GENESEE TRANSPORTATION COUNCIL

Long Range Transportation Plan for the Genesee-Finger Lakes Region 2035

Chapter VI - RECOMMENDATIONS

Recommendations

The recommendations of the *LRTP 2035* represent those actions that best meet regional transportation needs and can be expected to be accomplished with the reasonably expected revenues for federal-aid-eligible projects and programs over the next nearly 25 years. Based on the amount of federal-aid-eligible projects for which funding has been solicited from GTC from 2005 through 2010, requests in the amount of $450 million ($75 million per year) have been unable to be funded. This represents a nearly 44 percent annual shortfall between available funding and the total amount requested. Approximately 70 percent of these unmet requests have been for projects on the *existing* highway and bridge network, representing an inability of federal transportation funding programs (as currently constituted) to address the deterioration of highways and bridges that is currently occurring.

Given this deficit between available funds and needed revenues, <u>it is a certainty that all of the region's transportation needs will not be able to be met with the reasonably expected revenues.</u> These recommendations are those strategies that will lead to the projects and programs that best address regional transportation needs and the emerging opportunities and issues as discussed previously and noted throughout the discussion of individual recommendations.

As discussed previously, the capacity of the highway and bridge network is currently sufficient for the needs of people and freight and is expected to be so throughout the period covered by the *LRTP 2035.* Accordingly, the need for new highways and bridges for the sole purpose of improving mobility is not warranted. Ensuring the continued structural integrity of existing facilities is paramount. Physical expansion of highway and bridge infrastructure via altogether new through lanes is discouraged. Management of both the existing system across all modes and the demand placed on it is considered the most cost-effective means for improving mobility and access. Expansion of the system will be limited but additional investments in the public transportation and bicycle and pedestrian networks represent the best opportunities to address the needs of an aging population and improve public health through opportunities that promote active lifestyles and reduce emissions.

A risk assessment was performed to determine the opportunity costs of various investment scenarios. The assessment considered what would and would not be able to be accomplished by allocating the reasonably expected federal funds through 2035 to various modes given upfront capital costs and lifecycle operating and maintenance costs. Specific considerations included investing only in highways and bridges, introducing fixed guideway public transportation (e.g., streetcars, light rail, or commuter rail), and completing the planned multi-use trail and sidewalk network, as well as multiple combinations of the aforementioned considerations at varying levels.

The existing regional emphasis on extending the useful life of highway and bridges through preventive and corrective maintenance, supporting increased system management and operations, and devoting significant fiscal resources to public transportation, bicycle, and pedestrian networks has been determined to be the optimal approach given the limited financial resources.

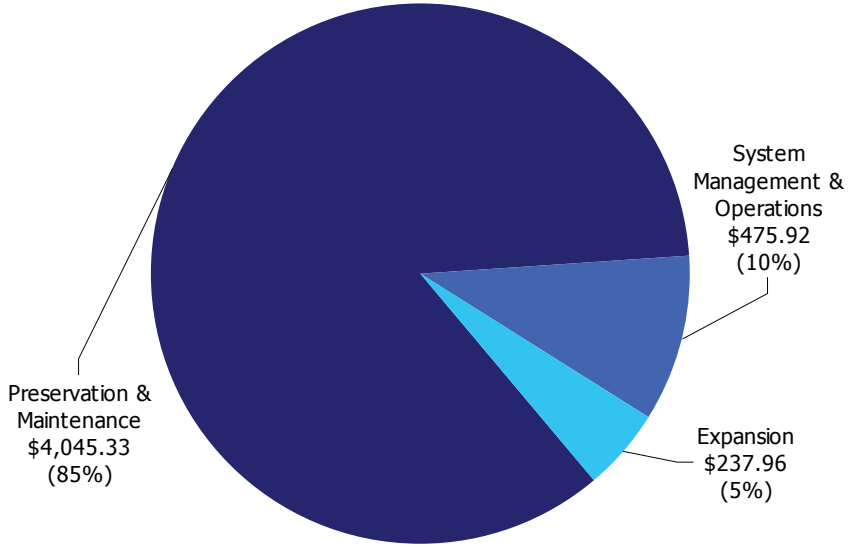
This region was the first in New York State to invest federal funds in highway and bridge preventive and corrective maintenance projects that defer the need for more costly rehabilitation, reconstruction, and replacement projects by extending the useful life of these facilities. Based on existing investments, this region has and continues to provide more federal highway funding to public transportation than any other area in Upstate New York. Regional spending of federal revenues on bicycle and pe-

destrian projects is among the highest in the nation.

As such, the allocation of reasonably expected revenues for federal-aid-eligible projects and programs through 2035 by category – Preservation & Maintenance, System Management & Operations, and Expansion – continues this investment strategy as presented in Exhibit 25. The actions included in the *LRTP 2035* serve as a framework for investment decisions made through future TIPs where proposed projects and programs are evaluated to determine their benefits and costs relative to other proposals. Projects and programs selected to receive federal transportation funds represent the tactics that will realize the strategy of the *LRTP 2035.* It is anticipated that additional planning will be conducted through future UPWPs to further refine and develop proposals for advancement with both federal and non-federal funds. Based on the limited amount of reasonably expected revenues, the specific allocation of revenues may diverge slightly from the percentages shown below.

Exhibit 25

Allocation of Reasonably Expected Revenues for Federal-Aid-Eligible Projects and Programs through 2035
(in millions of YOE Dollars)



Should reasonably expected revenues result in less than the amount estimated, the assumption should not be that a proportional reduction in the amounts allocated to the various categories will be made. In other words, the region will need to consider all alternatives, including strategic divestment of existing infrastructure to reduce the allocation to preservation and maintenance and preserve the allocations to system management and operations and/or expansion.

Recommendations that provide opportunities to mitigate the three types of delay discussed previously are considered part of the Congestion Management Process (CMP) and noted as such. These recommendations include supply-driven and demand-driven mitigation strategies that emphasize getting the most out of the existing assets that comprise the regional transportation system. Advances in technology will play a major role in lessening any additional delay that will result from the projected increases in population and employment.

GTC has conducted the associated conformity statement for the *LRTP 2035* and *2011-2014 TIP* to comply with the current requirements of the Clean Air Act related to ground-level ozone, and this document is hereby incorporated by reference. GTC also conducted an analysis of direct and indirect energy usage and carbon dioxide emissions (the primary greenhouse gas) consistent with the approved methodology of the New York State Energy Plan. This analysis demonstrates that in 2035 energy usage and carbon dioxide emissions will be slightly less if the *LRTP 2035* is implemented than if it were not, establishing that the recommendations are worthy of advancement beyond those currently required by National Ambient Air Quality Standards.

Beyond air quality concerns, GTC commissioned the Genesee/ Finger Lakes Regional Planning Council to produce the *Long Range Transportation Plan Non-Air Environmental Issue Scan.* This report identifies issues and associated mitigation activities related to nonpoint source water pollution; terrestrial habitat, open space, and historical/cultural modification; noise and light pollution; and thermal pollution/urban heat island effect. It is incorporated by reference in the *LRTP 2035* as a resource for implementing agencies.

Not all of the reasonably expected revenues are available immediately. As such, the recommendations have been prioritized based on need and when funds for their implementation are expected to be able to be accessed. The timeframe for implementation of the recommendations discussed below are as follows:

- Immediate = Federal Fiscal Years (FFYs) 2011-2014 (aligns with current TIP)
- Near-Term = FFYs 2015-2019 (October 1, 2014 through September 30, 2019)
- Medium-Term = FFYs 2020-2025 (October 1, 2019 through September 30, 2025)
- Long-Term = FFYs 2026-2035 (October 1, 2025 through September 30, 2034)
- Ongoing = FFYs 2015-2035 (all FFYs of the *LRTP 2035*)

Preservation and Maintenance

In previous LRTPs, Preservation and Maintenance was limited to planning the extension of the useful physical life of existing infrastructure and services. Beginning in the *LRTP 2035*, preservation and maintenance recommendations encompass not only the maximization of existing assets but also improvements to these assets when they are reconstructed or replaced at the end of their useful life. Given the length of time between reconstructions and replacements of facilities, simple in-kind replacement of infrastructure and the vehicles that currently serve our transportation needs represents a lost opportunity to improve the system. In addition, these opportunities represent the ability of the transportation system to meet the challenges of sustainability and climate change adaptation through the use of new materials and design elements that were not available when the facilities were first built or last reconstructed, whichever the case may be. There are two primary initiatives that serve as the basis for the Preservation and Maintenance recommendations of the *LRTP 2035:* Asset Management and Improved Design. While the number of Preservation and Maintenance recommendations are limited, these actions constitute the majority of projects to which reasonably expected federal transportation funds will be allocated through 2035.

Asset Management

At its core, asset management is about maximizing the service life of necessary infrastructure. This encompasses preventive maintenance and on-demand repairs to ensure that the travelling public can continue to utilize the existing system knowing that it is safe and reliable. Effectively applying this approach requires the selection of appropriate treatments at the proper times in the lifecycle of individual assets. A fundamental goal of asset management is to keep assets from deteriorating to a condition where they have to be reconstructed or replaced for as long as possible. Significant savings can be realized by conducting preventive and corrective maintenance on a facility at a fraction of the cost of reconstructing or replacing it prior than absolutely having to do so.

Unfortunately, because of financial resource constraints, not all of the corrective and preventive maintenance that is required can be accomplished with federal transportation funding. Regardless, the region should and will continue to get the most out of previous and current expenditures of public funds by identifying candidates that would benefit from corrective and preventive maintenance treatments and making

requisite revenues available to the greatest extent practical given other competing preservation and maintenance needs that include reconstruction/replacement and rehabilitation. Capitalizing on the opportunity to gain additional useful life from existing infrastructure and vehicles requires that the agencies that own, operate, and maintain these assets have a thorough working knowledge of their needs.

Recommendations

- Conduct preventive and corrective maintenance treatments on highways and bridges to extend the useful life of infrastructure without requiring more costly rehabilitation and reconstruction before absolutely necessary – Ongoing

  Preventive and corrective maintenance treatments can cost in the hundreds of thousand dollars per lane-mile compared to rehabilitation and reconstruction projects that typically cost upwards of $1.5 million per lane mile. These treatments maximize previous investments, including not only the roadway but also safety and security related features such as signage, lighting, striping, and guiderails. Communities throughout the region have embraced preventive and corrective maintenance as the primary means for effectively managing their assets – the current TIP includes projects of this type in both major population centers (Monroe County) and areas where agriculture is the primary industry (Wyoming County).

- Reconstruct and rehabilitate highways and bridges in-kind (i.e., as currently designed) when they reach the end of their useful life and there is suitable space provided for cars, trucks, bicycles, and pedestrians – Ongoing

  Not all highways and bridges are candidates for preventive and corrective maintenance treatments. When infrastructure reaches the end of its useful life and currently provides for safe and efficient use by all modes (i.e., is a complete street), its replacement should ensure that this functionality is maintained and consider the ability to handle rising sea levels and extreme weather events that may occur as a result of climate change. Clearance under bridges that carry traffic above Class I railroads should be increased when they are replaced to allow for double-stacked rail cars. Similar consideration should be given to bridges that have had multiple incidents involving trucks becoming stuck underneath them. Given the large costs of reconstruction and rehabilitation projects, federal aid will continue to be the primary source for these types of projects and it is expected that this will be reflected in future TIPs.

- Increase the use of recycled materials and incorporate green technologies in the rehabilitation and reconstruction of highways and bridges – Ongoing

  Opportunities to increase sustainability through the use of reused and recycled materials in the construction of highways and bridges continue to grow and become more affordable. Use of these materials would reduce the amount of refuse deposited in landfills and can be produced in a manner that, when applied, could result in more porous pavements which would improve stormwater management and have other environmental benefits.

- Conduct preventive maintenance on public transportation vehicles to ensure the reliability of services in the region, allowing service to be attractive to choice riders – Ongoing

  Persons in the region that are dependent on public transportation should and can expect that public transportation services will be reliable, taking them where they need to go consistent with published schedules. In addition, individuals who have a choice to either use public transportation or travel via privately-owned automobiles will not choose the former if the vehicles that provide the service are not properly maintained and prone to mechanical problems that affect the reliability of the service. As with highways and bridges, the importance of preventive maintenance is recognized by public transportation service providers. Per the current TIP, RGRTA will invest over one-third of the FTA Urbanized Area (Section 5307) Program funds in vehicle preventive maintenance activities.

- Maintain and improve the condition and functionality of public transportation facilities throughout the region – Ongoing

  The age of public transportation facilities in the region varies with the RGRTA/RTS campus constructed in the 1970's while the CATS and LATS maintenance and operations facilities were completed in the last five years. Regardless, these facilities will need to be not only preserved and maintained but improved with respect to their security, energy efficiency, safety, and operational functionality over the next nearly 25 years. The building envelopes (e.g., roofs, walls, doors, etc.), mechanical systems (e.g., heating, cooling, ventilation, etc,); and electrical (lighting, control, etc.) systems will require repairs and replacement.

- Preserve and maintain dedicated bicycle and pedestrian facilities, including multi-use trails and sidewalks – Ongoing

  The more than 500 miles of multi-use trails and sidewalks in the region are vital to promoting public health via active transportation. The ability of persons to travel safely by bicycling and walking would be severely compromised if these facilities are not maintained and kept in a state of good repair. The ownership of these facilities is more diverse than that of other modes of transportation with local governments and not-for-profit entities having a larger role in ensuring their continued use compared to highways, bridges, and public transportation services. Nevertheless, providing the necessary resources to preserve and maintain multi-use trails and sidewalks cannot be overlooked in the region's comprehensive, multimodal asset management strategy.

- Reconstruct and rehabilitate rail infrastructure to allow for the efficient movement of freight into, out of, and within the region – Ongoing

  While privately owned, operated, and maintained, rail infrastructure is an important component of the regional transportation system. The maintenance of and upgrades (via reconstruction and rehabilitation) to tracks, ties, ballast, and bridges along with signaling, switching, and crossing equipment should be continued and increased

as private and public resources allow. Representative projects in the region include rehabilitation and improvements to both Class I and Shortline infrastructure to allow them to carry maximum weights at the highest operating speeds allowed. In addition, the over-100-year old Portage Bridge that crosses the Genesee River Gorge in Letchworth State Park is a critical component of Norfolk Southern's Southern Tier Line that is in need of major restoration or replacement to remove weight and speed restrictions.

Improved Design

The physical design of transportation infrastructure and development served by public transportation services can appreciably improve the safety, efficiency, and reliability of the transportation system. Access management, interchange configurations, and provision of space for public transportation and non-motorized travelers (i.e., complete streets) can enhance the existing system and better serve regional transportation needs now and in the future. Specifically, physical measures that improve mobility, safety, and predictability for vehicles (including freight) and non-motorized modes, when and where appropriate, increase economic opportunities and quality of life. These improvements require coordination and cooperation with local governments who have land use planning and decision making authority.

Recommendations

- Improve the function of interchanges on major roadways (i.e., Interstates and other Principal Arterials) through improved design that reduces delay and improves mobility – Immediate/Near-Term **CMP**

  The region's interstate highways and other expressways are the facilities that have the greatest impact on mobility. Recurring delay that results where they intersect with

other highways has significant implications including increased emissions and reduced productivity. Incorporating improved design of these interchanges when they have reached the end of their useful life and require reconstruction will result in significant benefits to regional mobility and safety. Representative projects in the region include the reconstruction of the I-490/I-390/NYS Route 390 interchange, the current western terminus of NYS Route 531, and the I-590/Winton Road interchange.

- Improve the function of intersections through improved design that increases safety, reduces delay, and improves mobility – Ongoing **CMP**

  The safety and efficiency of high volume intersections that result in delay can sometimes be improved through dedicated turning movements enabled through the addition of turn-only lanes and signalization. Other options include reconfiguring intersections via the introduction of roundabouts and new alignments. In the case of roundabouts, appropriate pedestrian safety considerations need to be included in their planning and design. Representative projects in the region include the O'Connor Road realignment at NYS Route 31F and Jefferson Avenue in Perinton and the construction of roundabouts at the County Road 10 and County Road 46 and County

Road 4 and County Road 46 intersections in Ontario County. Further, improving safety at rail crossings in the region through maintenance and replacement of signaling equipment and gates as well as, where necessary, redesign of the geometry of crossings will be advanced.

- Advance Access Management recommendations contained in completed UPWP-funded studies as part of rehabilitation and reconstruction highway projects – Near-Term/Medium-Term **CMP**

  Proactively managing access from highways to adjacent land can improve efficiency and reduce crashes, mitigating both Recurring Delay and Non-Recurring Incident Related Delay without requiring the physical expansion of infrastructure. GTC has provided funding for and technical assistance to numerous communities to conduct multi-jurisdictional access management plans that have integrated transportation and land use planning. These plans include recommendations that should be advanced as part of reconstruction and rehabilitation projects in the region and are incorporated by reference in the *LRTP 2035* subject to available funding and the willingness of municipalities to commit to the corresponding revisions to land use regulations.

- Advance Circulation, Accessibility, and Parking (i.e., "Complete Streets") recommendations contained in completed UPWP-funded studies as part of preventive/corrective maintenance, rehabilitation, and reconstruction highway projects – Near-Term/Medium-Term

  GTC instituted the Circulation, Accessibility, and Parking (CAP) program to improve livability and economic vitality in villages, city neighborhoods, and hamlets by identifying physical and operational improvements and regulatory changes to enhance traffic circulation, accessibility, and parking for all transportation system users, as well as community appearance including gateway treatments.

  The CAP plans, like GTC-funded access management plans, have integrated transportation and land use planning and include recommendations that should be advanced as part of reconstruction and rehabilitation projects in the region. Their recommendations are incorporated by reference in the *LRTP 2035* subject to available funding and the willingness of municipalities to commit to the corresponding revisions to land use regulations. Lane reconfigurations that include reductions in the number of lanes and addition of on-street parking and bicycle space should be advanced, where appropriate, as part of preventive maintenance and minor rehabilitation projects – recent examples include East Avenue in the City of Rochester (an urban area) and Phillips Road in Webster, Monroe County (a suburban area).

- Institute a regional program to prioritize the retrofit and/or new installation of American with Disabilities Act (ADA)-compliant treatments – Immediate/Near-Term

  A regional program should be developed to address ADA-related non-compliance issues. Improvements to pedestrian facilities, including crosswalks, sidewalks, and curb cuts, need to be prioritized so that they can be addressed not only as part of rehabilitation and reconstruction projects but also as stand-alone improvements. State, county, and local governments that receive federal

funding are required to have ADA transition plans. These plans should fully incorporate pedestrian and other transportation considerations that limit mobility and access for persons with disabilities, including access to public transportation. Making these improvements will also increase the attractiveness of walking as a preferred mode of travel for persons of all abilities.

- Support development that more fully considers and integrates transportation needs (e.g., transit-supportive, cluster, etc.) by creating and providing associated information materials for local planning and zoning boards – Immediate/Near-Term **CMP**

  As discussed above, local land use decisions are a major determinant of transportation system performance. When the demand created by land uses outstrips the supply provided by transportation infrastructure and services, the potential for delay, crashes, and other negative events increases. To improve understanding among local governments of the impacts of their decisions on the transportation system, GTC has developed and funded resources and studies that are available to cities, towns, and villages to assist in more fully integrating transportation and land use planning and development. These activities are in addition to the examples contained in and lessons learned from access management and CAP plans.

- Regularly assess and, as necessary, adjust existing public transportation services based on current and projected needs, demand, and market potential – Ongoing

  RGRTA has developed and continues to refine a nationally-recognized route analysis system that allows it to optimize RTS routes and schedules, putting buses where people are to take them where they want to go when they want to go there. RTS routes and schedules are adjusted quarterly based on analyses of trip-level and stop-level ridership and fare data. Strategic plans for public transportation have been completed for all of the counties of the region. Adjustments to maximize the effectiveness of non-RTS service consistent with strategic plans should be conducted. The evaluation of Ontario CATS fixed route and dial-a-ride services was completed in 2010, but strategic plans for services in other rural counties should be revisited and updated, as needed, over the period covered by the *LRTP 2035.* The large increase in the number of seniors and growing importance of universities and colleges will necessitate a review of how route structures are developed and adjusted regularly. In addition, improved connections between existing RTS, other RGRTA, and Ontario CATS services should be developed.

System Management and Operations

Transportation system management and operations (TSMO) recommendations provide the best opportunity to maximize the effectiveness of the current transportation system at the lowest cost. There are three primary initiatives that serve as the basis for the TSMO recommendations in the *LRTP 2035:* Technology, Coordination, and Demand. These initiatives are not mutually exclusive (e.g., there are Technology elements that are critical to and included in Coordination and Demand and the same is true for Coordination and Demand as they relate to Technology and each other).

The majority of delay in the region is non-recurring and is the result of crashes, weather, and other irregular events. TSMO programs and projects can effectively address non-recurring delay through improved incident response, more efficient deployment of resources to clear snow and ice, and timelier information to travelers. Even in cases where the delay is recurring due to peak demand and fixed capacity, TSMO programs and projects that inform travelers of less costly options that could be

more convenient have the potential to reduce demand on the system when use is at its highest level.

TSMO programs and projects can increase safety by providing timely and accurate information to make travelers aware of hazards such as adverse weather conditions, work zones, crashes, and other incidents. By improving incident response and management, TSMO programs and projects can also shorten clearance times for crashes which reduce the likelihood of secondary crashes. This improves safety, reduces resulting delay and decreases emissions. The technologies used to monitor transportation system performance can also be used for homeland security purposes to prevent or respond to a terrorist attack, natural disaster, or other large-scale emergency.

Technology

Technology provides multiple opportunities to improve safety, efficiency, and reliability for transportation users while reducing the need for expansion of physical infrastructure or introduction of new services. Utilizing continuously improving information and communication technologies via Intelligent Transportation System (ITS) instrumentation will allow transportation agencies to better manage and operate the existing system, including parking in areas where it is limited. Consistent with Moore's Law, which describes the long-term trend of computing capacity increasing exponentially, the usefulness of technology in TSMO will increase substantially over the period covered by the *LRTP 2035.*

Current and immediately forthcoming uses of ITS (for all modes) in the region includes closed circuit television monitoring, vehicle volume and speed detection, dynamic messaging (physical signs and mobile phone texts and e-mails), automatic vehicle location (AVL), roadway weather information systems, and highway advisory radio via both fixed (e.g., fiber optic) and mobile telecommunications.

At present, transportation agencies in the region emphasize the use of ITS to determine what is occurring on the system and make corresponding adjustments remotely, to the extent possible. In the near future, it is anticipated that ITS can be used to identify not only what *is* happening on the transportation system but what *will* happen. Effectively, technology will allow transportation agencies to conduct not only diagnosis but, more importantly, also prognosis to proactively address the safety, efficiency, and reliability of the system as it affects travelers. An example of prognostic capabilities is the use of sensors to continuously monitor the structural conditions of bridges to ensure their safety via the adequacy to handle the load of vehicles they routinely carry.

In addition to managing and operating transportation facilities, ITS offers the opportunity to improve preservation and maintenance of infrastructure and vehicles by monitoring and reporting on the structural integrity of roadways, bridges, and buses. As part of the TIDE program, RGRTA is outfitting RTS buses with sensors that are able to identify issues with the functioning of buses prior to breakdowns that would inconvenience travelers and may result in choice riders choosing not to use public transportation. Using ITS to detect deterioration of transportation system infrastructure that compromises the structural integrity of a facility can allow for appropriate repairs to be undertaken before weight limits need to be enacted or closures are required.

RECOMMENDATIONS

Recommendations

- Upgrade regional communications infrastructure for greater integration of transportation agency operations – Ongoing **CMP**

  The key to fully utilizing technology to improve transportation system management and operations is dependent on the transfer of information among and between personnel and devices that are deployed to monitor travel conditions and make necessary adjustments. This communication can and should be accomplished by an appropriate combination of hardwired (i.e., fiber contained in conduit) and cellular technologies. As new capabilities become available, existing and expanded communications devices connecting instrumentation and TSMO agency staff will be implemented. Representative projects include linking traffic signals and other ITS elements to each other and to the Regional Traffic Operations Center (RTOC) through new fiber optic and wireless means, including along corridors that are not currently remotely connected such as the NYS Route 96 corridor in Victor, Ontario County.

- Deploy ITS instrumentation along and in First Priority Critical Operations Corridors and Areas as identified in the *ITS Strategic Plan for Greater Rochester* – Near-Term/Medium-Term **CMP**

  The *ITS Strategic Plan for Greater Rochester* prioritizes corridors and areas along and in which ITS instrumentation will have the most benefits relative to existing and projected travel volumes and characteristics. These corridors and areas serve the largest number of travelers and amount of freight, making them the most likely to experience Recurring Delay. The emphasis should be in filling gaps in the regional transportation system via these corridors and areas to address the largest and most immediate needs.

- Deploy ITS instrumentation along and in Second Priority Corridors and Areas of Regional Operations Significance as identified in the *ITS Strategic Plan for Greater Rochester* – Medium-Term/Long-Term **CMP**

  To fully advance TSMO capabilities, deploying ITS instrumentation should be expanded to corridors and areas that experience lesser amounts of Recurring Delay as well as significant amounts of Planned Event Related Delay due to concerts, sports matches, and other events.

- Replace ITS instrumentation when necessary with next generation technologies along and in Critical Operations Corridors and Areas and Corridors and Areas of Regional Operations Significance as identified in the *ITS Strategic Plan for Greater Rochester* – Long-Term **CMP**

  Many of the ITS instruments currently deployed in the region are first or second generation equipment and the technologies that will be available when they require replacement will provide increased management and operation capabilities. Regardless of the type of technology available when replacement is required, the next generation of instruments is anticipated to allow for increased TSMO capabilities.

- Develop integrated/coordinated interchange and arterial signal timing systems and plans – Ongoing **CMP**

  Optimizing signal timings along and between major corridors improves efficiency, leading to reduced delay and vehicle emissions. Creating plans to implement systems that include an entire corridor or significant portion thereof must include input from agencies whose roadways intersect with the corridor so that the needs of adjacent and parallel facilities are considered. Replacing existing fixed-time (light cycles change at preprogrammed intervals) signal controllers with actuated ones (light cycles change when triggered by actual needs) that can be adjusted remotely rather than require

manual modification of timings allows for quicker responses to changing traffic conditions.

- Monitor advances in and, as appropriate, implement IntelliDrive[SM] to provide networked wireless communications between vehicles, infrastructure, and personal communications devices – Medium-Term/Long-Term **CMP**

  The continuous and active interconnection of vehicles and infrastructure has the potential to improve efficiency and safety. By allowing vehicles to communicate with each other and infrastructure in real-time, better information can be provided to drivers to alert them to possible hazards. As an example, if many cars engage their stability control and anti-lock braking systems in a similar location, information can be transmitted to drivers approaching that location that slippery conditions are present and caution is advised.

- Further expand electronic payment options for on-street, garage, and surface lot parking in the City of Rochester, including a pilot electronic toll tag for garages – Near-Term

  Offering electronic payment (e.g., credit card, online, etc.) options for parking in the City of Rochester can result in improved efficiency of parking administration and improve the friendliness of the central business district as parking is not limited to currency, and only coins for on-street meters. Currently, electronic payment options are available on select city streets and some city-owned garages. These options should be expanded to all city parking facilities and privately-owned garages and lots should be encouraged to adopt them as well. The installation of multi-space on-street parking meters in Downtown Rochester that accept coins and credit cards should be expanded.

- Install AVL and weather information instrumentation on public fleets to maximize vehicle routing and serve as floating, real-time data sensors – Immediate/Near-Term **CMP**

  The data provided from AVL technology installed on publicly-owned vehicles such as snow plows and refuse trucks allows operating agencies to optimize routing of these vehicles as they provide needed service. Improved routing based on this data can make service delivery more efficient, reducing costs for labor and fuel. Installing sensors that provide data on weather conditions can, when combined with data on changes in the locations of vehicles equipped with AVL instrumentation, provide valuable information for transmittal to the travelling public informing them of delay and hazards. The City of Rochester is currently developing a project funded through the TIP to equip its Department of Environmental Services vehicles with AVL technology.

RECOMMENDATIONS

- Install relevant pedestrian ITS instrumentation at identified intersections and crossings to reduce vehicle/pedestrian crashes – Ongoing **CMP**

  Installation of pedestrian countdown signals, audible/tactile devices, and similar ITS elements can improve pedestrian safety and accessibility. Pedestrian countdown signals inform pedestrians of the time allotted for crossing; this is especially important for persons with limited mobility, including seniors. Audible/tactile devices provide guidance and assistance to persons with disabilities as to when it is appropriate to cross streets. Locations for installation should be determined based on the volume of pedestrians and data on vehicle-pedestrian incidents to ensure the instrumentation is deployed where it is most needed.

- Continue the implementation of and expand Technology Initiatives Driving Excellence (TIDE) for RTS – Ongoing

  As discussed previously, TIDE is a comprehensive Advanced Public Transportation Systems (APTS) suite that improves operational efficiency and customer service. The benefits derived from TIDE are critical to attracting choice riders and reducing delay on the highway and bridge network. Given the time period covered by the *LRTP 2035,* TIDE instrumentation (like many ITS elements) are first generation and will require replacement. As technology advances, additional capabilities will become available and will be incorporated as the system matures. **CMP**

- Introduce transit signal priority (TSP) on heavily traveled RTS routes to decrease travel time and improve reliability – Ongoing

  TSP allows buses to signal their arrival at an intersection and, as overall operations requirements allow, receive a green light as they approach to continue through. TSP works best when done in combination with the consolidation of stops and queue jump lanes. Queue jump lanes are dedicated to public transportation vehicles at the approach to a signalized intersection allowing the bus to jump to the front of queuing cars and trucks. TSP and associated roadway configuration improvements (i.e., queue jump lanes) can serve as the precursor to more robust bus service, including Bus Rapid Transit. The *RTS Signal Prioritization Study* has identified the Lake Avenue (RTS Route 1) and Dewey Avenue (RTS Route 10) routes as the optimal routes to introduce TSP. The introduction of queue jump lanes can and should be accomplished as part of highway reconstruction projects, as appropriate, and in coordination with RGRTA.

- Expand relevant APTS technologies and capabilities to other RGRTA systems and the Ontario CATS – Medium-Term/Long-Term

  APTS implementation plans based on TIDE experiences and lessons learned should be developed and implemented for other public transportation services in the region. AVL systems for Lift Line, LATS, and OTS are scheduled for completion in the next three years. Additional APTS elements and associated instrumentation will be considered as appropriate on all non-RTS services to improve operational functionality and improve customer service.

Coordination

TSMO programs and projects also include the coordination of transportation infrastructure and services and the associated organizational relationships among all transportation agencies, including but not limited to NYSDOT, NYSTA, counties, the City of Rochester, and other municipalities. Like the design of infrastructure and services, the relationships between transportation agencies can also appreciably improve the safety, efficiency, and reliability of the transportation system. How transportation agencies coordinate their respective activities can maximize the investment of public resources and the delivery of services that clear crashes, address weather-related consequences, and provide connections between public transportation services operated by public and not-for-profit providers. The structure of interagency collaboration between transportation, emergency management, and law enforcement entities is critical to efficient management and operation of the transportation system. Formal protocols (including via Regional Concepts of Transportation Operations) to coordinate information sharing, incident response, and timing of construction projects based on a cooperatively-developed vision can improve efficiency and effectiveness.

Recommendations

- Develop Integrated Corridor Management (ICM)-based Regional Concepts of Transportation Operations (RCTOs) to improve interagency collaboration and coordination – Immediate/Near-Term **CMP**

  A RCTO provides a shared strategy among transportation agencies representing all modes, law enforcement, and emergency responders to better coordinate system operations and management. ICM-based RCTOs to be developed in this region will address the following issues: winter roadway conditions information sharing, joint management of parallel facilities in designated corridors, expressway management and operating characteristics information sharing, and incident management.

- Execute the interagency agreements necessary to implement protocols contained in the ICM-based RCTOs – Near-Term/Medium Term **CMP**

  It is anticipated that the RCTOs will require formal agreements between the involved agencies to advance the recommended operational activities contained in them. The specific form of the agreements (e.g., memoranda of understanding, shared services contracts, etc.) will need to be determined, but it is anticipated that the initial one will serve as a template for future agreements with minimal additional effort necessary to implement RCTOs.

- Continue federal funding for Regional Traffic Operations Center (RTOC) staffing, including continued 24-hour operations and cross-training of NYSDOT and Monroe County staff – Ongoing (Near-Term for cross-training) **CMP**

  To take full advantage of the capabilities provided by current and future ITS instrumentation, an adequate number of trained personnel need to be available at all times to monitor and process the information provided. Improving interoperability is an important component that can be addressed in the near-term through cross-training of NYSDOT and Monroe County operators, with the expectation that greater consistency between ITS instruments software and associated applications can occur in the future. Funding for RTOC staffing has been and continues to be provided in the TIP and these financial resources will continue to be made available.

RECOMMENDATIONS

- Continue federal funding for the NYSDOT Highway Emergency Local Patrol (HELP) Program to decrease delay and increase safety on major highways by providing emergency roadside service to disabled vehicles – Ongoing **CMP**

The HELP Program is an important initiative in minimizing Non-Recurring Incident Related Delay. The program provides assistance to motorists that have experienced issues on major roadways that without quick action will limit capacity and cause congestion with the potential for secondary incidents as a result. The *NYSDOT-Region 4 Advanced Transportation Management System Local Evaluation Report* found that the HELP Program had one of the highest cost/benefit ratios of any initiative assessed. Like RTOC staffing, funding for the HELP Program has been and continues to be provided in the TIP and these financial resources will continue to be made available.

- Conduct relevant training opportunities between transportation, law enforcement, fire and medical, and other agencies to improve incident response, management, and clearance – Ongoing

  Clearing crashes as quickly as possible while providing for the safety of emergency responders and law enforcement agents requires significant coordination. The National Highway Institute Coordinated Incident Management (Quick Clearance) Workshop, developed by the I-95 Corridor Coalition, was conducted in October for regional local law enforcement, first responder, and transportation system management agencies, as well as representatives from the local towing industry. This workshop or a similar training opportunity should be offered in the region on a regular basis.

- Institute informational programs to reduce distracted driving – Ongoing

  Distracted driving is a major safety hazard that has arisen as a result of people's need to feel connected at all times to personal communication devices. Talking on the phone and texting while driving reduce drivers' attentiveness to required actions to ensure their and others' safety. Studies have shown that distracted driving is as comparable to operating a vehicle while impaired by alcohol or drugs. Traffic safety boards that include transportation agencies, law enforcement, and other organizations should develop and implement educational and enforcement programs to reduce distracted driving. Absent intervention, the problem will only increase as ownership of smart phones and in-vehicle communication technologies proliferate at an accelerated rate.

- Ensure that public transportation facilities are accessible to all users during service hours – Immediate

  All trips taken by fixed-route public transportation begin with the customer making their way to a bus stop or shelter. If snow and ice have not been cleared, the sidewalks are in such condition as to make them impassable for persons with disabilities, or some other issue prevents reasonable access, the viability of public transpor-

tation is compromised. The responsibility for ensuring this access is typically borne by the owner of the right-of-way in which the sidewalk is located. Ensuring that those sidewalks that provide access to public transportation are a priority for preservation and maintenance activities should be increased.

Demand

The Technology and Coordination initiatives focus almost exclusively on managing and operating the system. This remaining initiative emphasizes providing users with better and additional information to manage the demand that is placed on the system. In some cases, technology is the primary enabler of the provision of the information (e.g., text alerts regarding incidents and next bus arrival times, directions provided by smart phones with GPS-based navigation applications, etc.). In other cases, information is provided to travelers the same way it has been for centuries: on printed materials (e.g., color coordinated wayfinding signage to assist visitors in reaching a destination in a downtown or special district, printed marketing fliers promoting a new transportation service, etc.).

Making full and complete information on options and conditions widely accessible allows users to choose how they

travel based on their individual needs. Providing access to travel time, route, and cost information for multiple modes (specifically, non-single occupancy vehicles) in a single place permits users to comparatively assess their full range of options. Doing so via the Internet is currently the most effective means for users to revise or adjust their preferences dynamically, and its reach will extend in coming years as tomorrow's seniors will be more technologically savvy than their predecessors.

Recommendations

- Continuously identify ways to increase and improve real-time travel information – Ongoing **CMP**

  Improved information on travel choices will lead to better decisions for all modes, and the means for doing so over the next two-plus decades will change in ways that cannot be predicted. Providing more and better information on traffic conditions and arrival times of buses and inter-regional trains to regional transportation system users in real-time is an important component of managing travel demand and getting the most out of existing infrastructure and services. Partnering with smart phone providers and media outlets throughout the region should be explored.

- Initiate the Greater Rochester Regional Commuter Choice Program to consolidate information on and allow comparative assessment of transportation options – Immediate **CMP**

  GTC is establishing a website where commuters can 1) find other commuters with proximate origins and destinations for carpooling; 2) identify optimal public transportation route(s) and schedule(s), and 3) determine preferred bicycling routes, as well as gain information on the amount of out-of-pocket costs, greenhouse gases, and air pollution reduced via the various non-single-

occupancy vehicle options available to them. The website is expected to be operational in fall 2011 and will provide the traveling public with the maximum opportunity to save money and reduce pollution by accessing commuting options other than the single-occupancy vehicle. The use of internet-based scheduling of paratransit rides should also be explored either as part of this program or one dedicated to persons with disabilities but with appropriate connections to this program.

- Continuously upgrade the 511NY Program to expand information on statewide travel conditions and options – Ongoing **CMP**

  The 511NY program is maintained by NYSDOT and is the state's official traffic and travel resource. The program is accessible through the internet and by phone. The program provides traffic and weather conditions, offers a public transportation trip planner, and includes carpooling and vanpooling resources. It is being enhanced regularly and should continue to include additional information to be as valuable as possible to transportation system users in this region.

- Integrate the Greater Rochester Regional Commuter Choice Program with the 511NY Program – Near-Term/Medium-Term **CMP**

  The Greater Rochester Regional Commuter Choice Program and 511NY program share common goals. Having a regional or local identity is generally seen as a factor in increasing the use of such programs. However, once the benefit of the Greater Rochester Regional Commuter Choice Program is proven, integrating it with the statewide program will increase traveler benefits by providing a one-stop-shop for residents to obtain information for trips outside of the region and for visitors to assess their options when they will be in the region.

- Improve or install (as appropriate) wayfinding signage in business, cultural, and other unique districts as well as interregional travel facilities – Near-term/Mid-Term **CMP**

  Providing information at key points is an important element in providing access to specific locations and can reduce delay and visitor angst. Districts and interregional travel facilities that would benefit from the introduction of new or improved wayfinding signage should have visitor needs and requirements assessed and then determine the appropriate form in which to provide signage that is simple, effective, and aesthetically consistent with the theme of the area. In addition to defined districts, wayfinding signage at multi-use trailheads and along multi-use trails should also be developed, including identifying connections to "blue ways" or recreational waterways for boating and kayaking.

- Implement an electronic parking guidance system for Downtown Rochester – Medium-Term/Long-Term

  Parking supply in Downtown Rochester is inherently restricted by the physical space available and need to use it for higher value-added activities. The existing supply of parking can be maximized by increasing the efficiency in which motorists are able to locate an appropriate place to park, be it a garage, surface lot, or on street. Options for accomplishing this include erecting dynamic messaging signs and developing an application for smart phones and in-vehicle communication technologies to provide information on the availability of parking spots and where alternatives exist nearby.

Expansion

Based on the identified transportation needs of the region through 2035, expansion of the bicycle, pedestrian, and public transportation networks is warranted. The level to which this can occur is limited by the reasonably expected revenues available for investment in the system over the next nearly 25 years and the need to preserve, maintain, and better manage and operate the existing system. Accordingly, investments in additional infrastructure and services must build upon the existing system by either increasing connectivity (i.e., bridging gaps) or offering increased access. The objective of these recommendations is to *expand* travel choices available to residents, visitors, and freight – not to replace current options. There are three primary initiatives that serve as the basis for the Expansion recommendations in the *LRTP 2035*: Bicycle and Pedestrian, Public Transportation, and Vehicle Options.

Bicycle and Pedestrian

Based on current and projected development patterns and trip making characteristics in the region, expanding the bicycle and pedestrian networks offer the greatest opportunity to improve public health, reduce greenhouse gas emissions, and provide mobility and accessibility to the majority of residents. Regional highway project proposal criteria strongly favor reconstruction and rehabilitation projects that add or improve on-street bicycle space and sidewalks. To complement shared space on roadways, the region has used federal transportation funds to make a significant investment in planning and implementing a comprehensive regional multi-use trails network that is dedicated to providing an efficient and safe bicycle and pedestrian network for both commuting and recreation.

Recommendations

- Expand the amount of and increase the connectivity of multi-use trails in the region per the Regional Trails Initiative – Ongoing

  Multi-use trails will function best when connected to improved on-street bicycling facilities. An emphasis should be placed on filling in gaps and increasing connections to the "core trails" which include the Canalway Trail (specifically, east of Lyons, Wayne County), Riverway Trail, Genesee Valley Greenway, Auburn Trail, Lehigh Valley Trail, and several other locally important trails such as the El Camino Trail and the 390 Trail. As discussed previously, the on-street facilities are expected to be developed as part of highway and bridge reconstruction, rehabilitation, and, where possible, preventive maintenance projects; some on-street facilities may be implemented as on-demand projects specifically for this purpose.

RECOMMENDATIONS

- Increase the availability of sidewalks along federal-aid highways to expand connectivity and access for pedestrians – Ongoing

  With the majority of retail, commercial, and civic uses located along major roadways that are eligible to receive federal-aid, the provision of sidewalks is critical to accessing these destinations. Many federal-aid highways have partial sidewalks but only about 20 percent have sidewalks that would be considered complete. Beyond adding them as part of federally-funded highway reconstruction and replacement projects, sidewalks should be improved where their condition deters walking and added where they don't exist via dedicated funding from federal and non-federal sources. This applies to all places in the region from the Regional Urban Core in the City of Rochester to Rural places like the Town of Williamson, Wayne County where residents, businesses, and elected officials recognize their benefits.

- Promote safe routes to school (SRTS) programs and the availability of technical resources that are available to implement them – Ongoing

  According to the FHWA *1972 Nationwide Personal Transportation Survey*, 49 percent of elementary school children walked or bicycled to school in 1969, while 12 percent traveled by passenger vehicle. By 2001, FHWA reported that the tables had turned: fewer than 15 percent walked or bicycled to school, and the percentage that traveled by passenger vehicle had increased to approximately 50 percent. SRTS programs promote deliberate efforts to increase the number of children that can safely walk and bicycle to school in all places (e.g., urban suburban, and rural). By encouraging "active transportation", they complement ongoing community- and school-based programs and activities intended to improve the overall health and wellness of children. Many SRTS also serve as safe routes to play, doubling their purpose in promoting active lifestyles and reducing the tendency towards increased instances of childhood obesity and diabetes. In addition, SRTS programs can reduce delay during drop-off and pick-up periods.

- Ensure that all fixed route buses can accommodate bicycles – Immediate/Near-Term

  Installing racks for bicycles on public transportation buses increases the opportunity for persons to begin and complete trips without having or choosing to use a private automobile. Bicycle racks are currently installed on all RTS buses and being added to other RGRTA services outside of Monroe County. In all places where fixed-route public transportation service is available, bicycle racks on buses are a cost-effective means to improving intermodal connections. Bus operators should be trained in the use of these racks and encouraged to assist customers in utilizing them.

- Increase the amount of bicycle parking at key locations in the Regional and Sub-Regional Urban Cores, Employment Centers, all Retail, and Higher Education Places – Near-Term/Medium-Term

  Bicyclists (commuter or recreational) invest personal financial resources in their bikes. Their use can be discouraged if secure places to leave them as they conduct their other activities are not available. Short-term and long-term bicycle parking should be highly visible, advertised, and located in well-lit areas (preferably, with surveillance to deter theft and vandalism). The parking means should hold the frame, accommodate a large variety of bicycles, and be suitable for a U-shaped shackle lock. Associated signage should be included whenever possible.

Public Transportation

To effectively serve the needs of the region over the next nearly 25 years, a fundamental shift in what is considered public transportation will need to occur. The fixed-route and dial-a-ride services of RGRTA and Ontario CATS will need to be supplemented to a greater degree by specialized transportation services supplied by not-for-profit agencies and private providers. In many cases, the need for public transportation will increase the most among seniors that may not have the physical ability to travel to a bus stop or wait in inclement weather, requiring a new approach to public transportation that will support aging in place. Ensuring access for persons with disabilities to non-emergency medical appointments, employment sites, and social events will be a major determinant of their independence, quality of life, and the overall livability of the region. The establishment of RTS satellite transfer centers in the City of Rochester and, potentially, Mature and Recent/Emerging Suburbs should also be advanced. Increased frequency of fixed-route service in select locations where transit-supportive development is or will be located is recommended.

Recommendations

- Construct the Renaissance Square Downtown Transit Center – Immediate

  The RTS hub-and-spoke operating model reinforces Downtown Rochester as the business, civic, and cultural center of the Genesee-Finger Lakes Region. Providing an enclosed, climate-controlled transit center for customers that removes buses from Main Street is critical to improving the quality of RTS service and the continued revitalization of downtown as not only an employment center but a 24-hour activity center. Notably, moving the transfer point for Ontario CATS buses off of Main Street in Downtown Canandaigua has also been recommended for similar reasons. Sufficient funding for the Renaissance Square Downtown Transit Center is secured with the federal portion of this funding included in the current TIP.

- Design and implement a mobility management program that coordinates existing and future services of public, not-for-profit, and private transportation providers – Immediate **CMP**

  Mobility management involves focusing on meeting individual customer needs through the variety of services offered by multiple providers. The range of services provided by public, not-for-profit, and private transportation providers are inventoried and cataloged to create a clearinghouse of available options. The mobility manager uses the clearinghouse to match customers to the most appropriate service based on their requirements (e.g., ability to access the service, if the destination is served by the provider, etc.). This program would create greater efficiencies as all public transportation services would be considered in a centralized manner. Sustaining the program would be an ongoing activity for regional transportation service providers.

- Increase the frequency of fixed-route public transportation services in the Regional Urban Core, Sub-Regional Urban Cores, Mature Suburbs, Employment Centers, Medical/Health, Higher Education, and Airport places – Near-Term/Medium-Term **CMP**

  Fixed-route public service should support and be supported by adjacent land uses that provide density in both population and employment. The places of the region that offer the best opportunities for and would be best served by expanded service in the form of more frequent buses along existing routes are the Regional Urban Core (City of Rochester), Sub-Regional Urban Cores in the Rochester TMA (including the City of Canandaigua), and Mature Suburbs. Determinations of when and where to increase frequency of service should consider lower-income residents' employment prospects, retail and commercial businesses' operating hours, and access to Medical/Health places in recognition of their growing importance to the increasing senior population. As discussed previously, the use of transit signal priority and associated infrastructure such as queue jump lanes in appropriate locations may allow trips by bus to become more competitive with private automobiles in terms of time.

- Construct satellite transit stations in the City of Rochester and assess their feasibility in Mature and Recent/ Emerging Suburbs – Near-Term/Medium-Term **CMP**

  Mixed-use developments are transit-supportive and more attractive to both residential and commercial tenants when a commitment is made to provide fixed-route public transportation service. This can lead to increases in choice riders. RGRTA is actively developing transit stations as part of the University of Rochester's College Town development. In addition, an assessment of the feasibility of the current RTS Park and Ride route structure with respect to service to Mature Suburbs through mixed use developments that include a satellite transit station will also be advanced.

Vehicle Options

To address energy, air quality, climate change, and cost concerns, the migration of energy sources for public fleets from gasoline and diesel to domestically-produced, cleaner options needs to be accelerated. The expanded availability of alternative energy sources for vehicles is largely dependent on actions at the national level but options that are immediately available are fully considered as part of this initiative. The establishment of alternative fuel dispensing and electric vehicle recharging infrastructure for public fleets can spur the use of more sustainable energy sources by other public operators, as well as commercial vehicles and private automobiles, creating private sector demand to provide the service. In addition, offering the opportunity for individuals to have access to an automobile or bicycle without owning one or having theirs immediately available can also assist in reducing energy use, emissions, and being beholden to oil prices. Future vehicle options for people and freight may require the use of land that served transportation uses in the past; preserving access to these rights-of-way is an important long range consideration.

Recommendations

- Expand the necessary infrastructure to facilitate increased use of alterative fuel/electric and hybrid vehicles in public fleets (including school districts) – Ongoing

  As discussed previously, it is likely that no single energy source for powering vehicles will have the same nearly monopolistic position as oil has had for the past 100-plus years. To maintain the flexibility and independence offered to people and freight by cars, buses, and trucks, various energy sources are being promoted as replacements to gasoline and diesel. Funding has been provided through

the TIP for the development of stations to dispense alternative fuels for the City of Rochester and Monroe County fleets and for the creation of plug-in charging stations at several City of Rochester facilities along with the purchase of plug-in hybrid electric vehicles. The development of additional fueling/charging infrastructure will be advanced including agreements to ensure access to the energy sources for additional public fleets and, as allowable, personal and commercial vehicles.

- Encourage and, to the extent practical, financially support the expanded use of more energy efficient, alternative fuel/electric, hybrid, and retrofitted vehicles in public and private fleets (including school buses) – Ongoing

  Wide acceptance of new vehicle technologies typically comes after a minimum level of use by early adopters that alleviates the anxiety of the larger market that they are safe and reliable. Encouraging the use of cleaner, more energy-efficient vehicles by providing objective information on their capabilities and limitations and, as funding allows, financially supporting their purchase for use in public fleets can significantly promote their acceptance in commercial fleets and as private automobiles. GTC has and continues to partner with Genesee Regional Clean Communities, including providing funding through the TIP, to incentivize the replacement of gasoline and diesel vehicles with those that are more energy efficient and environmentally friendly, as well as retrofit existing vehicles to reduce emissions. The current TIP also includes funding to retrofit CSX Transportation switcher locomotives with more efficient engines that will increase operating efficiencies and significantly reduce emissions in and around the Goodman Street Yard, improving air quality in the surrounding neighborhood.

- Institute car sharing and bike sharing programs to expand access to automobiles and bicycles without requiring ownership – Immediate/Near-Term

  Many individuals want to enjoy the benefits of a private vehicle for certain activities but may not engage in these activities enough to warrant the costs of ownership. In addition, lower-income persons may not be able to afford to own and maintain a vehicle but would significantly gain from access to one for certain trips that cannot be served by other modes. Individuals who participate in car sharing programs typically have a desire to lower their overall transportation costs, drive less, and use other modes more frequently. Many public fleets do not use or need passenger vehicles full time (law enforcement, fire, and other emergency responders excluded). By instituting car sharing for these vehicles, government agencies can reduce overall fleet purchase and maintenance costs while maintaining access to passenger vehicles for official use when needed. Bike sharing programs can promote increased use of not only bicycling but also public transportation by allowing program members to travel further distances from the bus stop than if they had to walk.

- Increase the number of Truck Stop Electrification (TSE) facilities to reduce idling emissions – Immediate/Near-term

  Operators of long-haul trucks will idle their vehicles when stopping overnight at rest stops to provide heating or cooling in their sleeper cabs and to maintain the charge of their vehicle batteries while using appliances. This leads to

significant diesel emissions. With the increasing amount of freight projected to be moved into, out of, and through the region by truck, expanding the number of facilities that provide TSE options can have significant benefits such as improved air quality, reduced fuel usage, and decreased maintenance costs.

- Preserve existing rights-of-way for future transportation uses that may be needed – Ongoing

  Existing linear rights-of-way – including active and abandoned rail corridors and utility corridors – that are suitable for transportation purposes need to be preserved as corridors for potential future use. When portions of these corridors are used for non-transportation uses, it is very challenging and, usually expensive, to reestablish or create a new corridor. In some cases, the former transportation use of the corridor may be needed again in the future. One example would be acquisition of nearly 20 miles of right-of-way from just east of the Village of Brockport, Monroe County to Rochester by the Falls Road Railroad to reinstate freight rail service on this corridor, extending their current operations from Lockport, Niagara County through Orleans County to Brockport.

Illustrative Projects

The recommendations discussed above will be advanced with the reasonably expected revenues available through 2035. In addition, other projects have been identified that the region would pursue implementation of if and when additional funding becomes available. These projects are provided for illustrative purposes and represent actions above and beyond those that can reasonably be expected to be accomplished given limited federal resources. Financial partnerships with private and not-for-profit entities should be explored; specifically, those that would directly benefit from the projects. Each of these projects have been discussed and vetted through the regional transportation planning process and are considered worthy of implementation if sufficient additional revenues were to be made available for their advancement.

- Construct an interchange at Kendrick Road as part of the I-390 Southern Corridor Project

  The purpose of the overall I-390 Southern Corridor Project is to improve I-390 from the Genesee River to I-590, including the reconfiguration of the existing interchanges at NYS Routes 15 and 15A. Due to funding constraints, the addition of an interchange at Kendrick Road to serve the planned expansion of the University of Rochester and its medical center cannot be included in the overall project. The University of Rochester is the region's largest employer and has recently completed its Master Plan, which calls for approximately $500 million in investments that would create roughly 11,000 jobs. These investments are dependent on improved access to the University's facilities that will not affect mobility by creating additional delay along the corridor. Given the location of the project, it would serve as a catalyst for further development in the City of Rochester (Regional Urban Core) and Town of Brighton, Monroe County (a Mature Suburb). This project continues to be the top infrastructure investment priority of the Rochester Community Coalition that includes the City of Rochester, Monroe County, Rochester Business Alliance, and the labor and construction industries. Construction costs are estimated at approximately $20-25 million in current dollars.

- Reconstruct the eastern portion of the Inner Loop as an at-grade boulevard

  Based on a strong interest in continuing the revitalization of Downtown Rochester and adjacent areas, the City of Rochester has assessed the feasibility of raising the eastern portion of the Inner Loop to an at-grade boulevard. Current traffic volumes on this portion of the facility are

well below the capacity provided by the current grade-separated four-to-six lane configuration. As envisioned, the reconstruction would reclaim land for private, taxable development, and improve connections between Downtown Rochester and surrounding neighborhoods. The reconstructed facility would allow for bicycling and walking and improve the overall contribution of the roadway to community character. Construction costs are estimated at approximately $21.5 million in current dollars.

- Establish a Center City Circulator Service to serve daily commuters, visitors, and tourists

  The circulator service would be designed to serve the needs of morning and evening peak period commuters, daytime workers and tourists, and evening/late-night visitors and tourists. The service would link major employment destinations, entertainment venues, and parking in Downtown Rochester, extending into the East End, High Falls, and Cascade districts. At present, it is recommended that this service initially utilize buses that could be purchased for $1.5-$1.75 million and be operated for $2-$3 million per year in current dollars. The feasibility of converting the service to modern streetcars or some other fixed-guideway system should be considered based on ridership and changes in development Downtown.

- Construct the Rochester Intermodal Station for interregional rail and bus services at the site of the current Amtrak Station

  The current Rochester Amtrak Station is over 30 years old and not suitable as a gateway for visitors arriving to the region. The City of Rochester is progressing designs for a combined interregional train and bus station that would combine Amtrak, Greyhound Lines, and New York Trailways services with connections to RTS service, taxicabs, public parking, and bicycle parking. Construction costs are estimated at approximately $25 million in current dollars.

- Support efforts to establish high-speed passenger rail service on the Empire Corridor

  Improved passenger rail service between Buffalo and Albany (with connections to Toronto and New York City) that is faster and more reliable than current Amtrak service should be provided as it offers the opportunity to increase connections within the larger mega-region. As part of this, the proposed Rochester Intermodal Station will need to be built and the development of a station in central Wayne County should be strongly considered. To be feasible, this service must save time for existing riders, attract new riders from other modes, and not interfere with freight operations. NYSDOT is currently advancing planning for proposed higher-speed passenger rail service along the Empire Corridor. Once the associated corridor-wide Environmental Impact Statement is drafted, the region will be able to consider whether the proposed service meets future transportation needs.