

OCTOBER 10, 2018



LONG RANGE TRANSPORTATION PLAN



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INTRODUCTION

The Adirondack/Glens Falls Transportation Council (A/GFTC) is the Metropolitan Planning Organization (MPO) for Warren, Washington, and northern Saratoga County (including the Town of Moreau and the Village of South Glens Falls). Originally designated by the Governor of the State of New York in 1982, A/GFTC is a regional association of governments, public agencies, and transportation providers responsible for conducting a continuing, cooperative, and comprehensive transportation planning process.

As an MPO, A/GFTC produces and maintains three core planning documents. The foundation document is this Long Range Transportation Plan (LRP). Updated every five years, the LRP sets the course for future transportation system investments by detailing a vision of the desired direction and evolution of the transportation system as described by area residents, businesses, and municipal leaders. The priorities and projects identified within this plan will then be incorporated into a realistic program of action through the annual Unified Planning Work Program (UPWP) and the biennial Transportation Improvement Program (TIP). The UPWP is a list of planning activities undertaken by A/GFTC in support of goals and objectives contained in the LRP, while the TIP is a five-year listing of federally funded capital projects that result from the transportation planning process.

An effective transportation plan cannot be inert. This LRP, *2040 Ahead*, has been written to adapt to the changing travel characteristics, evolving land use patterns, emerging technologies, and other significant modifications to the surrounding environment that may occur in the next twenty years.

2040 Ahead represents the synthesis of public input, regular interaction with local officials, and technical studies undertaken by A/GFTC staff and professional transportation planning firms hired to assist the Council with the execution of its UPWP. The Plan describes existing system conditions, projects future conditions, measures performance, identifies transportation priorities, and recommends projects and strategies to maintain and improve the system in the near and long term.

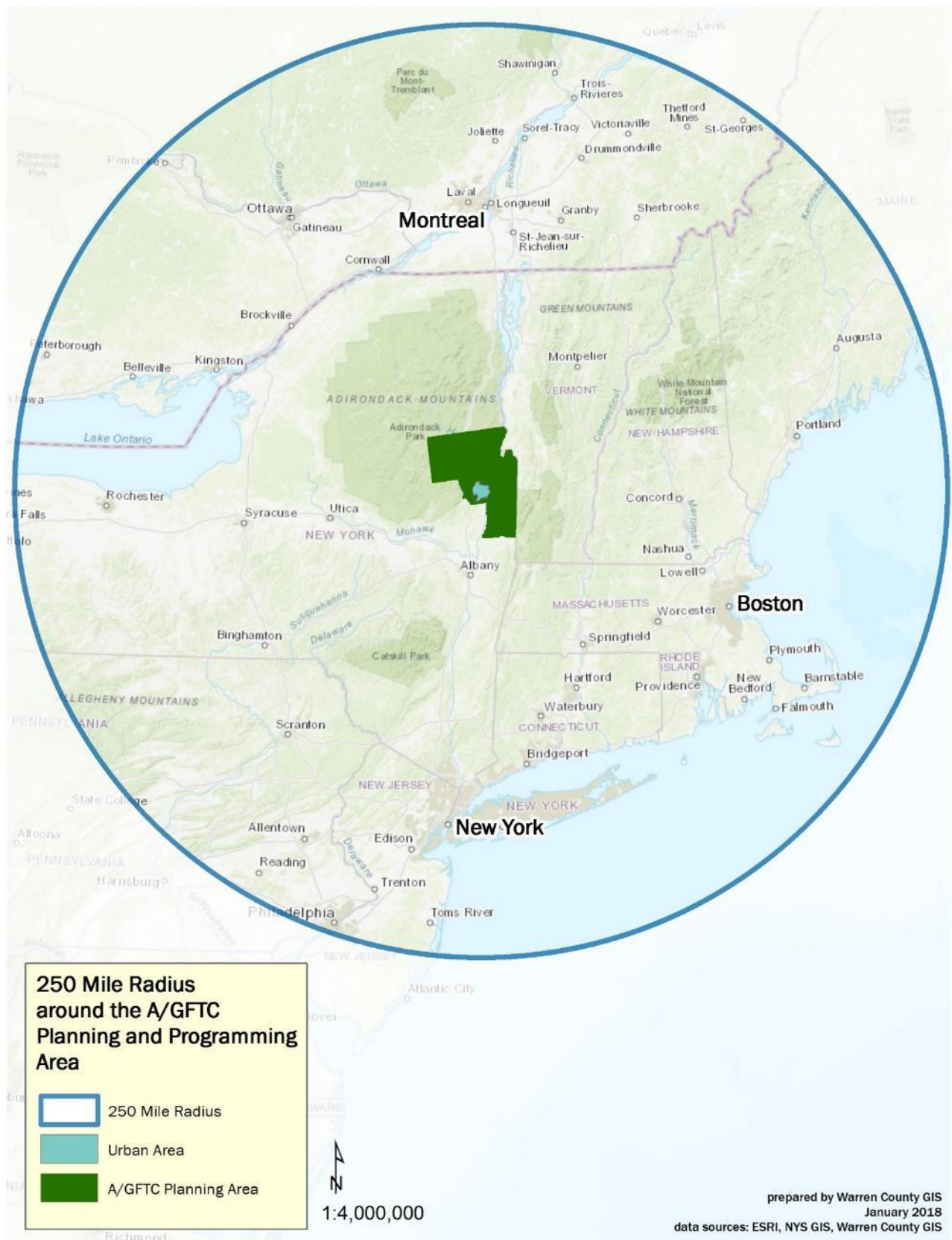
Setting

The A/GFTC Planning and Programming Area of Warren County, Washington County, and northern Saratoga County is situated in northeastern New York between the metropolitan Capital District to the south and the Adirondack Park to the north, as shown in Map 1. Transportation infrastructure was critical to the evolution of the region. The area was a base of military activity during the late 1700s. In the century that followed, the Hudson River was a major energy source for industrial development. The 1800s saw the expansion of the state canal system and railroads, modes of transport that enabled greater industrial activity and in turn incurred additional settlement.

Modal emphasis shifted from canals and railways to roads and highways during the 20th century. However, the area's significance as a regional transportation link has not diminished. The future of the region will be largely dependent upon fostering a safe and efficient transportation system.

The A/GFTC area is characterized by the remarkable quality of life it provides for its residents. A diverse economy, access to services and cultural and recreational resources, and affordable housing in a variety of residential settings all contribute to the region's significant appeal. The Glens Falls urban area is in close proximity to Saratoga Springs and the Capital District (including Albany, Schenectady and Troy). The area is also centered within easy driving distance of three major metropolitan areas - New York City, Boston, and Montréal.

Map 1: 250 mile radius around the A/GFTC Area



Jurisdictional Responsibilities

Most of the Federal funding sources administered by A/GFTC have restricted applicability. Federal funds are generally limited to the Federal aid eligible network, which is comprised of roads and highways with the following functional classifications: principal and minor arterials, urban collectors, and major rural collectors. Similarly, state funds are limited to use along state highways. The total centerline mileage (689.6) of regional streets and highways that are eligible to receive federal and state funds is less than 30% of the overall mileage total. (See Map 2.) As a result, federal and state funds are a comparatively small element of the transportation funding equation. Cities, villages, towns and counties also contribute considerable resources to maintain their respective highways systems while working to preserve local and regional mobility.

It is important to note that air transportation is outside of the federally-mandated jurisdictional responsibility of A/GFTC, and therefore not directly addressed by this document. However, the Floyd Bennett Memorial Airport (GFL), located in the A/GFTC area, is an important component of the area's economic engine, both in terms of the movement of people and goods. Although the airport does not currently have scheduled service, the facility has more than 30,000 operations a year¹. A/GFTC has participated in planning projects that address roadway access to/from the airport; however, the MPO is not involved in the planning or operations of the airport itself.

Functional Classification and the Federal aid eligible network

Functional Classification is defined by the role that a road or street plays in the network. Selection criteria for the various categories, as well as eligibility for most forms of federal aid, are listed below.

Federal Aid Eligible:

Principal Arterials – Rural and Urban

- Connected network of continuous routes that serve substantial statewide or interstate travel
- Carry the major portion of trips entering and leaving the area

Minor Arterials – Rural and Urban

- Work in conjunction with Principal Arterials to link cities and larger towns
- Spaced at logical intervals so that developed areas are within reasonable distance of an arterial highway
- Designed to provide for relatively high overall travel speeds with minimum interference to movements
- Carry significant intra-area travel, such as between business districts and outlying residential areas
- May link major suburban centers and carry bus routes

Collectors - Urban

- Provides land access and traffic circulation within residential neighborhoods, commercial and industrial areas.
- Accumulates traffic from local streets in residential neighborhoods and channels it into the arterial system
- Normally follows a grid pattern which is the most logical form for traffic circulation
- Integrates interstates with the arterials and augments the principal system with a lower level of mobility

Major Collector – Rural

- Routes on which the predominant travel distances are shorter than on arterials; speeds may be more moderate
- Connect towns not otherwise served by highways and other traffic generators such as schools or county parks

Not Federal Aid Eligible:

Minor Collectors – Rural

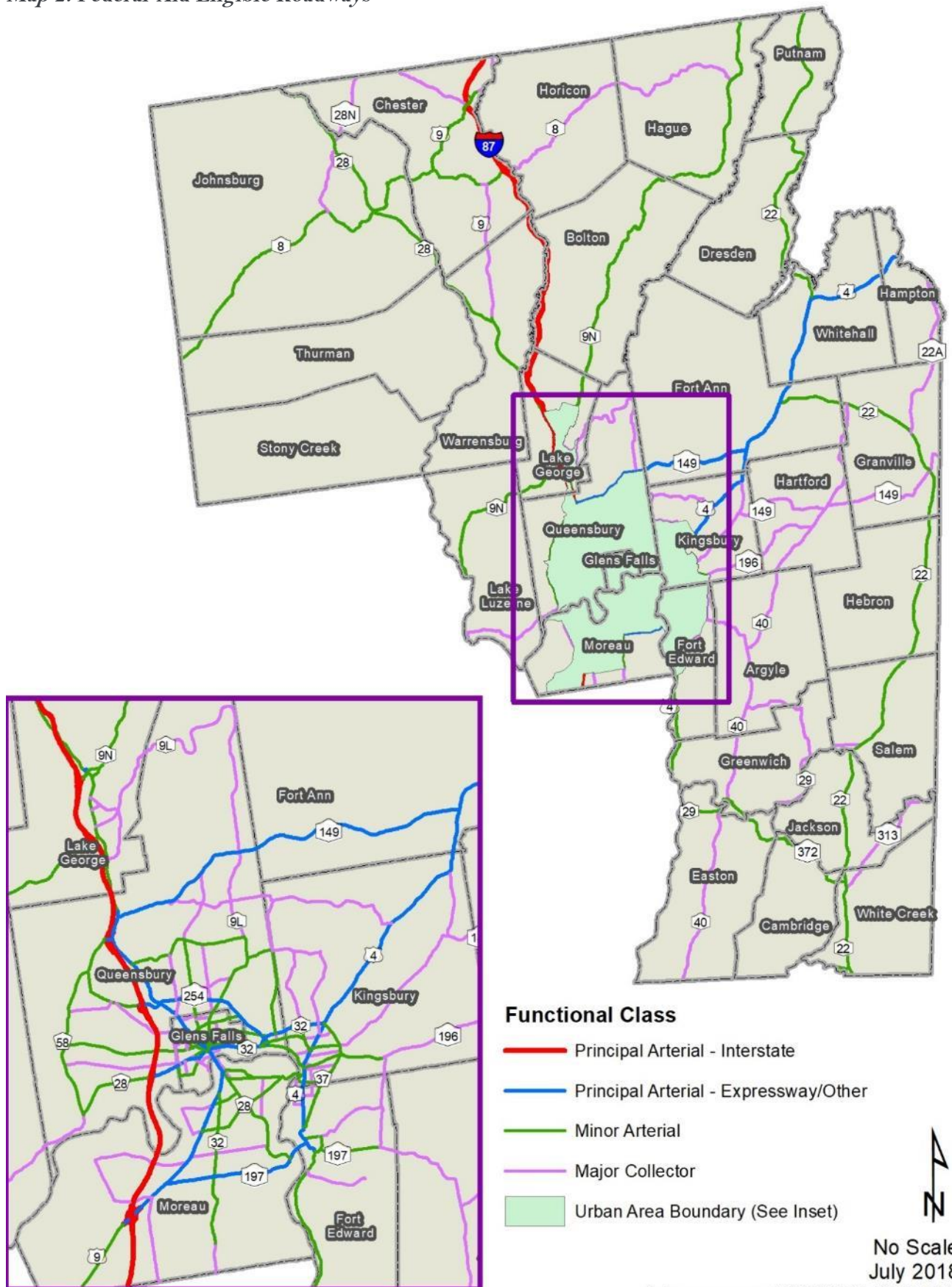
- Provide service to smaller communities
- Bring traffic to developed areas and link locally important traffic generators within their rural areas

Local Streets – Urban/Rural

- Provide direct access to land and higher ordered systems
- Lowest level of mobility; through traffic movements are usually deliberately discouraged

¹ Source: http://warrencountyny.gov/airport/docs/draft_ea/chapters/Chapter%201.pdf

Map 2: Federal-Aid Eligible Roadways



A/GFTC Committee Structure

The Adirondack/Glens Falls Transportation Council consists of two principal working groups. The **Policy Committee** is responsible for reviewing and approving all A/GFTC planning activities and documents, including the TIP, UPWP, and the Long Range Plan. Policy Committee voting membership includes:

- Chairmen of the Boards of Supervisors of Warren, Washington and Saratoga Counties
- Mayors of the City of Glens Falls and the Villages of South Glens Falls, Fort Edward, Hudson Falls, and Lake George
- Supervisors of the Towns of Moreau, Fort Edward, Kingsbury, Queensbury, and Lake George
- One rural supervisor from Warren County and one from Washington County
- The Chairman of the Lake Champlain/Lake George Regional Planning Board
- The Commissioner of The New York State Department of Transportation
- The Executive Director of the New York State Thruway Authority

In addition, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the United States Environmental Protection Agency (EPA) and Greater Glens Falls Transit (GGFT) serve as advisory members to the Council.

The **Planning Committee** serves as the recommending body to the Policy Committee. It reviews all major documents and actions in advance of Policy Committee consideration and is responsible for oversight of ongoing staff activities. The Planning Committee is comprised of local highway superintendents, planning officials, and other representatives from the municipalities that vote on the Policy Committee, and also includes voting representation from GGFT.

Through the A/GFTC committee processes, local and regional transportation issues are considered. Transportation policies, programs, and projects are developed and prioritized for the area's highway, bridge, and public transportation facilities. The Council must ensure the public's involvement in this transportation decision-making process through public notices and hearings and access to complete information on a timely and continuous basis.

Host Agency and Staffing Arrangement

The Lake Champlain-Lake George Regional Planning Board (LC-LGRPB) is the host agency for A/GFTC. The host agency provides first-instance funding for expenses incurred by the operation of the Council.

As one of nine regional planning and development agencies operating in New York State, the LC-LGRPB's mission is to promote sustainable economic development that strengthens our communities, provides quality jobs and preserves the unique natural, historical, and cultural characteristics for the region that includes the counties of Clinton, Essex, Hamilton, Warren, and Washington. The LC-LGRPB is also the designated Area-wide Clearinghouse for the intergovernmental review process. As such, it provides early notification and additional review opportunities to local governments for a wide range of federally funded projects.

Federal Legislation and Requirements

FAST Act

On December 4, 2015, the Fixing America's Surface Transportation Act (FAST Act) was signed into law as Public Law 114-94. The FAST Act funds surface transportation programs—including, but not limited to, Federal-aid highways—at over \$305 billion for fiscal years (FY) 2016 through 2020. It was the first long-term surface

transportation authorization enacted in a decade that provided long-term funding certainty for surface transportation.

The FAST Act builds on the changes made by the previous surface transportation program, Moving Ahead for Progress in the 21st Century Act (MAP-21). Enacted in 2012, MAP-21 included provisions to make the Federal surface transportation program more streamlined, performance-based, and multimodal, and to address challenges facing the U.S. transportation system, including improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery.

Setting the course for transportation investment in highways, the FAST Act:

- *Improves mobility on America's highways:* The FAST Act establishes and funds new programs to support critical transportation projects to ease congestion and facilitate the movement of freight on the Interstate System and other major roads. Examples include developing a new National Multimodal Freight Policy, apportioning funding through a new National Highway Freight Program, and authorizing a new discretionary grant program for Nationally Significant Freight and Highway Projects (FASTLANE Grants).
- *Creates jobs and supports economic growth:* The FAST Act authorizes \$226.3 billion in Federal funding for FY 2016 through 2020 for road, bridge, bicycling, and walking improvements. In addition, the FAST Act includes a number of provisions designed to improve freight movement in support of national goals.
- *Accelerates project delivery and promotes innovation:* Building on the reforms of MAP-21 and FHWA's Every Day Counts initiative, the FAST Act incorporates changes aimed at ensuring the timely delivery of transportation projects. These changes will improve innovation and efficiency in the development of projects, through the planning and environmental review process, to project delivery.

With regards to the scope of the metropolitan planning process, the FAST Act calls for consideration of projects and strategies that will:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and nonmotorized users;
- Increase the security of the transportation system for motorized and nonmotorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- Enhance travel and tourism.

Clean Air Act Amendments of 1990

The Clean Air Act Amendments are intended to significantly affect transportation planning, not only to achieve air quality goals but also to affect broader environmental goals related to land use, greater availability of mode choice, and reductions in vehicle miles traveled. As the designated MPO, A/GFTC is the lead agency for air quality planning in the urban area. It must insure consistency of the TIP with regional and Statewide Implementation Plans

for Air Quality. If air quality standards are not attained, A/GFTC must evaluate and adopt reasonable transportation strategies so that these standards are attained.

The Town of Moreau, in Saratoga County, had been included within the Albany-Schenectady-Troy air quality nonattainment area for ozone in 1997. In 2012, that same area achieved attainment for the 2008 ozone standard. However, even though attainment had been achieved for the newer, more stringent National Ambient Air Quality Standards, the February, 16, 2018 ruling of the DC Circuit of the United States Court of Appeals affirmed that anti-backsliding provisions within the EPA's implementation requirements prevent relief from prior requirements if those areas have not formally been re-designated as being in attainment. The programming and reporting implications of that decision are unclear; A/GFTC will continue its collaborative relationship with the Capital District Transportation Committee to fulfill requirements as those are identified.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (1990) prohibits discrimination against anyone who has physical or mental disabilities in the areas of employment, public services, public accommodations, and telecommunications. With regard to transportation, ADA prohibits State and local governments from discriminating against people with disabilities in all programs, services, and activities, including but not limited to public transportation services provided by public entities.

New York State Legislation and Requirements

Statewide Planning Emphasis Areas

In conjunction with the development of the New York State Transportation Master Plan, the New York State Department of Transportation has identified four forward-looking principles (known as the "Forward Four"):

- Preservation First
- System not Projects
- Maximize Return on Investments
- Make It Sustainable

In addition, the Department has established a "Hierarchy of Priorities" which all actions should satisfy:

- a) Demand response: Safety of the system is the key component. Keep the system safe and reliable through: demand and corrective maintenance to structures; demand maintenance to pavement and roadside appurtenances; and response and restitution of system closures/restrictions due to human and/or natural emergencies.
- b) Preservation: Preserve the system through preventive maintenance and additional corrective maintenance actions.
- c) Enhance Safety: Enhance the safety of the system through nominal and substantive safety countermeasures, including "systematic" improvements and spot locations.
- d) System renewal: Strategically address system critical bridge replacements/major rehabs, pavement rehabs and reconstructions. System Renewal projects are considered "Beyond Preservation" projects.
- e) Modernization: Improve the system through strategic added capacity projects (e.g., HOV lanes), major widening, addition of lanes, rest areas, or other enhancements to existing facilities. Modernization projects are considered "Beyond Preservation" projects.

New York State Energy Plan

The New York State Energy Plan was adopted in 2015. One focus of the plan is clean, reliable transportation. The plan includes several initiatives to support the overall goals:

- ChargeNY: seeks to build a bridge to a self-sustaining market for plug-in vehicles (PEVs)
- Clean Fleets NY and Innovative Ownership Models: works to increase the number of zero-emission vehicles in the statewide transportation fleet
- Financial Mechanism to Capture Value of Alternative Transportation: looks to increase investment in alternative clean transportation infrastructure that supports increased use of bicycle, pedestrian, public transit, and intercity passenger rail modes can reduce the consumption of petroleum imported from out-of-state
- Smart Mobility through Improved Information and Communication: seeks to develop and demonstrate new technologies through collaborations with private sector leaders to build smart and efficient mobility into the State's transportation system

Community Risk And Resiliency Act

New York State enacted the Community Risk and Resiliency Act (CRRA) in 2014. The purpose of the law is to ensure that certain state monies, facility-siting regulations, and permits include consideration of the effects of climate risk and extreme-weather events. CRRA includes five major provisions:

1. Adoption of science-based sea-level rise projections
2. Consideration of sea-level rise, storm surge and flooding (coastal and inland)¹ in facility siting, permitting and funding
3. Inclusion of mitigation of sea-level rise, storm surge and flooding in the list of Smart Growth Public Infrastructure Policy Act criteria
4. Development of model local laws to enhance community resiliency
5. Development of guidance on the use of natural resources and natural processes to reduce risk

The Smart Growth Public Infrastructure Policy Act (SGPIPA)

The SGPIPA, enacted in 2010, was intended to shift state spending on transportation, sewer/water treatment, water, education, housing, and other publicly supported infrastructure projects away from sprawl and toward compact development that conserves resources. To that end, the SGPIPA originally established ten smart-growth criteria to be used by state public-infrastructure agencies when approving, undertaking, supporting or financing public-infrastructure projects. CRRA amended this law to add mitigation of risk due to sea-level rise, storm surge and flooding to the list of smart-growth criteria used to evaluate public-infrastructure projects.

The ten criteria originally included in the SGPIPA are as follows:

1. To advance projects for the use, maintenance or improvement of existing infrastructure
2. To advance projects located in municipal centers
3. To advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan
4. To protect, preserve and enhance the state's resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archaeological resources
5. To foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income and age groups

6. To provide mobility through transportation choices including improved public transportation and reduced automobile dependency
7. To coordinate between state and local government and intermunicipal and regional planning
8. To participate in community based planning and collaboration
9. To ensure predictability in building and land use codes
10. To promote sustainability by strengthening existing and creating new communities that reduce greenhouse gas emissions and do not compromise the needs of future generations, by, among other means, encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain its implementation

CRRA added an eleventh smart-growth criterion to the SGPIPA:

11. To mitigate future physical climate risk due to sea-level rise, storm surges and flooding, based on available data predicting the likelihood of future extreme weather events, including hazard risk analysis data, if applicable

PLANNING PRINCIPLES FOR A/GFTC

As the guiding document for all MPO activities for the next twenty years, *2040 Ahead* seeks to synthesize the stated priorities of those who live and travel within the A/GFTC area with a wide variety of national, statewide, and regional priorities for transportation. As part of previous long-range planning efforts, A/GFTC established a series of twelve principles to guide the planning and programming activities in the MPO. These have been reviewed and are still relevant and appropriate for the *2040 Ahead* plan. The principles are:

1. Transportation plans and programs will seek to maintain the established and varied settings that make the area an attractive place to live, work, and visit while bringing positive changes to the natural and built environments that outweigh associated costs.
2. Options for maintaining the existing transportation system and maximizing its operating utility through improvements that address surface conditions, safety issues, intersection operations, access, and multimodal accommodations will be given priority over costlier and more disruptive capacity improvement or new highway alignment concepts.
3. Maintaining and operating an integrated transportation system for all modes that entails minimal risk and maximum access for users of all ages and abilities is paramount.
4. Current travel and transportation habits will intrinsically create some degree of traffic congestion in certain locations. Projects and plans intended to address those locations with recurring vehicle congestion should also incorporate meaningful demand management measures including transit provisions and access improvements.
5. Public transit is essential to progress the evolution of the transportation system. Improving the span, scope and coordination of existing services will enhance mobility options for those that cannot or will not rely upon automobiles and in turn help reduce the physical, environmental and capital costs associated with transportation.
6. Bicycling and walking are modes of transportation – not just means of recreation. Capital projects that are designed to include meaningful accommodations for bicyclists and pedestrians will be given priority as future programs are developed.
7. Developing the potential of passenger rail and commercial shipping of water borne and rail borne freight will lessen the demand upon and improve performance of the road-based transportation system.
8. Coordination of land use planning, economic development, and transportation planning activities is essential to maximize the region's potential.
9. Regional issues will require cooperation of municipalities and organizations that transcend established jurisdictional boundaries.
10. Encouraging infill development and redevelopment through the prioritization of system investments is preferable to facilitating large-scale development outside of established residential and commercial areas.
11. A/GFTC will continue its commitment to public participation so that it may continue to plan with the people, not for the people.
12. Technology and data collection will play an important role in identifying, prioritizing, operating, and analyzing transportation system improvements. A/GFTC is committed to improving its technological and analytical capabilities.

DEMOGRAPHIC TRENDS

When setting forth priorities for transportation planning, it is important to examine demographic trends. Knowing where people live reveals potential demand for transportation infrastructure and services. In addition, understanding how age, employment patterns, and other factors affect travel behavior can bring the picture of the A/GFTC population into greater focus.

Population and Housing Data

Table 1: Population Growth, 2000-2016

Name	2000 Pop.	2010 Pop.	2016 Pop. (EST)	% Growth 2000-10	% Growth 2010-16
Bolton	2117	2326	2293	9.9%	-1.4%
Chester	3614	3355	3320	-7.2%	-1.0%
Glens Falls	14354	14700	14422	2.4%	-1.9%
Hague	854	699	764	-18.1%	9.3%
Horicon	1479	1389	1720	-6.1%	23.8%
Johnsburg	2450	2395	1859	-2.2%	-22.4%
Lake George	3578	3515	3480	-1.8%	-1.0%
Lake Luzerne	3219	3347	3310	4.0%	-1.1%
Queensbury	25441	27901	27671	9.7%	-0.8%
Stony Creek	743	767	734	3.2%	-4.3%
Thurman	1199	1219	1303	1.7%	6.9%
Warrensburg	4255	4094	4035	-3.8%	-1.4%
Warren County	63303	65707	64911	3.8%	-1.2%
Argyle	3688	3782	3744	2.5%	-1.0%
Cambridge	2152	2021	1998	-6.1%	-1.1%
Dresden	677	652	544	-3.7%	-16.6%
Easton	2259	2336	2480	3.4%	6.2%
Fort Ann	6417	6190	6158	-3.5%	-0.5%
Fort Edward	5892	6371	6242	8.1%	-2.0%
Granville	6456	6669	6567	3.3%	-1.5%
Greenwich	4896	4942	4895	0.9%	-1.0%
Hampton	871	938	816	7.7%	-13.0%
Hartford	2279	2269	2148	-0.4%	-5.3%
Hebron	1773	1853	1774	4.5%	-4.3%
Jackson	1718	1800	1750	4.8%	-2.8%
Kingsbury	11171	12671	12599	13.4%	-0.6%
Putnam	645	609	771	-5.6%	26.6%
Salem	2702	2715	2664	0.5%	-1.9%
White Creek	3411	3356	3331	-1.6%	-0.7%
Whitehall	4035	4042	3984	0.2%	-1.4%
Washington County	61042	63216	62465	3.6%	-1.2%
Saratoga County (Moreau & SGF)	13826	14728	15161	6.5%	2.9%
A/GFTC Area	138171	143651	142537	4.0%	-0.8%

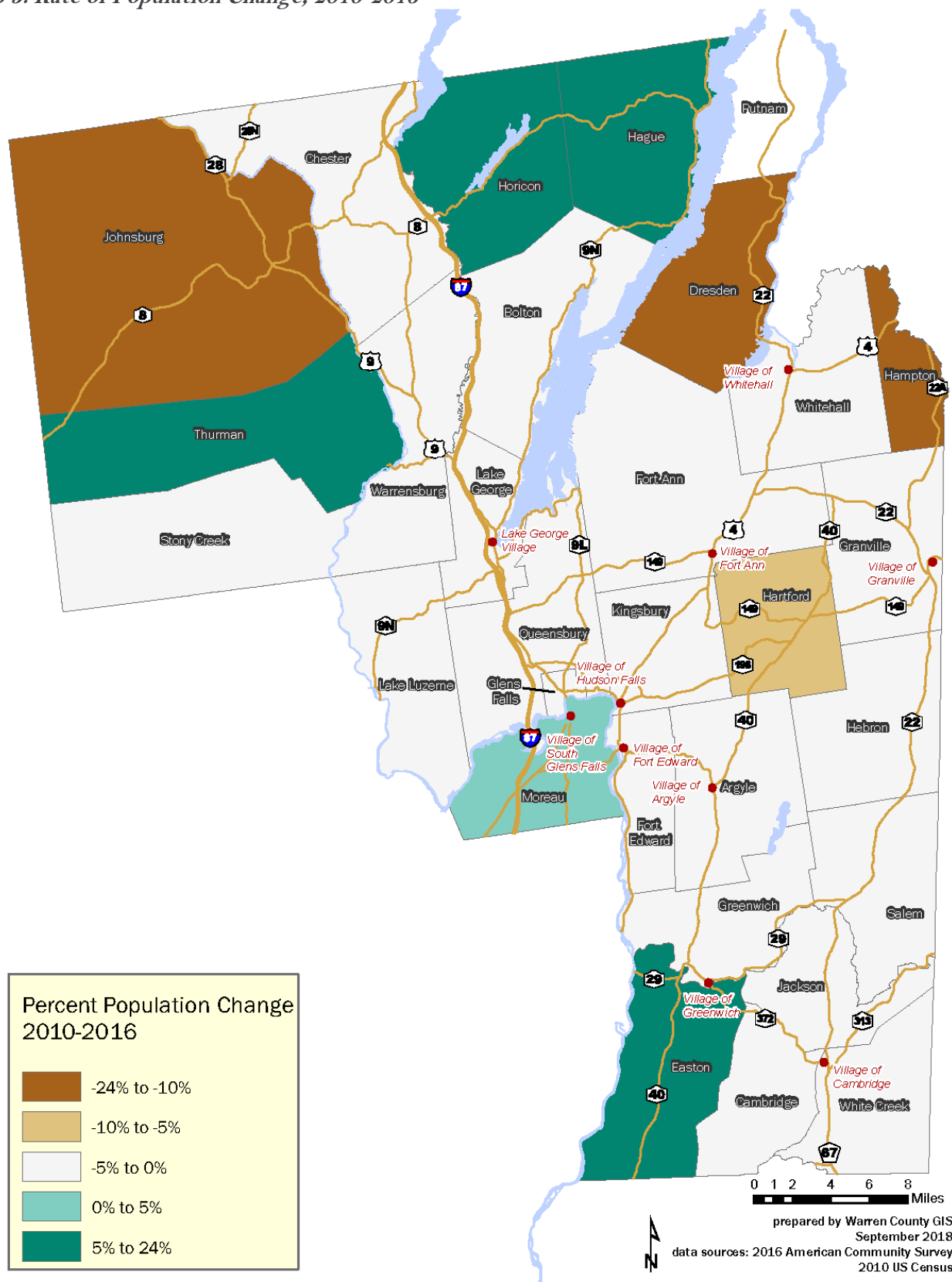
The growth of the population at the town and county level are shown in Table 1 and Map 3. It is important to note that the 2015 population is an American Community Survey (ACS) estimate based on a county-wide sample². As such, comparing this data to the 2010 census data may not provide an “apples-to-apples” comparison. In particular, the rural towns may be the most difficult to estimate. However, accuracy improves at the county level.

Despite the potential for irregularities at the sub-county level, it is important to consider how population trends on the whole. In general, there has been an estimated decline in most of the municipalities in the A/GFTC area. Only eight towns have shown an estimated increase in population over 2010 levels, and in many cases this is close to or within the margin of error. As such, it is likely that the population of the A/GFTC area as a whole has remained steady or slightly declined.³

² See <https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2010-2016/2016-su-meth.pdf>

³ Warren County Planning has developed in-house population projections which predict modest growth through 2030. However, as these projections are not available for the remainder of the A/GFTC area, and are based on a predictive methodology rather than a sample of existing conditions, the ACS data was used for the demographic and transportation modeling in this document.

Map 3: Rate of Population Change, 2010-2016



The number of housing units was also examined, as this can sometimes provide a more complete picture of where development is occurring. For the purposes of this plan, the percentage growth in population was compared to the percentage growth in housing units, shown in Map 4. Areas with strong population growth but weak growth (or even decline) in housing units could be experiencing a housing shortfall, indicating that demand for homes and apartments is greater than the supply. For the opposite case, locations where housing growth is strong but population growth weak (or in decline) could indicate suburban sprawl. Again, as this is not an apples-to-apples comparison; it is included only to allow for a broad overview of potential conditions.

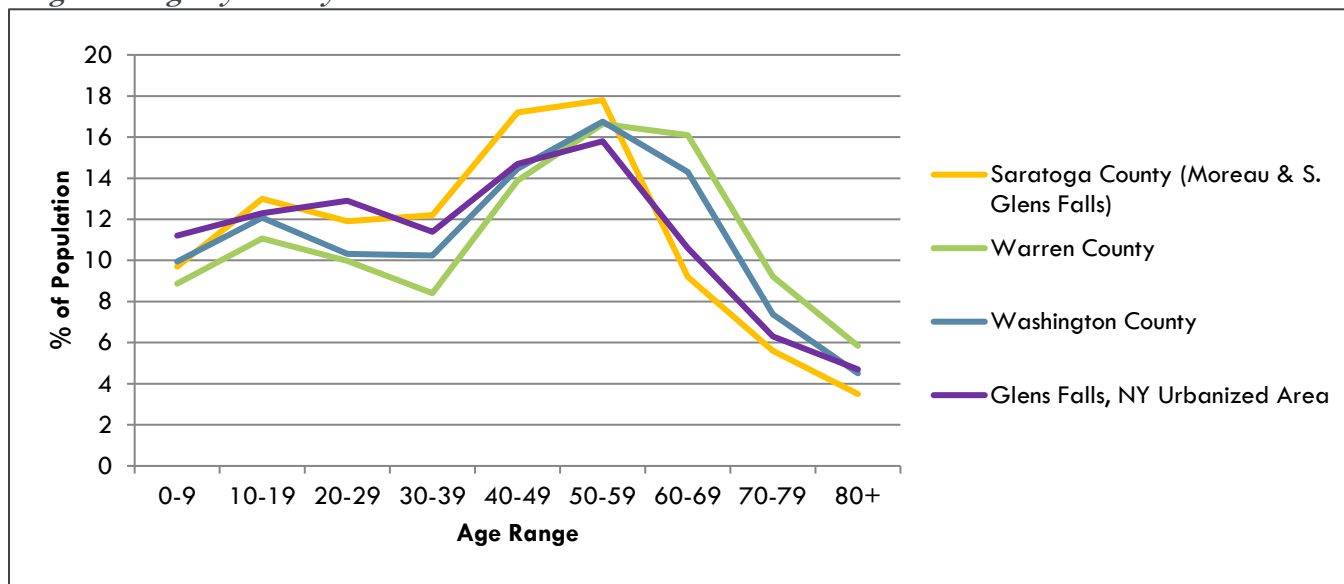
Age

Like many areas of New York, communities in the A/GFTC area are facing an aging population. This affects the transportation system in a variety of ways. As the population ages, travel patterns shift as people retire and no longer have a daily commute to work. In addition, aging can affect the ability to drive, thus increasing reliance on friends, family, or public transportation to meet mobility needs.

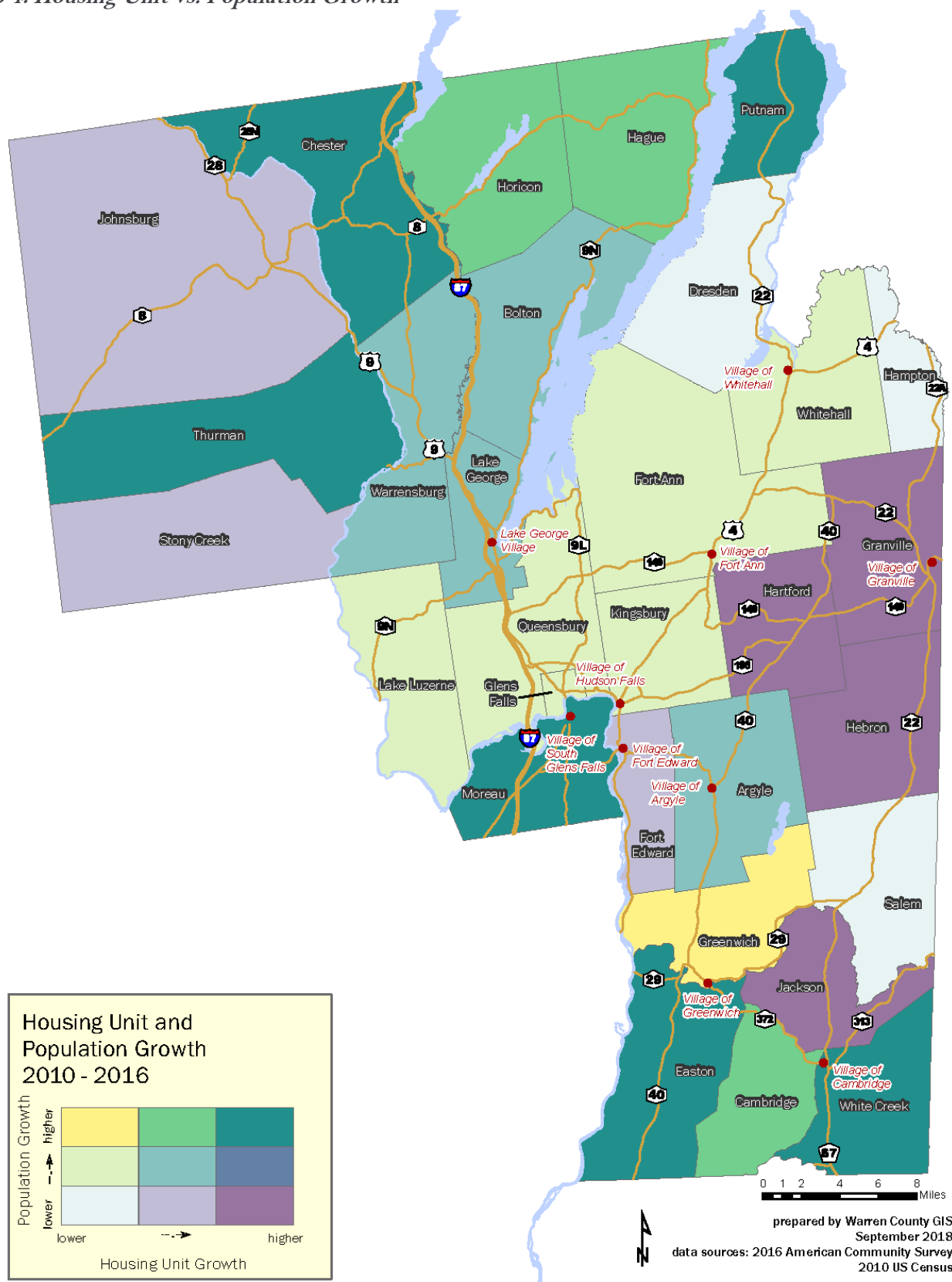
Map 5 shows the age groups that comprise the largest proportion of the populations in each town in the A/GFTC area. There are several towns, including Hague, Bolton, Johnsbury, Dresden, Greenwich, and Easton, in which the largest proportion of the populace is made up of 60-64 year old residents, who are presumably retired or about to retire. There are also areas which have a high percentage of residents aged over 70, especially in Hague, Horicon, and Johnsbury.

The age cohorts for the A/GFTC area are shown in Figure 1. This also includes the age cohorts for the urbanized area, which includes all of the City of Glens Falls as well as portions of the surrounding municipalities. As the figure shows, the urbanized area has a higher proportion of young residents (aged 20-29), as well as lower percentages of the cohorts aged 50 and above, than the county averages.

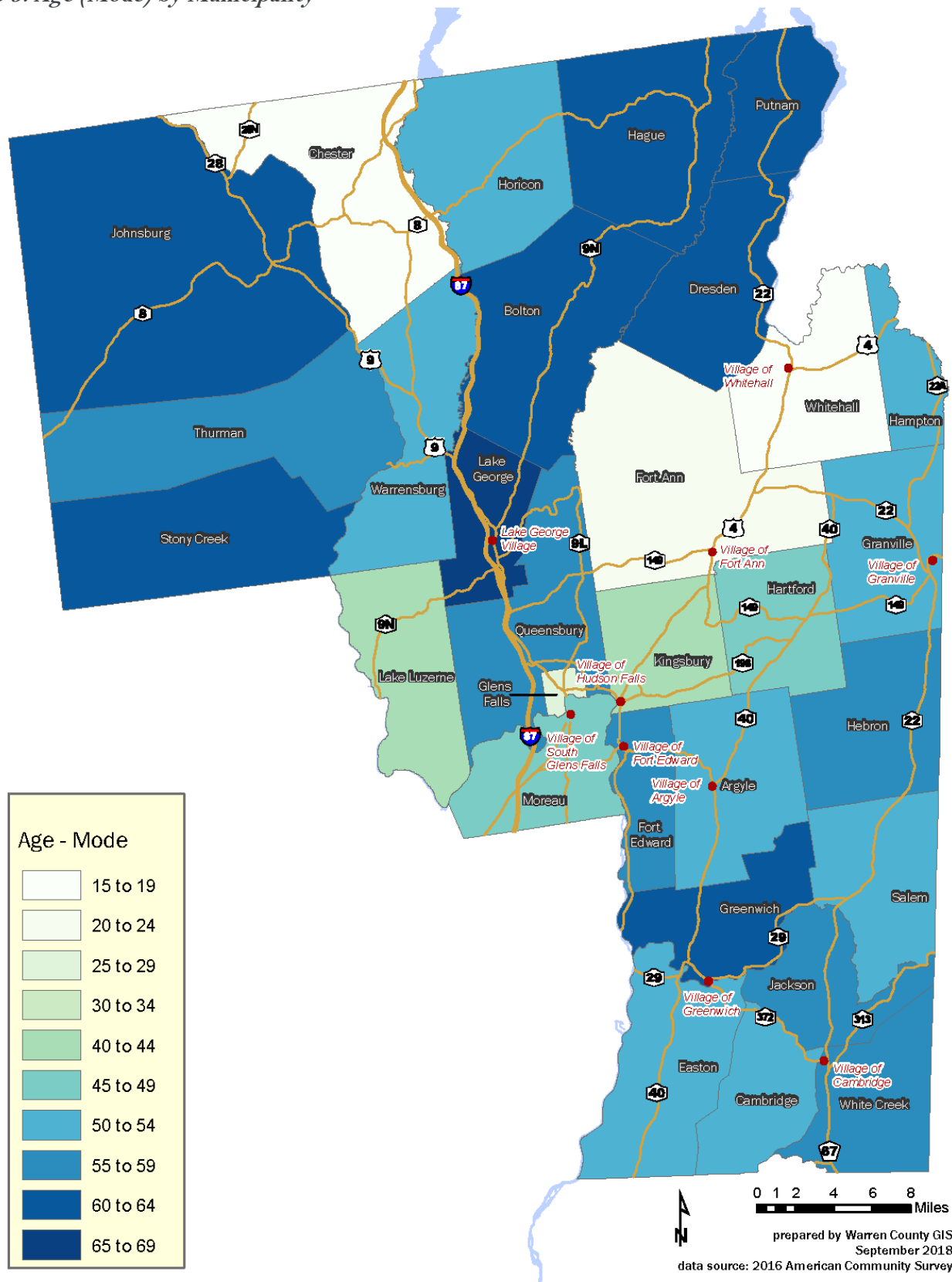
Figure 1: Age by County/Urban Area



Map 4: Housing Unit vs. Population Growth



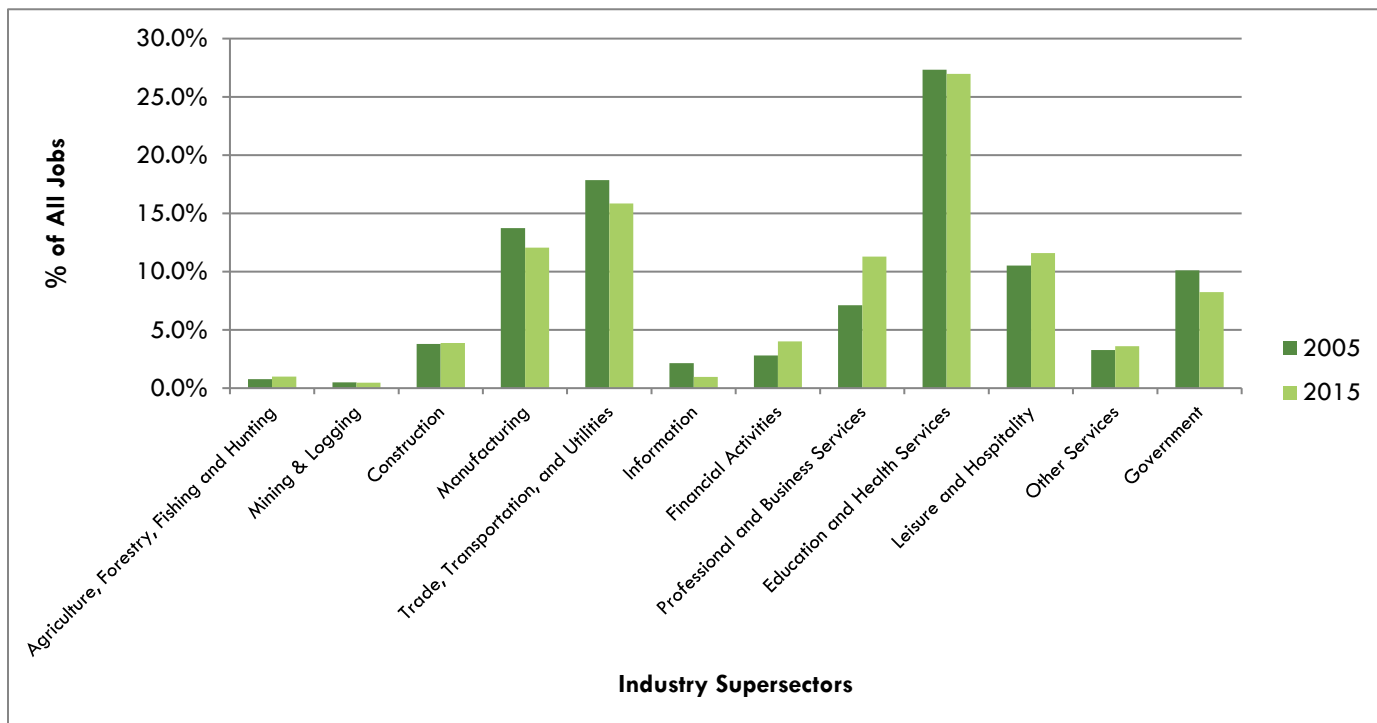
Map 5: Age (Mode) by Municipality



Employment

Although unemployment rates in the Glens Falls MSA at the end of 2017 were slightly higher than the statewide average, the area has experienced a period of job growth in the last five years.⁴ Education and Health Services make up the largest proportion of jobs within the area, as seen in Figure 2. As the figure indicates, there has been a decline in Manufacturing, Trade, Transportation and Utilities, Information, and Government jobs compared to 2005. However, Financial Activities, Professional and Business Services, and Leisure and Hospitality experienced increased shares of jobs in the same time period.

Figure 2: All Jobs by Industry Supersector, 2005 & 2015



It is important to have an understanding of the types of jobs held by residents of the A/GFTC area; however, it is perhaps more relevant to this plan to examine where these jobs are located. Job location affects transportation systems, both in terms of commuting and public transportation.

According to the U.S. Census, about two-thirds of the employed residents of the A/GFTC area work 24 miles or less from their home. (See Figure 3.) In terms of direction, most workers head south towards their jobs. South-bound commutes are also significantly longer, as residents travel to Saratoga, Wilton, and the Albany area to get to work.

⁴ NYS Department of Labor, Labor Market Overview, Glens Falls MSA, December 2017
<https://www.labor.state.ny.us/stats/cap/glensfalls.pdf>

Another important consideration is the actual location of jobs inside and outside the A/GFTC area. According to the U.S. Census, about 54% of employed residents in the A/GFTC area also work within the MPO boundary. Conversely, about 45% travel outside the area to get to work, and just over 40% of people working in the A/GFTC area live outside the MPO boundary. More specifically, Table 2 lists the municipalities where residents work. A comparison of this data from 2010-2015 shows a slight decrease in the number and share of jobs in the City of Glens Falls and the Town of Queensbury, indicating more residents are working in other parts of the region.

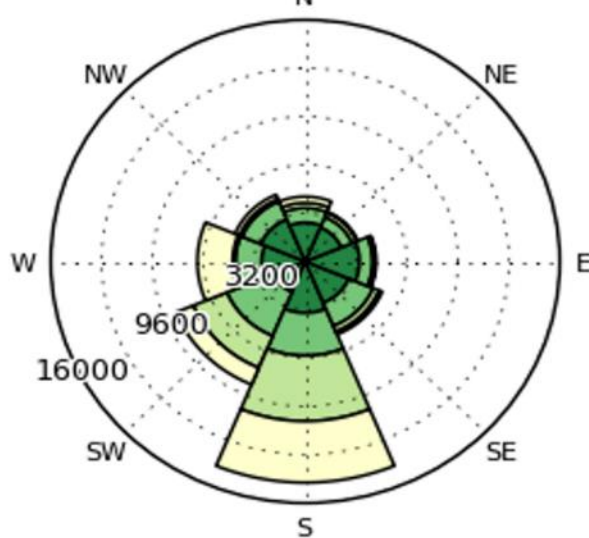
Table 2: Job location, A/GFTC residents

Location	Number of Jobs	Share
Glens Falls city, NY	8,437	14.7%
Queensbury, NY*	5,086	8.9%
Saratoga Springs city, NY	2,741	4.8%
Albany city, NY	1,750	3.1%
Fort Edward village, NY	1,378	2.4%
New York city, NY	1,141	2.0%
Granville village, NY	718	1.3%
Warrensburg CDP, NY	634	1.1%
Hudson Falls village, NY	633	1.1%
All Other Locations	34,819	60.7%

* Includes Census-Designated Places (CDPs) Glens Falls North and West Glens Falls

Figure 3

Job Counts by Distance/Direction in 2015
All Workers



Jobs by Distance - Home Census Block to Work Census Block

	2015	
	Count	Share
Total Primary Jobs	52,591	100.0%
Less than 10 miles	22,824	43.4%
10 to 24 miles	13,057	24.8%
25 to 50 miles	8,183	15.6%
Greater than 50 miles	8,527	16.2%

PUBLIC OUTREACH AND INPUT

A/GFTC has demonstrated a continued commitment to including public outreach and input in all MPO products. As the Long Range Plan sets the course for the next twenty years, public input is crucial, both in shaping the content of the document and in providing comments on the final plan. This planning effort builds on the framework set forth for the last LRP update, which included a public survey and a public meeting on the draft plan held on August 8, 2018.

Public Survey

The backbone of the public outreach effort was an online survey, with a paper format available on request. Press releases were submitted to all local media and a short article appeared in the Post-Star. The survey was also made available on the A/GFTC website and Facebook page, as well as the websites of Warren County EDC, Town of Queensbury, and Washington County Planning. In addition, the survey was promoted on Facebook, with a geographically-oriented market roughly comporting to the A/GFTC planning area. The survey links were available from 2/12/2018 to 3/30/2018. In that time, 192 responses were received (191 online, 1 paper).

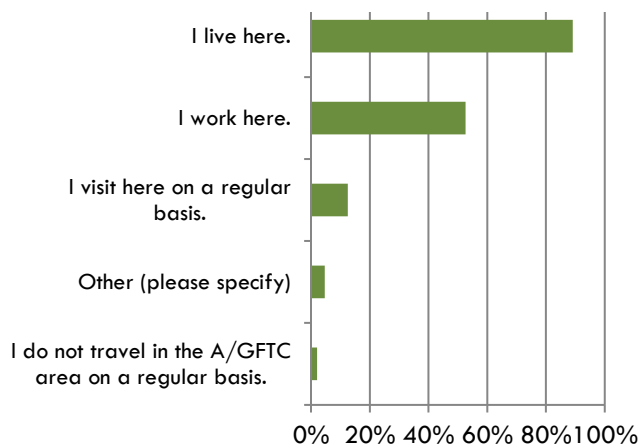
The survey was formulated to provide input at a scale appropriate to the scope of a Long Range Plan. That is, the questions were by design broad and intended to gather information at the regional level. In addition, the questions were formulated to provide data in a useable format; open-ended questions were minimized in favor of multiple-choice options.

It is important to note that the Long Range Plan Survey was elective. Although the results are useful for planning purposes, the results of the survey should not be extrapolated to represent a broader population. Additionally, not all respondents answered all of the questions. Depending upon the nature of the question, some of the following charts illustrate the number of responses, while some are presented in terms of the percentage of respondents who answered that particular question.

Demographics and geographic representation

The survey was targeted to people who live, work, and/or regularly visit the A/GFTC area. Figure 4 represents the responses to the relationship with the A/GFTC area; the majority of respondents either live or work in the region, or both. To determine whether a broad range of demographics were represented, respondents were asked to provide home zip code (Map 6), age range (Figure 5), and income range (Figure 6). The breakdown of age and income ranges suggest that the results reflect a wide variety of demographics. Although the majority of respondents were clustered in and around the Glens Falls urbanized area, there was a relatively even dispersal of responses in rural parts of Warren and Washington counties.

Figure 4: Reasons for travel to/from/within A/GFTC area



Map 6: Survey Response Locations

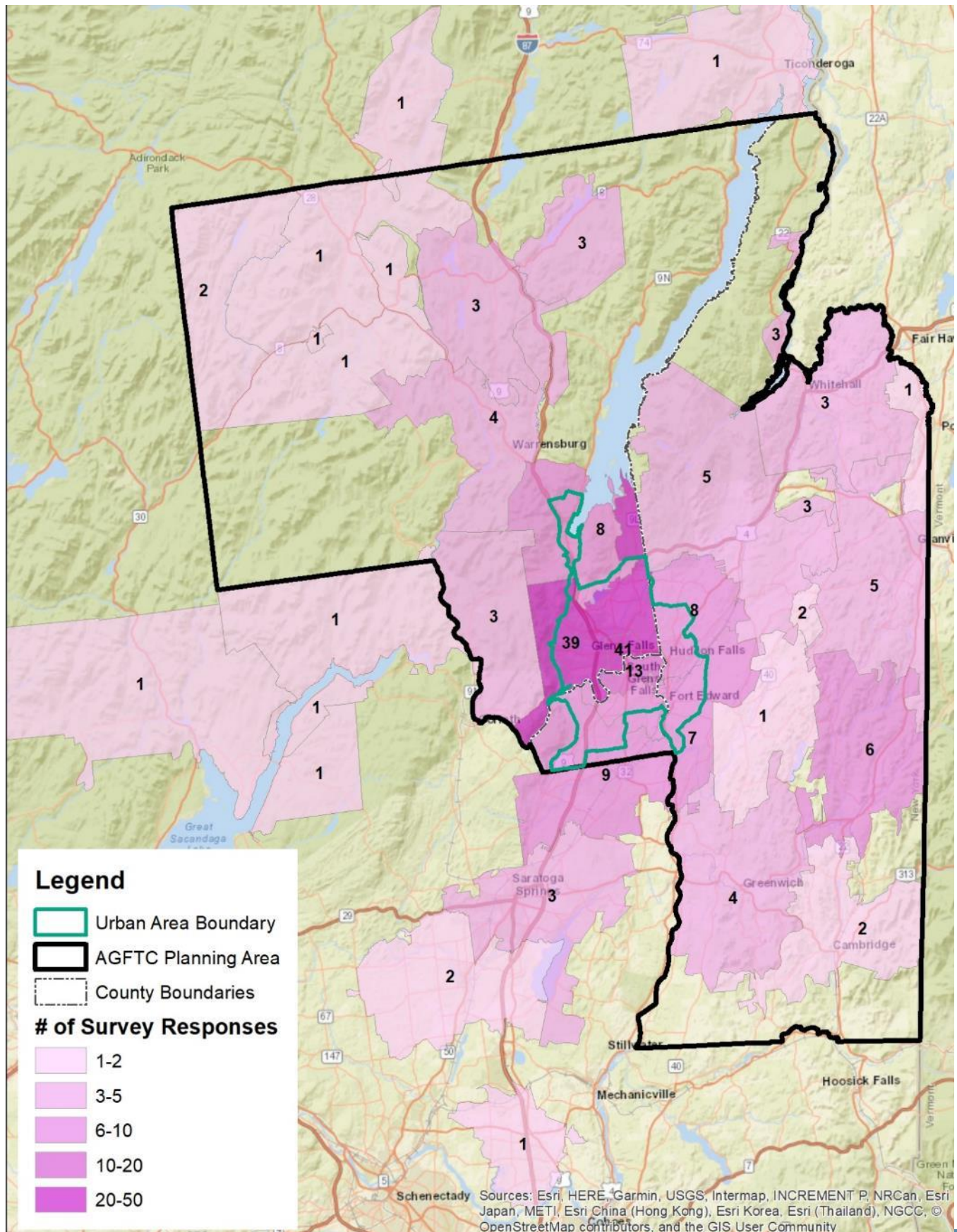


Figure 5: Survey Respondent Age

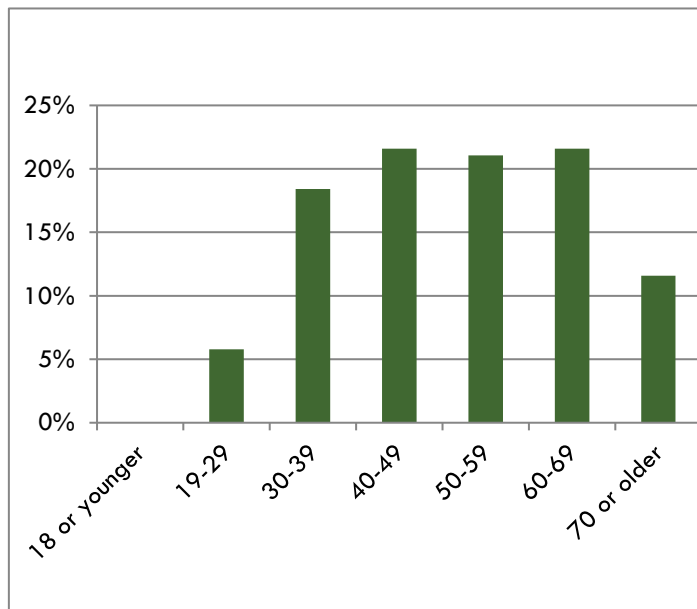
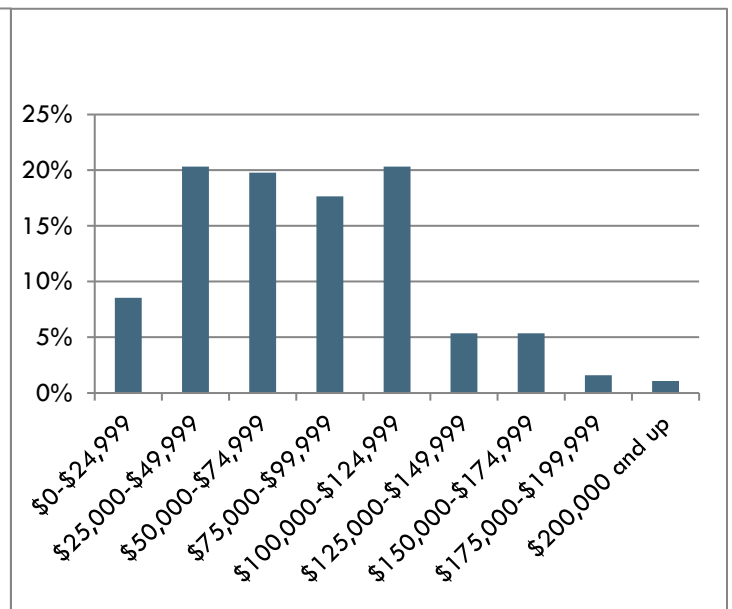


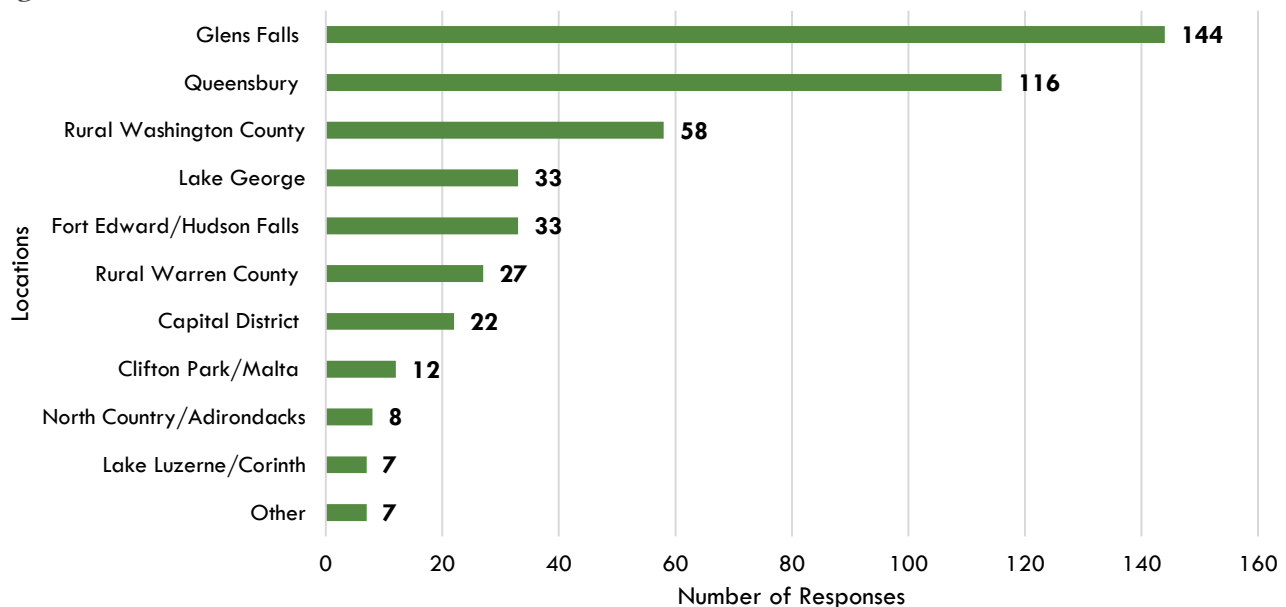
Figure 6: Survey Respondent Household Income



Survey Questions

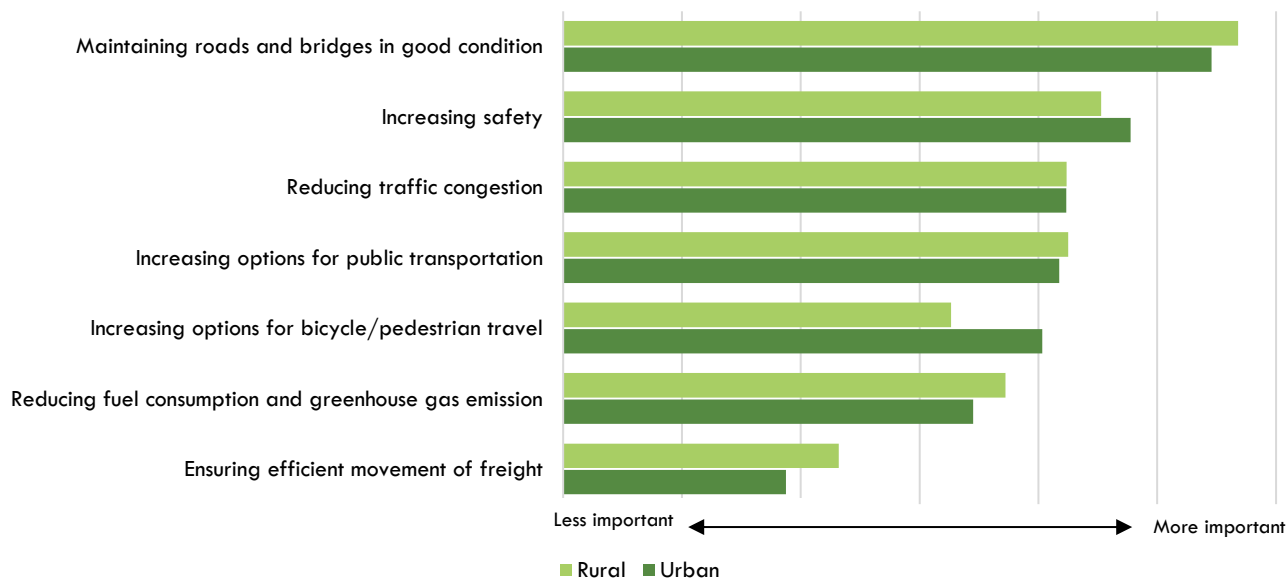
Unsurprisingly, the vast majority of respondents (almost 92%) indicated that driving was their main form of transportation. Respondents were also asked to list up to three locations where they travel most often. These open-ended answers were aggregated by staff; the results are shown in Figure 7.

Figure 7: Most Common Destinations



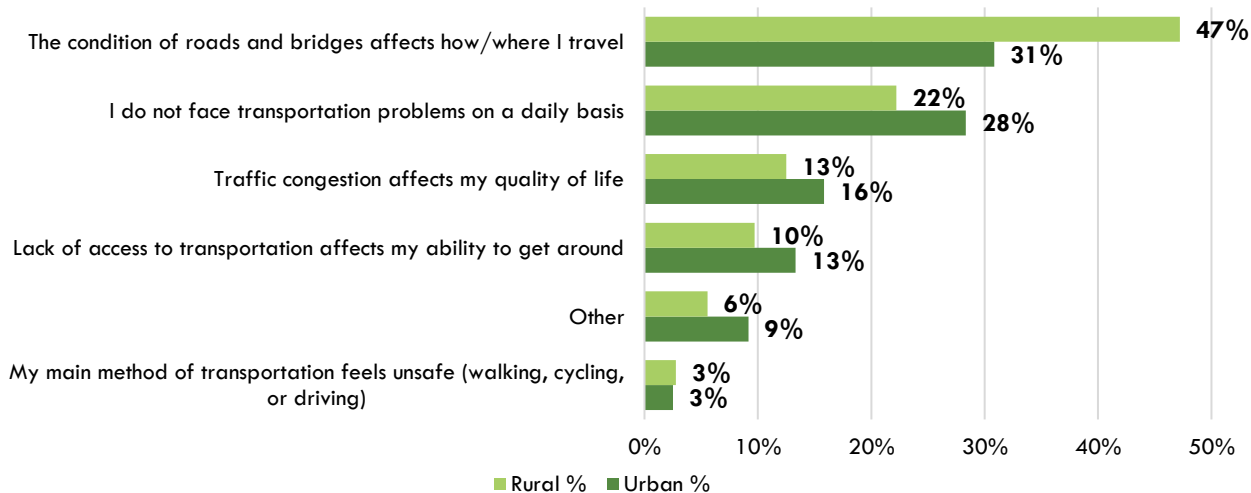
Survey respondents were asked to rank transportation considerations from least to most important (Figure 8). The intention of this question was to determine which topic areas are of greatest concern to respondents. These were further broken down into urban and rural responses, based on the zip codes provided. Overall, maintaining surface transportation infrastructure in good condition was the most important, followed by increasing safety. Reducing traffic congestion and increasing options for public transportation were effectively tied in the third position, while increasing bicycle/pedestrian facilities and reducing fuel consumption were next most important. Efficient freight movement was the least important priority.

Figure 8: Importance of Transportation Considerations



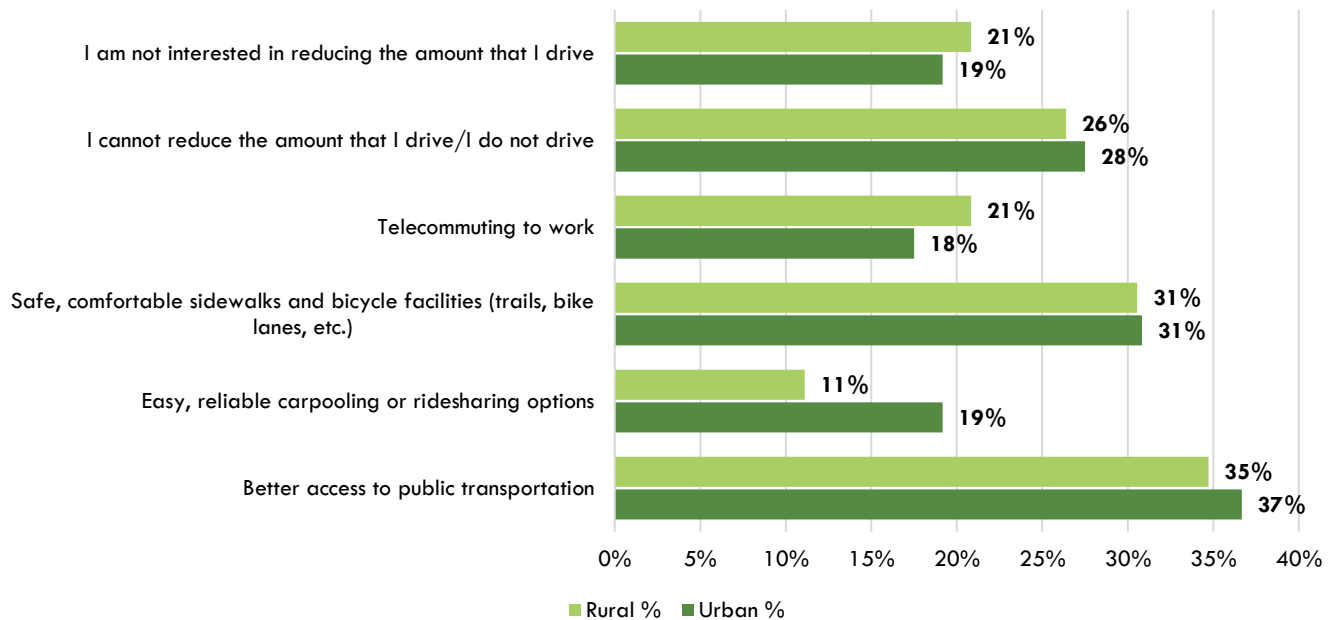
The survey also asked about transportation problems. For this question, respondents could select only one option. The results were sorted according to rural/urban, to see if these issues might be related to geography. Overall, road/bridge conditions was cited as the largest issue, though Figure 9 illustrates that rural respondents noted this with much greater frequency; almost 47% cited this as the biggest issue they faced on a daily basis. Conversely, urban respondents were slightly less likely to face transportation issues on a daily basis. Traffic congestion and lack of access to transportation were also cited by a slightly higher percentage of urban respondents.

Figure 9: Transportation Problems



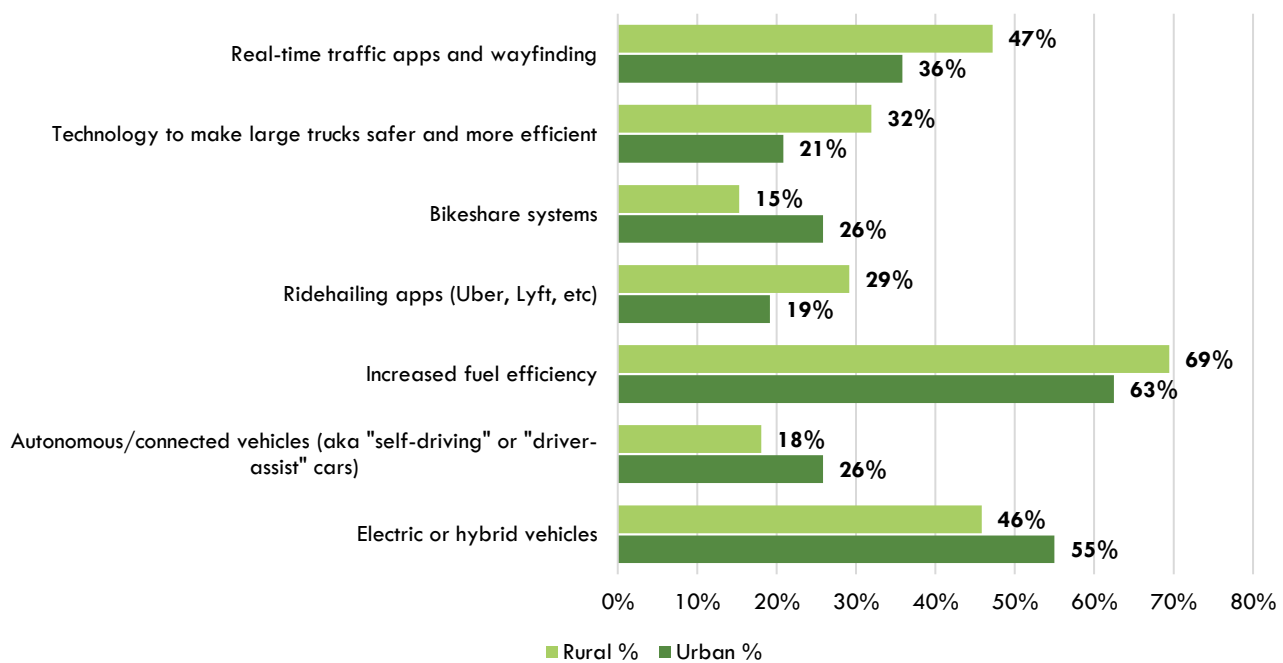
Respondents were also asked whether certain options would be likely to effect the amount they drive. This can provide insight into which efforts to reduce Vehicle Miles Traveled (VMT) are likely to have the greatest impact. For this question, multiple selections were permitted. As can be seen in Figure 10, nearly 50% indicated that they could not reduce their amount of driving or had no interest in doing so. Of the remaining options, better access to public transportation, safe and comfortable bicycle/pedestrian facilities, and telecommuting to work were the most popular ideas. Carpooling/ridesharing was selected by almost 20% of the rural respondents, but only about 10% of urban respondents.

Figure 10: Options to Reduce Driving



Finally, the survey asked about new and emerging transportation technologies (Figure 11). For this question, multiple selections were permitted. The most popular technology was increased fuel efficiency, with 69% of rural respondents and 63% of urban responses. Electric/hybrid vehicles was also a popular choice, especially among urban respondents; 55% of urban residents selected this option, versus 46% of rural residents. Real-time traffic apps proved to be popular among rural residents, with 47% indicating interest in this technology, versus 36% of urban residents. Ridehailing apps such as Uber and Lyft were also more popular with rural residents (29%) versus urban respondents (19%). This dichotomy was also evident for technology to make large trucks more safe and efficient; 32% of rural respondents expressed interest versus 21% of urban respondents. Bikeshare and autonomous/connected vehicle technology were more popular with urban residents, with each receiving 26% of the possible urban selections, versus 15% and 18% of rural responses, respectively.

Figure 11: Interest in New/Emerging Transportation Technologies



Safety is an issue of paramount importance in transportation planning. A/GFTC has a strong commitment to improving the safety of the transportation system, and will continue to pursue this goal. Previous efforts to address safety issues in the MPO have included both planning and capital projects at a variety of scales. This includes:

- **Intersection-Specific Assessments.** Using staff assistance and the Engineering Assistance Program, A/GFTC has examined several intersections, including County Routes 18 & 21 in Whitehall and County Routes 43 & 44 in Argyle, as well as several intersections in the City of Glens Falls. The completed projects allowed the municipalities to pursue and implement low-cost striping and signage solutions at each intersection.
- **Road Safety Assessments.** Although the MPO has not conducted a Road Safety Assessment (RSA) in recent years, this tool is available as a Unified Planning Work Program task, upon request of a member municipality. An RSA is a safety performance examination by an independent team of engineers, planners, and highway professionals. Rather than relying solely on crash statistics, an RSA allows the assessment team to qualitatively identify potential road safety issues and opportunities for improvements. Road safety audits can be used in any phase of project development or on existing infrastructure. RSAs can also be used on any sized project, including minor intersections and roadway retrofits.
- **Local System Safety Screening.** A/GFTC prepared reports for Washington County, Warren County and the Town of Moreau which examine the crash patterns and locations along the local roadway system. These reports also list contributing factors, as well as a wide variety of conditions relating to vehicle crashes, such as light condition, weather, and pavement conditions. The plans also look specifically at trends for bicycle/pedestrian crashes. These reports are intended to fulfill the requirement for HSIP projects to be "data-driven". Future efforts to provide this data in a useable format may include online mapping applications.

In addition to local projects, there are a number of State-wide efforts to increase safety. The New York State Strategic Highway Safety Plan, prepared and updated by NYSDOT, promotes best practices and strategies that, if implemented, could have a substantial impact on reducing fatal and injury crashes. The emphasis areas of this plan include: intersections, lane departures, vulnerable users (bicyclists, pedestrians, motorcyclists, and individuals working/traveling in a work zone), age-related incidents (young and older drivers), road user behavior (impaired driving, occupant protection, distracted and drowsy driving), and speed. The companion documents to this are the Pedestrian Safety Action Plan (PSAP), prepared by NYSDOT, and the New York State Highway Safety Strategic Plan, prepared and updated by the Governor's Traffic Safety Committee (GTSC). This plan is focused on enforcement and behavior-related campaigns than on infrastructure improvements. As an MPO, A/GFTC participates in the preparation and implementation of these plans at the local level.

Performance Measures

MAP-21 and the FAST Act called for the establishment of performance measures and targets for a variety of transportation planning considerations, including safety. In August 2017, the A/GFTC Planning Committee voted to support the first set of NYSDOT's targets for the five safety performance targets as described below and in Appendix 1. These targets will be periodically updated by NYSDOT as required by federal regulations.

These measures include:

- Number of fatalities
- Fatality rate, as expressed in million vehicle miles traveled (MVMT)
- Number of serious injuries
- Serious injury rate, as expressed in million vehicle miles traveled (MVMT)
- Number of non-motorized fatalities and serious injuries

The recent trends and statistics for each performance measure within the A/GFTC planning area can be seen in Figures 12-16. Over the past 5 years, all of the performance measures aside from the number of non-motorized fatal and serious injuries have declined, based on 5-year moving averages.

Figure 12: A/GFTC Fatalities, 2012-2016

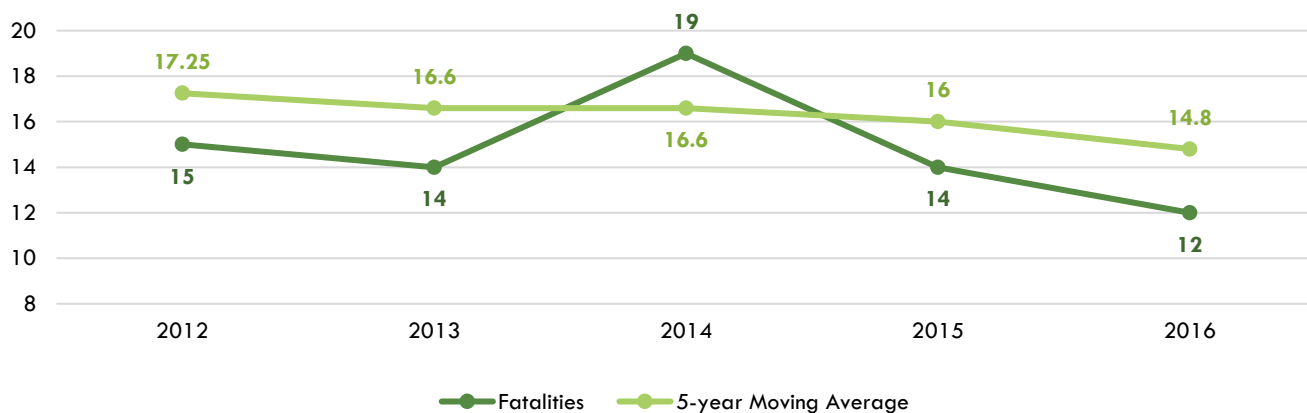


Figure 13: A/GFTC Rate of Fatalities, 2012-2016

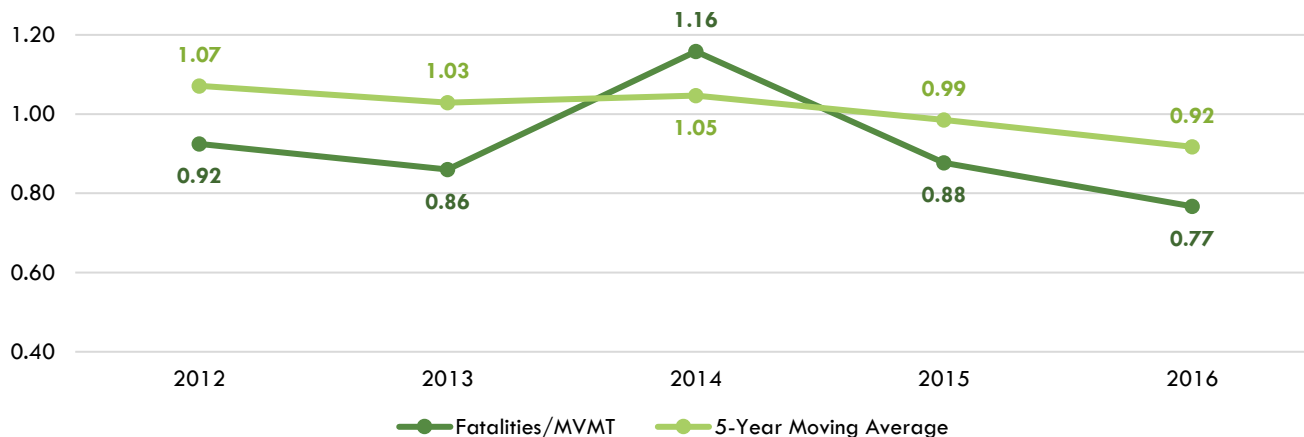


Figure 14: A/GFTC Serious Injuries, 2012-2016

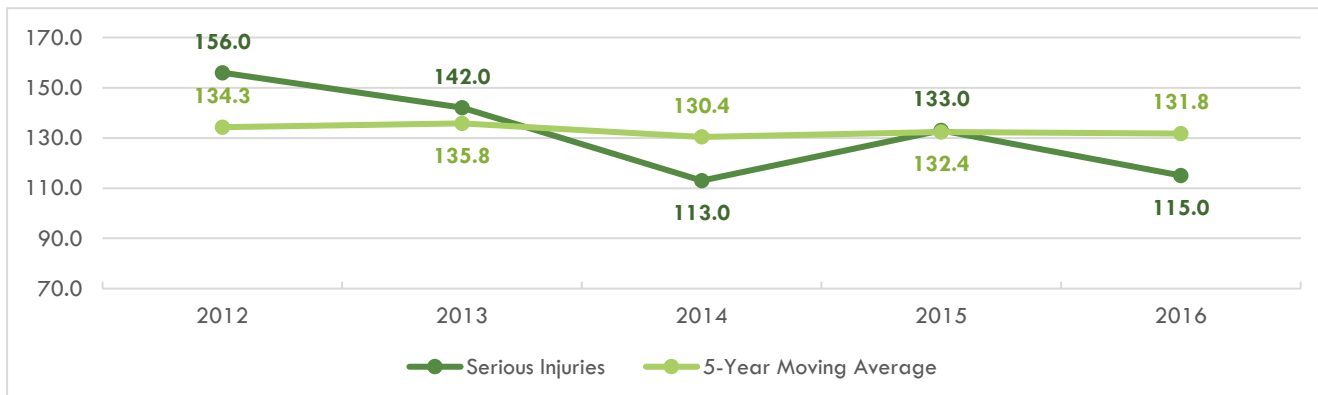


Figure 15: A/GFTC Serious Injury Rate, 2012-2016

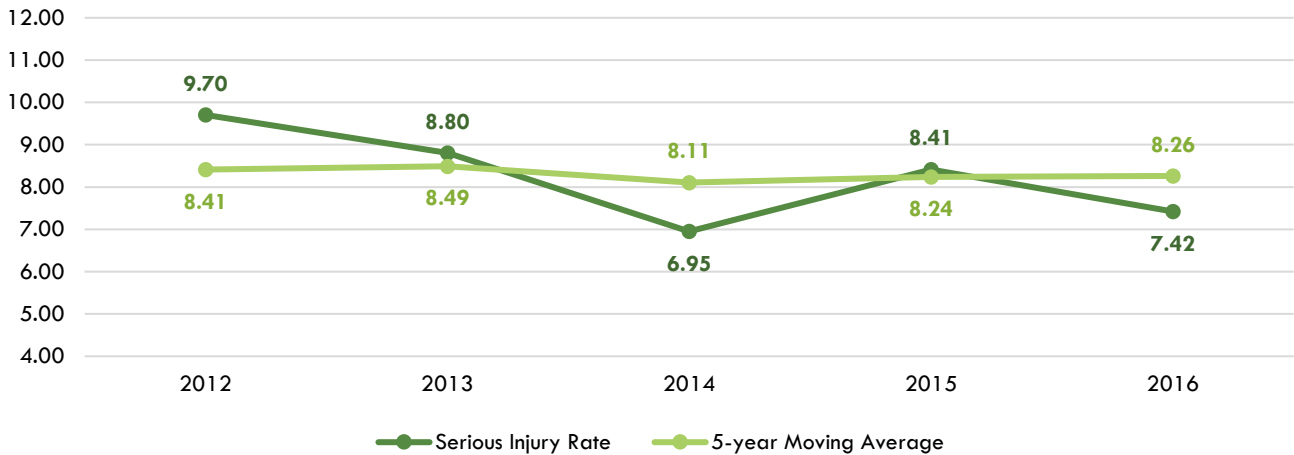
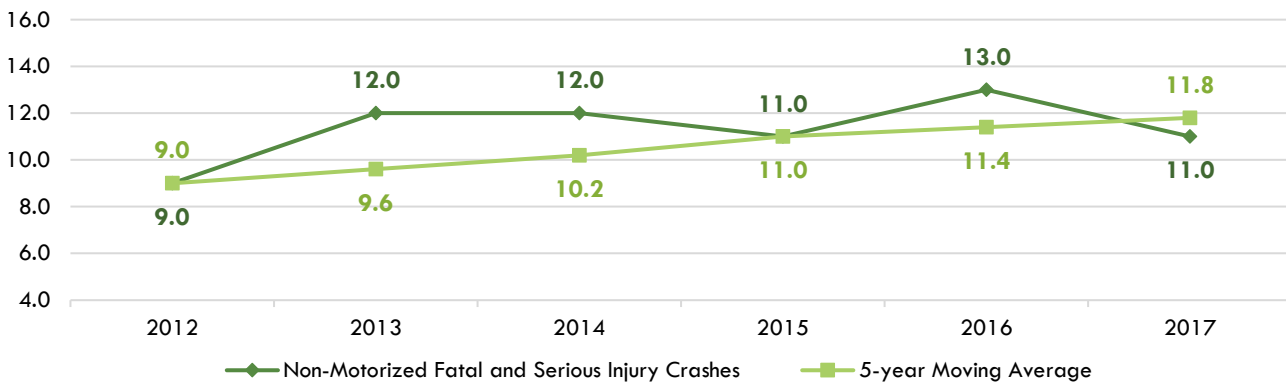


Figure 16: A/GFTC Non-Motorized Fatal & Serious Injury Crashes, 2012-2016

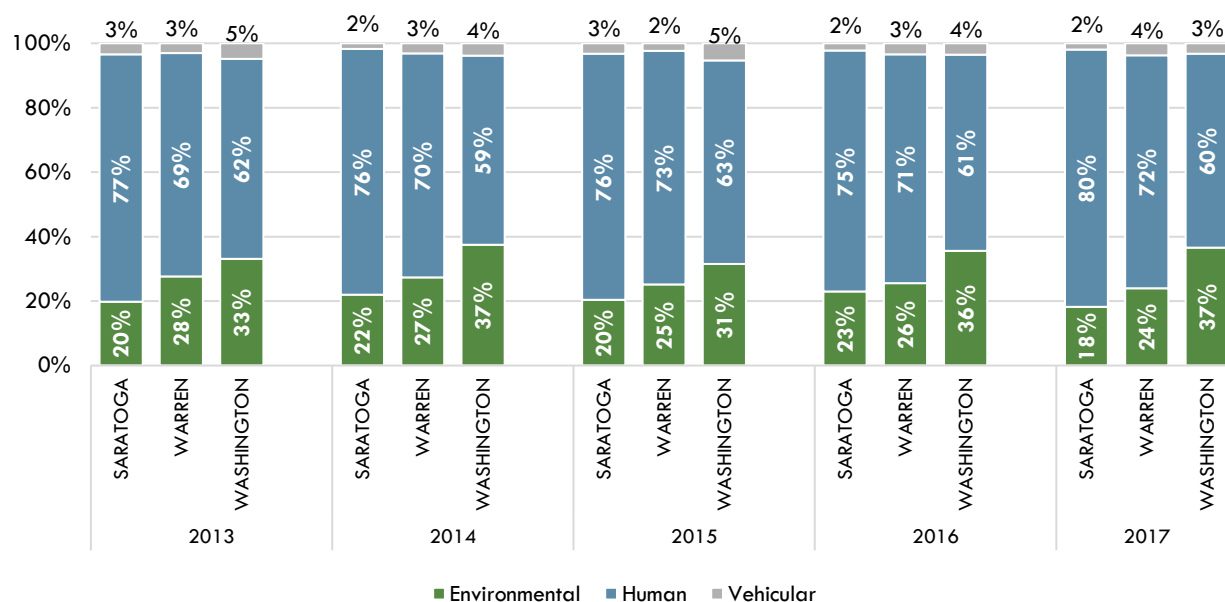


Other Safety Trends

Although knowing the statistical trends for crash rates and number of crashes is useful, for the purposes of a long range transportation plan it is also beneficial to analyze other sources of safety-related information which might better inform the activities of the MPO. As such, the contributing factors for crashes were examined.

Contributing factors are noted by law enforcement officials in crash reports. Up to four factors can be assigned for each crash event. These provide a snapshot of the factors influencing the crash, based on the reporting officer's perspective, and can be categorized as environmental, human, or vehicular factors. As can be seen in Figure 17, human factors make up the largest portion of crash contributing factor in each county. The difference in the proportion of human vs. environmental factors from county to county can perhaps be attributed to the presence of I-87 in the town of Moreau and Warren County. The more rural nature of the Washington County roadway network increases the potential for environmental factors, such as crashes involving animals.

Figure 17: Crash Contributing Factors by County and Year

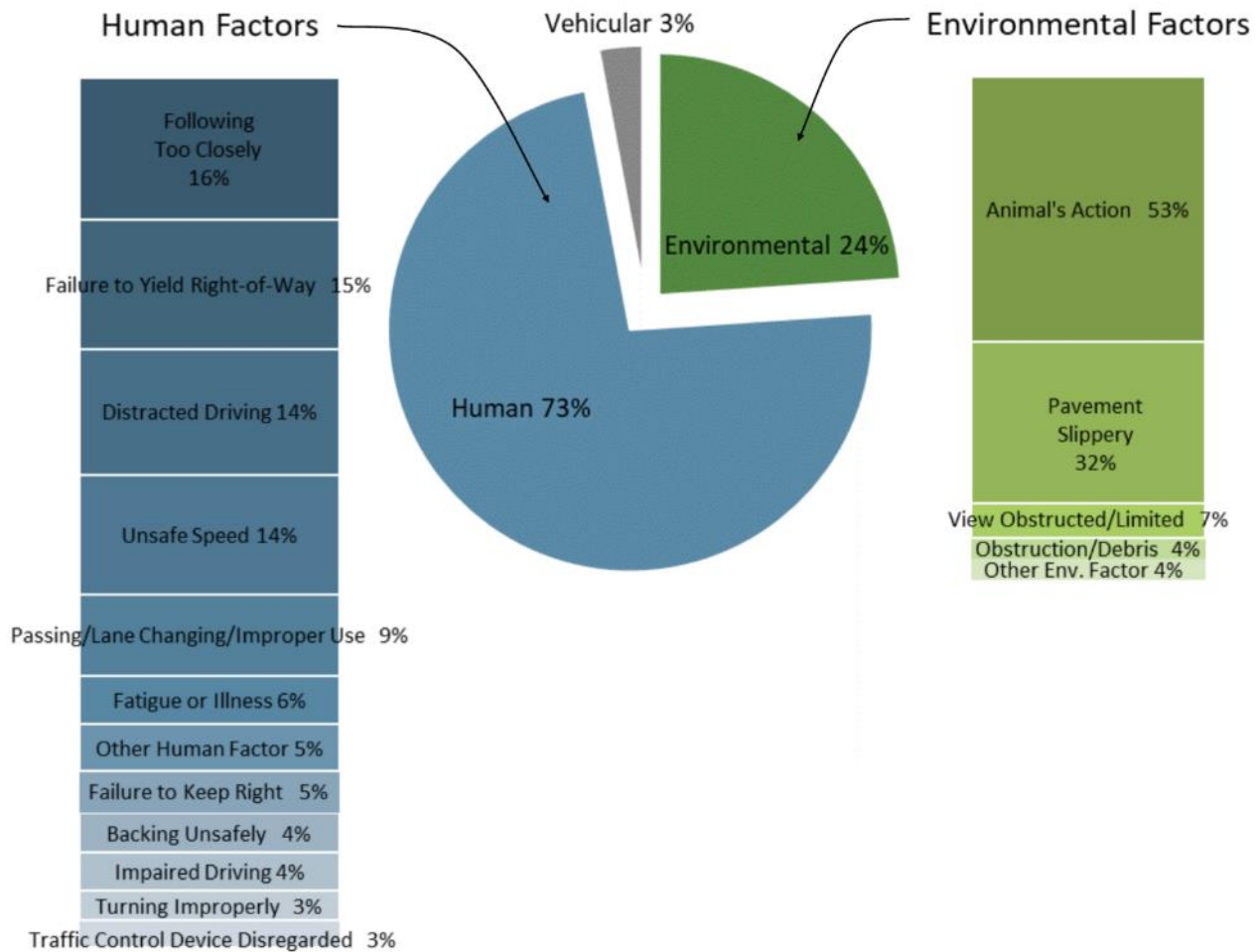


In terms of specific contributing factors, the breakdown from the most recent available year of data is shown in Figure 18. This can provide a more complete picture of the types of factors which are most commonly attributed to the crashes in the A/GFTC area.

In terms of human factors, following too closely, failure to yield right-of-way, distracted driving, and unsafe speed were the most commonly cited behaviors contributing to all crashes. Of these, unsafe speed accounted for 35% of the contributing factors for fatal crashes in 2017. From a transportation planning perspective, efforts to reduce crashes could be focused on preventing these types of behaviors through public education and enforcement campaigns. In addition, there are engineering solutions which are focused on mitigating or reducing the severity of crashes caused by human behavior, such as centerline or shoulder audible roadway delineators (commonly referred to as rumble strips).

In terms of environmental factors, animal action made up the majority of that category, with slippery pavement comprising another third. Although maintenance is an important consideration regarding slippery pavement, it is important to keep in mind this includes wet and rainy conditions as well as snow and ice. There are no wide-scale infrastructure interventions which can mitigate animal action on a regional level; however, these types of events tend to result in property damage only, rather than injuries or fatalities.

Figure 18: Detailed Contributing Factors, 2017



Challenges/Opportunities

A/GFTC faces a number of challenges and opportunities regarding transportation safety over the next twenty years. These include:

- Difficulty in addressing safety related to human behavior. As a transportation planning agency, it can be a challenge for A/GFTC to make measurable changes to driver behavior. However, there are infrastructure safety countermeasures which help drivers to regain control of a vehicle or to reduce the severity of a crash once it occurs.
- Limitations on the HSIP funding mechanism. Since the last LRP, changes to the HSIP funding mechanism have reduced the amount available as a setaside in favor of increasing a larger, competitive statewide solicitation for safety-related projects with a focus on systemic treatments. Given the large scope of the competitive program, the high minimum project cost, and the focus on systemic treatments, no local HSIP projects have been sponsored in the A/GFTC area since the program changes have taken effect. This new approach may make it difficult for smaller municipalities, which do not have access to technical expertise, to compete for statewide funding. Conversely, the funding available to A/GFTC as a sub-allocation is too small to allow for effective annual solicitations, further making it difficult to construct safety-related projects.

Priorities & Projects

This plan identifies a number of projects and priorities intended to increase safety while taking into account the challenges facing the MPO. These priorities and projects will also support the NYSDOT performance targets.

1. Continue to use engineering assistance to identify safety improvements. A/GFTC has demonstrated success in applying engineering assistance contracts towards site-specific safety improvements. As such, the MPO is committed to continuing to make this tool available to member municipalities.
2. Continue to monitor safety trends on the local road network. As stated above, the focus on data-driven approaches to safety planning can create a burden on local municipalities. In the past, A/GFTC has created Local System Safety Screening documents for Warren and Washington Counties and the Town of Moreau as a first step towards fulfilling the requirements of the HSIP program. As advances in technology and data management occur, it is anticipated that these products will be replaced by more user-friendly formats, such as password-protected online mapping portals for municipal staff and MPO member agencies. In addition, A/GFTC will continue to provide crash and safety statistics to member municipalities as requested.
3. Continue partnership with Traffic Safety Boards. A/GFTC has a positive, beneficial relationship with both the Warren and Washington County Traffic Safety Boards. This collaboration should continue in the future, so that all involved agencies can maximize the safety benefits for the region.

INFRASTRUCTURE CONDITION

RELATED PLANNING PRINCIPLES: 2, 3, 9, 12

The majority of the region's transportation infrastructure is made up of roads and bridges. Private automobiles and commercial vehicles continue to be the dominant mode of moving goods and people. A reliable, predictable, and functional surface transportation system not only provides basic mobility, but also contributes to sustained and expanded economic development, tourism and recreation, safety and emergency response, and quality of life. As such, it is of paramount importance that the infrastructure be maintained in good condition.

Pavement Condition

A/GFTC collects pavement condition data for locally-owned federal aid roadways, consistent with the NYSDOT condition rating format. Surface scores for local highways are assessed using windshield surveys. A reference manual with photographs is used to maximize consistency in evaluations. Scores of 9-10 represent pavement that is in "excellent" condition, with 7 or 8 being "good", 6 being "fair", and 1-5 being "poor". For 2017, the locally-owned federal-aid roadways had an average condition rating of 8.05 for the entirety of the A/GFTC area. Almost 92% of pavement for this roadway network was rated "good" or better. As can be seen in Figures 19-20, this reflects an overall upward trend in pavement conditions along locally-owned federal-aid highways.

Figure 19: Average A/GFTC Pavement Score, Local Federal-Aid Network

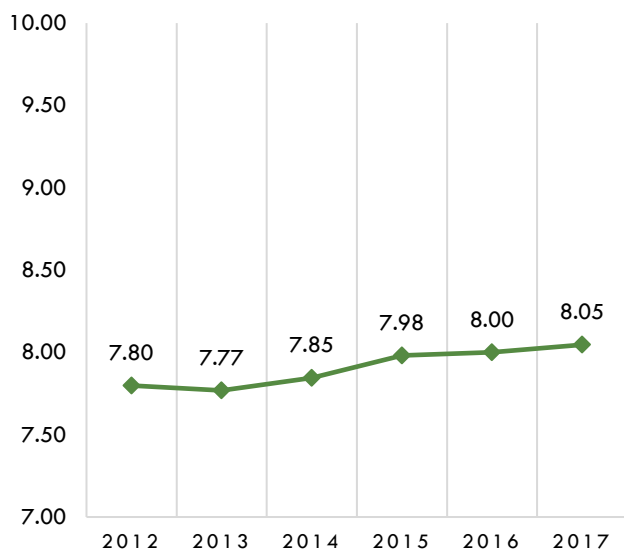
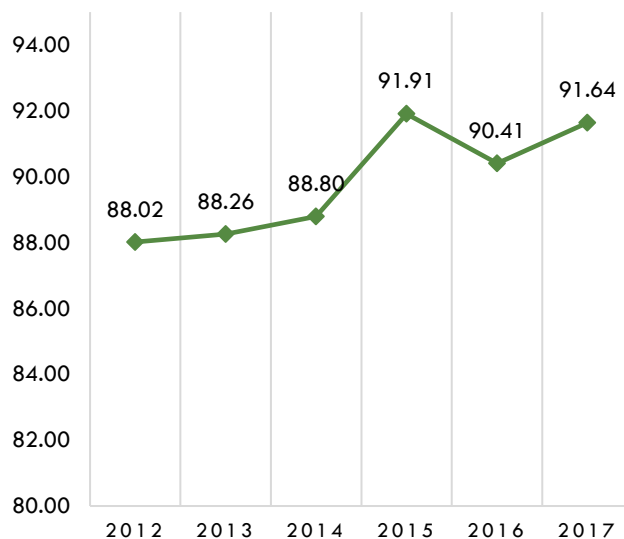


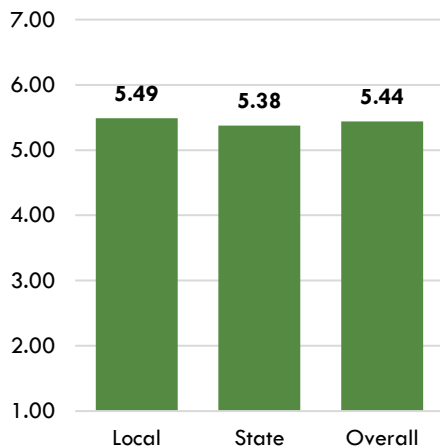
Figure 20: % Pavement Rated Good or Better



Bridge Condition

In the A/GFTC area, there are 324 public bridges; 187 are owned by the local municipalities, with the remaining 137 owned by NYSDOT.

Figure 21: NYS Bridge Condition Rating, 2017



In New York State, NYSDOT is responsible for inspecting and evaluating all bridges. This includes assigning a condition score and associated quantities and documenting the condition of structural elements on a span basis, as well as general components common to all bridges. NYSDOT computes an overall condition rating for each bridge by combining the ratings of individual components using a weighted average formula. This formula assigns greater weights to the ratings of the bridge elements having the greatest structural importance and lesser weights for minor structural and non-structural elements. The NYSDOT condition rating scale ranges from 1 to 7, with 7 representing new condition. A rating of 5 or greater considered as good condition. It should be noted that the Federal performance measures utilize a different standard for bridge condition. (See “Performance Measures” below.) The average bridge condition in the A/GFTC area is 5.44, with local bridges slightly higher at 5.49 and state-owned bridges slightly lower at 5.38. (See Figure 21.) It should be noted that the bridge

rating methodology has recently changed; bridge ratings from 2018 on will be collected in the new format.

In addition to the overall condition score, a bridge may be assigned a status of “Structurally Deficient” (SD). Bridges are given this status, according to FHWA guidelines, if the condition rating of one of its major components is less than 5, the bridge has inadequate load capacity, or repeated bridge flooding causes traffic delays. The fact that a bridge is “structurally deficient” does not imply that it is unsafe or likely to collapse; instead, this classification is used to designate which bridges require repairs or modifications to restore their condition or improve their functionality. If a bridge is deemed unsafe, it is closed to traffic. There are about an equal number of SD bridges on the local system (30) as on the state system (31). However, the SD bridges make up a higher proportion of the state-owned bridges than the local-owned structures. (See Figure 22.)

Figure 22: Bridge Status by Owner, 2017

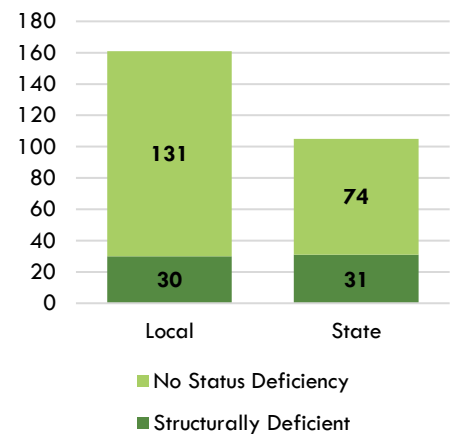
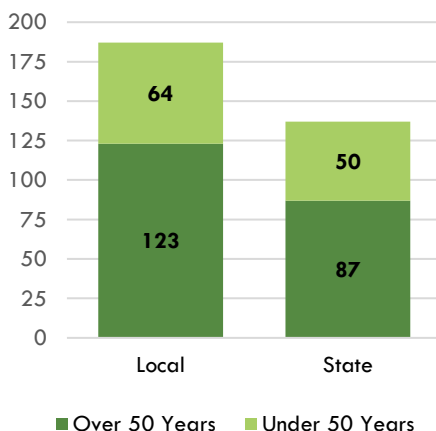


Figure 23: Age of Bridges by Owner, 2018



Another important consideration is the age of bridge structures. Older bridges were often built to outdated design standards and may not be suited to modern needs in terms of considerations such as lane width and pedestrian facilities. In addition, changes in climate and weather patterns have increased the likelihood of severe storm events, which may also increase the chances of flooding and washout for older bridges which were built to accommodate less frequent and severe rainfall events. In general, about 65% of both the state and local systems are over 50 years old. (See Figure 23.)

Performance Measures

The FAST Act outlined performance measures for pavement and bridge condition, including:

- % of Interstate Roadway Pavement in Good Condition
- % of Interstate Roadway Pavement in Poor Condition
- % Non-Interstate NHS Roadway Pavement in Good Condition
- % Non-Interstate NHS Roadway Pavement in Poor Condition
- % of NHS Bridge Condition in Good Condition (by deck area)
- % of NHS Bridge Condition in Poor Condition (by deck area)

The most recent available statistics for these targets and baseline conditions are located in Appendix 1 of this document. For the most part, within the A/GFTC planning area, the infrastructure which falls under these targets is controlled by NYSDOT. It should be noted that the Federal measure of “Good”, “Fair”, and “Poor” are defined separately from the NYSDOT condition measures⁵. A/GFTC is committed to supporting NYSDOT Region One in their efforts to meet their targets for infrastructure condition.

Challenges/Opportunities

- In the A/GFTC area, of the 212.40 miles of NHS highways, only 8.85 miles are under local jurisdiction (5.04 miles under County jurisdiction, 3.81 miles under City or Village jurisdiction). There are no NHS bridges under local jurisdiction. This makes it difficult to effect any substantive local programming to directly improve the pavement and bridge conditions as measured under Federal standards.
- In terms of pavement condition, the "preservation first" model promulgated several years ago by NYSDOT has had repercussions on the ability to implement improvements on the non-State owned federal aid network. Recently, the heavy emphasis on pavement preservation projects has been reduced, shifting the burden away from the local road system and loosening requirements to spend a high proportion of federal funds on pavement preservation. However, while these measures were in effect, local agencies were forced to shift the focus of their overall capital programs to account for the change. Although the condition of the pavement on the federal aid system continued to improve, other types of projects (such as capacity improvements or road reconstructions) were put on hold.
- Changes in the funding mechanisms for MAP-21 and the FAST Act have limited the amount of funding available for local system bridges. Although the funding for bridges on the NHS system has increased, most locally-owned structures within the A/GFTC area are not NHPP-eligible.
- As with the highway system, funding limitations dictate that the vast majority of bridge funds are expended on maintenance projects. In addition, many bridges are nearing the end of their design life. Bridges in poor condition will likely go unaddressed in the short-term, resulting in potential load postings (weight restrictions) and closures. Although NYSDOT offers funding for local bridges under the BridgeNY program, regional considerations may not fully be taken into account in this state-wide competitive process.

⁵ These terms are defined in accordance with the Pavement and Bridge Condition Performance Measures final rule, published in January of 2017. Pavement condition is dependent on roughness, cracking, rutting, and faulting data elements. For a section of pavement to be rated in Good condition, the absolute values for all relevant metrics need to exceed thresholds specified in the NPRM. Bridge condition is determined by the lowest component condition rating for the bridge, based on the NBI condition ratings for deck, superstructure, substructure, and culverts. For a bridge to be classified as in Good condition, all the relevant metrics need to equal the values specified in the NPRM.

Priorities & Projects

Maintaining existing transportation facilities is of primary concern to the A/GFTC transportation planning process. The following priorities and projects are intended to maximize the limited funding available, within the targets set by NYSDOT.

- Continue to assist local sponsors to maximize the benefit of the maintenance and preservation setasides on the Transportation Improvement Program. The current TIP includes regional setasides for preservation/maintenance projects, including activities such as element-specific bridge repair and pavement repairs and rehabilitations.
- Continue to support bridge and pavement preservation projects through planning initiatives, to allow local sponsors to make informed decisions. This includes maintaining and updating the Bridge Preservation Analysis tool as well as providing access to pavement condition ratings. Due to the requirements of MAP-21 and the FAST Act, NYSDOT is transitioning their pavement scoring program to include all roads in the federal-aid network, regardless of ownership. Pavement scores will be collected by NYSDOT in each region every other year. A/GFTC will work with NYSDOT to establish access to bridge and pavement condition data for distribution to the MPO.

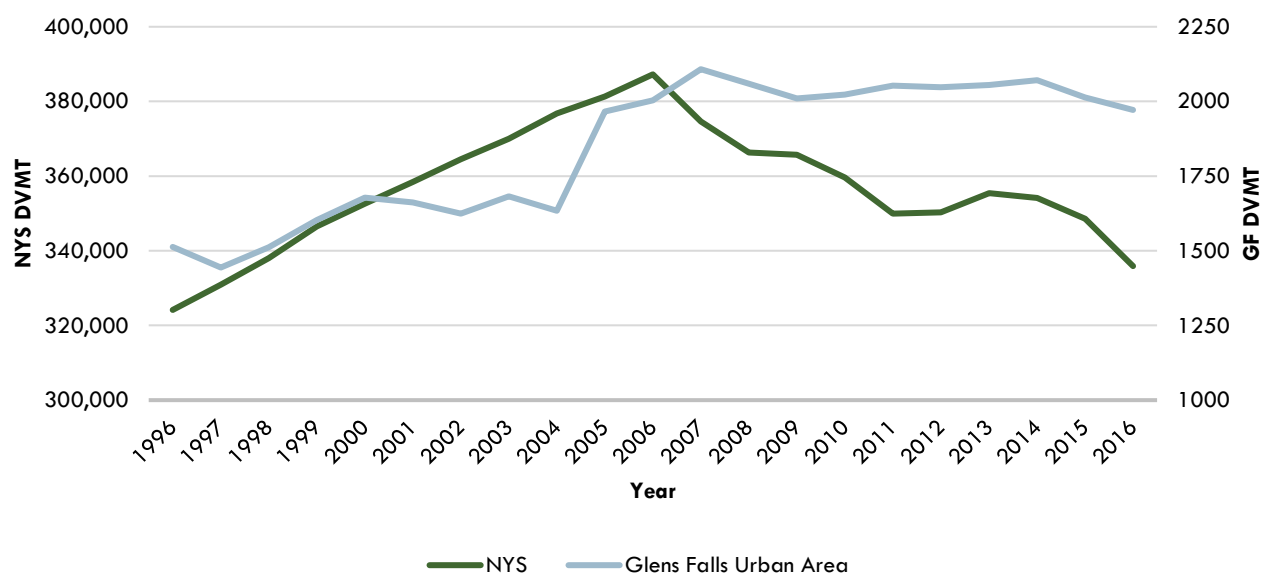
SYSTEM RELIABILITY & PERFORMANCE

RELATED PLANNING PRINCIPLES: 1, 2, 4, 8, 9, 10, 12

One of the most significant factors in transportation planning is the amount people drive. This is usually measured in Vehicle Miles Traveled (VMT), which can be calculated on an annual or daily basis. The past decade has seen a remarkable shift in VMT trends on the national, statewide, and regional level. Historically, VMT has tended to increase annually, except in cases of extreme fuel crises. However, as can be seen in Figure 24, daily VMT (DVMT) peaked in 2006-07. In the state as a whole, this peak was followed by a precipitous decline; despite some recent upward trends in 2012 & 2013, VMT levels in 2016 were as low as they had been almost twenty years before that.

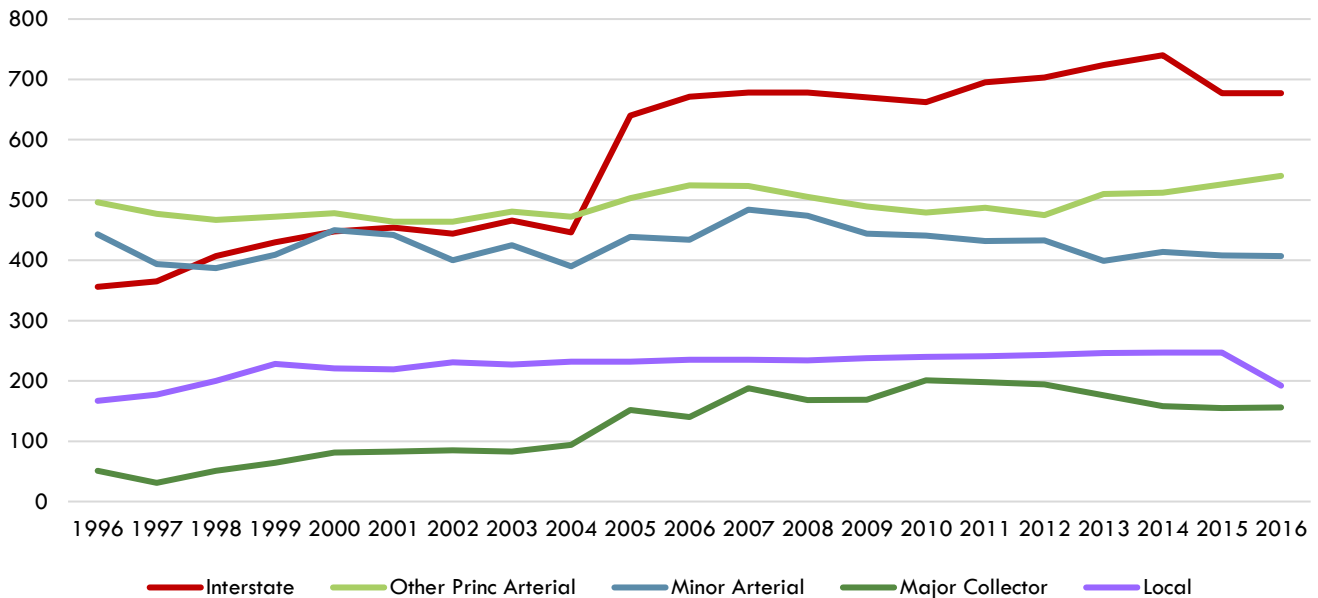
On a regional level, trends in traffic volume are influenced not only by large-scale economic drivers such as gas prices, but also by more local factors such as housing prices and the location of employment centers. In the Glens Falls urbanized area, the decline in VMT has not been as steep as in the state as a whole. After peaking in 2007, the daily VMT has declined only slightly; VMT in 2016 is about the same as it was in 2006.

Figure 24: Trends in DVMT, HPMS Network



As can be seen in Figure 25, not all roadway types have experienced the same trends in VMT growth and decline. Most notably, the DVMT on the interstate in the Glens Falls Urban Area increased significantly from 2004-2005. There has also been a moderate increase in volume along major collectors, while volume on non-interstate principal arterials, minor arterials, and local roads has fluctuated.

Figure 25: DVMT, Glens Falls Urban Area, HPMS by Road Type



Capacity issues have become increasingly difficult to accommodate within capital programs as infrastructure conditions deteriorate, the buying power of public funds continues to decline, and the overall size of the programs decrease. As a consequence, A/GFTC's 2016-2021 Transportation Improvement Program contains no programmed highway improvement projects solely intended to address capacity or congestion issues. Although VMT has been relatively stable over the last few years, system performance with regards to recurring congestion is still an issue in certain localized areas.

One tool to identify congestion is the National Performance Management Research Data Set (NPMRDS). This data is used by states and MPOs to monitor transportation system performance and consists of aggregated travel time information gathered from GPS-enabled technology. This data is highly useful because it measures actual conditions (as opposed to a simulated computer model). The NPMRDS data in New York State has been used to analyze several different measures of performance. One of these is a measure of “bottleneck” conditions, as set forth by methodology created by the American Transportation Research Institute (ATRI). Table 5 lists the locations of noted congestion-related bottlenecks within the A/GFTC region, as ranked by NPMRDS data between July, 2016 and June, 2017. This data was further broken down to account for seasonality.

With respect to the congestion on and off the interstate, it is important to note that the measure of congestion is based on the difference between actual travel speed and posted speed limits. Thus, road segments off the interstate, which have traffic signals, intersecting roadways and access drives, transit service, and bicycle and pedestrian features, are more apt to experience “stop-and-go” conditions which contribute to congestion as measured by this methodology. In contrast, I-87 itself should theoretically experience free-flow conditions at the exits.⁶ Capacity-related congestion on the interstate segments is therefore a factor of decreases in traffic speed due to vehicles entering or exiting the roadway ramps. This can account for the conditions seen in Table 5, in which certain segments of I-87 experience congestion at a different rank than the associated roadways at the exits. It is also important to note that the NPMRDS data is only available for portions of the National Highway System; therefore, areas of potential bottlenecks off of the NHS are not apparent.

⁶ Certain roadway segments in the more mountainous parts of the A/GFTC area experience measurable declines in travel speed due to slope; these roadway segments have not been included as they do not experience congestion-related slowdowns.

Table 3: Existing NHS Bottlenecks

Location	Avg. Rank, 12 months	Avg. Rank, April-Sept.	Avg. Rank, Oct.-March
Non-interstate segments			
Aviation Rd. between Exit 19 of I-87 and Route 9	1.00	1.00	1.00
Saratoga Ave. between Gansevoort Rd and Centennial Circle	2.58	2.83	2.33
Quaker Ave. between Route 9 and Ridge Rd.	3.08	3.00	3.17
Route 9 between Exit 20 of I-87 and Route 149	3.33	3.17	3.50
Interstate segments ⁷ :			
Exit 17	1.67	2.00	1.33
Exit 20	1.92	1.67	2.17
Exit 19	3.00	2.83	3.17
Exit 18	3.42	3.50	3.33

Projected System Performance

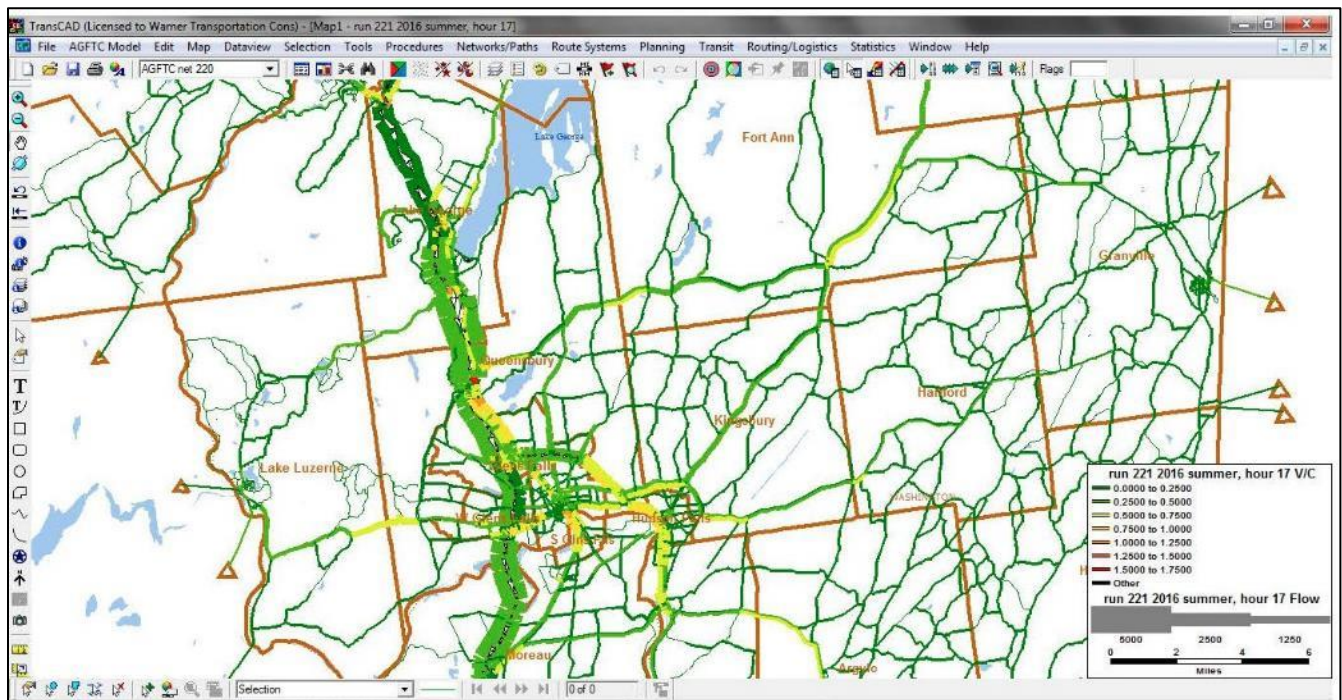
Although it is important to understand existing system performance, it is perhaps just as crucial to plan for future conditions. To estimate the potential impacts of continued economic development and proliferation of households, the A/GFTC regional travel demand model was used to generate volume to capacity ratio (V/C) data. The V/C ratio compares the amount of traffic along a given roadway to the amount of traffic that that roadway is capable of carrying. The degree to which known site-specific capacity issues are accurately represented within a regional travel demand model can vary from location to location; for example, the A/GFTC model notably under-represents existing traffic conditions at US Route 9 / NYS 149 in Queensbury and at US Route 9 in the Village of South Glens Falls, two locations that feature significant and recurring congestion. However, comparison of existing data to forecasted data within the regional model is a useful measure that can be used to identify potential system capacity constraints.

The following graphics (Maps 7 & 8) show current condition (2016) and projected (2040) PM peak hour summer season V/C data for federal aid - eligible roadways in the A/GFTC area. The 2040 forecast was developed for A/GFTC by Warner Transportation Consulting using data acquired from Woods & Poole Economics. Using a conservative estimate that forecasts no capacity improvement projects between now and 2040, the A/GFTC travel demand model suggests that capacity constraints evident in 2016 will become more pronounced over time with growth, but that capacity issues do not appear to expand geographically. It is however logical to assume that a more significant capacity constraint at a given location could indeed lead to delays and queue length increases on adjacent segments. Noting that, the travel demand model suggests that future traffic conditions at the following locations may worsen by approaching or exceeding existing roadway capacities:

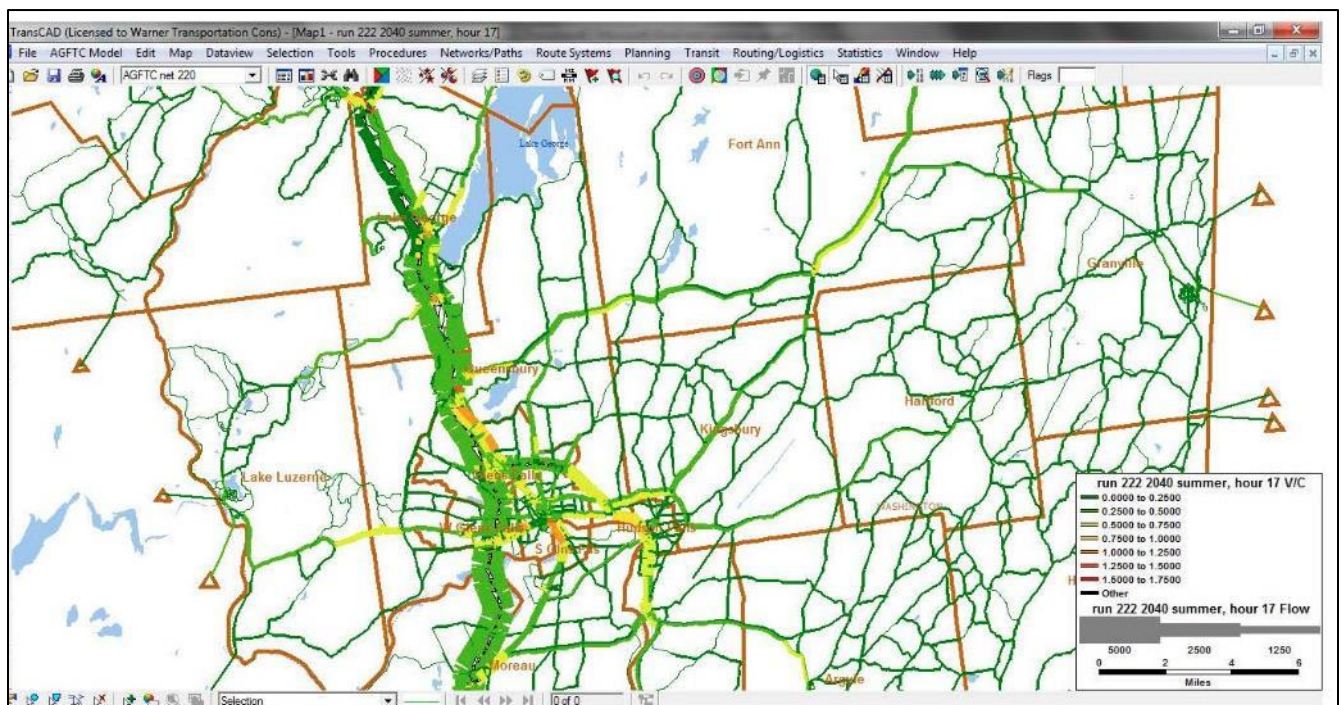
- US Route 9, between Quaker Road and Exit 20
- NYS 149 at US Route 9 (Gurney Lane / Exit 20 SB)
- Downtown Glens Falls (Glen Street, Ridge Street, Warren Street, Hudson Avenue)
- US 9, Village of South Glens Falls
- NB off-ramps from I-87 to Exits 22 and 23, Town of Lake George
- NB off-ramp from I-87 to Exit 21, and NYS 9N approach to US 9, Town of Lake George
- US Route 4 at NYS Route 196 / 254, Village of Hudson Falls

⁷ These refer to the segments of I-87 at the exit referenced. It is assumed that the data is measuring reduced traffic speeds related to congestion on the on/off ramps due to peak hour traffic queues; however, other conditions, such as roadway geometry and slope, can also contribute to bottleneck conditions on the interstate. Non-congestion related bottlenecks have not been included in this list.

Map 7-- Current Volume-to-Capacity Ratio



Map 8 - Forecasted Volume-to-Capacity Ratio



Performance Measures

The FAST Act contains two measures to assess the reliability of the National Highway System. These include:

- Percent of the person-miles traveled on the Interstate that are reliable (referred to as the Interstate Travel Time Reliability measure); and
- Percent of person-miles traveled on the non-Interstate NHS that are reliable (referred to as the Non-Interstate Travel Time Reliability measure).

The most current targets and baseline data for these performance measures are located in Appendix 1. A/GFTC is committed to supporting NYSDOT Region One in their efforts to meet their targets for travel time reliability. It should be noted that there is a lack of consistent historic data, as the NPMRDS data vendor changed in 2017. The targets shown are not in anticipation of performance decline, but rather an acknowledgement that future data sources may necessitate adjustments in the baseline. A/GFTC staff will continue to monitor and document data trends for travel time reliability as required.

Challenges/Opportunities

- The regional plateau in VMT may result in a reduced burden on the road system as a whole, which may ease the deterioration of capacity in the short-term. This could be seen in the recent update to the Dix Avenue Corridor study, where the growth in traffic predicted in 2005 had not realized in 2015. However, although VMT has leveled off in the last few years, previously identified congestion issues still remain, for example in the Exit 20 area. Competing system maintenance demands will impede A/GFTC's ability to program capital projects intended to address these issues.
- Advances in technology could present impacts which are difficult to anticipate. For example, advances in alternative fuel technology, especially electric vehicles, could disrupt the impact of gas prices on VMT, leading to more congestion regardless of the price of fuel. Advances in connected and autonomous vehicles (C/AV) could also provide more access to mobility for people who have a limited ability to drive, and could theoretically also increase VMT. Conversely, C/AV technology could theoretically allow for better system utilization; that is, by dispersing the traffic more evenly, peak hour congestion could be reduced. Although none of these technologies are anticipated to become widely embraced in the short-term, the potential for impacts further in the future is significant.

Priorities & Projects

- Continue to complete corridor-based planning studies. Large-scale transportation plans, such as the recent Dix Avenue Corridor Update and the Exit 17/Route 9 Study, provide local municipalities with the necessary background to pursue congestion and capacity improvements at such time that funding becomes available. In addition, these types of studies often identify low-cost improvements, such as signal timing and striping, which can provide incremental improvements to system performance without a major capital project. Demand-management and land use strategies can also provide solutions independent of the availability of capital funding.
- Continue to monitor emerging transportation technology, including C/AV and alternative fuels, and provide relevant information to member municipalities as appropriate. In addition, A/GFTC staff should continue to pursue UPWP projects, such as the recent Electric Vehicle Charging Station Analysis, which assist communities to adopt emerging transportation technologies.
- Explore methods to monitor and forecast travel patterns in the A/GFTC planning area. A/GFTC currently maintains a traffic model for the planning area, should the need arise to model impacts for projects on the TIP. Given recent advances in technology, the potential for rapid shifts in travel patterns, and funding

restrictions which have limited the number of capital projects focused on congestion and capacity, the need for a traditional traffic model may decrease. A/GFTC will continue to explore the most efficient and effective methods to forecast travel patterns and impacts, whether by updating the existing model or other methods.

FREIGHT MOVEMENT

RELATED PLANNING PRINCIPLES: 4, 7, 8, 9

Freight travels through the A/GFTC area primarily on highways, but rail and waterways also play a role. The movement of goods impacts the region in a variety of ways. The provision of adequate freight facilities is of prime importance for local and regional economic development interests. However, in most cases, the same transportation facilities used for freight are also shared by passenger vehicles, which creates the potential for competing interests among limited resources.

Freight Facilities: Highways

In New York State, about 94% of shipments traveling within the state (by weight) are shipped via truck. (See Table 7.) With the exception of local deliveries and commodities generated or consumed by the local economy, the majority of regional truck trips utilize the National Highway System. Within the urban area, most of these NHS components are built and designed to handle considerable volumes of heavy truck traffic. However, some rural Principal Arterials, including U.S. Route 4 and NYS 149, are strained by the volume of truck traffic.

Table 4: 2015 Modes of Transportation for Shipments in New York, % of Weight

Mode of Transportation	Within NYS	Outbound from NYS	Inbound to NYS
Truck	93.8%	64.7%	58.5%
Air (including truck and air)	0.0%	0.3%	0.3%
Rail	1.1%	13.1%	10.8%
Water	1.6%	2.6%	4.0%
Pipeline	1.8%	16.2%	22.3%
Multiple modes & mail	0.5%	2.9%	3.8%
Other and unknown modes	1.3%	0.2%	0.3%
Total	100%	100%	100%
SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics			

Freight movement on the highway system is subject to the same congestion issues that affect all vehicles. As such, the challenges, opportunities, and priority projects in the System Performance section of this plan also apply to freight movement as well.

In addition, trucks are also affected by geometric limitations and local limits on truck traffic along certain roadways. The following locations, identified through the course of planning studies undertaken by A/GFTC, have geometric issues that limit the regional mobility of larger vehicles.

NYS 197 Bridge over Hudson River, Village of Fort Edward

The bridge carrying NYS 197 over the east branch of the Hudson River was once classified as functionally obsolete, having inadequate lane width and no shoulder. To the east of the bridge, the geometry of the Route 4 intersection limits truck movements, although a recent reconstruction of that intersection has improved those restrictions. Existing adjacent land uses limit right-of-way availability for larger, more functional design alternatives.

Route 4 / NYS Route 32 Intersection, Town of Kingsbury

The angle of the Route 4 & 32 intersection is an impediment for larger trucks. Additionally, this location is subject to peak hour congestion, particularly on the east and west approaches. In 2016, NYSDOT made minor modifications

to the striping and curb configuration of the intersection, to allow for better truck turning movements. However, capacity issues are anticipated to worsen. The Dix Avenue Study Update, completed in 2016, anticipated Level of Service E or F for certain peak hour conditions by 2030. Several alternatives to remedy the capacity issues, including a roundabout, were proposed as part of that study.

NYS Route 149 Geometry/Alignment Improvements, Washington County

Although NYSDOT reconstructed the westernmost portion of Route 149 in the last twenty years, the remaining portions of this roadway in Washington County, notably between Route 4 and Warren County, are a source of significant local concern. This includes constraints to width and various vertical and horizontal curves which could be improved to better accommodate heavy vehicle traffic.

US Route 4, various municipalities in Washington County

As the link between Interstate 87 and Washington County, Vermont, and northern New England, Route 4 is a major component of the freight routing for the region and beyond. In the rural areas, truck volumes can exceed 30% of overall traffic for certain sections of this roadway. Within the urban area, Phase I of the Route 4 reconstruction project (Village and Town of Fort Edward) was completed in 2010. As part of this project, the geometry of several intersections was improved for large trucks. Phase II (Village of Hudson Falls/Town of Kingsbury) was completed in 2014 but the project's physical scope did not include the intersection of Route 4 with NYS 32. NYSDOT completed minor striping and curb re-location work on this intersection in 2016.

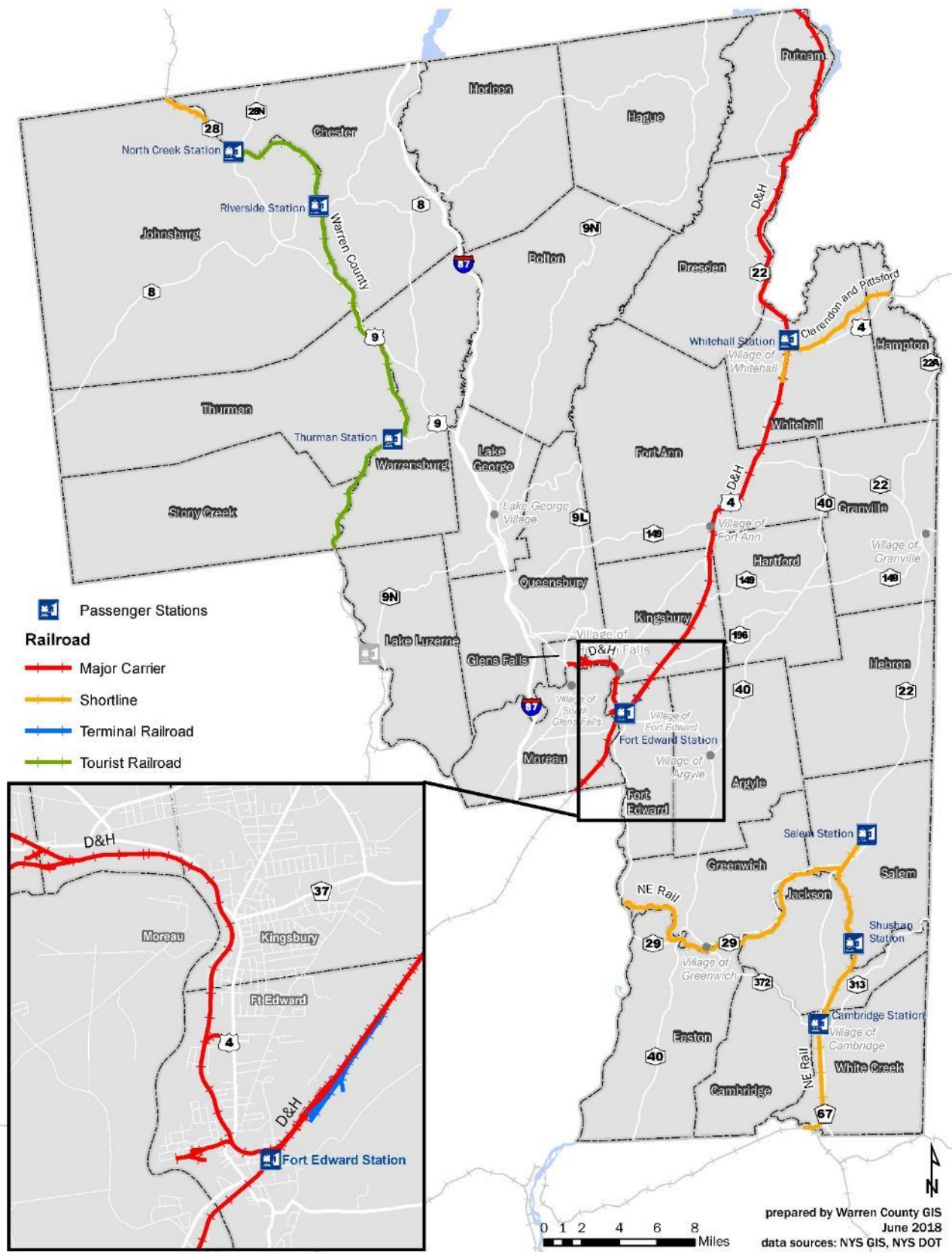
The rural section of U.S. Route 4, north and east from the Town of Kingsbury to the State of Vermont boundary, features a number of substandard intersection angles, horizontal and vertical sight distance issues, varying shoulder widths, and abrupt rural-to-village transitions. NYSDOT has taken some steps to address these issues, for example at the intersection of Route 4 and NYS 149 in the Village of Fort Ann. Recent improvements to that intersection improved turning radii for trucks and added a turning lane to improve capacity.

Freight Facilities: Railroads

Although a majority of freight shipments utilize trucks, vans, and airplanes, rail transport remains as a viable alternative for the movement of high volume bulk goods that are not sensitive to time demands. To sustain the businesses which use rail freight currently, as well as encourage new economic activity within the region, existing rail infrastructure should be maintained in a state of good repair. Not only is this vital to the current and future economic security of the United States, but regional efforts to alleviate rail congestion issues could lead to further use of rail in the A/GFTC area.

The A/GFTC region contains five railway systems of varying ownership, condition and function (see Map 9). More detailed information for the major active rail lines are listed below. Please note that these are listed in terms of ownership of the rail lines and the name of the rail service operated.

Map 9: Rail Lines, A/GFTC Area



Delaware & Hudson Railway Company - Canadian Pacific Railroad

Of the rail lines in the MPO, the Canadian Pacific Railway (CP) is the most significant in terms of the economic activity, movement of goods, and connectivity to major ports and terminals. Outside of the A/GFTC area, CP tracks connect to Montreal, New York City, and Philadelphia. CP is one of seven remaining Class I railroads still operating in North America (See sidebar for rail class thresholds.)

Railway Classes – Surface Transportation Board

For regulatory purposes, railroads are classified as Class I, II, or III based on their annual operating revenues. A carrier's class is determined by its inflation-adjusted operating revenues, for three consecutive years.

STB Freight Rail Class	Adjusted Revenues, 2016 Dollars
Class I	\$447,621,226 or more
Class II	\$35,809,698 - \$447,621,226
Class III	\$35,809,698 or less

Industrial employers including Lehigh Cement, Finch, Pruyn and Company, and Irving Tissue rely upon CP rail service for shipments of coal, pulp paper, cement, industrial chemicals, and other commodities. Smaller operations in the area rely on CP rail for the transport of feedstock, scrap materials, and rock salt.

Intermodal service optimizes the competitiveness of rail as a means of shipping. The regional intermodal terminal for CP is located at Kenwood Yard in Albany, with a recently upgraded rail switching yard in Mechanicville. Within the A/GFTC area, significant rail infrastructure improvements at the dewatering facility in Fort Edward were constructed to facilitate the

outbound shipment of PCB-contaminated sediment removed from the Hudson River. This infrastructure represents an important opportunity as the post-dewatering industrial park is developed.

Vermont Rail System - Clarendon and Pittsford Railroad

Acquired by the Vermont Rail System in 1972, the Clarendon and Pittsford Railroad, a Class III line, has 6.8 miles of track in Washington County. Crossing the towns of Whitehall and Hampton, the railway connects the CP mainline to the Vermont Railway in Rutland, VT. Commodity shipments along this line include fuel, rock salt, and slurry (mixtures of water and insoluble solids such as cement); AMTRAK also operates the Ethan Allen passenger service to Rutland and Burlington along this rail section. The Vermont Rail System continues to invest in both track infrastructure and their fleet of locomotives, and is committed to providing a high level of service to its customers.

NE Rail - Batten Kill Railroad

The Batten Kill Railroad is a Class III line, comprised of 34 miles of track in southern Washington and northern Rensselaer Counties, with an eventual connection to the CP network via Guilford Transportation Industries trackage that leads to Mechanicville, NY. Once servicing Cambridge, Salem, Greenwich and Clarks Mills, existing operations along the Batten Kill are limited to bulk shipments of animal feed and fertilizer to East Greenwich. The 500 annual carloads shipped along the track result in transportation and commodity cost savings for local farmers. Previous efforts by the State resulted in the improvement of trackage and the rehabilitation or replacement of several rail bridges in the last decade. Most recently, in 2016 the railroad received \$1.6 million to pursue 4 miles of track repairs.

Warren County - Saratoga & North Creek Railway

After years of track dormancy, Warren County acquired the former Adirondack Branch of the Delaware and Hudson Railroad in 1998. In 2011, the railway operations were acquired by the Saratoga & North Creek Railway. Through significant investments of county, state, and federal funds, 40 miles of railroad are now up-to-date and operational, from North River south to the Town of Corinth in Saratoga County. Until recently, the line was used on a limited basis for tourism and freight. However, the Saratoga & North Creek Railway company has since gone out of business, and the future of the rail facility is unclear.

Freight Facilities: Canals

Truck and rail-based shipments dominate contemporary commodity movements, despite the fact that barge shipping is far more fuel efficient. The slow travel rate of barge travel does not support the movement of low-volume high-value consumer goods that are in continued demand. However, recent interest in commercial shipping has increased, especially for low-value, high-volume products such as stone and aggregate. In the future, fuel shortages and price fluctuations could trigger additional demand in water-borne shipping.

Champlain Canal

With 49 miles of waterway in Washington County, the Champlain Canal connects Lake Champlain in the north to the Hudson River and Erie Canal to the south. Besides speed, another constraint that limits the viability of barge shipments is canal depth. As a legacy of historic PCB contamination in the Champlain Canal, the controlling depth of the Champlain Canal in the A/GFTC area is generally too shallow to accommodate larger vessels. Deeper drafts are necessary in the Champlain Canal in order to make these shipments more economically viable. Through continued capital investments by the New York State Canal Corporation, the Champlain Canal remains operational and supports recreational boating as well as the recent resurgence of commercial shipping.

The alignment of the Champlain Canal effectively parallels the Canadian Pacific Railway mainline. Both provide unique modal access to hundreds of acres of industrial-zoned property in the Towns of Fort Edward and Kingsbury. The construction of a state of the art wharf at the dredge dewatering facility could prove to be an asset to redevelopment of these properties in the future, especially given other investments to on-site rail trackage. While most of that property is located less than 20 minutes from Interstate 87, there are a number of vehicle access issues relating to intersection alignment, capacity restrictions, and deficient structures along the major connecting National Highway System routes. The Town and Village of Fort Edward have worked to identify potential solutions to the issue of truck access, and have pursued public-private partnerships to establish improved vehicle connectors to this area, most recently in regards to access from Route 196. The proximity to both rail and waterway modes for shipping is an asset of regional importance for this site.

Performance Measures

MAP-21 and the FAST Act called for the establishment of measures to assess the performance of freight movement on the interstate system. This measure, the Truck Travel Time Reliability Index, compares the 95th percentile truck travel time to the 50th percentile truck travel time for the interstate highway system. The baselines and target set by NYSDOT are listed in Appendix 1. A/GFTC is committed to supporting NYSDOT Region One in their efforts to meet their targets for truck travel time.

Challenges and Opportunities

FHWA expects the volume of commercial freight to increase 40% by 2045, resulting in commercial truck traffic growth that should well exceed increases in passenger car usage. If realized, this growth will have an enormous impact upon mobility along our nation's major highways. The A/GFTC Planning and Programming Area is itself situated at a regional transportation crossroads between the New York City – Montreal corridor and northern New England. The existing regional NHS network features generally adequate system redundancy that can temporarily absorb non-recurring congestion events, but the level of anticipated growth in truck traffic will create future capacity issues in locations where they do not exist today.

Unstable fossil fuel prices and supplies could potentially result in a shift of transport demand proportionally away from trucks to more fuel efficient but less timely modes like barges and railcars. Unique and diverse infrastructure assets advantageously position the A/GFTC area to accommodate modal shifts in commodity transport, but

continued investments in new accesses, system maintenance and intersection capacity mitigations are required if the region is to capitalize fully upon the inevitable increase in the regional, national, and international movement of goods.

Impediments to the multimodal accommodation of freight shipments in and through the A/GFTC Planning and Programming Area include the following:

- Geometric deficiencies at intersections of NHS components, notably:
 - US Route 4 and NYS 32 in the Town of Kingsbury
 - US Route 4 and NYS 197 in the Village of Fort Edward
 - US Route 4 and NYS 196 in the Village of Hudson Falls
- Intersection capacity issues along major routes, including:
 - Exit 20 / US Route 9 / NYS 149 in the Town of Queensbury
 - Exit 19 / NYS 254 / Quaker Road in the Town of Queensbury
 - NYS 32 (Dix Avenue) in the Town of Kingsbury
- NHS components that bisect established villages and activity centers
- Anticipated continued growth in truck traffic, counter to other automobile usage trends
- Substandard access to existing and planned industrial parks and industrially zoned property throughout the urban area
- Aging rail infrastructure
- Water depth limitations in the Champlain Canal

For a small urban area, the A/GFTC region features a number of unique freight transportation assets that collectively comprise a system that can likely adapt to the anticipated increases in freight traffic, including:

- Access to Interstate 87
- A comprehensive NHS network featuring system redundancy and generally adequate arterial link capacity
- Diverse non-highway shipping infrastructure that includes active rail, a regional airport, and the Champlain Canal
- Sites positioned for future development or redevelopment as intermodal transfer centers
- Hundreds of acres of vacant industrial property located in close proximity to major transportation facilities

Priorities & Projects

Given the importance of freight to the economic welfare of the region, as well as the potential to impact the transportation network, A/GFTC has identified the following priorities and projects relating to freight.

- Continue to collaborate with local and regional agencies to implement innovative solutions to identified surface transportation freight obstacles:
 - US 4/NYS 32 Intersection Improvements (Kingsbury)
 - US 9/Exit 20/NYS 149 Congestion Improvements (Queensbury)
 - NYS 197 over the Hudson River (Fort Edward)
 - Dix Ave/NYS Route 32 Improvements (Glens Falls, Queensbury, Kingsbury)
- Continue to collaborate on local, regional, and statewide planning efforts related to rail- and water-based freight. This includes participation in regional planning efforts, as well as providing technical assistance as needed.

Whether considering the economic, community, or environmental health of a region, a vital and utilized public transportation system has many well-documented benefits, including:

- Providing essential mobility to the area's population and workforce, potentially attracting both workers and employers alike
- Increasing capacity of key transportation corridors, particularly during the peak summer tourist season
- Reducing air pollution and greenhouse gas emissions from single-occupant vehicles
- Expanding the range of bicycle and pedestrian transportation (all GGFT fixed route buses feature bicycle carriers)
- Attracting tourists and other visitors traveling without automobiles
- Regional mobility and quality of life are dependent upon the continued success and potential expansion of public transportation operation.

Greater Glens Falls Transit (GGFT)

Greater Glens Falls Transit (GGFT) is the designated publicly operated local transit system that provides fixed route bus service and demand responsive paratransit service throughout most of the urbanized area. (See Map 8). GGFT is a department of the City of Glens Falls. Services are funded in part with funds from the Federal Transit Administration and the NYS Department of Transportation, in addition to fares and local government support. A summary of GGFT's services is included below. See Table 9 and Figure 26 for ridership trends and projections.

Fixed-Route Service

The fixed-route bus system consists of eight primary routes which converge in downtown Glens Falls at an on-street terminal located along the east side of Ridge Street opposite City Hall. The radial pulse system allows passengers to easily transfer between routes; GGFT offers timed transfers and will hold buses for a few minutes to make sure services meet. The full system operates primarily on weekdays between 6:00 AM and 6:30 PM. Selected routes also operate on Saturdays and in the evening.

Seasonal Trolley Service

In addition to the regular route system, GGFT operates on-road trolley service in Lake George during the summer months from late June through Labor Day. Routes extend from the Steel Pier on Beach Road in the Village of Lake George for about 20 miles north and south between Bolton Landing and downtown Glens Falls. The seasonal trolley routes operate seven days per week at times and service frequencies that are primarily oriented to visitors' travel schedules and itineraries.

Freedom and Mobility Express (FAME) Service

GGFT offers complementary paratransit service to individuals unable to access the fixed-route services. This service is branded as Freedom and Mobility Express (FAME). FAME is available for travel within $\frac{3}{4}$ mile of GGFT's fixed-route services and all passenger pick-ups and drop-offs must be within this area. The service is available during the fixed-route operating hours and based on the route schedule. Fares for FAME trips are double the fare on the fixed-route system.

Map 10: GGFT Service Area

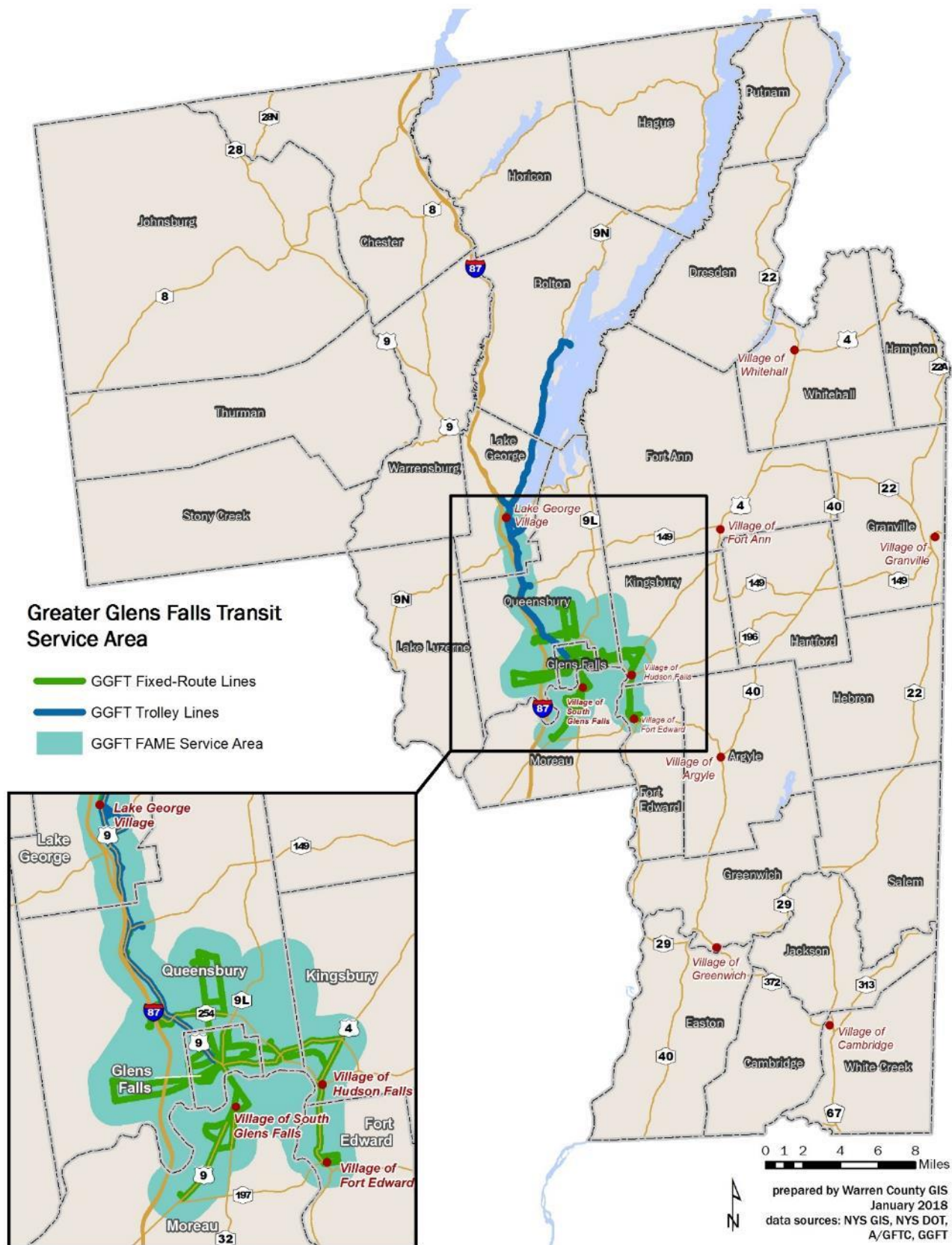
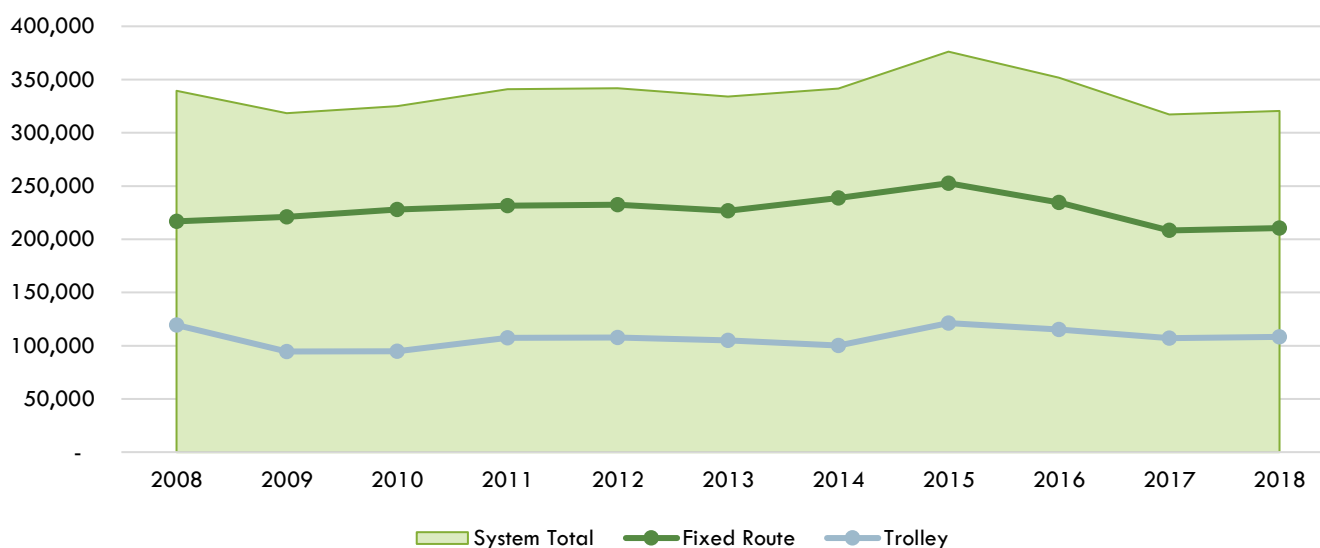


Table 5: GGFT Ridership Trends and Projections

Year	Fixed Route	Trolley	FAME	Total Passengers	% Change - Annual	Actual/Projection
2013	226,792	104,876	2,324	333,992	-2.4%	Actual
2014	238,801	100,095	2,513	341,409	2.2%	
2015	252,609	121,215	2,393	376,217	9.3%	
2016	234,459	115,055	2,362	351,876	-6.9%	
2017	208,254	107,056	2,023	317,333	-10.9%	
2018	210,337	108,127	2,023	320,486	1.0%	Estimate
2019	212,440	109,208	2,043	323,691	1.0%	Projection
2020	214,564	110,300	2,064	326,928	1.0%	
2021	216,710	111,403	2,084	330,197	1.0%	
2022	218,877	112,517	2,105	333,499	1.0%	
2023	221,066	113,642	2,126	336,834	1.0%	

Figure 26: GGFT Ridership Trends, 2008-2018



Performance measures: Transit Asset Management

The FAST Act requires transit operators to promulgate performance targets for the condition of certain assets. In this case, these targets are set by Greater Glens Falls Transit and include:

- Age of buses and revenue vehicles: 10% or less of these vehicles may be at or have exceeded their useful life benchmark (ULB), and 90% or greater will be at an age less than their ULB.
- Age of major equipment and service vehicles: 25% or less of these components may be at or have exceeded their ULB, and 75% or greater will be at an age less than their ULB.
- Condition of major transit facility components: 25% or less of these components may be at or have exceeded their ULB, and 75% or greater will be at an age less than their ULB.

A/GFTC supported the Transit Asset Management plan as developed by GGFT in resolution 18-04, dated 09/14/2018.

Other Agency Services

Several area public departments and social service agencies (including Offices for the Aging, Veterans Services, and public senior health care facilities) as well as private organizations (examples include the Conkling Center, Community Work and Independence Inc, Southern Adirondack Independent Living, and others) offer varying levels of transportation services to their respective clients. Although these services are not truly public in that they are only available to limited segments of the population or specific clients, they do serve particular mobility needs for eligible residents and often operate in areas where sustained public transit is not feasible. While many of these operators cater to unique clients or geography, some services overlap. Coordination of human services transportation has the potential to increase significantly the efficiency and range of area transportation services.

Intercity Bus

Northway Xpress

The Capital District Transit Authority (CDTA) operates this commuter-oriented bus line, which runs Monday through Friday from a park & ride lot in South Glens Falls. The route stops at Exit 9 on the Northway and various points in downtown Albany and the State Office campus. Another trip returns to the lot each evening. This service is not coordinated with the GGFT route schedule. In addition, the route leaves quite early from South Glens Falls, arriving in Albany at 7:35, while the return schedule in the afternoon leaves Albany well before 5 p.m. This schedule could be a potential barrier to people looking for transportation predicated on a traditional 9-5 schedule. Previous efforts to coordinate GGFT & CDTA services have yet to come to fruition, but remain a possibility in the future.

Adirondack Trailways and Greyhound

These buses operate intercity and commuter services six days a week from a terminal on Hudson Avenue in the City of Glens Falls. An average of six bus trips per day operate between Glens Falls, the Albany area and points south including New York City; one regular bus per day travels north from Glens Falls to Canton, NY. Major local service destinations include Warrensburg, Lake George, and Bolton Landing. Adirondack Trailways does offer a commuter-oriented fare package from Warrensburg and Glens Falls to Albany. However, the fares are significantly higher than the Northway Xpress and would not be a viable daily transportation option for most people.

Intercity Rail

AMTRAK

Passenger train service to the Glens Falls area is accessed by way of the AMTRAK station located in the Village of Fort Edward. Service from the station is twice daily, north- and south-bound, one trip each provided by the Adirondack and Ethan Allen Express trains. GGFT's Train Catcher service travels to and from the train station and major area destinations on a reservation basis. AMTRAK services to the Fort Edward/Glens Falls station are not practical for regular commuting based upon departure and arrival times. However, the service is utilized heavily by tourists and provides an important alternative travel mode to Albany and New York City.

Regional Transit Issues

Although an inventory of current transportation services is useful, for the purposes of this Plan it is of greater importance to identify future transit needs and potential solutions. A precise prediction of future need is not possible, but several key factors influence public transportation usage and demand, including land use patterns, commuter travel demand, rural mobility, economic development, human service agency transportation systems, and new technology.

Land Use Patterns

The City of Glens Falls, all urban area villages, and most major urban arterials are included within GGFT's coverage area. Existing GGFT services provide reasonably convenient access to most area employers, shopping and older residential areas. However, development of residential and commercial centers has continued to occur in the more outlying suburban and rural areas. In addition, demand in outlying hamlets and villages outside of the GGFT service area has continued.

To respond to these shifts in land use and demand, GGFT evaluates their operations periodically to ensure that new demands can be met without eroding core services. This includes consideration of alterations in service, utilizing different types of vehicles, or modifications to or additions of routes. Consideration should be given to transit-related issues of access and scale, by allowing transportation providers review and comment on the design of major land use developments.

Although existing services can sometimes be adapted to respond to changes in demand, expanding service to new areas often entails considerable costs. To be a truly viable alternative to private vehicles, an adequate frequency of service is necessary. Establishing these new services should be balanced with the need to continue predictable and reliable services to existing service areas.

Commuter Travel Demands

Commuting patterns between residential and employment areas are somewhat fluid, depending on the location of homes and businesses. Public and private transit capabilities can have a positive impact on reducing road congestion, increasing road capacities and maintaining air quality. Local public and intercity private commuter systems should work together to improve the transferability between systems and jointly market their services to encourage maximum usage.

Since Glens Falls currently meets federal air quality standards and peak hour congestion does not yet constitute a serious regional problem, localized reliance upon private automobile transportation has not yet deteriorated to the point where there are serious observable consequences. As a result, a strong need for dedicated intercity commuter transit services has not yet developed. Excluding smaller scale rural demands, present commuter services are considered as adequate within the immediate Glens Falls area.

The commuter dynamic between the A/GFTC Planning and Programming Area and the greater Capital District (including the Albany and Saratoga areas) is expected to strengthen as large-scale employment centers continue to develop along Interstate 87 between the urban areas. As fuel prices fluctuate, there may be associated shifts in demand for park and ride lots near Glens Falls area Northway exits, expanded bus commuter options, ridesharing services, and vanpooling services. Among these new demands will likely be the need for new and expanded commuter transit services from the A/GFTC area.

Rural Mobility

The Glens Falls area is the primary center for the location and delivery of many services, employers and shopping for large areas of Warren, Washington and other outlying counties. Currently, most public transit services are limited to the urbanized area. Transportation services to outlying rural areas are generally limited to private intercity carriers, taxis, and various public human service agencies.

GGFT and other area public service agencies have long studied the feasibility of instituting rural transit services to selected larger rural population centers such as Warrensburg, Whitehall, Granville, and others. Providing service to the more outlying communities poses an even greater challenge, as these areas are not contiguous to the existing service boundary. To date, the demand has been too diffuse in these areas to overcome the challenge inherent in expansion of GGFT service area. A/GFTC recently completed a Rural Transportation Needs Assessment and Options Analysis to identify unmet rural transportation gaps and potential alternatives to meet these needs.

Economic Development

Effective transportation, inclusive of all modes, is critical to sustaining and growing the local and regional economy. Transit provides inexpensive transportation to the work force. In addition to providing access to jobs, tourism plays a major role in the area economy. The GGFT trolley service has seen increased ridership trends over the last few years, indicating that demand for transit to tourist centers such as Lake George and Bolton Landing continues to grow.

Coordination of Human Services Transportation Programs

The need for public transportation is vital and continues to grow, especially among particular segments of the population such as the elderly and persons with disabilities. Given the aging population noted in this plan, a significant amount of the future growth in demand for transportation services is likely to be in these specialized areas of service.

Historically, much of this need has been addressed on a case-by-case basis by a variety of local agencies providing services to their specific clients. As a result, there are a number of area government agencies and not-for-profit organizations that either operate or sponsor client transportation services. Many of the vehicles used for these transportation services have been purchased with assistance of State and Federal funds. While each of these services are important and make valuable contributions to the local and regional mobility, service gaps persist. While no one operator can assume the role of sole mobility provider for the entire region, transportation coordination between agencies can yield increased efficiencies and greater extent of services. It is important that future planning efforts work to promote the coordination of services wherever feasible so that available public resources are used as effectively and efficiently as possible. A/GFTC maintains a Coordinated Human Services Transportation Plan for the area to address Federal requirements for FTA-funded programs. Recommendations of that Plan are focused on finding feasible, meaningful opportunities for the many human service agencies to come together to coordinate transportation needs.

New Technologies and Equipment

The last ten years have seen the introduction of a variety of new 'green' and 'smart' technologies in the transit industry. Small public transit operations like those in Glens Falls face challenges in adopting many of the new beneficial technologies. Many of these new technologies have associated costs (new equipment, training, operating, and infrastructure) that are difficult to reconcile without corresponding increases in ridership.

New technologies such as hybrid engines, smart card systems, and real-time transit information will likely become more standardized throughout the industry. Emissions regulations will mandate alternative fuels and cleaner vehicles. Ridehailing apps may shift the utilization of transit services or relieve demand in certain areas. Small transit operations will need to be provided with sufficient time and resources to incorporate these changes into their fleets and operations.

Challenges and Opportunities

Significant challenges that will face public transportation operators in the next 20 years are expected to include:

- Changes to regional north-south commuting patterns and the resultant transit demand
- Continued pressure to expand services to outlying rural areas, where expanding populations and increased percentages of elderly and disabled residents will likely trigger implementation of rural transportation services during the planning horizon of this document
- Securing the requisite levels of federal, state and local funding support essential for continuing transit's critical role in the regional transportation system

- Coordinating the varied public and private transportation providers as is needed for the region to effectively address its transportation needs

Priorities and Projects

Although A/GFTC does not operate a transit system, the MPO takes an active role in advancing public transportation options for the many residents and employees in the area. In addition, staff is available to provide technical assistance to public transportation providers and the UPWP can be utilized to undertake more rigorous planning efforts. The following priorities and projects are intended to continue this commitment to improving public transportation.

- Continue to manage the Coordinated Human Services Transportation process through stakeholder meetings and regular plan updates, as well as participation with existing human service agency coalitions. The MPO will continue to seek input and participation from stakeholders when updating the Coordinated Human Services Transportation Plan, as well as during solicitations and selection of FTA competitive programs.
- Continue to support GGFT through promotion, data needs, mapping, and technical assistance. A/GFTC maintains a strong working relationship with Greater Glens Falls Transit. The MPO will continue to support GGFT as needed.
- Continue to support efforts to increase use of public transportation and other activities which promote regional mobility, such as ridesharing and carpooling.

Although much of the focus of this plan is on vehicular transportation, A/GFTC is committed to promoting a balanced transportation network, including streets and roadways that accommodate cyclists and pedestrians – also known as Complete Streets. Maintaining and expanding bicycle and pedestrian infrastructure has long been a key priority for A/GFTC. Safe, functional, and accessible bicycle and pedestrian facilities provide essential transportation choices for those without practical access to private vehicles and for the increasing number of Americans electing to limit their automobile usage. Non-motorized transportation modes have a number of benefits to communities, including:

- Reduced vehicular congestion
- Reduced environmental consequences, such as air quality impacts, noise levels, resource consumption and neighborhood disruptions
- Improved health and fitness for participants
- Increased economic activity through better access to urban commercial areas and tourist spending, as well as increased personal capital from reduced vehicle-related costs
- Reduced reliance upon social services to provide transportation alternatives and a heightened sense of independence for those with disabilities
- Increased interpersonal interaction within the community

Bicycle and pedestrian infrastructure in the A/GFTC area contributes to the quality of life for residents and workers as well as seasonal visitors. In addition to having numerous tourist destinations and attractions, the A/GFTC region serves as a gateway to the Adirondack Park, Lake Champlain, and Vermont. Tourism is a vital component to the continued economic vitality of the region. Promotion of existing recreational opportunities can enhance the profile of the region as an attractive vacation destination.

Existing Bicycle & Pedestrian Infrastructure

The A/GFTC region currently is home to a growing bicycle and pedestrian network, including:

- Separated right-of-way trails: The A/GFTC area has several facilities which accommodate non-roadway travel. The most extensive network consists of the Warren County Bikeway and Feeder Canal Trails, which link the City of Glens Falls to the Villages of Fort Edward, Hudson Falls, South Glens Falls, and Lake George, and the Towns of Queensbury, Fort Edward, and Kingsbury. In addition, there are almost 5 miles of trail located in the Village and Town of Granville. This trail is located along the D&H rail bed and extends into Vermont. The Town of Queensbury has also recently expanded its off-road trail network, completing the Rush Pond Trail in 2013, with plans to connect this facility to much of the western part of the town. New York State has also recently committed to extending the Champlain Canalway Trail, with segments in Fort Edward, Kingsbury, and Fort Ann currently moving through design and construction.
- Designated cycling routes: There are currently about 100 miles of on-road bicycle routes located on State highways and local roads throughout the area. These include US Route 9 in Saratoga County, NYS Route 197 in the Town of Moreau, US Route 4 and NYS 22 (both are elements of NYS Bicycle Route 9), as well as local roads in the Towns of Queensbury, Lake Luzerne, and the City of Glens Falls. It is anticipated that this network of on-road bicycle routes will continue to grow as local communities adopt policies in support of the A/GFTC Bicycle Plan and NYS Complete Streets legislation.

In addition, the villages, hamlets, and the City of Glens Falls within the A/GFTC area were built prior to the automobile and are inherently walkable communities. Conditions among the associated pedestrian networks vary widely. Many communities struggle to maintain, repair, and replace older facilities that have degraded in condition and were not constructed to ADA standards. However, thanks to dedicated funding programs such as the Transportation Enhancement Program and Safe Routes to School (now part of the Transportation Alternatives Program), and A/GFTC's Make the Connection Program, many communities have been able to make targeted improvements to the pedestrian network.

Since the last LRP, A/GFTC has worked steadily to improve bicycle and pedestrian conditions throughout the MPO. These efforts have included:

- Updating the Regional Bike Plan. In 2014, A/GFTC completed an update for the Regional Bicycle/Pedestrian Plan. This set forth priorities for the location and design of bicycle and pedestrian infrastructure in the A/GFTC area, as well as providing guidance for the implementation of bicycle, pedestrian, and complete streets projects at the local level.
- Supporting local efforts to improve bicycle and pedestrian conditions. A/GFTC staff has participated in several planning efforts sponsored by local municipalities and advocacy groups. This includes:
 - Fire Road – Crandall Park – Kensington Road Elementary School Bicycle and Pedestrian Improvement Plan
 - Crossing Guard Location Evaluation for the City of Glens Falls School District
 - Halfway Brook-Hudson Pointe Trail Connection Study in the town of Queensbury
 - Lake George/Warren County Bikeway Extension Study in the towns of Lake George and Warrensburg
- Assisting ADA Transition Planning efforts, including mapping pedestrian infrastructure for use by local municipalities in the entire A/GFTC area, as well as assisting Warren County in the development of a GIS-based rating system to evaluate compliance with ADA standards.

Challenges and Opportunities

The projects above have made considerable progress in improving bicycle and pedestrian conditions, but much work remains. The following are some of the challenges and opportunities that will inform this work.

- Although most maintenance and pavement preservation projects are exempt from New York State's Complete Streets law, some progress has been made towards implementing systemic improvements to state highways. In particular, recent engineering guidance at NYSDOT calls for driving lanes to be narrowed and shoulders to be widened when certain roadways are re-striped. Although wider shoulders are not a substitution for dedicated bicycle and pedestrian facilities, this policy will result in incremental improvements which will provide benefits to cyclists and pedestrians, especially in rural areas where development has occurred along state highways.
- An increased focus on project deliverability has led to changes in the administration of the Transportation Alternatives Program and the Make the Connection program. Historically, smaller bike/ped projects have been difficult to construct, as lack of right-of-way, inaccurate cost estimates at the planning level, and a complicated administration process for federal-aid projects have impeded project delivery. This has resulted in higher project minimums. Although this may increase project deliverability, smaller projects are less likely to be completed using state or federal funds.
- Support for bicycle and pedestrian issues has continued to grow, increasing opportunities for partnerships and collaboration. This can, in turn, open up new opportunities for improvements from non-traditional funding sources. However, as calls for bike/ped facilities continue to increase, funding availability,

especially for small-scale projects, continues to be highly competitive. This can create frustration for residents who are seeking to implement complete streets projects in their community.

Priorities and Projects

A/GFTC has identified the following projects and priorities, intended to continue the MPO commitment to bicycle and pedestrian transportation, as well as take advantage of new opportunities.

- Continue to provide staff support for local municipalities and agencies in plans involving bike/pedestrian issues. As stated above, A/GFTC staff currently supports a number of local and regional bicycle and pedestrian oriented efforts. This assistance will continue to be provided, as staff resources allow.
- Review/reorganize the Make the Connection program to improve project delivery. A/GFTC is committed to continuing the Make the Connection program. The most recent solicitation, completed in 2018/19, includes modifications to the program to allow the local benefits to the bike/pedestrian infrastructure while minimizing the administrative burden associated with small projects. These program modifications should be evaluated in future solicitations, and additional improvements made as warranted.
- Continue to update the Regional Bicycle Pedestrian Plan as needed. Updates should take into account new facilities, changes to funding mechanisms, and any relevant design guidance based on best practices.
- Utilize UPWP and Engineering Assistance to plan for bicycle pedestrian improvements. The gap between the desire for bike-ped improvements and facility design is a common obstacle for small projects. A/GFTC's Engineering Assistance task allows local sponsors to utilize on-call engineers to create concept plans which can address this gap. Similarly, the UPWP can be used for larger-scale projects, either dedicated solely to bicycle/pedestrian issues, which include these components as part of a larger plan.
- Complete previously-identified bicycle/pedestrian projects. Currently, there are a number of ongoing or recently completed bike-ped planning projects in the A/GFTC area: the Halfway Brook-Hudson Pointe Trail Connector, the Lake George/Warren County Bikeway Extension, and studies of pedestrian conditions in Argyle, Greenwich, and North Creek. In addition, there are a number of concepts identified in local planning efforts, such as the Dix Avenue Corridor Study Update, the City of Glens Falls Downtown Connectivity Plan, the Warrensburg River Street Streetscape Plan, and others. These projects are a priority for the MPO, whether in terms of construction project delivery, or assistance in bringing a concept plan to fruition.
- Continue to prioritize the maintenance/expansion of bicycle/pedestrian facilities in preservation project selection parameters. Pavement preservation/maintenance projects usually replace existing facilities in kind. This leaves little or no opportunity to create wider shoulders or road striping which benefits cyclists. However, many roads in the A/GFTC area are already suitable for bicycle use. Given the choice between two equal candidates for preservation funding, one which accommodates bicycles adequately and one which does not, it is logical to give priority to the project which will benefit more than one mode.

ENVIRONMENTAL SUSTAINABILITY

RELATED PLANNING PRINCIPLES: 1, 2, 8, 9, 10, 12

Like any aspect of the built environment, transportation infrastructure can cause direct and indirect impacts on the environment, including impacts on air and water quality, noise and vibration, historic and cultural properties, parklands, contaminated lands, displacement of indigenous species, and community preservation.

The FAST Act mandates the consideration of environmental issues as part of MPO transportation plans, as well as the consultation with Federal, State, and tribal wildlife, land management, and regulatory agencies. In addition, the LRP must contain a list of potential environmental mitigation activities, including activities that may have the greatest potential to restore and maintain affected environmental functions.

As part of the required consultation process, A/GFTC will solicit input from a wide variety of agencies at all levels of government in an attempt to identify those issues that are of greatest significance or sensitivity on a regional scale. The following includes a description of the air quality/greenhouse gas (GHG) issues, climate change and vulnerability, as well as a summary of the other environmental factors identified by stakeholders in previous planning efforts.

Air Quality/GHG

The Clean Air Act, amended in 1990, requires the United States Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for various air pollutants. Areas not in compliance with those standards are designated as “non-attainment.” The New York State Department of Environmental Conservation (DEC) is required to produce a plan that outlines how emission reductions, including those from mobile sources, will meet the NAAQS.

The Town of Moreau, in Saratoga County, had been included within the Albany-Schenectady-Troy air quality nonattainment area for ozone in 1997. In 2012, that same area achieved attainment for the 2008 ozone standard. However, even though attainment had been achieved for the newer, more stringent National Ambient Air Quality Standards, the February, 16, 2018 ruling of the DC Circuit of the United States Court of Appeals affirmed that anti-backsliding provisions within the EPA’s implementation requirements prevent relief from prior requirements if those areas have not formally been redesignated as being in attainment. The programming and reporting implications of that decision are unclear, but FHWA has communicated to A/GFTC staff that no conformity determination will be required for the purpose of approving this Plan. A/GFTC will continue its collaborative relationship with the Capital District Transportation Committee to fulfill requirements as those are identified.

Climate Change and Resiliency

The relationship between fuel consumption and climate change is well established. According to FHWA, the transportation sector accounted for about 28% of total U.S. greenhouse gas (GHG) emissions in 2012; in the northeast part of the country, that statistic increases to 35%, according to the Georgetown Climate Center’s Transportation and Climate Initiative (TCI). Transportation agencies at all levels are actively seeking to reduce the level of GHG emissions from the transportation sector, whether local municipalities, regional MPOs, state DOTs, or in multi-state collaborations such as TCI.

In the A/GFTC planning area, warming trends can already be observed in the historical weather patterns. In addition, severe weather events have had direct impacts on the A/GFTC region, including tropical storm Irene and

hurricane Sandy, as well as more localized road washouts due to flooding. According to the ClimAID report, the A/GFTC area is facing current and future climate change impacts due to:

- Increases in annual average temperature: Warmer winters may reduce snow removal costs and extend the construction season. However, the increased frequency of freeze/thaw cycles can cause potholes, cracks, and frost heaves in pavement.
- Increases in annual average precipitation, especially during the winter: When combined with warmer winters and more extreme storms, this may lead to an increase in icing events, which affect vehicular traffic, on-road freight movements, and aviation. Ice jams can lead to winter flooding and road closures. This not only causes significant effects on transportation facilities, but to the surrounding environment as well.
- Extreme heat events: This can lead to damage of asphalt pavement and railroad tracks.
- Increased storm intensities: Extreme storms can overload stormwater systems, leading to flash flooding, temporary road closures, and road washouts. These events can also increase the potential for scouring of bridge foundations. High winds and intense storms can affect air transportation.

With the passage of the Community Risk and Resiliency Act (CRRRA), New York State has taken significant steps toward adapting and mitigating infrastructure to the changing conditions posed by climate change, especially in regards to flood risk management. New guidance is anticipated to be set forth soon which will provide specifics for the location and design of infrastructure with regards to flood management. Although not all transportation projects will be covered by CRRRA guidance, the framework provided may prove useful to local road and bridge projects as well.

Consultation with involved agencies

The FAST Act required that long range transportation plans must include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. As such, A/GFTC will conduct outreach to environmental agencies at the local, county, regional and State level to solicit priorities, opinions and suggestions on how to best incorporate environmental preservation and mitigation activities within the context of transportation planning. Past outreach with responding agencies emphasized corridor management as a mechanism to address three primary negative impacts that result from transportation projects:

- Degradation of water quality due to runoff
- Proliferation of invasive species
- Disruption of wildlife habitat continuity

Water Quality Preservation

The construction and maintenance of roadways can cause significant impacts on nearby waterbodies and the surrounding watershed. Soil erosion during construction can cause sedimentation in waterbodies that decrease wildlife habitat and contribute to the overall eutrophication of the waterbody. These impacts can also continue post-construction if the road corridor has not been properly graded and re-seeded. Once the roadway is constructed, the impermeable surface of the pavement collects contaminants such as soil, oil, grease, and litter, which is then carried to local waterbodies during storm events.

Road maintenance can also cause negative impacts to water quality. Salt and sand are commonly deployed during the winter months to improve driving conditions; this can affect the quality of adjacent soils and water bodies.

As discussed in the Climate Change section of this plan, flooding from storm events can also cause considerable damage. Excessive runoff can wash out roads and bridges, cutting off crucial transportation routes and requiring extensive repairs.

To address these concerns, a stormwater study is conducted in conjunction with all new road projects. Best management practices will be selected based on the most current relevant standards as required by the NYS Department of Environmental Conservation, Adirondack Park Agency, and/or Army Corps of Engineers.

Invasive Species

Controlling the proliferation of invasive species continues to a principal concern in the A/GFTC area and beyond. These species spread rapidly and often cause severe and irreversible impacts on agriculture, recreation, and natural resources by threatening biodiversity, habitat quality, and ecosystem function. Some common invasive plant species along roadsides include Phragmites, Purple loosestrife, and Japanese knotweed.

Surface transportation activities can hasten the spread of invasive species. Road maintenance activities such as mowing, dredging of swales, and plowing can disperse seeds and roots of invasive plants. In particular, highway departments often share the soil which is dredged from drainage ditches with local homeowners. Properly disposing of soils contaminated with invasive species can slow the propagation of plants that are choking the habitation of native species.

Another potential vector for the expansion of invasive species is the movement of freight by road, rail, or canal, as well as by passenger vehicles. Seeds can be carried in cargo or the wheels of vehicles and pests such as the Asian long horn beetle can travel via wood pallets and wood packing material in cargo shipments. Other pests can travel in the cargo itself, especially in produce and livestock. Transportation of firewood is especially problematic, to the degree that untreated firewood may not be transported more than 50 miles from its origin or source, as prohibited by the NYS Firewood Regulation.

Aquatic invasive species are also easily distributed via transportation methods. Plant fragments, seeds, and animals such as zebra mussels attached to a boat hull travel miles beyond their current range. New invasive species are introduced in this manner and current invasive species spread even further. Boat inspections and washing stations, such as those on Lake George, can help curb the expansion of aquatic invasives.

Recognition of invasive species is a key element to slowing their spread. Once identified, a management strategy can help to contain and minimize their impact; however, eradication is rarely obtainable. Identifying potential vectors, such as contaminated soils and vehicles, should also be considered when undertaking roadway construction projects.

Habitat Continuity

Roadways, especially limited access highways, can obstruct the natural migration and territory of wildlife. Additionally, animal/vehicle collisions are a common cause of crashes in the A/GFTC region. The following are examples of wildlife-supportive highway design elements that can reduce negative impacts on breeding cycles and habitat, heighten motorist awareness of the presence of animals, and enhance territorial connectivity across a given highway corridor:

- Breaks in medians and fencing
- Visible and scalable fencing for larger mammals
- Construction of culverts and underpasses specifically for wildlife and aquatic organism passage
- Recreation of native habitats along newly constructed roadways

Quality of Life/Environmental Justice

Although much of the focus on sustainability relates to the impacts of transportation on the natural world, it is crucial to take human impacts into consideration as well. Transportation systems can affect quality of life and human health through air, noise, water pollution, hazardous waste, aesthetic values, community cohesion, economic vitality, employment effects, displacement of persons or businesses, farms, accessibility, traffic congestion, relocation impacts, safety, and construction/temporary impacts. Many of these potential effects are addressed elsewhere in this document, but others, such as noise, represent an ongoing concern to the public. Many of the issues relating to noise impacts are outside of A/GFTC's ability to control, such as vehicle noise levels or infrastructure design/construction. However, there mitigation opportunities may materialize, for example through noise-compatible planning or traffic management techniques.

Historically, noise and other quality of life impacts have disproportionately affected disadvantaged populations, which is a matter of environmental justice. As a matter of course, A/GFTC seeks to identify and address disproportionately high and adverse effects on minority populations and low-income populations during planning projects. In addition, A/GFTC maintains an Environmental Justice plan and makes regular reports on these issues, to ensure an equitable distribution of the benefits and burdens of the transportation system.

Challenges/Opportunities

- Identifying meaningful ways to reduce GHG emissions can be a challenge for MPOs. The most effective methods to reduce GHGs, such as an increase in fuel efficiency standards, are not within the purview of A/GFTC. In addition, it can be difficult to directly influence driver behavior; the rising cost of fuel may prove to be an effective, if unintended, way to reduce the number of vehicle miles traveled.
- Although advances in climate science have helped to determine the particular risks facing the A/GFTC region, the actual incidence of these events (such as severe storms) is impossible to predict. However, as new data becomes available, systematic planning efforts to increase resiliency and adaptation to a changing environment become more feasible.
- Regional planning efforts have provided support and potential funding streams for resiliency related plans at the local level. This may allow the MPO to partner with other agencies to complete studies, such as vulnerability assessments, which can lead to improved infrastructure resiliency.
- As an MPO, A/GFTC is not directly involved in the design or construction of roadway projects. As such, it is difficult to introduce countermeasures to these project phases. However, there are many opportunities to consider environmental issues during the planning projects undertaken by A/GFTC.

Priorities & Projects

Many of the activities that A/GFTC is currently engaged in have climate change and environmental co-benefits. The following is a list of current or proposed priorities or projects which will help the A/GFTC area mitigate or adapt to climate change impacts in the future.

- **Alternative Transportation:** A/GFTC will continue its commitment to increasing the use of alternative modes of transportation, including public transportation, ridesharing facilities, and bicycle and pedestrian infrastructure. In addition, A/GFTC will continue to pursue projects and collaborations which encourage climate-smart behavior, such as reducing automobile trips, distances traveled, and idle times, increasing the number of people per vehicle, using alternative fuels, and increasing fuel efficiency. These efforts not only contribute incremental benefits to reducing GHG emissions, but also have numerous financial and health-related co-benefits.

- **Congestion/Idle Time:** The longer a vehicle sits in traffic, the more greenhouse gases are emitted. The A/GFTC planning area does not currently suffer from widespread congestion, although this is an issue in specific locations. A continuing commitment to keep levels of congestion low by seeking ways to reduce VMT is one way that A/GFTC will address this issue. More directly, the MPO will identify ways to improve intersection efficiencies, by installing roundabouts or coordinating traffic signals.
- **Access Management:** Access management, at the system-wide level, can contribute to a logical and efficient flow of vehicles between local streets, collectors, arterials, and the freeway system. This results in decreased congestion and reduced travel times and can therefore decrease the amount of carbon output. A/GFTC has a strong track record of encouraging sound access management techniques, and is committed to maintaining this effort in the future.
- **Land Use and Design:** The pattern of development can have a direct impact on GHG emissions. In general, dense urban neighborhoods with a grid street network are associated with fewer vehicle miles traveled and less travel time, and therefore less GHG emissions, than neighborhoods with a less compact development pattern. Encouraging Complete Streets principles can improve the likelihood of biking and walking as well. A/GFTC will continue to pursue projects which encourage efficient development patterns, which can also improve livability, economic vitality, and public health.
- **Alternative Fuels:** The usage and availability of alternative fuel vehicles (AFV) and associated refueling infrastructure can supplement the goal of energy independence while providing economic benefits. Specifically, alternative fuels can benefit the Glens Falls area by creating commercial opportunities and jobs through the sale, conversion, and maintenance of AFVs and the associated infrastructure. However, more research and substantial investments are required before converting the existing oil-based transportation economy to one based upon other sources of energy is imminent. Any change will not happen quickly, but incremental steps such as fuel conversions of large public or private vehicle fleets could enable larger transitions.
- **Infrastructure Resiliency/Vulnerability Assessments:** In addition to finding ways to reduce greenhouse gases, it is important to identify ways that existing infrastructure can be adapted to the changes which are already occurring. One method is to complete a vulnerability assessment, which identifies opportunities to adapt transportation infrastructure and operations to climate change events, including more frequent severe storms, road washouts, and flooding. An example of this type of project was conducted in the White Creek watershed in 2016. A/GFTC will continue to make this project type available to members by including it as a potential UPWP item.
- **Explore design alternatives that are less disruptive to the natural and built environment.** The federal aid design process already includes a thorough environmental review process, including evaluation of alternatives. In addition, A/GFTC will continue to include environmental considerations within all relevant planning projects, to ensure that these issues are considered at all levels of project development.
- **Improved outreach to and communication and coordination with environmental organizations.** As an MPO, A/GFTC does not have a formally established relationship with environmental organizations. However, improvements in communication have been made as staff continues to explore regional collaboration. A/GFTC is committed to further strengthening this coordination in the future.

The FAST Act requires that all MPOs consider projects, strategies and services that increase the security of the transportation system for motorized and non-motorized users. For the purpose of this discussion, security has been defined as actions to deal with significant and unforeseen disruptions to the transportation system. In this area, this can include disruptions caused by weather events, as well as the more traditional security-related issues. NYSDOT and Warren and Washington Counties have a proven track record of responding to major flooding events and resulting road washouts, as well as incidents with hazardous material transportation crashes.

Presently, the primary responsibility for mobilization and operations rests with other organizations and municipalities that A/GFTC interacts with on a regular basis and that are currently involved in the coordinated regional transportation planning process.

Challenges/Opportunities

Security is a difficult concept for smaller MPOs such as A/GFTC to integrate into their planning processes. The A/GFTC Planning and Programming Area does not contain a major intermodal passenger center, such as an international airport or large-scale rail station, or any intermodal transfer centers like a large port. Further, A/GFTC does not own or operate any transportation infrastructure nor does it have any direct influence over the management or operations of any transportation facility. The regional surface transportation system is generally devoid of access control and thus cannot easily be “secured” in the traditional sense.

A/GFTC has the financial resources to engage targeted engineering consulting resources for the express purpose of improving disaster planning efforts, if such efforts come to be identified by A/GFTC Policy and Planning Advisory Committees.

The MPO is currently engaged in a number of activities that have some relevance to the issue of security. Most of those related activities are listed in the current Unified Planning and Work Program and include:

Task 2.10 - Transportation Data Inventory: A/GFTC routinely collects data on transportation facility characteristics that could be of potential value to emergency response and mitigation efforts.

Task 2.20 - Land Use Monitoring: As a regional planning organization, A/GFTC has access to data and modeling outputs for the entire area, not just specific municipalities within. This could prove useful in the event of a large-scale disruption.

Task 2.70 - Program Coordination and Local Government Assistance: As a regional planning organization, A/GFTC offers staff assistance to area-wide planning efforts which include transportation considerations, should the need arise.

Task 2.80 - Local Traffic Engineering and Assistance: A/GFTC retains contracts with up to three transportation planning and engineering firms for the purpose of availing those firms’ services to its member municipalities. These agreements, although limited in scope so as not to circumvent the coordinated planning process, could be utilized to review transportation-specific operational elements of existing plans or to aid municipalities in developing plan updates.

Task 2.90 - GIS Support and Operation: A/GFTC staff is available to supplement existing municipal GIS resources if called upon to do so in the event of a significant regional disruption.

Task 3.20 - Traffic Simulation and Modeling: A/GFTC staff has the ability to analyze potential alternatives for detours and evacuation routes. Those capabilities could be of value in either the emergency planning or response stages.

Task 3.40 - Intelligent Transportation Systems Architecture Development: Intelligent Transportation Systems (ITS) is a concept rooted in the coordinated use of technology and infrastructure to adapt to changing transportation patterns. The role of ITS in the advancement of security of the transportation system is immense, particularly with regards to emergency response, routing, and coordinated communications. At present, A/GFTC is the only MPO area in New York State that does not have an architecture for ITS investments in place.

Task 4.20 - Transportation Improvement Program Update: The Transportation Improvement Program is the capital programming document that identifies priority projects for federal transportation funding. Through judicious application of the planning process, facilities that are subjected to recurring disruption (eg: a flood-prone roadway) can be addressed through the coordinated planning process. Additionally, in the event of infrastructure replacement, the type of facility that is desired could potentially evolve through MPO discussions.

Priorities/Projects

As stated above, addressing security within the context of a small MPO can be a challenge. In time, the anticipated role of A/GFTC in security planning could change because of unforeseen events or legislative action. As security planning is a comparatively new requirement for MPOs, it is expected that further guidance and responsibilities will emerge over time. The following are the priorities and projects which have been identified as feasible ways to address transportation security within the A/GFTC area.

- Continue outreach to the emergency planning and response community. In 2015, A/GFTC staff participated as a stakeholder in the preparation of Warren County's Hazard Mitigation Plan. This allowed for collaboration between many agencies which are not traditional partners in the A/GFTC planning process, such as the Soil and Water Conservation District and the Office of Emergency Services. A/GFTC should continue to expand this coordination and outreach to other member counties as appropriate.
- Complete the ITS Architecture Development task. The initiative to prepare an ITS architecture for the A/GFTC Planning and Programming Area has stalled for a variety of reasons. As part of this effort, NYSDOT and A/GFTC staff had previously conducted outreach to regional highway departments and emergency coordinators, but those efforts should likely be revisited. Working towards the implementation of a regional ITS provides a natural vehicle to re-engage those responsible for emergency response.
- Identify methods to undertake a criticality assessment of road network, to determine network robustness. A criticality assessment reveals those transportation network links which are most crucial to the operations of the network as a whole. Traditionally, these were identified by examining traffic patterns and capacity. However, new modeling techniques are available which can identify links which, due to connectivity and lack of redundancy, would result in a "domino effect" of backups and issues in the network as a whole. Having an understanding of which network links are most critical can be a powerful tool for emergency planning, as well as capital improvement plans.

FINANCIAL PLAN

As required by the FAST Act, all Long Range Plans produced by Metropolitan Planning Organizations must include a financial plan. Prior A/GFTC Long Range Plans were developed under anticipation that reauthorizations of federal transportation law would introduce new revenue sources and funding programs that would help to address declining transportation infrastructure conditions and performance. Those changes did not occur. Funding for transportation infrastructure continues to be inadequate, and distribution formulas continue to reward states for fuel consumption at the expense of transit utilization. The consolidation of federal programs has further limited funding eligibility, particularly for rural off-system bridges. Most municipalities do not have the requisite funding to keep pace with growing infrastructure maintenance needs even with the availability of federal funding assistance, and merely increasing the share of the existing federal transportation program will not solve this issue. Not only is additional funding required, but also new mechanisms and formulas for funding.

Federal Transportation Funding Programs Available to A/GFTC

The 2016-2021 Transportation Improvement Program (TIP) serves as the near-term capital programming plan for the investment of federal transportation funding within MPO areas. A/GFTC administers the programming of the following federal transportation funding sources through maintenance and biennial updates to the TIP. These funding programs are subject to change as the federal surface transportation bill is revised and updated.

- Highway Safety Improvement Program (HSIP): funding for improvements designed to achieve a significant reduction of traffic-related fatalities and serious injuries on public roads.
- National Highway Performance Program (NHPP): funding for improvements to rural and urban roads and bridges that are part of the National Highway System, including the Interstate System, Principal Arterials and designated connections to major intermodal terminals.
- Surface Transportation Program (STP): funding for projects on any Federal-aid highway, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities.
- Transportation Alternatives Program (TAP): funding for alternative transportation projects, including bicycling and pedestrian facilities, access to public transportation, transportation enhancement projects, recreation trails, scenic byways, safe routes to schools, community improvement, and environmental mitigation.
- Large Urban Cities (FTA 5307): funding for transit capital and operating assistance in urbanized areas and for transportation related planning.
- Rural and Small Urban Areas (FTA 5311): funding for supporting public transportation in areas of less than 50,000 populations.
- Transportation for Elderly Persons and Persons with Disabilities (FTA 5310): funding for assisting private nonprofit groups in meeting the transportation needs of the elderly and persons with disabilities when the existing transportation services provided are unavailable, insufficient, or inappropriate to meeting these needs.

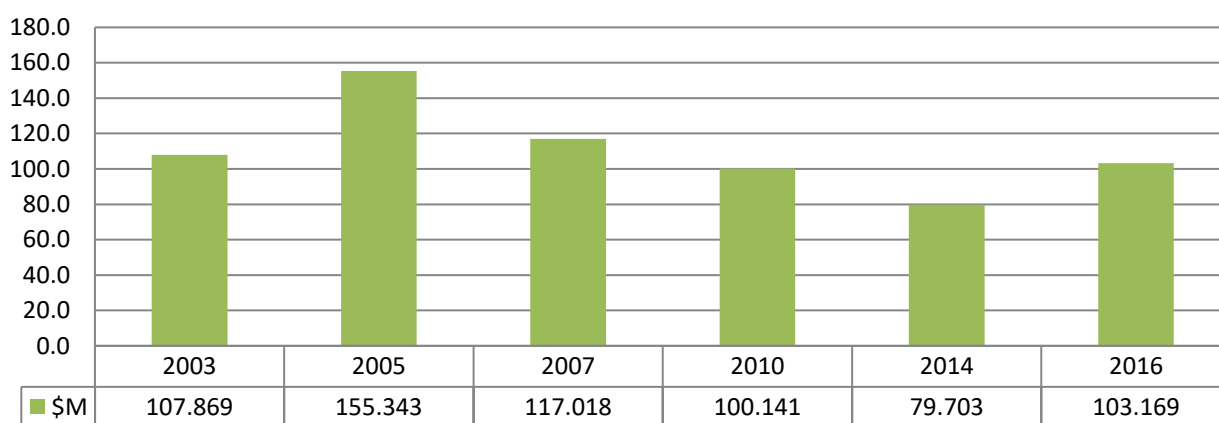
For A/GFTC, the most significant change in funding from SAFETEA-LU to MAP-21 and continued through the FAST Act is the consolidation of the former Interstate Maintenance, National Highway System, and Highway Bridge Preservation Programs into a single program, the National Highway Performance Program. While the consolidation was intended to simplify program administration and assign greater programming priority to major infrastructure, it also represents a major reduction in dedicated funds available for locally owned bridges located off of the federal aid highway system. Major rehabilitations and replacements of local bridges accounted for over 1/4 of the highway funds programmed within the 2010-2015 TIP.

Short-term Core Program Funding History at A/GFTC

Capital programming at A/GFTC has been a collaborative process with Greater Glens Falls Transit and New York State Department of Transportation. Typically, A/GFTC is provided with suballocated program targets for the core highway transportation programs: NHPP and STP. Transit programming is largely driven by formula and availability of local matching funds.

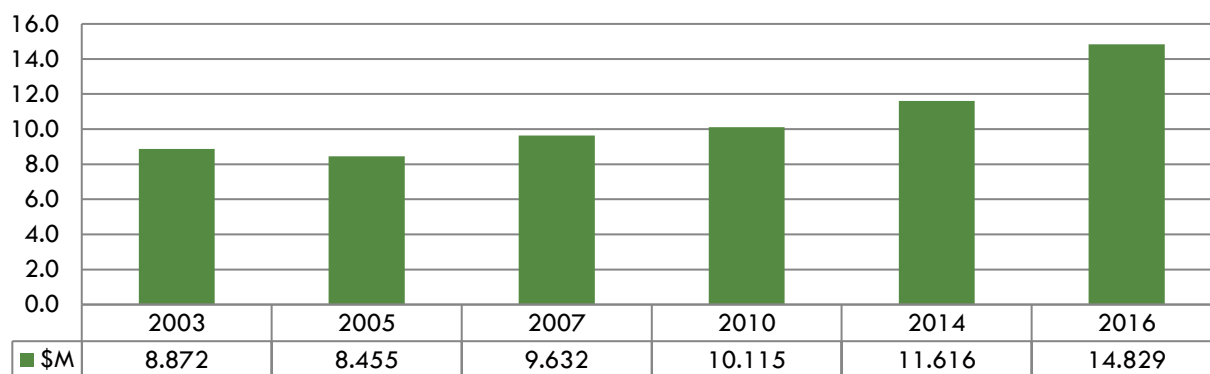
Federal transportation funding levels within the A/GFTC area have shown considerable variability over the period that includes the last 6 Transportation Improvement Programs. NYSDOT Region 1 historically provides guidance regarding the suballocation targets based upon formulas that are used for distribution within New York State, localized needs and regional and statewide balances. A greater degree of fund source over-programming had been permitted in the past, which accounts for the peak programming that occurred in 2005. A heightened emphasis on statewide competitive solicitations correlates with the 2014-2018 Transportation Improvement Program being the smallest A/GFTC capital program in terms of initial overall dollars since 1991. Programming levels appear to be on the rise, as the 2016 TIP total was considerably higher than the 2014 amount.

Figure 27: Transportation Improvement Program



In contrast to the combined highway programs, core transit funding has increased steadily in terms of overall dollars since the 2005 TIP, with a notable increase in 2016.

Figure 28: Transit Funding



Adequacy of Funding Levels

This Long Range Plan presents condition data and demand information for highways, intersections, bridges, transit, rail and bicycle and pedestrian facilities. In general, average condition ratings for State and locally-owned bridges are better than they were ten years ago, but significant overprogramming beyond regional suballocated

funding levels has occurred in the bridge program and it is unlikely that those gains would have been realized had expenditures been limited to suballocated planning targets over that time. It remains to be seen whether the maintenance and preservation-first strategy will have a significant impact upon average conditions, as less-costly repairs and maintenance will receive funding priority over replacement of structures in poor condition.

Average pavement condition ratings for the State highway system and for locally-owned federal aid eligible highways are also improved over a ten year span. Gains in locally-owned pavement conditions are not entirely attributable to federal funding levels, as most previously programmed highway projects were pavement reconstructions or major rehabilitations that only improved short sections of roadways. That said, annual pavement scoring data collected by A/GFTC for locally-owned federal aid - eligible highways indicates gradually improving overall conditions concurrent with preservation-first strategies.

Federal transit funding continues to be adequate to sustain existing public transportation operations only. Greater Glens Falls Transit has been able to successfully maintain its fleet, staffing, and operations with only modest increases in fares and municipal contributions. The generally sufficient condition of GGFT's present levels of federal funding assistance could be quickly and significantly diminished with continued increases in demand for services, particularly those that result from growth and development pressures and the ever-increasing costs associated with personal transportation.

Funding for bicycling and pedestrian projects tends to suffer at the expense of mounting highway and bridge costs; that trend is likely to continue as funding for capital improvement projects becomes more scarce. The maintenance and preservation-first strategy is not likely to be effective in addressing bicycle and pedestrian infrastructure deficiencies. The Safe Routes to School and Transportation Enhancement Program, two distinct federal funding categories that had been used to expand the scope of bicycle and pedestrian infrastructure in the A/GFTC region, were consolidated under MAP-21 into the Transportation Alternatives Program. While bicycle and pedestrian facilities remain eligible for funding under the FAST Act, it remains to be seen as to whether the Transportation Alternatives Program will have the same positive impact upon non-motorized transportation network as did the former programs.

Programming priority for improving railroad and canal facilities suffers from a general lack of profile based upon stagnant or declining commercial usage. Demand for rail transportation (both freight and passenger) and waterborne transportation is anticipated to increase along with rising fuel costs. Many railways throughout the country, including the Batten Kill Railroad, have deteriorated to the point where such demand cannot be met given existing infrastructure conditions. And while the Champlain Canal remains open to recreational boat traffic, the controlling depth of the canal in the A/GFTC area is shallower than the 12 feet needed to accommodate larger commercial vessels.

Previous LRPs noted A/GFTC's past programming philosophy of reserving federal funds to provide fiscal relief to municipal project sponsors that were engaged in costly, large-scale, or design-intensive capital replacement projects. It was also noted that that strategy left little or no funding for infrastructure maintenance. The maintenance and preservation first strategy introduced by NYSDOT's Forward Four set a preservation program 'target' that effectively inverted the shortfalls of the previous programming strategy, leaving comparatively little funding for capital improvements or infrastructure replacement. It is anticipated that the programming priorities of Forward Four will be continued, albeit with less emphasis on firm preservation targets for municipal project sponsors.

Funding Projections

Highway Federal Funding Assistance

The Fast Act requires that MPO Long Range Plans include an estimate of funds that are reasonably expected to be available in order to implement those plans. The average overall size of the A/GFTC-administered federal highway program based upon the last 6 previous programming cycles is approximately \$107M. This figure will be used as the basis for projected future funds. Factoring an increase of 2.5% per year over that average, A/GFTC staff projects that an average annual matched federal program of \$26.6M will be available over a 21-year period.

Table 8: Projected Capital and Planning Funds (\$ M)*

Program Source	Current TIP	2019-23	2024-28	2029-2033	2034-2039
HSIP	2.305	2.484	2.810	3.179	3.957
NHPP	41.840	45.086	51.009	57.712	65.296
STP Flex	38.688	41.688	47.166	53.364	60.377
STP Off-Sys. Bridge	23.749	25.591	28.954	32.758	37.063
FHWA PL	1.963	2.115	2.393	2.707	3.063

Note: Amounts shown are matched federal dollars

Transit Federal Funding Assistance

Public transit operations throughout the country rely upon Federal and State assistance to help fund current levels of operations and capital purchases. Table 8 includes estimates of required federal financial assistance to support transit services over the next fifteen years in increments of five years. Capital estimates are based on a federal participation level of 80% with State and local funds providing the required 20% match. Operating aid estimates are based on present levels plus any additional anticipated need. Estimates for FTA 5310 program projects (Capital assistance for Elderly/Disabled services by private not-for-profits) are not available. Metropolitan Planning Program (MPP) funds are projected based upon current annual allocations.

Table 9: Transit Needs Estimate and MPP Forecast (\$ M)^a

Program Source	Current	2019-23	2024-28	2029-2033	2034-2039
Operating-urban (5307)	9.000	9.000	9.000	9.000	9.000
Operating-rural (5311)	0.150	0.150	0.150	0.150	0.150
Capital-urban (5307, 5339) ^b	1.500	2.500	1.500	1.500	1.500
Capital-rural (5311) ^c	0.200	0.200	0.200	0.200	0.200
MPP (5303)	0.285	0.307	0.347	0.393	0.249

Notes:

a - All numbers are in constant 2017 dollars, no adjustment for inflation has been made.

b - Capital replacements for urban systems assume a continuation of the cycle currently contained in the current TIP, which is a ten (10) year life for GGFT's four large buses and a five (5) year life for smaller vehicles. Also includes trolley replacements at 10-year intervals.

c - Rural figures include operation of potential expansions of rural transit service using two to three small buses.

Given the long timeframe involved in this plan, the numbers used are only estimates that are based upon the assumptions previously outlined in this section. It is important to note such estimates become increasingly speculative over time as unforeseen changes in legislation, demand, and technologies may greatly influence future expenditures. A/GFTC TIP and UPWP programming will continue to adhere to the prevailing fiscal constraints of a given program cycle, noting that the preceding sample estimates are illustrative. Available funding in excess of those estimates will allow for greater flexibility to consider necessary system improvements and technological

enhancements as warranted by changing and increased demand. The A/GFTC TIP update process will be the appropriate vehicle to address changes in funding availability.

Local, Regional, and State Impacts

Maintaining existing levels of funding for transportation infrastructure, while perhaps stabilizing rates of decline in infrastructure conditions, will impede implementation of the congestion mitigations, operational improvements, and multi-modal upgrades that are consistent with national goals of economic viability and personal mobility.

Prolonged shortfalls in needed transportation funding will negatively affect the quality of life for residents, workers, and visitors in a number of different ways, including:

- Decreased mobility and greater unpredictability in travel times resulting from failing or overburdened infrastructure
- Increased personal transportation costs
- Slowed economic growth resulting from stagnant market areas, unreliable shipping and goods movement operations, and the lack of infrastructure-related job creation
- Continued environmental degradation resulting from transportation inefficiencies

Should the transportation sector within New York be able to direct funding above the levels anticipated by the projected constraints, included continued support from competitive statewide funding awards, many of these impacts can be lessened, reduced, or eliminated.

Conclusion

Based upon resource estimates developed by staff, the A/GFTC region can reasonably expect to be able to program close to 700 million dollars in transportation capital funds between now and the year 2040. Simply stated, this will not be enough to keep pace with continued infrastructure decline and increased demand.

Congestion-related highway improvement projects are practically unsupported by preservation-first programming strategies, and freight demand reduction strategies such as greater utilization of regional rail and canal facilities entail additional capital programming that is currently not likely under existing funding scenarios. Transit funding is projected to be adequate to support existing operations, but not sufficient to support service or system expansion.

The fact that needs exceed revenues is not surprising; that trend has been known throughout the transportation sector for several years. A technical analysis of needs versus resources was prepared on behalf of the NYS Metropolitan Planning Organization Association in 2002 by Wilbur Smith Associates and Cambridge Systematics. A general finding of that study was that existing revenue mechanisms, regardless of scale, are not adequate to address mounting transportation needs. Even doubling the size of the federal transportation program does not address growing infrastructure and capacity demands. New revenue sources are needed.

Transportation often suffers from a lack of policy profile even though the efficient and reliable movement of people and goods affect us all. A functional and reliable multimodal transportation system is critical to support economic growth, environmental sustainability, national security, tourism, and community character and cohesion. New York State was once a national leader in multimodal transportation and is well-poised to capitalize upon previous and progressive infrastructure investments should future funding scenarios improve.

APPENDIX 1: PERFORMANCE TARGETS

Fixing America's Surface Transportation (FAST) Act, the current federal transportation law, reiterates MAP-21 provisions for a performance-based approach in transportation. These requirements were further detailed in the Metropolitan Transportation Planning Final Rule issued May 27, 2016, in section 23 CFR 450.306(d). States, transit providers, and MPOs must establish transportation performance targets for certain goal areas, including safety, infrastructure condition, system performance and, in the case of transit assets, state of good repair.

MPOs have the option of supporting targets set forth by their respective state Departments of Transportation and transit providers, or promulgating their own regional targets. A/GFTC has opted to support the targets set by NYSDOT and is anticipated to support the targets set by Greater Glens Falls Transit at such time as those targets are finalized. Please note that performance measure requirements for On-Road Mobile Source Emissions and CMAQ Traffic Congestion (Peak Hour Excessive Delay and Non-Single Occupancy Vehicle Travel) are not applicable to A/GFTC.

Safety					
Measure		NYSDOT Target 2019 (DRAFT)	A/GFTC 2016 Actual	A/GFTC 2016 Baseline*	
Number of Fatalities		1072	12	15	
Fatality Rate		0.86	0.77	0.93	
Number of Serious Injuries		10,987	115**	132**	
Serious Injury Rate		8.62	7.42**	8.26**	
Number of Non-Motorized Fatalities and Serious Injuries		2,726	60**	57**	
Pavement and Bridge Condition					
Federal Measure	NYSDOT 2018 Baseline	A/GFTC 2018 Baseline	2 Year Interim Target (2020)	4 Year Target (2022)	
Roadway Pavement Condition					
Interstate % Good	52.2%	Not Available****	46.4%	47.3%	
Interstate % Poor	2.7%	Not Available****	3.1%	4.0%	
Non-Interstate % Good	20.4%	Not Available****	14.6%	14.7%	
Non-Interstate % Poor	8.3%	Not Available****	12.0%	14.3%	
Bridge Condition by Deck Area					
Good	20.2%	27.2%	23.0%	24.0%	
Poor	11.7%	9.9%	11.6%	11.7%	
System Reliability					
Performance Measure		NYS 2018 Baseline	A/GFTC (2017)***	NYS 2020 Target	NYS 2022 Target
% of the Interstate System Providing for Reliable Travel		94.5 %	99.7%	85.0 %	84.9%
% of the Non-Interstate NHS Providing for Reliable Travel		85.9%	84.2%	NA	71.4%
Truck Travel Time Reliability					
Performance Measure		NYS 2018 Baseline	A/GFTC (2017)***	NYS 2020 Target	NYS 2022 Target
Truck Travel Time Reliability Index		1.38	1.201	2.00	2.11
Transit Asset Management DRAFT					
Performance Measure				2018 Baseline	2019 Target
Rolling Stock % that exceeds Useful Life Benchmark (ULB)				TBD	10%
Equipment % that exceeds ULB				TBD	25%
Facilities rated less than 3.0 on the Transit Economic Requirements Model scale				TBD	25%

* Baseline calculated as 5-year moving average, consistent with NYSDOT methodology

** Serious injury data available for whole counties only; serious injury statistics for the Town of Moreau & Village of South Glens Falls to be reported by the Capital District Transportation Committee

*** Data Source: NPMRDS, Avail Labs (may be inconsistent with NYSDOT-generated data)

**** Federal metrics require reporting percentages using data and calculation methods based on 0.1 mile segments. This level of reporting is inconsistent with how NYSDOT currently manages or models pavement conditions at the statewide level, and as such cannot be used to generate accurate outputs at the MPO level