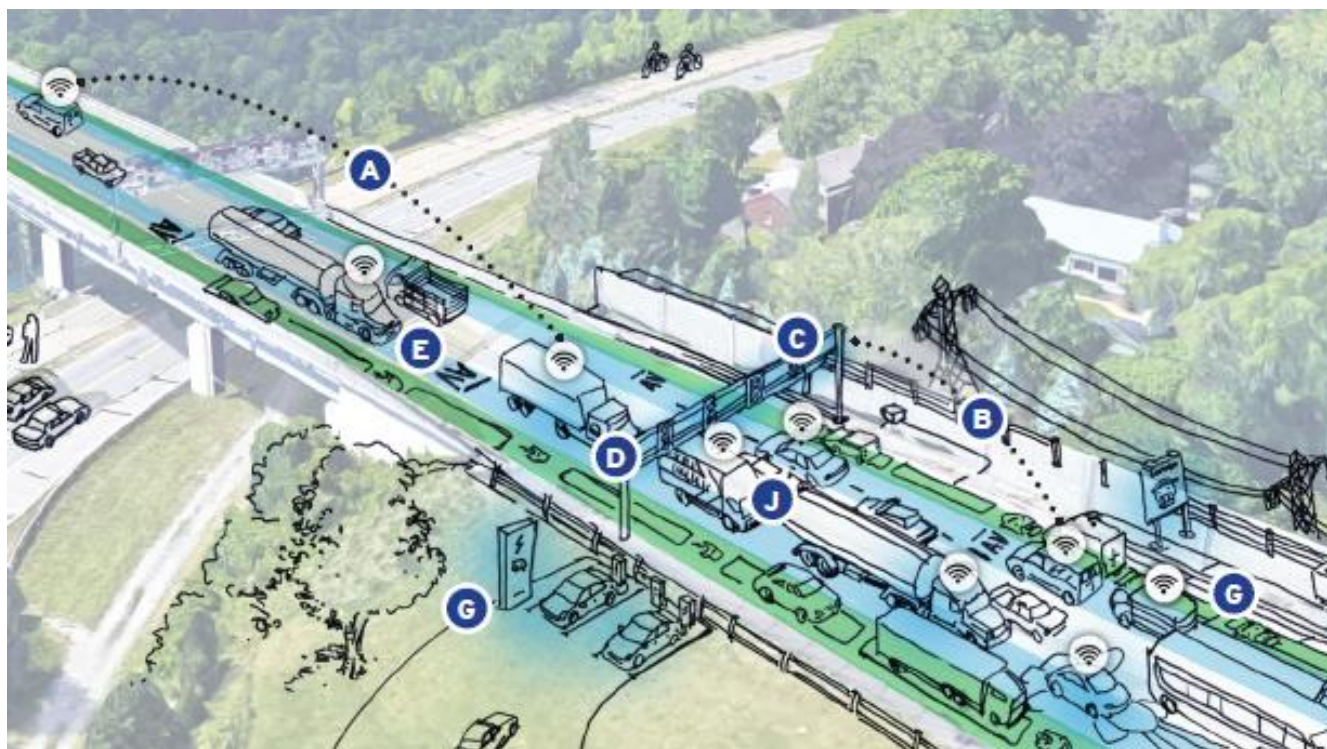


Enhancing our highway system with

Next Generation Freeways

Commuter Expressways

Connections to Other Regions



Next Generation Freeways + Commuter Expressways

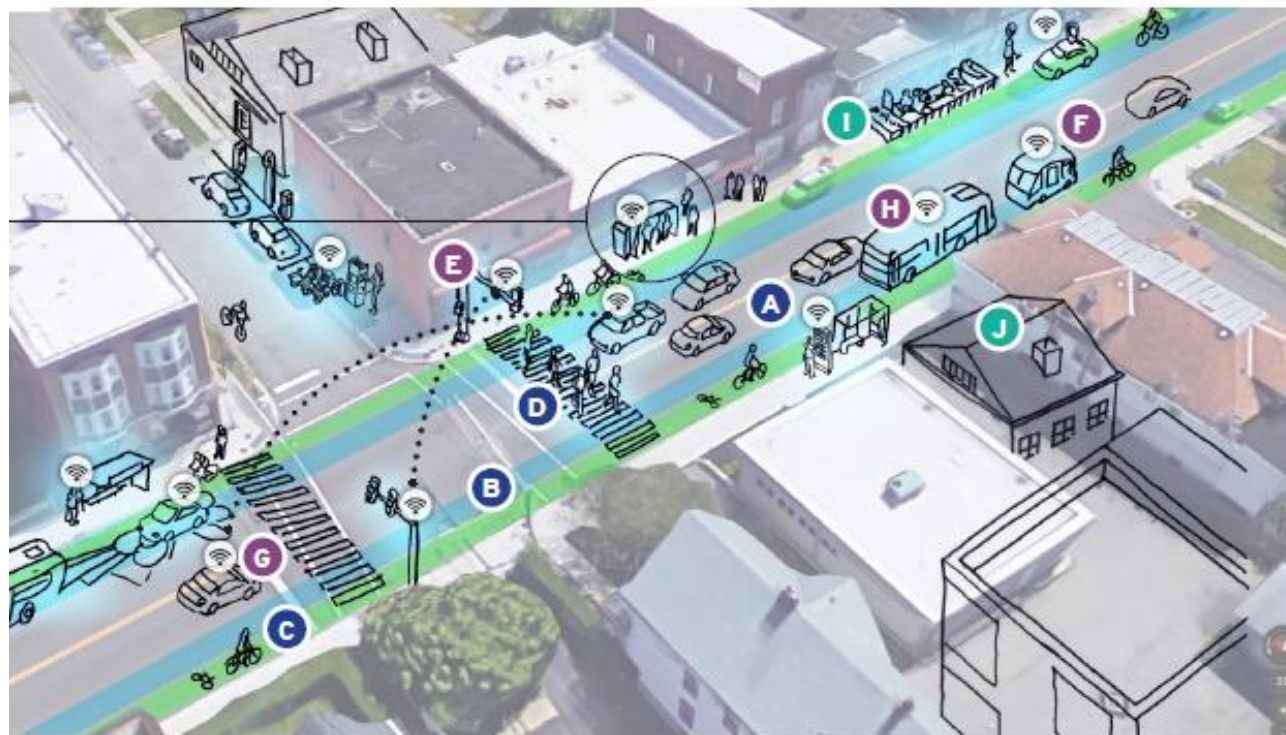
- A** Vehicle-to-vehicle (V2V) communications
- B** Vehicle-to-infrastructure (V2I) communications
- C** Electronic signage
- D** Variable speeds
- E** Autonomous vehicle (AV) lane
- F** Sustainable materials
- G** Alternative fueling (charging stations and lanes)
- H** Electronic tolling



STRATEGIES TO MOVE US FORWARD

**SMARTLY ENHANCED
MULTI-MODAL ARTERIALS**

Transforming key corridors into Smartly Enhanced Multi-modal Arterials



WAYS TO GET THERE

Sharing the street

Using the street right-of way for more than just automobile traffic allows for safe and convenient travel via other modes – like walking, bicycling and transit.

- A Travel lanes for vehicles**
- B Dedicated bus/transit lanes**
- C Bike lanes**
- D Safe pedestrian environment, with wide sidewalks, frequent crosswalks and pedestrian activated signals**

Mobility hubs



Mobility hubs conveniently connect all these services at one location.

Improving the flow of people and goods

E Coordinated and priority traffic signals

Traffic signals coordinated across jurisdictions using real-time traffic information will limit stop-and-go traffic, and give priority to buses and other mass transit vehicles.

F Microtransit

Microtransit, or a shared vehicles to transport multiple commuters in one vehicle, limiting the number of cars on the road. Rerouting school buses to other roadways would also improve traffic flow on SEMAs.

G Connected vehicles

Technology will enable vehicles to share information on roadway hazards, traffic signal timing, and alternative routes, and could direct vehicles to available parking spaces, variably priced based on demand.

H Autonomous vehicles

AVs, including public buses and other commuter vehicles, improve efficiency and safety with technology to avoid congestion and prevent crashes.

Reactivating the street

I Flexible curb space

Curbs are used differently at different times of the day. For instance, AVs could drop off and pick up passengers during AM and PM peak travel hours; AV and drone deliveries could be made overnight; and events can be held throughout the year (See page 74).

J New development along the street

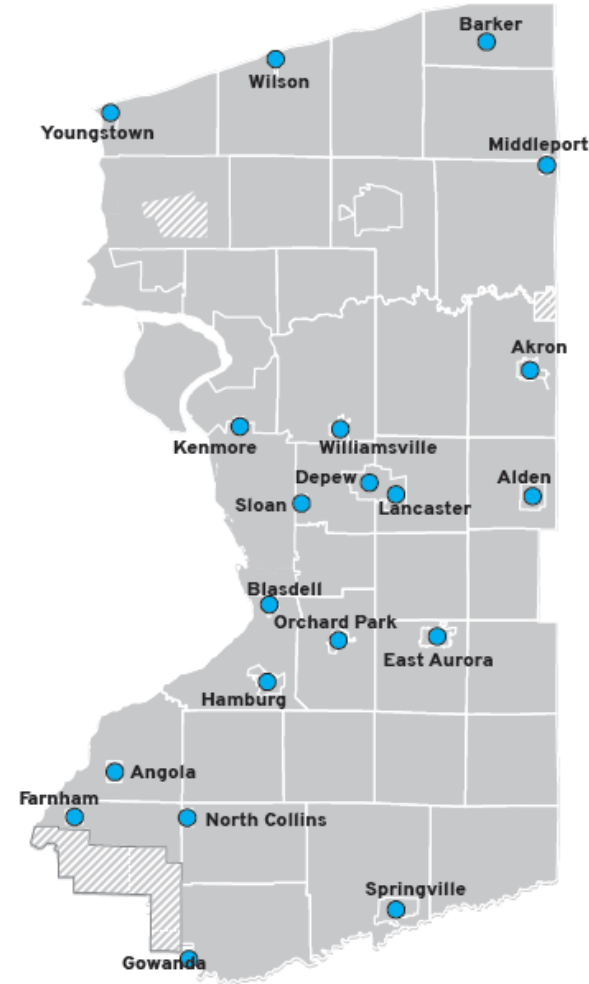
Existing buildings can be reused and new buildings can be constructed along the street to add commercial space and housing and revitalize these corridors. Benches, street art and other amenities can also be incorporated to bring life back to these corridors. Green infrastructure, like sustainable pavement materials, trees and plants, and drainage improvements, can help reduce runoff into the region's waterways.

Improving our smaller cities

- Continue to implement complete streets in downtowns and neighborhoods, with walkable neighborhoods and downtown centers, bike lanes and other cycling amenities, green infrastructure, pedestrian and cyclist connections to waterways, and smart parking management.
- Support Transportation Network Companies (TNCs)— and eventually autonomous circulators—to improve connectivity from neighborhoods to services and shopping areas, as well as connections among the Small Cities.



Maximizing access and mobility in village centers



Upgrading on rural roadways



*Incorporate **new construction materials and design of culverts** to minimize infrastructure deterioration and negative impacts on the local habitat and wildlife.*



*Upgrade roadways, shoulders, bridges and culverts in agricultural districts to **accommodate the heavier equipment** being utilized in commercial farming operations.*

Promoting bicycling with a modern cycle network

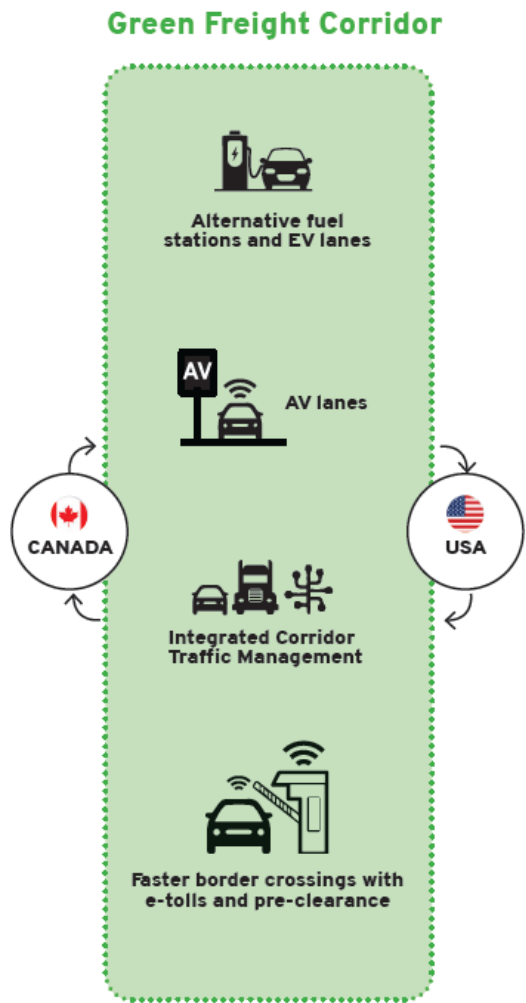


Strengthening our economy with a smart, efficient and diverse freight network



WAYS TO GET THERE

Bi-national Autonomous Green Freight Corridor



AV truck platoons on highways

Upgrades that facilitate AV truck platoons, like dedicated lanes and vehicle-to-infrastructure communications, can make our freight system more efficient.



Local “last mile” deliveries

Our freight network will need to diversify to accommodate new services and expand so that deliveries can be made safely and efficiently on local streets using drones, delivery bots and package pick-up lockers.



DOING THINGS DIFFERENTLY: FUNDING, FINANCE AND PROJECT DELIVERY



How we'll pay

Examples of innovative funding and financing include:

User fees for:

- Vehicle miles traveled
- Parking (including variable rates based on demand; implemented in San Francisco)
- Curb space (based on location and vehicle type)
- EV charging
- TNCs (Chicago charges a fee that funds public transportation)
- Tolls (including higher prices during peak hours)

Value capture:

- Tax increment financing (to encourage private development in specific areas and along designated corridors)
- Data from traffic signal timing, vehicle counts, bike counts, bus tracking sold to third-party travel navigation companies (Los Angeles and Seattle are exploring this)
- Ballot measures to allow for tax increase to be spent on transportation infrastructure (done in Austin, Los Angeles and Seattle, among other places)
- Increased gas tax (or possible EV charging tax in the future)

How we'll make it all happen

New Forms of Governance



- Coordinated Planning and Delivery
- New Mobility
- Smart Region
- Innovative Funding and Financing

How our strategies meet our objectives

ECONOMY

OUR GOALS	OUR OBJECTIVES	STRATEGIES									
		New Mobility & Transit	Regional Highway System	Smartly Enhanced Multi-modal Arterials	Secondary Corridors	Smaller Cities	Village Centers	Rural Roadways	Regional Cycle Network	Future Freight Network	Infrastructure for Reconsideration
Raise the region's standard of living	Support REDC target sectors										
	Increase Gross Regional Product										
	Improve connectivity in the Greater Golden Horseshoe										
Support efficient freight movement	Reduce freight delays										
Strengthen the fiscal health of local governments	Minimize local governments' infrastructure costs and maximize benefits from infrastructure investments										

COMMUNITIES

OUR GOALS	OUR OBJECTIVES	STRATEGIES									
		New Mobility & Transit	Regional Highway System	Smartly Enhanced Multi-modal Arterials	Secondary Corridors	Smaller Cities	Village Centers	Rural Roadways	Regional Cycle Network	Future Freight Network	Infrastructure for Reconsideration
Support focused growth in urban, rural and suburban communities	Maximize investments in community centers										
Ensure access to opportunities and services	Increase multi-modal access to neighborhood services										
	Improve equitable access to employment centers										
Support healthy and safe communities	Increase active transportation options										
	Improve transportation system safety for pedestrians, cyclists and vehicle drivers										

ENVIRONMENT

OUR GOALS	OUR OBJECTIVES	STRATEGIES									
		New Mobility & Transit	Regional Highway System	Smartly Enhanced Multi-modal Arterials	Secondary Corridors	Smaller Cities	Village Centers	Rural Roadways	Regional Cycle Network	Future Freight Network	Infrastructure for Reconsideration
Preserve and protect a healthy environment and accessible open spaces and waterways	Reduce negative impacts of local transportation on the region's air quality										
	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										
Maximize infrastructure resiliency	Improve the ability of infrastructure to respond to weather and other extreme events										

INNOVATION

OUR GOALS	OUR OBJECTIVES	STRATEGIES									
		New Mobility & Transit	Regional Highway System	Smartly Enhanced Multi-modal Arterials	Secondary Corridors	Smaller Cities	Village Centers	Rural Roadways	Regional Cycle Network	Future Freight Network	Infrastructure for Reconsideration
Create a fully integrated and seamless transportation environment	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										

Our objectives

Regional performance measures

Maximize investments in community centers	<p>INCREASE concentration of investment where we already have infrastructure*</p> <p>INCREASE in job growth around our main streets, downtowns and former industrial sites*</p>
Increase multi-modal access to neighborhood services	INCREASE in share of commuting trips taken via alternative transportation modes
Improve equitable access to education and employment centers	DECREASE in commuting time (by different modes, and compare communities of concern vs. rest of population)
Increase active transportation options	INCREASE in dedicated bike paths, shared bike lanes and multi-use/ recreational trails*
Improve transportation system safety for pedestrians, cyclists, vehicle drivers	DECREASE in number of reported motor vehicle crashes with pedestrians, cyclists or motorists

Moving Forward 2050 Meets Federal Requirements for Metropolitan Transportation Plans

REGULATION

(7) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multi-modal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area's transportation system.

(8) Transportation and transit enhancement activities, including consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated, and including transportation alternatives, as defined in 23 U.S.C. 101(a), and associated transit improvements, as described in 49 U.S.C. 5302(a), as appropriate;

RELEVANT CONTENT IN MOVING FORWARD 2050

One goal of Moving Forward 2050 is “Maximize infrastructure resiliency,” and a related objective is “Improve the ability of infrastructure to respond to weather and other extreme events.” The strategies described in Chapter 5, “Strategies to Move Us Forward,” contain elements that address all of these requirements, such as the use of permeable pavements, sustainable road surface materials and vehicle-to-infrastructure communications. Page 101 discusses how the strategies of Moving Forward 2050 will enhance the resiliency of the region’s infrastructure.

Current regional connections to intercity bus service providers are described on page 47 of the plan. These services benefit the region by providing interregional connectivity and affordable transportation options; and also by reducing pollution and energy consumption (especially as electric bus fleets are promoted). Their role in future transportation strategies that address goals of lowering congestion, emissions and costs are detailed in the “Connections to other regions” strategy (page 72).



THE IMPACTS OF MOVING FORWARD

Should we stand still or move forward?

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.

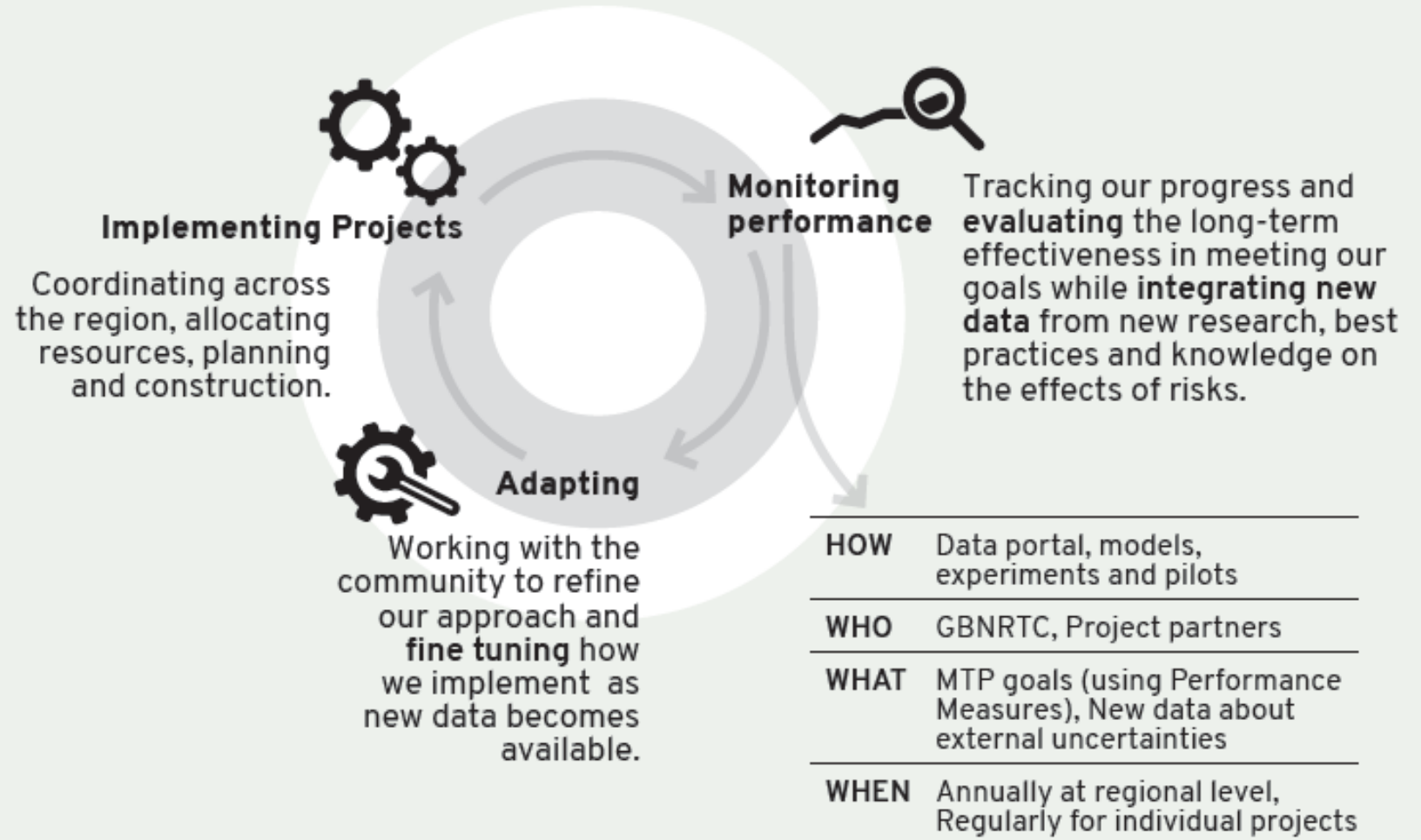
Should we stand still or move forward?

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.

Taking Action and Measuring Progress

As we carry out the work of the plan, we will track our progress and adapt our approach to move us closer to our goals. This continuous process will update our regional transportation plan in the next five years.

MOVING
FORWARD
2050
The Plan





LET'S MOVE FORWARD

www.gbnrtc.org/movingforward2050

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GBNRTC

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