Ithaca-Tompkins County Transportation Council

2045 Long Range Transportation Plan

Draft for Review Sept.2024

ITHACA-TOMPKINS COUNTY TRANSPORTATION COUNCIL

LETTER TO THE COMMUNITY

TO BE PROVIDED

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We wish to thank the following current and former staff members who contributed to the development of this report:
Teresa Linde
Jay Lambrix
Lulu Tornari
Fernando de Aragon

Ithaca-Tompkins County Transportation Council
121 E. Court St.
Ithaca, NY 14850
607-274-5570
email: itctc@tompkins-co.org web: tompkinscountyny.gov/itctc

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Cover photo: Jon Reis
Data Assistance: Tom Mank

The following agencies contributed images for use in this document:
City of Ithaca
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STAFF

Fernando de Aragón,
Director
Teresa L. Linde, Administrative Assistant
Jay Lambrix, Transportation Analyst

INTRODUCTION

THE MPO & THE LONG-RANGE TRANSPORTATION PLAN

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The MPO & The LONG-RANGE TRANSPORTATION PLAN

What is a Metropolitan Planning Organization?

In 1974, the U.S. Congress amended the Federal Aid Highway Act, mandating that all Urbanized Areas having a population of 50,000 or more designate a single agency to administer federal transportation funds. The agencies that were established were called Metropolitan Planning Organizations (MPO). These organizations were to provide a transportation planning process for local, state and federal officials. Today, there are approximately 450 MPOs across the country, including the Ithaca-Tompkins County Transportation Council (ITCTC), the MPO for the Ithaca-Tompkins County area. The ITCTC was created in 1992 after the Ithaca Urbanized Area reached 50,000 population in the 1990 census.

ITCTC Organizational Structure

As the designated MPO for the Ithaca metropolitan area, the ITCTC is responsible for conducting a transportation planning process that is "continuing, cooperative, and comprehensive" (see infographic at the end of this chapter). In order to achieve this objective, the ITCTC operates at three levels.

The **Transportation Policy Committee** is the final MPO decision-making authority of the ITCTC. Committee members consist of the primary elected official from each member government in the urbanized area. Cornell University, the New York State Department of Transportation, the Federal Highway Administration, the Federal Transit Administration and Tompkins Consolidated Area Transit (TCAT) and the other local governments in Tompkins County are also represented on the Policy Committee.

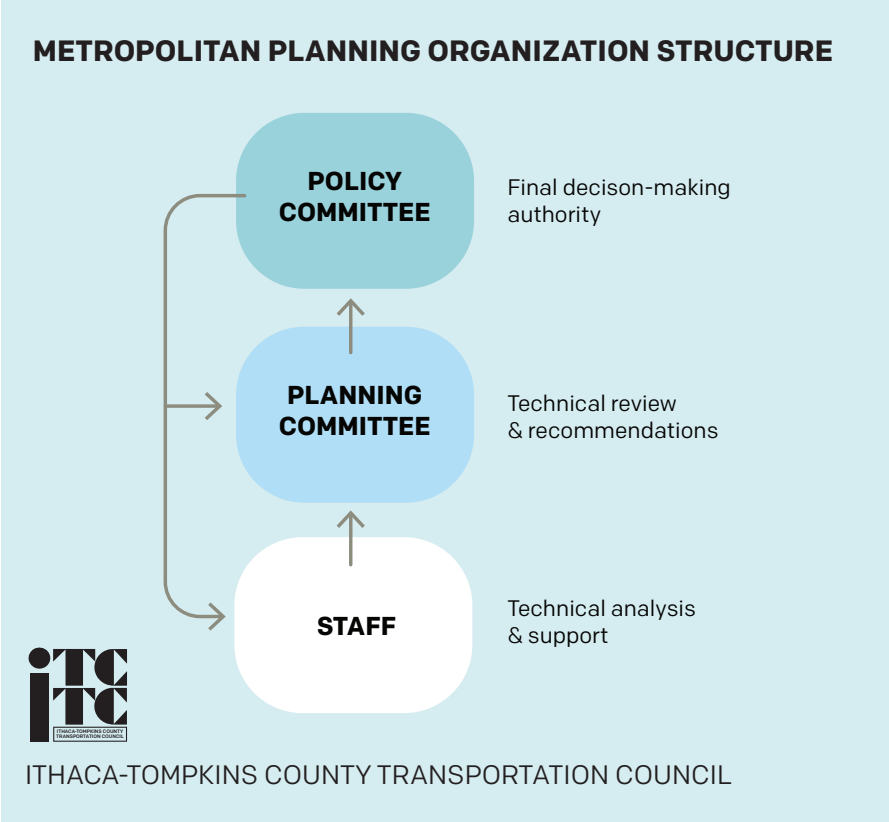
The **Transportation Planning Committee** is responsible for coordinating and managing the area's transportation planning activities and providing technical advice to the Policy Committee. The Planning Committee is composed primarily of lead engineering and planning staff from the member entities and local transit operators.

The **Central Staff** is responsible for performing the administrative and technical services necessary to operate the MPO. The efforts of the Central Staff are supplemented by the "in-kind services" of various participants in the MPO process.

The Policy and the Planning Committees meet alternately during the year, holding two joint committee meetings in June and December. All meetings are open to the public and held in accessible locations.

The core functions that the MPO must carry out include developing and maintaining both the Long-Range Transportation Plan (also called a Metropolitan Transportation Plan) and a Transportation Improvement Program, a 5-year program of transportation planning and capital projects. The MPO keeps the public informed and encourages participation and feedback during development of these planning documents.

The operations and procedures of the ITCTC are guided by the Unified Operations Plan. This document specifies that the Transportation Planning Committee is responsible for developing



Federal guidelines state the following basic direction for long-range transportation plans:

"The transportation plan shall include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand."

the Long-Range Transportation Plan.

What is the Long-Range Transportation Plan

The federal regulations that guide the operation of all MPOs indicate that the transportation planning process must include the development of a transportation plan covering a 20-year planning horizon – **the Long-Range Transportation Plan (LRTP)**. The ITCTC Long-Range Transportation Plan needs to be updated every five years. The first ITCTC LRTP was developed in 1995. The 2045 LRTP is the sixth update since the original.

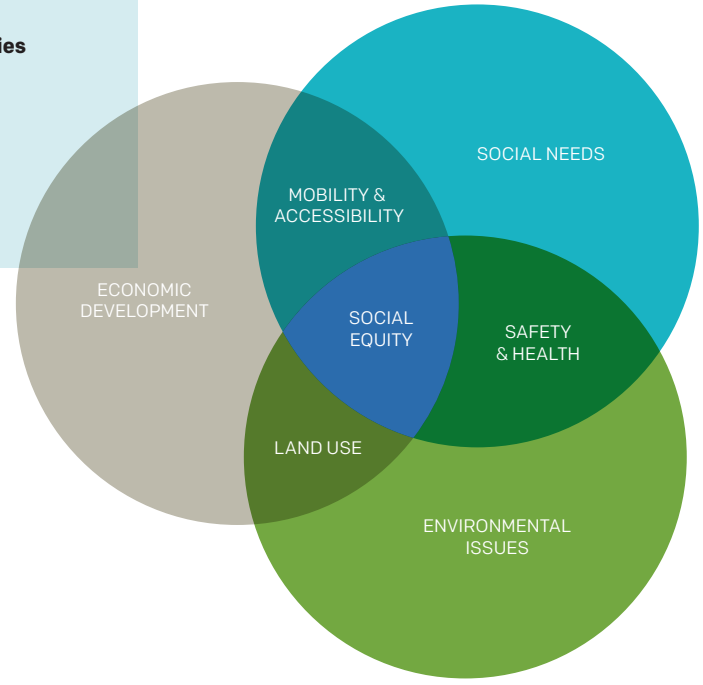
Public Involvement

In this 2045 update of the Long Range Transportation Plan, the Ithaca Tompkins County Transportation Council will describe the vision for the transportation systems in Tompkins County taking into account the expressed views of residents, transit users, bicyclists, pedestrians and motorists concerned for the environment and the quality of life in their communities.

In the broadest sense, transportation in its many forms affects our common future and what our community will be like as it evolves. The LRTP presents strategic goals aimed at having a positive impact on the overall quality of life of residents and visitors to Tompkins County.

Through a series of public meetings, online surveys, printed materials, media outreach and public presentations, the Ithaca-Tompkins County Transportation County engaged the public and solicited comments and reactions on key components of the LRTP update. The intent was to learn and evaluate what the public thought about a transportation system that would:

1. **Include all modes**
2. **Be safe, convenient, and efficient**
3. **Serve and enhance existing land-use and planned growth**
4. **Sustain the quality of the environment and enhance our communities**
5. **Be financially feasible**
6. **Provide equitable access and connectivity**
7. **Be maintained through local officials and citizens participating in transportation decision-making**



Introduction to Tompkins County

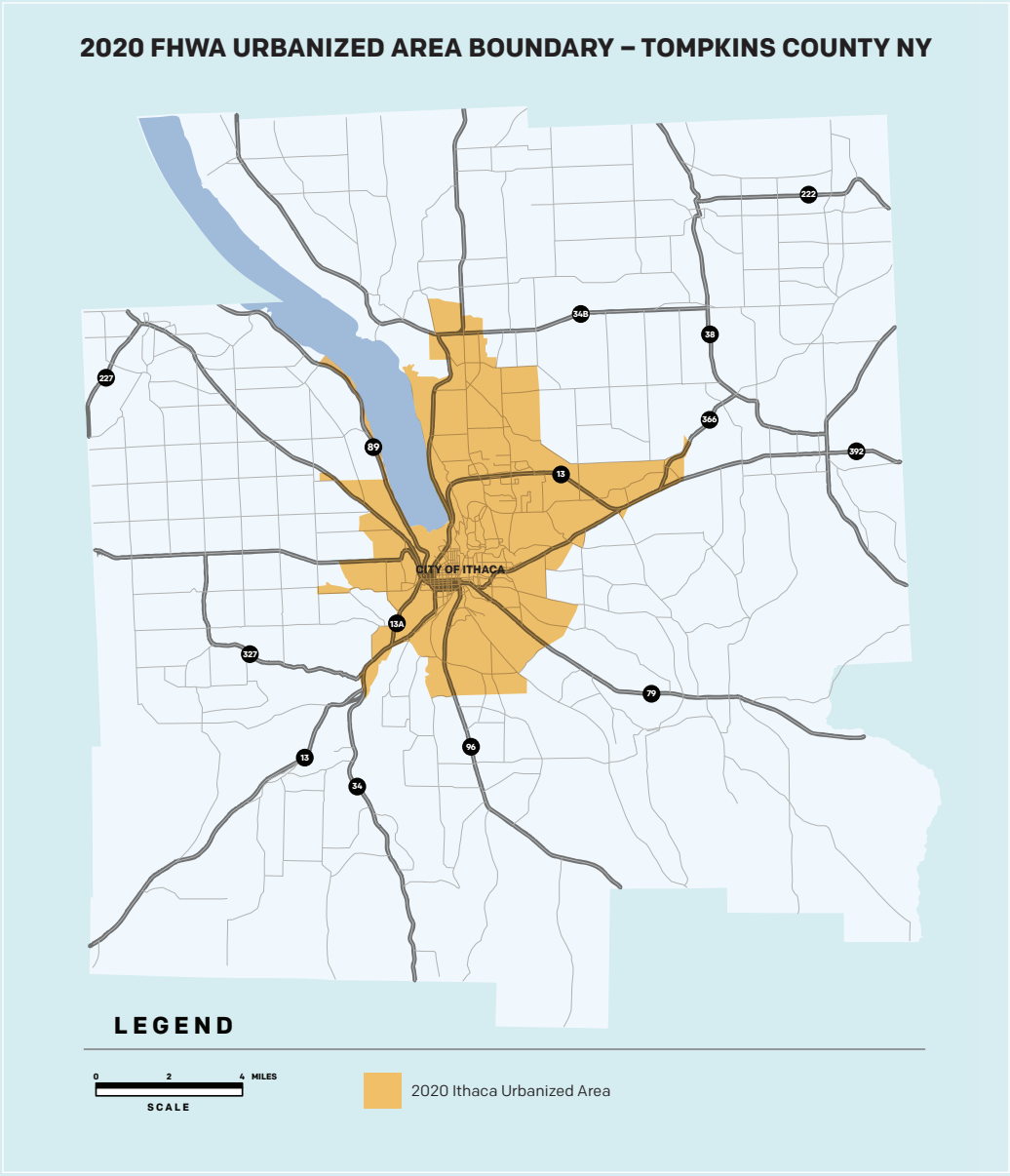
Located in Upstate New York, Tompkins County contains nine towns, six villages and is home to the City of Ithaca, one of the principal cities of the scenic Finger Lakes region. The City of Ithaca, which is centrally located within Tompkins County, is situated at the southern end of Cayuga Lake and serves as the activity hub for the County and indeed for a greater multi-county region. The area is characterized by topography that is restricted and interrupted by the aftereffects of past glacial activity that created the Finger Lakes region. The climate of the area is variable and is characterized by well-defined seasons. The County is best known as an education center, as it is home to Cornell University, Ithaca College, and Tompkins Cortland Community College. These institutions provide important sources of revenue, employment, and cultural amenities for the residents of Tompkins County as well as surrounding counties.

Tompkins County Locater Map

Metropolitan Planning Organization Geographic Structure

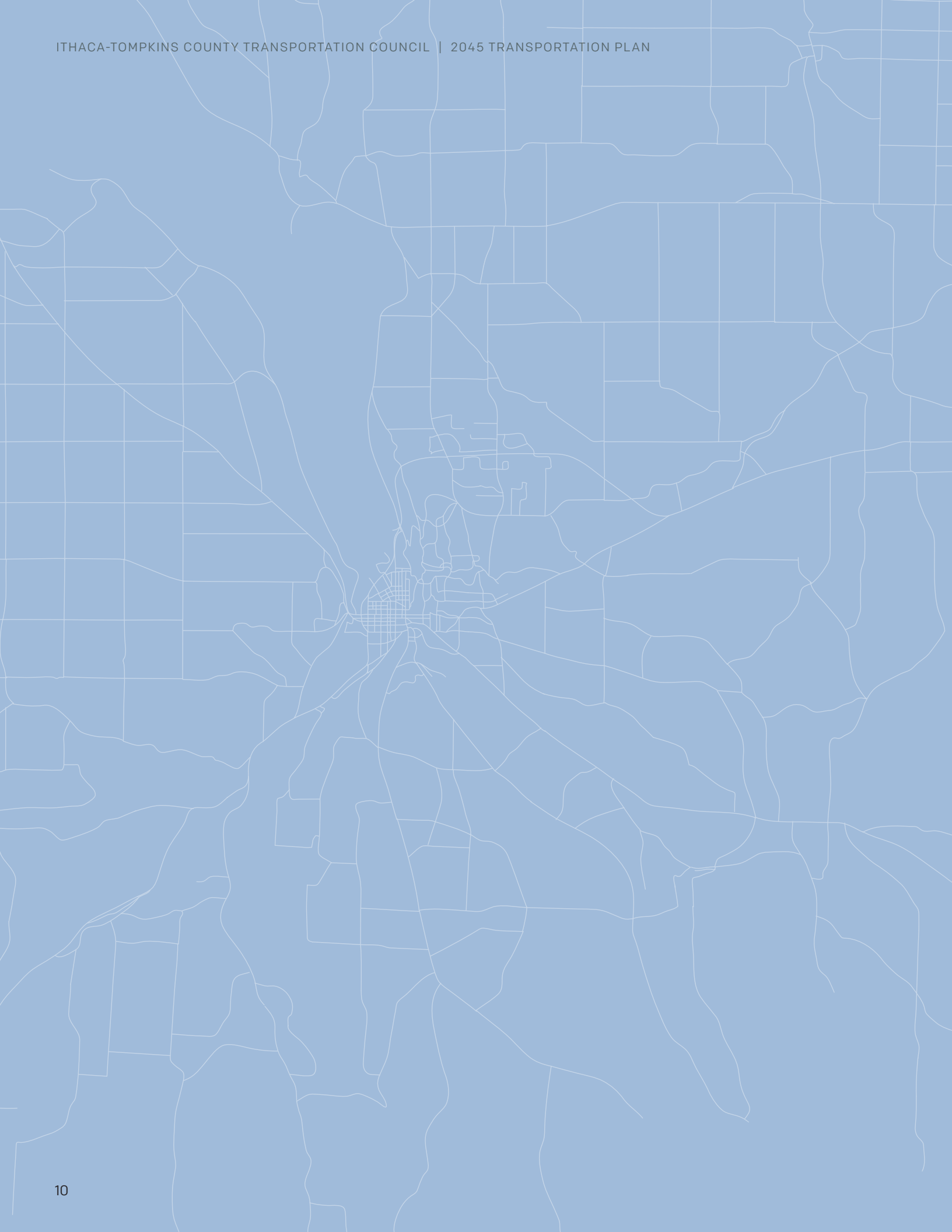
Urbanized Area

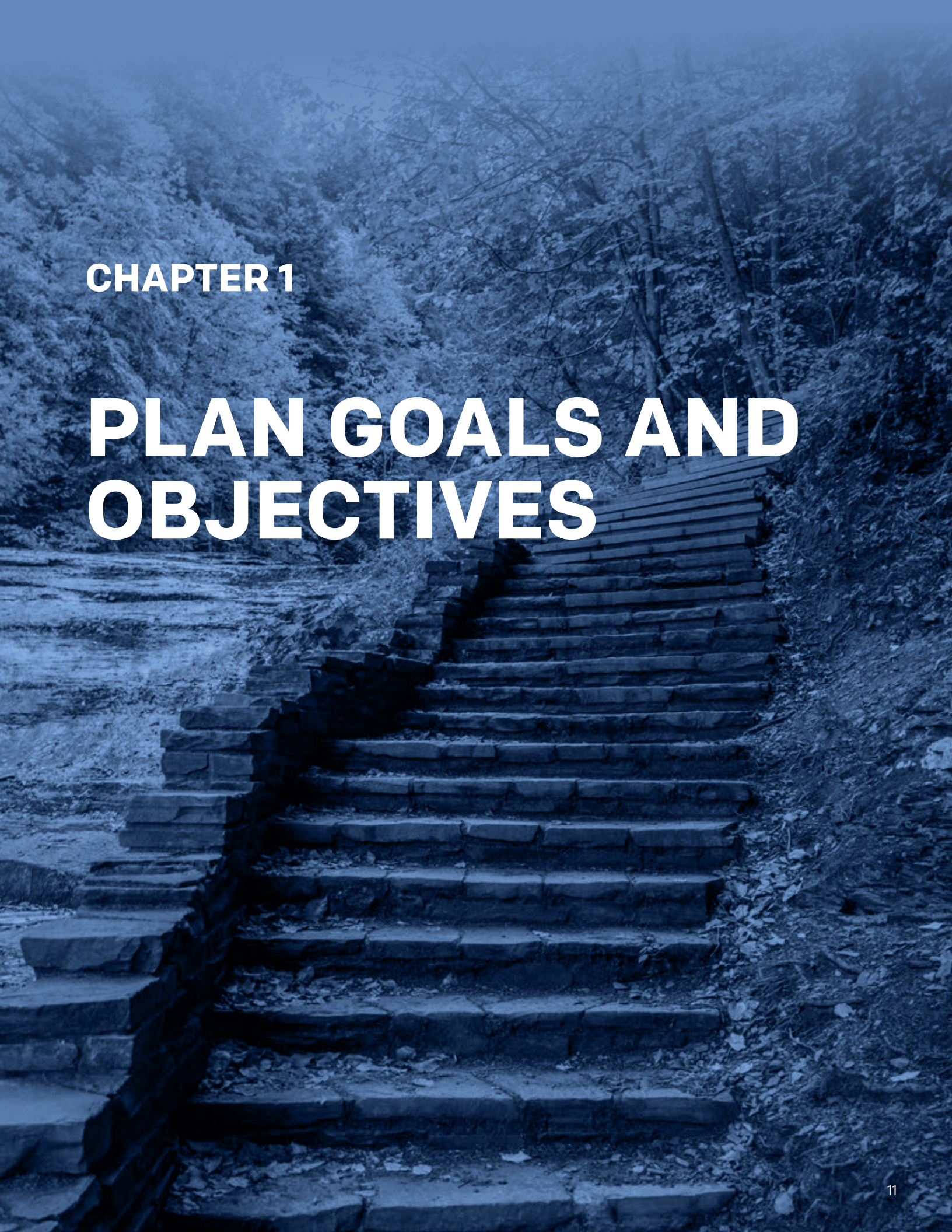
The ITCTC Urbanized Area is a Census designated contiguous urban area with a population greater than 50,000. The area is defined primarily by housing density and the intensity of land uses. In Tompkins County, the Urbanized Area is composed of the City of Ithaca, the Village of Cayuga Heights, the Village of Lansing, most of the Town of Ithaca, and portions of the Towns of Dryden, Lansing and Ulysses.



Metropolitan Planning Area

The Metropolitan Planning Area is the area for which the ITCTC engages in transportation planning. For the ITCTC, the Metropolitan Planning Area is all of Tompkins County. Any section of the planning area that is outside the Urbanized Area described above is considered rural for planning purposes. The urban/rural designation affects eligibility for certain programs and their associated funding sources.





CHAPTER 1

PLAN GOALS AND OBJECTIVES

PLAN GOALS AND OBJECTIVES

SUSTAINABLE ACCESSIBILITY

The 2045 vision for the future of the Tompkins County transportation system continues to embrace the concept of Sustainable Accessibility initially presented in the 2030 plan. This concept expands our vision of transportation, transforming transportation systems into mobility networks that meet the needs of pedestrians, bicyclists, transit users, rail, freight, and motorists while addressing vehicular congestion, equity, energy and environmental concerns. Sustainable Accessibility can be defined as the ability to get to a destination or complete a task in an efficient, convenient, and reliable way, while using technologies and services that minimize environmental impacts, promote economic vitality and ensure equity in the provision of transportation to the community.

The challenge of implementing the vision of Sustainable Accessibility is to identify opportunities and begin to integrate transportation modes (i.e. transit, bikes, walking, cars, car sharing, van pool, trucks, rail, etc.) so they address personal transportation and commercial needs in ways that will enhance our quality of life and promote sustainable growth in Tompkins County. The vision of Sustainable Accessibility will require insight into the social structure as well as the infrastructure of the community so that the enhancements to the transportation system can serve all communities equitably.

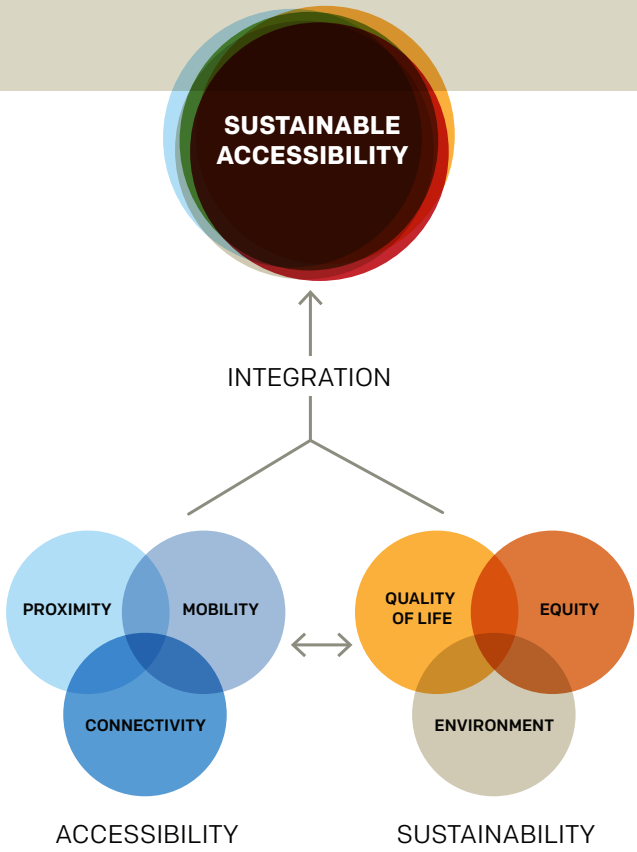
Sustainable Accessibility integrates transportation with land use planning to promote development patterns that reduce dependency on the automobile as the sole source of transportation. With Sustainable Accessibility at its core, the transportation network will integrate multiple modes of transportation so that traveling by transit, walking, bicycling, car share, car pool, etc. becomes as attractive, convenient and cost effective as using a private car. By bringing all modes to bear, the transportation system becomes more efficient and more resilient. A vision of Sustainable Accessibility will also embrace new transportation options, technologies and programs as they emerge.

The components of Sustainable Accessibility affecting accessibility include: Mobility, Proximity and, Connectivity. Environment, Equity and Quality of Life are components of sustainability. The integration of these components contributes to the ultimate goal of achieving a transportation system that is sustainable and resilient.

2045 Long Range Transportation Goals

Overarching goals that pervade all other goals:

- **To improve the safety of the transportation system**
- **To enhance coordination among transportation providers to the benefit and convenience of users**
- **To minimize negative environmental impacts of transportation including: dependency on fossil fuel energy use, emissions, noise pollution and non-point source pollution**
- **To reduce vehicle miles of travel and the number of drive-alone trips**
- **To ensure the equitable availability of mobility options in the community**



Sustainable Accessibility

Goal: To develop a transportation system for Tompkins County that is sustainable, equitable and efficient, resulting in Sustainable Accessibility for all travelers.

The LRTP lays out a process to achieve Sustainable Accessibility that focuses on utilizing transportation resources in a manner that optimizes the choice of modes, minimizes environmental impact and enhances the quality of life of all users. An outcome of this approach is to reduce dependency on the private automobile as the principal mode of transport by expanding the transportation mode choices available to travelers and promoting more transport-efficient land use patterns. This will result in a more resilient transportation system that promotes enhanced mobility and reduces congestion, vulnerability to fuel supply fluctuations, tail pipe emissions, and traffic related deaths and injuries.

Accessibility Components

Mobility

Goal: To promote the implementation of transportation services, programs and projects that enhance mobility.

Mobility refers to the movement of people or goods (freight). Mobility increases as travelers and freight have more transportation mode options and increased convenience to access their destinations. Enhanced coordination between transportation modes also leads to increased mobility. Modern communication and wireless technologies can serve as substitutes for travel and help individuals access their destinations and complete tasks without the need to be physically present. These technologies can be considered to increase mobility by enhancing accessibility.

Connectivity

Goal: To maintain and improve transportation networks to enhance safety, multimodal and intermodal connectivity and facilitate the movement of people and goods.

Connectivity refers to the different transportation networks serving an area and the density of connections between different origins and destinations. A well-connected area has transportation networks with many links, numerous modal options, and minimal service dead-ends. As connectivity increases, travel times decrease and route options and transportation mode options increase, allowing for more direct travel between destinations, and creating a more accessible and resilient system. Connectivity is achieved through networks of infrastructure (i.e. roads & bridges, sidewalks, trails, bicycle routes, transit, etc.) and communications (wireless services, internet access, etc.).

Proximity

Goal: To achieve land development patterns that enable the efficient and equitable provision of multimodal transportation services.

Proximity refers to the location of different trip origins and destinations. Proximity is considered greater in areas with mixed land uses (i.e. residential close to shops and employment) and higher development densities. As proximity increases, travel times decrease and transportation options other than personal car use become more feasible. Increased proximity allows for more efficient use of transit (including fixed-route service, car share and vanpools), bicycling and walking, resulting in a lower-cost, more accessible and resilient transportation system. The relationship between mobility, connectivity, and proximity supports land use settlement patterns that promote compact, mixed use development which can impact physical movement by both shortening travel distances and prompting travelers to use modes other than the automobile, i.e. walking, bicycling, transit, etc.

Coordination of Accessibility Components

Goal: To develop a coordinated transportation system for Tompkins County that is multimodal and seamless, that achieves greater operational efficiencies, and increases the safety and convenience of users.

Increasing coordination between modes achieves greater operational efficiencies and increases the convenience to users. Coordination between modes extends to all aspects of any operation including the provision of single payment forms, seamless intermodal connections, and quality information for customers. Transportation works best when it is customer based and centered on providing ease of access, comfort, safety, reliability and convenience. This goal brings together components of connectivity (networks) and mobility (travel modes and freight) in a dynamic format that seeks to improve efficiency and convenience for users.

Technology and Accessibility

Accessibility includes consideration of technologies such as the internet, wireless networks, etc., that allow users to have access to their destinations and complete their desired tasks remotely. This not only relates to telecommuting, but also the numerous tasks that can be completed via the internet and wireless services such as bank transactions, retail purchases, and other forms of e-commerce.

Also critical are the communication technologies that provide traveler information, trip planning assistance, freight tracking, and facilitate shared transportation and many travel demand management programs.

Sustainability Components

Equity

Goal : To achieve equity in transportation policy and projects that spur fundamental improvements in communities across Tompkins County.

Equity (also called justice or fairness) refers to the balance in the distribution of impacts (benefits and costs) of transportation projects and policies. Transportation planning decisions often have significant equity impacts, and equity concerns often influence planning debates. Accessible, affordable transportation is disproportionately important to low income and minority communities, whether rural or urban. Equity considerations must be part of all transportation policy and project decisions.

Quality of Life

Goal: Develop a transportation system that sustains and enhances the quality of life for Tompkins County residents and visitors.

Quality of life is the degree of well-being felt by an individual or group of people. Unlike standard of living, it is not a tangible concept, and so cannot be measured directly. It is virtually impossible to predict the quality of life of a specific individual, since the combination of attributes that leads one individual to be content is rarely the same for another individual. However, one can assume with some confidence that the higher average level of diet, shelter, safety, as well as freedoms

and rights a general population has, the better overall quality of life it experiences.

Transportation affects quality of life in many ways. Our transportation systems generate various negative impacts - congestion, noise, water quality, air quality, health/safety (crashes) - which can negatively affect quality of life at the street, neighborhood, city or regional level. A transportation system that contributes positively to the quality of life in an area will seek to minimize negative impacts by enhancing the components for Sustainable Accessibility.

Environment

Goal : To work progressively towards a transportation system that will have zero-net negative impact on the environment.

The transportation sector has direct impacts on the environment, including among others tail pipe emissions from fossil fuel based engines, and impacts on water quality from runoff from roads and other impervious asphalt and concrete surfaces. The indirect environmental impacts of transportation are many due to the complexity of systems involved, including networks (roads, rail, etc.) and vehicles (cars, trucks, trains, bicycles). A life cycle assessment (LCA, also known as life cycle analysis and cradle-to-grave analysis) of the environmental impacts from manufacturing, construction, use, and on to eventual disposal, would show massive environmental impacts from the transportation sector. Implementation of Sustainable Accessibility minimizes these direct and indirect negative environmental impacts through the reduction in the number of motor vehicles and vehicle miles traveled inherent in a more efficient and integrated transportation system.

ACTION PLAN FOR SUSTAINABLE ACCESSIBILITY

Transportation touches nearly all of people's daily activities. Efforts should be made to expand the number of options available to people for safe, efficient, and healthy transportation. The Sustainable Accessibility goals included in this plan, seek to expand the variety of effective options to meet the community travel needs, including biking on dedicated bicycling facilities, walking on sidewalks, hopping on a bus, connecting for a shared ride, driving electric or hybrid cars, as well as driving on safe roads. To make sure that "driving alone" is not always the best transportation solution to get somewhere, it is important to make it easy, safe and even fun, for people to choose other more sustainable means to move from place to place.

Besides expanding choice, broadening transportation alternatives can result in a healthier population, less traffic congestion and emissions, fewer crashes, and fewer environmental impacts. A sustainable transportation system seeks to minimize negative impacts while providing a good level of service to all in the community. This will require insight into the social structure of the community, as well as the infrastructure components, to ensure that enhancements to the transportation system service all communities equitably. Much is being done in the transportation sector to bring innovative technologies into use. Numerous communication technology applications are at different levels of development and implementation. Vehicle and infrastructure innovations are constantly being developed. The ITCTC and its partners will monitor and take advantage of new technologies and program concepts that can serve the Tompkins County area.

Tompkins County has a long history of multijurisdictional collaboration in transportation. For example, TCAT, Gadabout, car sharing and bike sharing are four important ongoing programs that were developed through collaboration by different parties.

Ongoing initiatives with higher education institutions, human service agencies, health and transportation advocates continue to energize transportation planning and program implementation in support of many of the goals of the LRTP.

The LRTP has been developed in coordination with the Tompkins County Comprehensive Plan. (www.tompkinscountyny.gov/planning/comprehensive-plan).

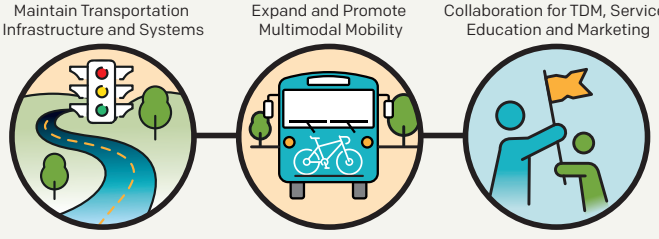
These documents share data and have policies, objectives and suggested actions based on similar fundamental goals.

The key implementation areas listed below, when taken together, will best and most realistically implement the Sustainable Accessibility goals of the Long Range Transportation Plan.

- **Maintain Existing Critical Transportation Infrastructure and Systems**
  - Roads
  - Bridges
  - Transit
  - Active transportation – trails, bicycle lanes, etc.
  - Operating systems – traffic lights, signs, etc.
- **Expand and Promote Multimodal Mobility Options and Integration**
  - Active transportation
  - Transit
  - Shared transportation
  - New technologies and programs
- **Collaboration**
  - Transportation Demand Management (TDM)
  - Mobility as a Service/Mobility Management
  - Coordination of Transportation Services
  - Education/Outreach
  - Marketing

The different aspects of the Action Plan are explored throughout the LRTP.

LRTP ACTION PLAN



FEDERAL REQUIREMENTS

Background

Pursuant to federal transportation planning requirements, states, Metropolitan Planning Organizations (MPOs), and transit providers must employ a transportation performance management approach in carrying out their federally required planning and programming activities. Title 23 Section 150(b) of the United States Code [23 USC §150(b)] includes seven national performance goals for the Federal-Aid Highway Program and Chapter 49 Section 5301 of the United States Code [49 USC §5301] specifies general purposes of Federal-Aid Transit Program. Combined, these include:

Safety: To achieve a significant reduction in traffic fatalities and serious injuries on all public roads and public transportation systems.

Condition: To maintain the highway infrastructure and transit capital assets (e.g., rolling stock, equipment, infrastructure, and facilities) in a state of good repair.

Congestion Reduction: To achieve a significant reduction in congestion on the National Highway System (NHS).

System Reliability: To improve the efficiency of the surface transportation system.

Freight Movement and Economic Vitality: To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.

Environmental Sustainability: To enhance the performance of the transportation system while protecting and enhancing the natural environment.

Reduced Project Delivery Delays: To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

MPOs must promote **continuing, cooperative, and comprehensive planning** that improves the performance of the transportation network.

USDOT established several performance measures that states, MPOs, and public transportation providers must use to conduct a performance-based approach to transportation decision making to support the national goals described above. The performance measures address highway safety, pavement and bridge condition, passenger and freight travel reliability, congestion and mobile source emissions, transit asset condition, and transit safety.

In addition, federal legislation stipulates that "the metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the following factors":

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;

2. Increase the safety of the transportation system for motorized and non-motorized users;

3. Increase the security of the transportation system for motorized and non-motorized users;

4. Increase accessibility and mobility of people and freight;

5. 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;

6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;

7. Promote efficient system management and operation;

8. Emphasize the preservation of the existing transportation system;

9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and

10. Enhance travel and tourism.

The Sustainable Accessibility vision of this plan presents a structure for Tompkins County that is supportive of the seven national goals and ten planning factors. Federal regulations require the use of a performance-based approach in the long-range transportation plan that will support the seven national goals. Performance-based planning and programming (PBPP) refers to the application of performance management within the planning and programming processes of transportation agencies to achieve desired performance outcomes for the multimodal transportation system. Under this directive, plan objectives are specific, measurable statements that support achievement of goals. Performance Measures are used to support objectives and serve as a basis for comparing alternative improvement strategies (investment and policy approaches) and for tracking results over time.

System Performance Report

The Ithaca-Tompkins County Transportation Council's 2045 Long-Range Transportation Plan was adopted on December 17, 2024. LRTPs must include performance targets associated with the following FHWA and FTA performance measures rulemakings:

- Highway Safety Improvement Program (HSIP) and Highway Safety (PM1)
- Transit Asset Management
- Pavement and Bridge Condition (PM2)
- System Performance/Freight/Congestion Mitigation & Air Quality Improvement (CMAQ) Program (PM3)
- Transit Safety

MPOs must also include a system performance report in the LRTP that describes the condition and performance of the transportation system with respect to required performance targets, and reports on progress achieved in meeting the targets compared to baseline data and previous system performance reports. This portion of the adopted/amended LRTP meets these requirements.

Highway Safety (PM1)

The Federal Highway Administration (FHWA) Highway Safety (PM1) rule established five performance measures for safety on all public roads.

The performance measures are five-year rolling averages:

- Number of Fatalities
- Rate of Fatalities per 100M Vehicle Miles Traveled (VMT)
- Number of Serious Injuries
- Rate of Serious Injuries per 100M VMT
- Number of Nonmotorized Fatalities and Serious Injuries

Table 1. Statewide Safety Performance, 2023 And 2024 Targets

	2017	2018	2019	2020	2021	2023 Targets	2024 Targets
Number of Fatalities	1,085	1,038	1,016	998	1,021	988.2	1,016.1
Rate of Fatalities per 100 Million VMT	0.881	0.844	0.827	0.844	0.890	0.836	0.886
Number of Serious Injuries	11,242	11,119	11,287	11,198	11,146	11,086.2	11,089.9
Rate of Serious Injuries per 100M VMT	9.127	9.041	9.176	9.431	9.654	9.337	9.606
Number of Combined Non-Motorized Fatalities and Non-Motorized Serious Injuries	2,731	2,638	2,672	2,660	2,642	2,633.4	2,628.4

Baseline Safety Conditions and Performance Targets

Table 1 presents the 2023 and 2024 targets, as well as the last five years for which final data is available. To be consistent with the performance measures, all data shown below is a five-year rolling average. The Ithaca-Tompkins County Transportation Council agreed to support the New York State Department of Transportation (NYSDOT) statewide 2024 targets on December 19, 2023 via Resolution 2023-09: Supporting NYSDOT's 2024 Targets for Safety Performance Measures.

Description of Progress

As shown in Table 1, the five-year rolling average for number of fatalities, number of serious injuries, and number of non-motorized fatalities and serious injuries in 2021 is lower than 2017. However, the rate of fatalities and serious injuries in 2021 is higher than 2017. FHWA annually completes an assessment of progress toward achieving safety targets for each state. A state makes significant progress toward its safety targets when at least four of the five targets have been met, or the actual outcome was better than the baseline performance. If a state has not met or made significant progress toward meeting performance targets, the State DOT must comply with 23 U.S.C. 148(i) for the subsequent federal fiscal year. This requires minimum investments in highway safety projects through the Highway Safety Improvement Program (HSIP) and submission of an HSIP Implementation Report.

The 2045 LRTP addresses safety needs, strategies, and programs within the ITCTC and safety is identified as an overarching goal of the plan. The ITCTC Objectives and Performance Measures table at the end of this chapter shows a variety of safety measures that have been tracked since 2014. Safety is a primary consideration in the selection of projects to be included in the 5-year Transportation Improvement Program of surface transportation projects funded with through the metropolitan planning process. In addition, the ITCTC prepares crash data summary reports as data becomes available and communicates analysis results to partner agencies and the community as whole.

Transit Asset Management

The Federal Transit Administration (FTA) Transit Asset Management (TAM) rule established the transit asset performance measures presented in Table 2.

FTA defines two tiers of public transportation providers based on number of vehicles and mode parameters. Tier I transit agencies, which are generally larger providers, establish their own TAM targets, while Tier II providers, generally smaller agencies, may participate in a group plan where targets are established by a plan sponsor (NYSDOT) for the entire group. NYSDOT's 2022 Group TAM Plan is available at https://www.dot.ny.gov/divisions/policy-and-strategy/public-trans-respository/NYSDOT%20%20Group%20TAM%20Plan%20July%2022_v7_Final.pdf.

Table 2. FTA TAM Performance Measures

ASSET CATEGORY	PERFORMANCE MEASURES AND ASSET CLASS
Rolling Stock	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their Useful Life Benchmark (ULB)
Equipment	Percentage of non-revenue, support-service and maintenance vehicles within a particular asset class that have met or exceeded their ULB
Infrastructure	Percentage of track segments with performance restrictions
Facilities	Percentage of facilities within an asset class rated below condition 3.0 on the Transit Economic Requirements Model (TERM) scale

The ITCTC area has a two Tier II providers operating in the region: Tompkins Consolidated Area Transit (TCAT) and Gadabout Transportation Services, Inc. (Gadabout). Gadabout is the paratransit provider for TCAT. Gadabout is included in the group TAM plan developed by NYSDOT; TCAT developed its own TAM Plan and establishes its TAM targets.

Baseline Conditions and Performance Targets

Table 3 presents the baseline performance/ conditions and the 2025 targets for transit assets in the ITCTC planning area. TCAT set the transit asset targets listed in Table 3 on April 2, 2021. The ITCTC agreed to support these transit asset targets on June 19, 2018 via Resolution 18-03: *Endorsing the Targets Established by TCAT for the State of Good Repair Performance Measures for Capital Assets.*

Description of Progress

The LRTP reflects the goals, objectives, performance measures, and targets as they are described in other public transportation plans and processes, including TCAT's Tier II Transit Asset Management Plan, and the current ITCTC 2045 LRTP. The LRTP strongly supports a transportation system that helps reduce car dependency. An effective public transportation system is essential to advance this position. The mobility, connectivity, equity and quality of life goals in the LRTP are particularly supportive and dependent of public transportation. The Objectives and Measures table at the end of this chapter includes transit measures under the System Reliability section.

Table 3. Baseline Transit Asset Performance/Condition and Targets

ASSET CATEGORY: PERFORMANCE MEASURE	ASSET CLASS	USEFUL LIFE BENCHMARK	BASELINE CONDITION	2025 TARGET
Rolling Stock				
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	BUS	X	—	20%
	CUTAWAY BUS	X	—	20%
Equipment				
Age - % of non-revenue vehicles within a particular asset class that have met or exceeded their ULB	Non-Revenue/Service Automobile	X	—	25%
	Trucks and other Rubber Tire Vehicles	X	—	25%
	Maintenance Equipment	X	—	20%
	Other (On-bus equipment)	X	—	20%
Facilities				
Condition - % of facilities with a condition rating below 3.0 on the FTA TERM Scale	Administration	N/A	—	10%
	Maintenance	N/A	—	10%
	Passenger Facilities	N/A	—	10%

Pavement and Bridge Condition Measures (PM2)

The FHWA Pavement and Bridge Condition rules (PM2) established the following six performance measures for all bridges and pavements on the National Highway System (NHS):

- Percent of Interstate pavements in good condition;
- Percent of Interstate pavements in poor condition;
- Percent of non-Interstate NHS pavements in good condition;
- Percent of non-Interstate NHS pavements in poor condition;
- Percent of NHS bridges (by deck area) classified as in good condition; and
- Percent of NHS bridges (by deck area) classified as in poor condition.

NYSDOT Pavement and Bridge Condition Baseline Performance and Established Targets

NYSDOT established statewide PM2 targets for 2023 and 2025 on December 16, 2022. The ITCTC agreed to support NYSDOT's PM2 performance targets on April 18, 2023 via Resolution 23-04: Supporting New York State Department Of Transportation's Updated Targets For Performance Measures Related To Bridge And Pavement Conditions and System and Freight Performance. By adopting NYSDOT's targets, the ITCTC agrees to plan and program projects that help NYSDOT achieve these targets. Table 4 presents recent performance for each PM2 measure for New York as well as the 2023 and 2025 statewide targets established by NYSDOT.

The ITCTC planning area includes two roadways in the National Highway System (NHS): all of State Route 13 through Tompkins County, and State Route 79 from the City of Ithaca, southeast to the Tioga County line. These include 26.69 center lane miles urban and 28.67 miles rural sections. NYSDOT and the City of Ithaca have active pavement and bridge maintenance initiatives along the NHS corridors. The SR-79/E. State Street approach to the center of the City of Ithaca was reconstructed in the early 2020's, including reconstruction of a critical retaining wall; while SR-13/Meadow St./Fulton St. and other connector roads through the City of Ithaca are scheduled for repaving/reconstruction in 2025. Additionally, a corridor planning study was conducted for SR-13 northeast of Ithaca from Warren Rd to the Village of Dryden (see https://www.tompkinscountyny.gov/planning/transportation-choicesrt13corridor).

On the NY Interstate system, the percentage of pavement in good condition decreased from 2019 to 2021, while pavement in poor condition held steady. The statewide targets for 2023 and 2025 reflect anticipated improvements in Interstate pavement in good condition and a small increase in the percentage in poor condition. On the non-Interstate NHS system, pavement in good condition decreased slightly from 2017 to 2021, while pavement in poor condition decreased.

NYSDOT has made positive progress in increasing the percent of NHS bridge deck area in good condition from 2017 to 2021, from 22.8 percent to 25.3 percent. The percent in poor condition rose slightly over the same time period.

The ITCTC 2045 LRTP addresses preservation of the transportation system and identifies infrastructure needs within the Ithaca/Tompkins region and provides funding for targeted pavement and bridge condition improvements. The Action Plan for implementation of the Sustainable Accessibility goals of the LRTP list as a key implementation area to "maintain existing critical transportation infrastructure and systems". Existing roads and bridges are essential components to achieving goals of Mobility and Connectivity. The bulk of funding included in the ITCTC TIP goes to maintenance of road and bridge infrastructure.

Table 4. Pavement and Bridge Condition (PM2) Statewide Performance and Targets

PERFORMANCE MEASURE	2017 BASELINE	2019	2021	2023 TARGET	2025 TARGET
Percent of Interstate pavements in good condition	N/A*	51.1%	45.3%	53.2%	54.3%
Percent of Interstate pavements in poor condition	N/A*	1.1%	1.1%	1.4%	1.7%
Percent of non-Interstate NHS pavements in good condition	20.4%	13.4%	18.9%	22.3%	20.7%
Percent of non-Interstate NHS pavements in poor condition	8.3%	7.5%	7.6%	9.3%	10.9%
Percent of NHS bridges (by deck area) in good condition	22.8%	26.0%	25.3%	24.1%	21.1%
Percent of NHS bridges (by deck area) in poor condition	10.6%	9.6%	11.3%	12.5%	12.8%

* FHWA did not require states to collect and report baseline performance for the Interstate pavement measures.

In October 2024 NYSDOT will report pavement and bridge performance for 2022-2023 to FHWA, as well as progress toward achieving the 2025 targets. Future ITCTC LRTP System Performance Reports will incorporate this information.

System Performance, Freight, and Congestion, Mitigation & Air Quality Improvement Program Measures (PM3)

The FHWA System Performance, Freight, and Congestion, Mitigation and Air Quality Improvement Program (CMAQ) Performance Measures Final rule (PM3) established the following six performance measures:

For the National Highway Performance Program (NHPP)

1. Percent of person-miles on the Interstate system that are reliable;
2. Percent of person-miles on the non-Interstate NHS that are reliable;

For the National Highway Freight Program (NHFP)

3. Truck Travel Time Reliability Index (TTTR);

For the CMAQ Program

4. Annual hours of peak hour excessive delay per capita (PHED);
5. Percent of non-single occupant vehicle travel (Non-SOV); and
6. Cumulative two-year and four-year reduction of on-road mobile source emissions for CMAQ funded projects (CMAQ Emission Reduction).

The three CMAQ performance measures listed above are applicable only in areas that do not attain or have only recently attained national air quality standards. The Ithaca-Tompkins County Transportation Council is not subject to establishing targets for these performance measures.

NYSDOT PM3 Baseline Performance and Established Targets

NYSDOT established PM3 targets for 2023 and 2025 on December 16, 2022. The ITCTC agreed to support NYSDOT's PM3 performance targets on April 18, 2023 via Resolution 23-04: Supporting New York State Department of Transportation's Updated Targets For Performance Measures Related To Bridge And Pavement Conditions and System and Freight Performance. By adopting NYSDOT's targets, the ITCTC agrees to plan and program projects that help NYSDOT achieve the State's targets.

Table 5 presents recent performance for the applicable PM3 measures as well as the 2023 and 2025 targets established by NYSDOT.

Table 5. System Performance and Freight (PM3) Statewide Performance and Targets

PERFORMANCE MEASURE	2017 BASELINE	2019	2021	2023 TARGET	2025 TARGET
Percent of person-miles on the Interstate system that are reliable	83.2%	78.8%	82.2%	75.0%	75.0%
Percent of person-miles on the non-Interstate NHS that are reliable	N/A	80.3%	85.7%	70.0%	70.0%
Truck Travel Time Reliability index (TTTR)	1.39	1.47	1.38	2.00	2.00

The ITCTC planning area includes two roadways in the National Highway System (NHS): all of State Route 13 through Tompkins County, and State Route 79 from the City of Ithaca, southeast to the Tioga County line. These include 26.69 center lane miles urban and 28.67 miles rural sections. There are not interstate system roadways in Tompkins County. The ITCTC recognizes the importance of the NHS roadways as main commuter and freight routes and as connectors to the nearest interstate, I-81, at the City of Cortland and the Village of Whitney Point. The ITCTC supports NYSDOTS efforts to maintain these roadways to ensure they maintain adequate system performance.

As shown in Table 5, the percent of person-miles on the Interstate system that are reliable decreased slightly from the 2017 baseline to 2021. For the non-Interstate NHS, a 2017 baseline was not required, however, performance increased notably from 2019 to 2021. TTTR performance decreased from 2017 to 2019, but then improved in 2021, remaining essentially flat over the 2017-2021 period.

The ITCTC 2045 LRTP addresses system performance and freight reliability, identifies infrastructure needs within the Ithaca/Tompkins region, and provides funding for targeted improvements. A corridor planning study was completed in 2020 for SR-13 northeast of Ithaca from Warren Rd to the Village of Dryden (see https://www.tompkinscountyny.gov/planning/transportation-choicesrt13corridor). This is the busiest section of road in Tompkins County and congestion threatens to impact system performance. The ITCTC will continue to work with local governments and NYSDOT to implement recommendations of the corridor plan in order to safeguard the functionality of this important roadway.

In October 2024, NYSDOT will report system performance results for 2022-2023 to FHWA, as well as progress toward achieving the 2025 targets. Future ITCTC System Performance Reports will incorporate this information.

Transit Safety

The FTA Public Transportation Agency Safety Plan (PTSAP) rule applies to certain providers of public transportation systems. Providers must develop and implement a PTASP that includes performance targets for the following performance measures:

- Total number of reportable fatalities by mode.
- Reportable fatality rate per total vehicle revenue miles by mode.
- Total number of reportable injuries by mode.
- Rate of reportable injuries per total vehicle revenue miles by mode.
- Total number of reportable safety events by mode.
- Rate of reportable safety events per total vehicle revenue miles by mode.
- System reliability – mean distance between major mechanical failures by mode.

When the public transportation provider establishes targets, it must make the targets available to MPOs to aid in the planning process. MPOs have 180 days after receipt of the initial PTASP targets to establish

transit safety targets for the MPO planning area. The MPO must reflect those targets in any LRTP and TIP updated on or after July 20, 2021, and revisits the MPO targets with each LRTP update.

The PTASP rule applies to all operators of public transportation that are a recipient or sub-recipient of FTA Urbanized Area Formula Grant Program funds under 49 U.S.C. Section 5307, or that operate a rail transit system that is subject to FTA's State Safety Oversight Program. Agencies that operate passenger ferries that are regulated by the United States Coast Guard or rail service that is regulated by the Federal Railroad Administration are not required to develop a PTASP for those modes of service.

Transit Safety Targets

The following transit provider is subject to the PTASP rule operate in the ITCTC region: Tompkins Consolidated Area Transit (TCAT).

Table 6 presents the transit safety targets established by the provider in the ITCTC planning area. TCAT established the transit safety targets on November 12, 2020.

The ITCTC agreed to support TCAT's transit safety targets on September 14, 2021 Resolution 21-04: Supporting Tompkins Consolidated Area Transit's Transit Safety Targets for Transit Safety Performance Measure, thus agreeing to plan and program projects that are anticipated to make progress toward achieving the targets.

Table 6. Transit Safety Performance Targets for Tompkins Consolidated Area Transit, 2020

	Fixed-route/ Deviated Fixed-route	Paratransit
Fatalities (total)	0	0
Fatalities (per 100k VRM)	0	0
Injuries (total)	3	0
Injuries (per 100k VRM)	0.18	0
Safety Events (total)	5	0
Safety Events (per 100k VRM)	0.30	0
System Failures	71	0
System Reliability (Failures/VRM)	4.20	0

Description of Progress

The LRTP directly reflects the goals, objectives, performance measures, and targets as they are described in other public transportation plans and processes, including TCAT's PTASP.

The 2045 LRTP addresses safety needs, strategies, and programs within the ITCTC and safety is identified as an overarching goal of the plan. In addition, mobility and connectivity goals of the plan are supportive of public transportation as an essential component of the Sustainable Accessibility approach of the LRTP. Throughout the LRTP public transportation is highlighted for its importance in achieving mobility, environmental and equity goals within the transportation sector. Inherent in all is the need for safety in the provision of public transport.

The transit safety performance measures are new. Performance for each measure has only recently been assessed and initial targets have been developed. Accordingly, this System Performance Report highlights the initial targets. Future system performance reports will discuss transit safety performance and progress towards meeting the targets over time.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ITCTC OBJECTIVES AND PERFORMANCE MEASURES

The ITCTC has been tracking a series of performance measures since 2014. They were designed to provide a 'local' measure of progress towards achieving the seven Federal highway program performance goals and are complementary to the information presented in the Systems Performance Report above. The 'local' measures are included in the ITCTC Objectives and Measures Table below and on the next page. The source of the data is referenced under the 'Data Source' column and in the notes following the table.

Trending in a negative direction compared to baseline

Trending in a positive direction to achieving goals compared to baseline

* latest TREND - compared to baseline

ITCTC OBJECTIVES AND PERFORMANCE MEASURES

FACTOR/OBJECTIVE	MEASURE	DATA SOURCE	BASELINE	TREND 1	TREND 2	TREND 3	TREND 4	TREND*
SAFETY & SECURITY								
1. Progressively reduce the number of motor vehicle crash fatalities and serious injuries in Tompkins County.								
CRASH FATALITIES	Number of average annual crash fatalities in the last five years	FARS	2009-2013 = 47 5 year avg = **9.4**	2010-2014 = **9.8** fatalities	2011-2015 = **10.0** fatalities	2012-2016 = **12.0** fatalities	2013-2017 = **10.8** fatalities	
CRASH FATALITY RATE	Number of average annual crash fatalities per 100MVMT in the last five years	FARS	2009-2013 = **1.24** fatalities	2010-2014 = **1.32** fatalities	2011-2015 = **1.36** fatalities	2012-2016 = **1.65** fatalities	2013-2017 **1.50** fatalities	
CRASH SEVERE INJURIES	Number of average annual serious injuries in the last five years	ALIS	Serious Injuries: 2009-2013 = 564; 5 year avg = **112.8**	2010-2014 = **118.8** ser inj	2010-2015 = **115.8** ser inj	2012-2016 = **126.4** ser inj	2013-2017 = **126** ser inj	
CRASH SEVERE INJURY RATE	Number of average annual serious injuries per 100MVMT in the last five years	ALIS	Serious Injuries: 2009-2013 = **14.83**	2010-2014 = **15.97** ser inj	2010-2014 = **15.74** ser inj	2012-2016 = **17.41** ser inj	2013-2017 = **17.46** ser inj	
2. Progressively reduce the number of annual bicycle and pedestrian crashes and the number of crashes with serious injuries in Tompkins County.								
BICYCLE / PEDESTRIAN	Number of average annual bicycle/ pedestrian crashes in the last five years	ALIS	2009-2013 = 290 5 year avg = **57.8** bike/ped	2010-2014 = **57.8** bike/ped	2011-2015 = **58.6** bike/ped	2012-2016 = **59.0** bike/ped	2013-2017 = **55.6** bike/ped	
BICYCLE / PEDESTRIAN	Number of average annual bicycle/ pedestrian crashes with serious injuries in the last five years	ALIS	Bike-Ped serious Injuries: 2009-13=46; 5 year avg = **11.4**	2010-2014 = **11.0** bike/ped	2010-2014 = **10.6** bike/ped	2011-2015 = **9.8** bike/ped	2012-2016 = **10.2** bike/ped	
3. Progressively reduce the number of annual bicycle and/or pedestrian fatalities to zero in 2025.								
BICYCLE / PEDESTRIAN	Number of average annual bicycle/ pedestrian fatalities	ALIS	Bike-Ped fatalities: 2009-2013 = 2; 5 year avg = **0.4**	2010-2014 = **.06** bike/ped	2011-2015 = **1.2** bike/ped	2012-2016 = **2.0** bike/ped	*2013-2017 = **2.0** bike/ped	
INFRASTRUCTURE CONDITION (SYSTEM CONDITION)							* Bridge rating methodology change	
4. Progressively reduce the number of structurally deficient bridges in Tompkins County.								
BRIDGE CONDITION	Number of structurally deficient bridges	NYSDOT	2014 = **80** bridges	2015 = **78** bridges	2016 = **83** bridges	2017 = **84** bridges	2018 = **55** bridges	
5. Progressively reduce the miles of state roads in 'poor' condition in Tompkins County.								
STATE ROAD PAVEMENT CONDITION	Number of miles of State roads in Tompkins County in 'poor' condition	NYSDOT	2012 = **87.7** lane miles	2013 = **76.9** lane miles	2014 = **62.3** lane miles	2015 = **82.1** lane miles	2016 = **93.7** lane miles	

Continued on next page.

FACTOR/OBJECTIVE	MEASURE	DATA SOURCE	BASELINE	TREND 1	TREND 2	TREND 3	TREND 4	TREND
CONGESTION REDUCTION (SYSTEM PERFORMANCE)								
6. Manage congestion to maintain adequate system performance on the National Highway System (NHS) roads (SR-13 and SR-79).								
CONGESTION	Number of miles of congested NHS roads – miles >60% volume-to-capacity (VOC)	Travel Demand Model + Census CTPP	2012 = **13.69** miles				2018 = **15.61** miles	
SYSTEM RELIABILITY (ACCESSIBILITY/PLACE MAKING)								
7. Progressively increase the provision and access to multiple transportation options.								
TRANSIT SERVICE	TCAT: total revenue service hours	TCAT	2013 = **120,663** hours	2014 = **120,657** hours	2015 = **121,193** hours	2016 = **122,624** hours	2017 = **121,630** hours	
	TCAT: rides per revenue hour	TCAT	2013 = **36.4** rides/rev hr	2014 = **35.6** rides/rev hr	2015 = **34.5** rides/ rev hr	2016 = **32.8** rides/ rev hr	2017 = **32.8** rides/ rev hr	
	TCAT: annual number of bicycles on buses	TCAT	2013 = **33,543** bikes	2014 = **34,024** bikes	2015 = **34,990** bikes	2016 = **33,891** bikes	2017 = **30,947** bikes	
BICYCLE/PEDESTRIAN FACILITIES	Miles of multi-use trails	ITCTC + Municipalities	2014 = **14.03** miles	2015 = **17.14** miles	2016 = **27.47** miles		2019 = **29.63** miles	
BICYCLE/PEDESTRIAN FACILITIES	Miles of on-road bicycle travel dedicated facilities	ITCTC + City + Cornell	2014 = **5.287** miles	2015 = **6.398** miles	2016 = **6.648** miles	2017 = **6.648** miles	2019 = **6.773** miles	
TRANSIT PROXIMITY	% of population living within 1/2 mile of transit with at least hourly bus service	ITCTC + Census CTPP	2012 = **52.11%**					
COMPLETE STREETS	Miles of "complete streets" (bus, bike and pedestrian facilities)	ITCTC + Municipalities	2014 = **9.255** miles	2015 = **10.558** miles	2016 = **10.937** miles		2019 = **11.650** miles	
ENVIRONMENTAL SUSTAINABILITY (CLIMATE CHANGE / ENERGY USE)								
8. Progressively reduce the environmental impact associated with the transportation sector.								
VEHICLE MILES TRAVELED	Annual Vehicle Miles Traveled (VMT) per capita	TDM + Census CTPP	2010 = **7,179.0** miles traveled per capita (16yrs +)	2012 = **7,062.3** miles traveled per capita (16yrs +)	2014 = **6,939.4** miles traveled per capita (16yrs +)	2016 = **7,270.4** miles traveled per capita (16yrs +)	2018 = **7,161.6** miles traveled per capita (16yrs +)	
CARBON DIOXIDE	Metric Tons of system-wide carbon dioxide emitted	TDM + VERPAT	2015 = **643,960,888.3** CO2 GM/DAY					
LAND USE/REDEVELOPMENT	% of population located in the urbanized areas and villages	Census ACS	2000 = **58.4%**	2010 5 = **56.8%**		2016 5 = **56.6%**		
VEHICLES PER HOUSEHOLD	Number of personal vehicles per household / number of households	Census ACS	2010 = **1.577** vehicles household	2014 5 = **1.514** vehicles/HH	2015 5 = **1.505** vehicles/HH	2016 5 = **1.517** vehicles/HH	2017 5 = **1.472** vehicles/HH	
REDUCED PROJECT DELIVERY DELAYS								
9. Working with Federal, State and local partners, reduce the amount of time it takes for projects to advance to implementation.								
YEARS FROM TIP INCLUSION TO PROJECT FINAL PHASE OBLIGATION	Average number of years between first inclusion in the TIP and funds obligated for the final phase of the project - usually construction and construction inspection - for previous 5 year period	ITCTC, NYSDOT & Local Project Sponsors	2010-2014 = **53** months (4.4 years)	2011-2015 = **32** months (2.6 years)	2012-2016 = **30** months (2.5 years)	2013-2017= **44** months (3.66 years)	2015-2019= **45** months (3.7 years)	

ACRONYMS

FARS: Fatal Accident Reporting System –Federal
ALIS: Accident Location Information System – NYS
NYSDOT: New York State Dept of Transportation
Census CTPP: Census Transportation Planning Package-Census transportation data
TCAT: Tompkins Consolidated Area Transport
ITCTC: Ithaca-Tompkins County Transportation Council
Census ACS: Census American Community Survey
VERPAT: VisionEval Rapid Policy Assessment Tool - land use and transportation computer simulation model

CHAPTER 2

TRANSPORTATION DEMAND OVERVIEW

TRANSPORTATION DEMAND OVERVIEW

INTRODUCTION

The purpose of this chapter is to provide a "snapshot" of demographic, economic and travel characteristics that affect the transportation system. Charts and tables use the latest available data. In most cases, the 2020 Census, 2022 American Community Service, NYSDOT and Replica data sets were used. Other sources are identified where used. The principal factors considered are population characteristics, travel patterns, and employment and economic characteristics.

DEMOGRAPHIC CHARACTERISTICS

Summary of the Impacts of Population Factors on Transportation

- Increasing population will continue to place increased demand for transportation services and capacity.
- As the area becomes more urbanized, the travel patterns and behaviors of its residents will continue to change. Urban areas offer the greatest opportunities to meet transportation needs with a variety of modes of transportation.
- The population density map displays how the distribution of people can be correlated to several important community resources: the location of the major employment centers (e.g., Cornell University, Ithaca College, the Central Business District (CBD), and the northeast Ithaca industrial corridor); the location of sanitary sewer and water service areas; and the ease and availability of transportation services/infrastructure.

COLLEGE TOWN EFFECT

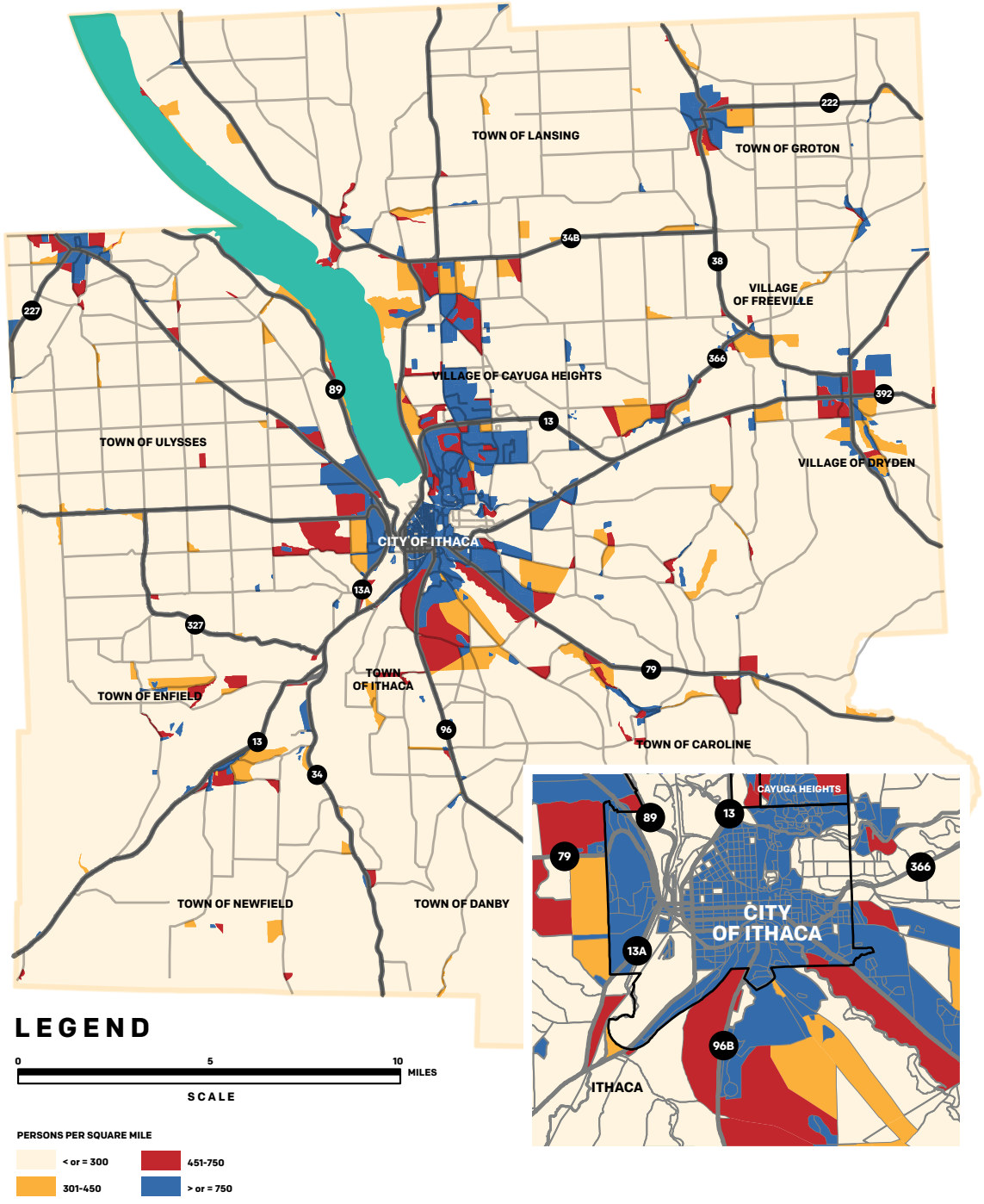
Tompkins County has a substantial college student population of approximately 33,000. The bulk of the students attend Cornell University and Ithaca College, both located within the Ithaca urban area. A third institution, Tompkins-Cortland Community College is located near the Village of Dryden.

Cornell University is the largest employer in Tompkins County. Higher education institutions comprised the largest employment sectors in the local economy.

The impact of college students making up approximately one-third of the population affects many areas of transportation planning. Census figures, travel patterns, mode choices, congestion cycles are all affected by the concentration of students.

Many of these students are year-round residents, but most reside in Tompkins County only during the school year. Therefore, they create a significant seasonal impact in the demand for services including transportation. ITCTC staff and other transportation professionals in the county are aware of this dynamic. Transportation studies and data gathering efforts are routinely coordinated with the academic schedules to capture the true peak in the travel demand.

CENSUS BLOCK POPULATION DENSITY 2020 IN TOMPKINS COUNTY



- Significant population density can be found in the Ithaca urbanized area and the County's villages.
- Tompkins County's topography along with Ithaca's location at the center of the county and at the southern tip of Cayuga Lake results in most NY state roads converging in the City as they extend across the county.
- The area in the Town of Lansing, south of SR-34B, has experienced substantial suburban growth.
- Not evident in the map is the increase in residential land uses dispersed along rural roads throughout the county.

POPULATION TOTALS FOR TOMPKINS COUNTY

CIVIL DIVISION	1990	% OF COUNTY TOTAL	2000	% OF COUNTY TOTAL	2010	% OF COUNTY TOTAL	2020	% OF COUNTY TOTAL	2010-2020 NUMERIC CHANGE	2010-2020 % CHANGE
TOWN OF CAROLINE	3,044	3.2%	2,910	3.0%	3,282	3.2%	3,334	3.2%	52	1.6%
TOWN OF DANBY	2,858	3.0%	3,007	3.1%	3,329	3.3%	3,421	3.2%	92	2.7%
TOWN OF DRYDEN	13,251	14.1%	13,532	14.0%	14,435	14.2%	13,905	13.2%	-530	-3.8%
TOWN OF ENFIELD	3,054	3.2%	3,369	3.5%	3,512	3.5%	3,362	3.2%	-150	-4.5%
TOWN OF GROTON	5,483	5.8%	5,794	6.0%	5,950	5.9%	5,746	5.4%	-204	-3.6%
TOWN OF LANSING	9,296	9.9%	10,521	10.9%	11,033	10.9%	11,565	10.9%	532	4.6%
TOWN OF NEWFIELD	4,876	5.2%	5,108	5.3%	5,179	5.1%	5,126	4.8%	-53	-1.0%
TOWN OF ULYSSES	4,906	5.2%	4,775	4.9%	4,900	4.8%	4,890	4.6%	-10	-0.2%
CITY OF ITHACA	29,541	31.4%	27,775	29.8%	30,014	29.6%	32,108	30.4%	2,094	6.5%
TOWN OF ITHACA	17,797	18.9%	18,710	19.4%	19,930	19.6%	22,283	21.1%	2,353	10.6%
TOTAL COUNTY	**94,106**		**96,501**		**101,564**		**105,740**		**4,176**	3.9%

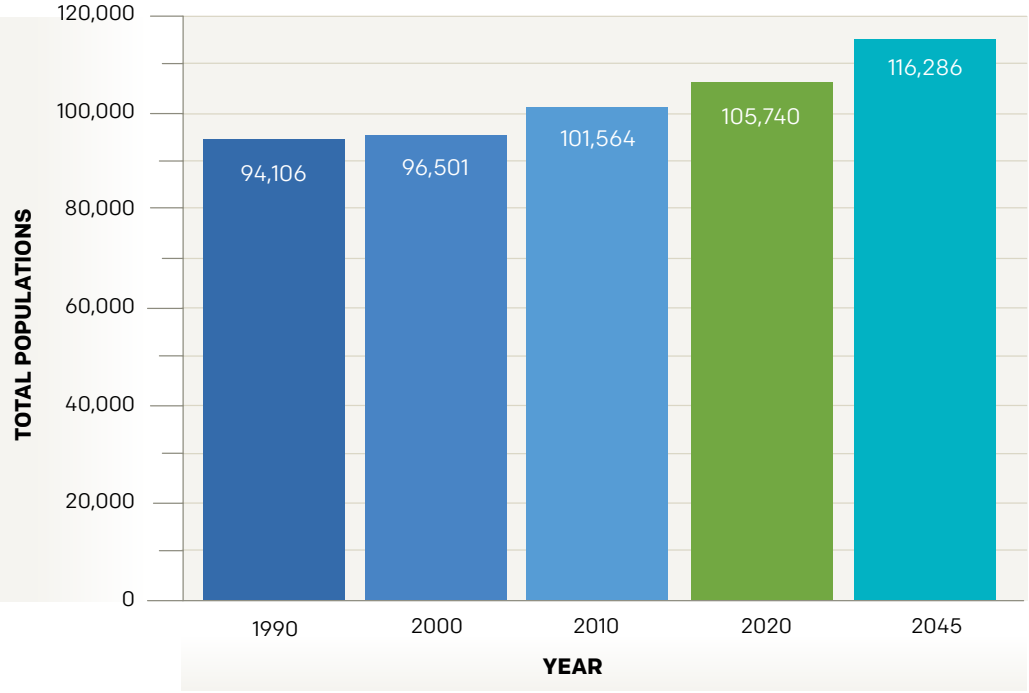
SOURCE: 1990, 2000, 2010 and 2020 Decennial Census
Note: Village population statistics are included as part of respective Town totals

POPULATION: VILLAGES OF TOMPKINS COUNTY 2000-2020

CIVIL DIVISION	2000 POPULATION	2010 POPULATION	2020 POPULATION	2010-2020 % CHANGE
VILLAGE OF DRYDEN	1,832	1,838	1,887	2.60%
VILLAGE OF FREEVILLE	505	520	498	-4.42%
VILLAGE OF GROTON	2,470	2,363	2,145	-10.16%
VILLAGE OF CAYUGA HEIGHTS	3,738	3,729	4,114	9.36%
VILLAGE OF LANSING	3,417	3,529	3,648	3.26%
VILLAGE OF TRUMANSBURG	1,581	1,797	1,714	-4.84%
TOTAL	**13,543**	**13,776**	**14,006**	**1.64%**

SOURCE: 2000, 2010 and 2020 Decennial Census

TOTAL POPULATION TOMPKINS COUNTY



SOURCE: 2010, 2020 Decennial Census. 2045 Population derived from linear projection based on annualized rate of growth from 1990 to 2020.

POPULATION TRENDS IN URBAN AND RURAL AREAS

CENSUS AREA	2010	2020	NUMERIC DIFFERENCE	PERCENT CHANGE
URBAN	53,661 | 52.83%	59,102 | 55.89%	5,441	10.14% ▲
RURAL	47,903 | 47.17%	46,638 | 44.11%	-1,265	-2.64% ▼
TOTAL	**101,564**	**105,740**	**4,176**	**4.11%**

SOURCE: 2000, 2010 Decennial Census

A SUMMARY REVIEW OF TOTAL POPULATION:

- According to the data, the Tompkins County population has increased at a modest annual average rate of .38% over the last 30 years
- Population in 2020 was approximately 105,740
- Projected population for 2045 is 116,286
- The City of Ithaca and all of the Towns in the County, except Town of Ulysses which remains essentially unchanged, showed population increases over the last 30 years
- From 2010-2020 population growth focused in the Ithaca urbanized area of the county with marginal population decreases in some of the surrounding towns
- The bulk of the population increase since 2010 took place in the City and Town of Ithaca
- From 2010 to 2020 overall population in the six villages in Tompkins County showed a small increase. However, population gains where limited to the villages of Cayuga Heights, Lansing and Dryden.
- The County's population is 55.89% urban and 44.11% rural as of the 2020 Census
- The urban population increased 10.14%, while rural population decreased slightly by 2.64% over the 2010-2020 decade

PERSONS PER HOUSEHOLD IN TOMPKINS COUNTY

POPULATION			OCCUPIED HOUSEHOLDS			POPULATION CHANGE	HOUSEHOLD CHANGE	PERSONS PER HOUSEHOLD (excludes group quarters)		
2000	2010	2020	2000	2010	2020	2010-2020	2010-2020	2000	2010	2020
96,501	101,564	105,740	36,420	38,976	40,817	4,176 (3.95%)	1,841 (4.51%)	2.32	2.27	2.26

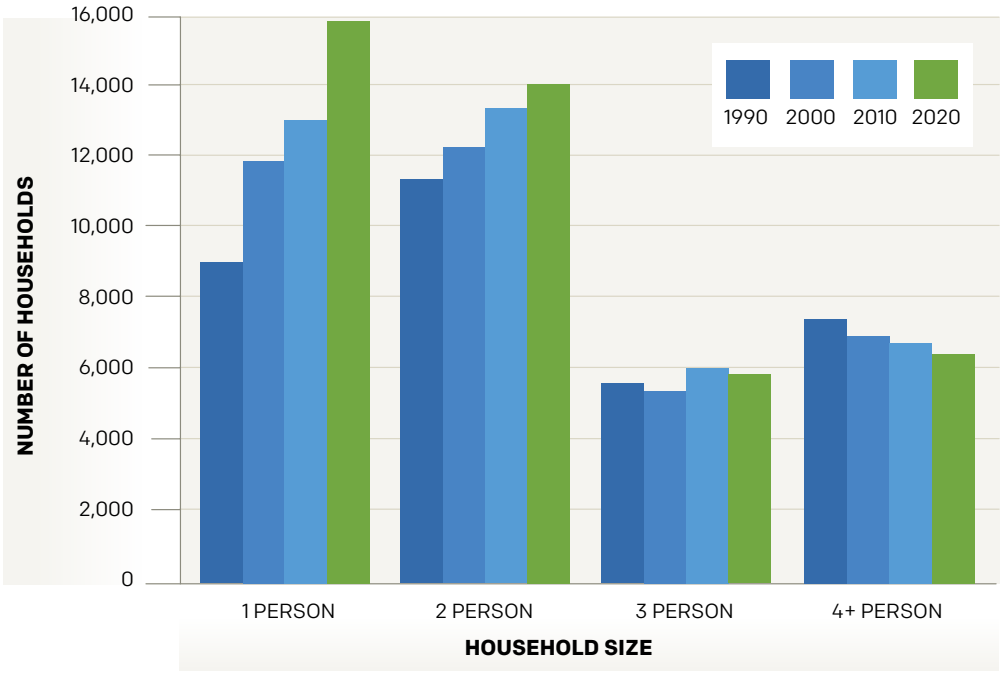
SOURCE: 2000 Census, 2010 Census, and 2020 Census

HOUSEHOLD SIZE

Persons per household figures are influenced by the large number of college students, group housing and rental housing units.

The number of 2 person households has shown continuous growth since 1990. One person households are the most numerous group.

HOUSEHOLD SIZE IN TOMPKINS COUNTY

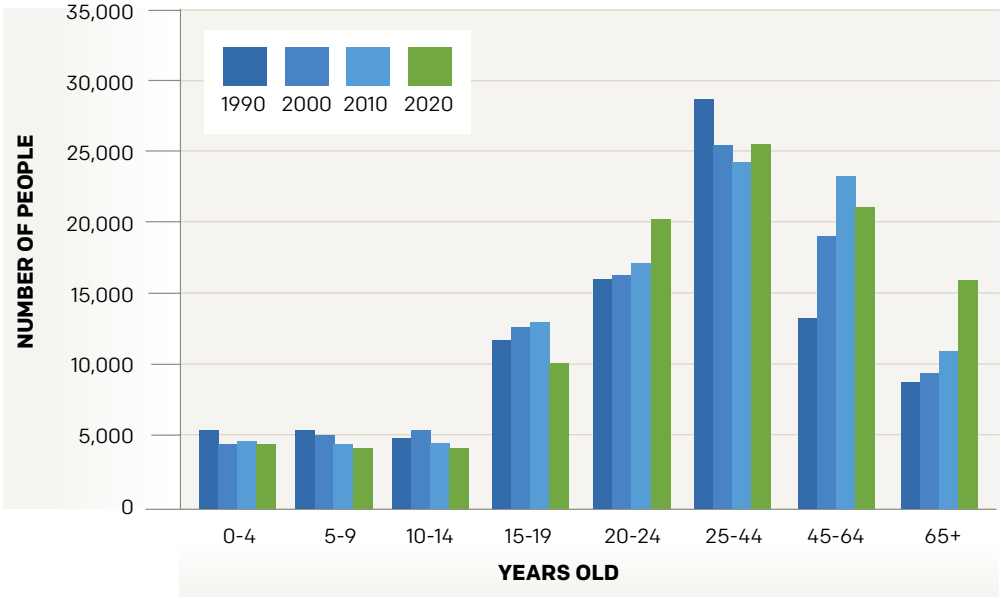


Source: 1990, 2000 Census, 2010, and 2020 Decennial Census

A SUMMARY REVIEW OF POPULATION BY AGE:

- Population of children 0-14 years of age remains relatively steady
- Population of persons 15-19 showed a reduction in 2020
- Population of persons 20-24 increased in 2020 at a higher rate than previous decennial measures
- Population 25-44 rebounded in 2020 after trending down from 1990 to 2010
- Populations age 65 and above show significant increases through 2020
- The population over 45 is projected grow into the future
- The figures in this table reflect the national trend towards an aging population (www.prb.org/ aging-unitedstates-fact-sheet/)

AGE OF POPULATION IN TOMPKINS COUNTY



Source: 1990, 2000 Census, 2010, and 2020 Decennial Census

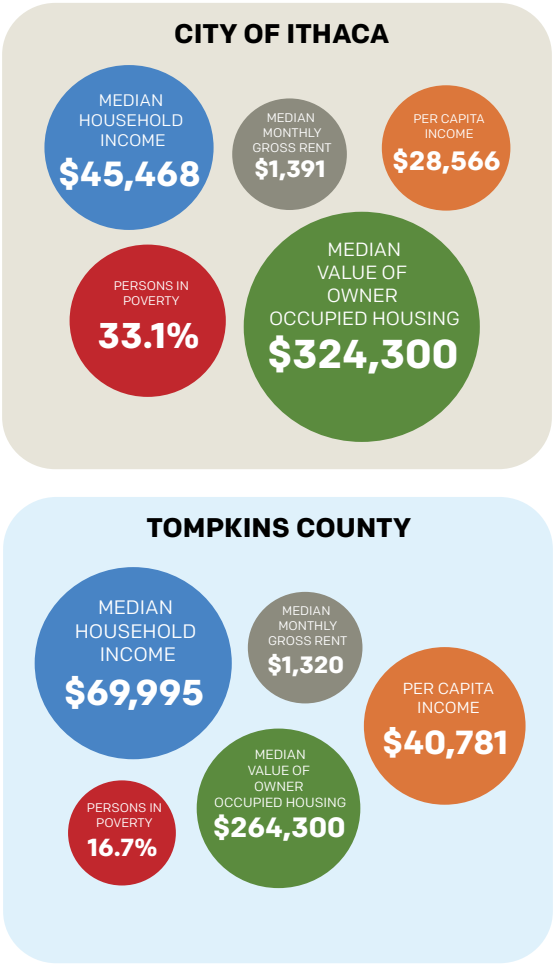
EMPLOYMENT AND ECONOMIC CHARACTERISTICS

Summary Review:

- Education is, by far, the leading employment sector in Tompkins County, followed by health services.
- The two principal employment centers in the county are Cornell University and Downtown Ithaca.
- Other important employment centers include:
  - Cayuga Medical Center;
  - Ithaca College/Therm, Inc./South Hill Business Campus;
  - Airport Area/BorgWarner, Inc./Cornell Business & Technology Park;
- The unemployment rate in Tompkins County is consistently one of the lowest in the State of New York, and yet there are still many pockets of poverty.
- The cost of living in Tompkins County is relatively high, affecting housing and transportation decisions.

Numerous factors, such as population increase, high demand for housing in the Ithaca Urban Area, and the disproportionate demand for rental units from college students have influenced the housing sector, creating increased demand and price pressure. Tight housing supply and high prices have pushed people out of urban areas, fueling sprawl and longer trip lengths, which disproportionately affect low income households. While this plan does not directly address issues of housing and high taxes, it is important to recognize the complex interactions between employment, economic and regulatory factors and the transportation sector.

BASIC ECONOMIC DATA



SOURCE: 2020 Decennial Census and 2022 5 Census American Community Survey (ACS)

EXTERNAL FACTORS AFFECTING TRANSPORTATION DEMAND

Gasoline prices

A small component of overall automobile cost but one that has a disproportionate impact on car use. The direct and recurring nature of this driving expense has a strong effect on driving habits.

Technology

Transportation systems across the US and the developed world have undergone significant changes in recent years. New technologies such as location-based tracking (GPS), reliable cellular networks, and secure online payment systems allow new players to enter the transportation marketplace, offering new mobility services that were not previously available.

Transportation Network Companies (TNC) such as Uber and Lyft provide on-demand mobility services. In many cities, TNC's are well established, making on-demand transportation a legitimate option for many who choose not to drive their personal vehicle. TNC services in Tompkins County are limited due to the small size of the market and rural nature of surrounding areas. New technologies and operation formats may allow greater penetration of TNCs in Tompkins County.

Other services such as car sharing (Ithaca Carshare), rideshare/carpooling and back-up/emergency ride home are facilitated by technology.

Meanwhile, micromobility services, both dock-based and smart dockless systems (including bike/e-bike and scooter-share), are rapidly growing and diversifying, reaching both major, densely-populated cities and smaller, less dense towns. Compared with traditional transit service, bike- and scooter-share use can be an affordable, on-demand alternative for short-distance trips. However, these services are not a feasible means of transportation for everyone and can be affected by trip length, weather conditions, topography, and the availability of safe cycling infrastructure.

National policies

National and State directives and resources (funding) can help shape demand through access to different modes of transportation. Having available safe, convenient options allows travelers to select modes that best match their needs. A diversified transportation system is more resilient, and less energy and fossil fuel intensive.

Economic fluctuations

Changes in economic factors (ie. unemployment rates, inflation rates, etc.) can dramatically affect decision-making down to the household level. Transportation is often one of the major household expenses, and also an important consideration of public and private businesses and organizations. Transportation decisions are directly impacted by fluctuations in economic parameters.

GENERAL TRAVEL TRENDS AND CHARACTERISTICS

Data

This section presents cell phone location generated data from Replica data services. The data is representative of an average day in 2023. The data include information specific to the Ithaca-Tompkins area. Where appropriate, national and New York State data is presented in addition to Tompkins County figures. The data provides a starting point for the analysis of general travel trends and characteristics in the greater Ithaca-Tompkins County area.

Person Trips by Trip Purpose

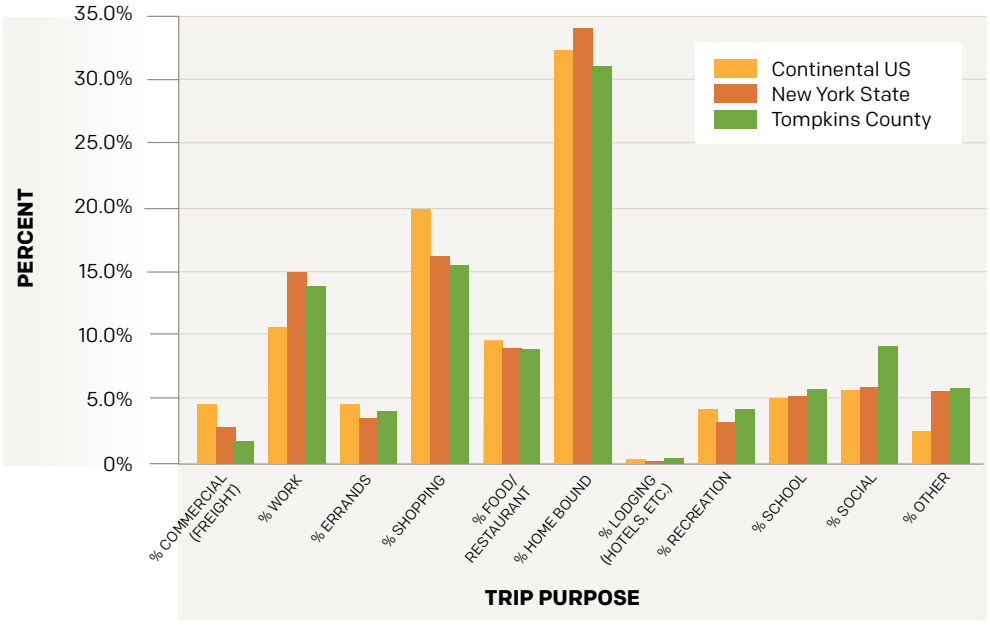
Work based trips are most responsible for peak hour traffic trends by the way they cluster in the mornings and evenings. Because these trips are concentrated in a specific period of time and along certain corridors, work trips are responsible for much of the local daily congestion. For this reason, they receive much of the attention of planners and engineers seeking to address congestion at peak times. However, the bulk of trips on our roadways (approximately 87%) are not work related. They are the social, recreational, shopping, home bound and other trips that are common in everyday life. These trips also need to be considered when determining travel trends and characteristics.

PERSON TRIPS PER DAY BY TRIP PURPOSE 2022

TRIP PURPOSE	CONTINENTAL US	NEW YORK STATE	TOMPKINS COUNTY
% COMMERCIAL (FREIGHT)	3.97%	2.84%	1.96%
% WORK	11.30%	13.37%	13.71%
% ERRANDS	4.26%	3.56%	3.06%
% SHOPPING	19.95%	18.40%	15.65%
%FOOD/RESTAURANT	9.39%	9.61%	8.60%
% HOME BOUND	32.72%	34.47%	36.90%
% LODGING (HOTELS ETC.)	0.79%	0.38%	0.48%
% RECREATION	3.37%	3.75%	3.56%
% SCHOOL	5.13%	5.35%	7.22%
% SOCIAL	6.32%	5.80%	6.70%
% OTHER	2.80%	2.47%	2.17%

SOURCE: 2022 Replica Data

PERSON TRIPS PER DAY BY TRIP PURPOSE



SOURCE: 2022 Replica Data

PERSON TRIPS PER DAY BY MODE OF TRANSPORTATION: 2019 AND 2022 ESTIMATES

TRIP MODE	UNITED STATES		NEW YORK STATE		TOMPKINS COUNTY	
	2019	2022	2019	2022	2019	2022
PRIVATE AUTO	80.22%	81.78%	59.56%	63.76%	66.69%	68.72%
WALKING	10.19%	10.16%	17.07%	17.97%	22.51%	23.30%
PUBLIC TRANSIT	2.06%	1.19%	16.99%	12.17%	4.88%	2.50%
COMMERCIAL VEHICLE (FREIGHT)	4.39%	3.97%	2.90%	2.84%	2.08%	1.96%
OTHER	1.57%	1.51%	1.27%	1.15%	1.48%	1.36%
BIKING	1.18%	1.00%	0.86%	0.77%	1.70%	1.34%
TAXI/TNC	0.40%	0.40%	1.36%	1.34%	0.67%	0.81%

NOTE: 'Other' includes trips whose mode went undetected & the U.S. data includes figures from the lower 48 states; Hawaii and Alaska are not included. SOURCE: 2019 and 2022 Replica data

Person Trips by Mode of Transportation

- Data on the Trips by Mode table include all trips types.
- Use of Private Vehicles as a percentage of trips per day in Tompkins County is significantly lower than national figures and slightly hire than NY state.
- State figures for private vehicle use are relatively low thanks to the influence of New York City and its extraordinary transit use levels.
- Walking as a mode of transportation continues to be a significant mode in Tompkins County, with a higher proportion of trips than NY state and national figures.
- Public Transit use (transit plus paratransit ridership), as a percent of total daily trips, in Tompkins County was above the national average . NY state transit data are way above average due to the high public transportation use levels in the New York City area.
- Public Transit ridership figures show reductions from 2019 to 2022 which can be attributed to the Covid pandemic. Every effort is being made to reach and surpass pre-pandemic use levels.
- Overall the 4.88% share of Public Transit is relatively low and is an mode that could grow, particularly outside the rush hour periods.
- Bicycling use estimate is higher than national and state figures. Hoewever, at 1.34% of all trips there is still opportunity to expand cycling's mode share – see the Trip Length by Trip Mode table for more information.

TRIP LENGTH BY TRIP MODE IN TOMPKINS COUNTY NY

ANNUAL PERSON TRIPS (IN THOUSANDS)

DISTANCE	TRIP MODE, DERIVED							TOTAL TRIPS	% OF ALL TRIPS BY DISTANCE	% TRIPS BELOW DISTANCE
	WALK	BICYCLE	ALL PRIVATE VEHICLES**	TAXI/TNC	COMMERCIAL VEHICLE	PUBLIC TRANSIT	OTHER***			
LESS THAN .5 MILES*	31,802	1,229	9,231	99	584	8	3,088	46,041	11.7%	11.7%
.5-1 MILE	22,439	1,186	20,511	876	645	412	0	46,069	11.7%	23.3%
1-2 MILES	27,322	1,574	39,561	1,380	984	2,718	14	73,553	18.6%	42.0%
2-4 MILES	8,796	1,940	60,357	1,298	1,171	2,729	183	76,474	19.4%	61.3%
4-8 MILES	91	1,171	68,260	763	1,540	1,887	86	73,798	18.7%	80.0%
8-16 MILES	1	373	68,285	250	1,324	629	77	70,939	18.0%	98.0%
16-32 MILES	6	5	7,645	37	149	81	2	7,925	2.0%	100.0%
32-64 MILES	0	0	21	0	0	0	0	21	0.0%	100.0%
ALL TRIPS	90,457	7,478	273,871	4,703	6,397	8,464	3,450	394,820		
	22.9%	1.9%	69.4%	1.2%	1.6%	2.1%	0.9%			

*Note: Trip distance in miles, collected from cellphone data
** "Private Vehicles" includes Cars, SUVs, Vans, Pickup Trucks, RVs and Motorcycles
*** "Other" includes Paratransit, Private Bus, Limo/Uber/Lyft, and Rental Car
Source: 2023 Replica Data Platform Data

Trip Length by Mode

- Trip length is an important factor to help determine feasible transportation mode options.
- Short trips, less than 2 miles, may be accommodated by walking, bicycling and other personal mobility options. They present the best opportunity to shift trips from personal motor vehicles.
- 69% of trips less than half a mile are completed by walking; 20% of these short trips use private vehicles.
- Overall, 1.9% of all trips are on bicycle.
- 42% of all trips are less than 2 miles in length. Of these, 49% are completed by walking; only 2.4% by bicycle; and 42% by private vehicle.
- 61.3% of all trips are less than 4 miles in length. Of these, 33.5% are completed by walking; only 2% by bicycle; and 53.5% by private vehicle. More specifically, 54% of trips 1-2 miles and 78% of trips 2-4 miles use private vehicles. These short trips represents the best opportunity to move trips to walking, bicycling or transit.
- Shifting private vehicle trips to more efficient modes will require the expansion of enhanced or new dedicated, safe, convenient and accessible infrastructure for bicycling, walking and transit.

Short trips present the best opportunity to move trips from automobile use to walking, bicycle, shared transportation and transit.

COMMUTING

The work commute is an important daily ritual with wide ranging economic, environmental, safety and life style implications. Although work trips constitute approximately 15% of all trips, the fact that they are clustered and repetitive creates a 'rush hour' which may lead to congestion and reduced safety in the transportation system. Location of employment relative to housing will help dictate what are the options for workers to get to work. Having housing near jobs provides greater accessibility and makes walking, bicycling and transit more convenient for commuters. Longer trips are more likely to be private motor vehicle dependent. For those, carpooling is a viable option, and in some instances where demand is high, there may be transit options available.

Regional Commuting Patterns

- Tompkins County is a net labor importer - more workers come into Tompkins County to work from neighboring counties than the number Tompkins County residents who travel to work outside the county.
- The total number of persons working within Tompkins County is approximately 60,763, while the number of persons that live and work in Tompkins County is only 45,028.
- Approximately 15,735 (25.8%) of all workers in Tompkins County commuted from more than nine other counties.
- Approximately 4,580 (9.2%) of Tompkins County's resident workers commuted out of the county for work in 2020.
- The total net number of in-commuters is 11,155.
- Tioga County contributed the greatest number of workers to Tompkins County (3,314) followed closely by Cortland County (3,309); while Cortland County received the most workers (1,423) from Tompkins County.
- The data patterns described above have been noticeable since the 1980 Census. This provides strong and persistent evidence of Tompkins County as a regionally important center of economic activity.
- The mode of transportation used to get to work varies significantly for commuters within the county vs. in-commuters from other counties. 54.3% of commuters within the county drive alone, whereas approximately 84% of in-commuters drive alone. (The 84% figure is based on historic mode split data; more recent data is not available.)
- Within Tompkins County workers who live in rural areas have less options for the commute to work due to longer trip distances and reduced or no transit and shared transportation options.
- Out-of-county public transportation connections currently exist to Cortland and Chemung Counties. However, these are limited and focus on morning and evening rush hours to principal employment centers (Cornell and Downtown Ithaca). Few options exist for workers outside the conventional 6:00AM to 8:00PM work day cycle.
- TCAT service is extensive in the Ithaca urbanized area but significantly more limited in the rural areas. Service focuses on morning and evening rush hour travel.

TOMPKINS COUNTY REGIONAL COMMUTING PATTERNS

COMMUTING PATTERNS	TOTAL 2020
A. TOTAL DAILY WORKERS IN TOMPKINS COUNTY (C+F)	60,763
B. TOTAL WORKERS WHO LIVE IN TOMPKINS COUNTY (C+D)	49,608
C. WORKERS WHO LIVE AND WORK IN TOMPKINS COUNTY (B-D)	45,028
D. TOTAL OUT COMMUTERS (B-C)	4,580
E. TOTAL IN COMMUTERS (A-C)	15,735
F. NET COMMUTERS (D-E)	11,155
PERSONS LIVING IN TOMPKINS COUNTY AND WORKING IN:	
TOMPKINS COUNTY	45,028
BROOME COUNTY	198
CAYUGA COUNTY	365
CHEMUNG COUNTY	508
CORTLAND COUNTY	1,423
ONONDAGA COUNTY	233
SCHUYLER COUNTY	234
SENECA COUNTY	98
STEUBEN COUNTY	238
TIOGA COUNTY	305
OTHER	978
PERSONS WORKING IN TOMPKINS COUNTY AND LIVING IN:	
TOMPKINS COUNTY	45,028
BROOME COUNTY	611
CAYUGA COUNTY	2,189
CHEMUNG COUNTY	1,266
CORTLAND COUNTY	3,309
ONONDAGA COUNTY	484
SCHUYLER COUNTY	1,782
SENECA COUNTY	1,238
STEUBEN COUNTY	189
TIOGA COUNTY	3,314
OTHER	1,353

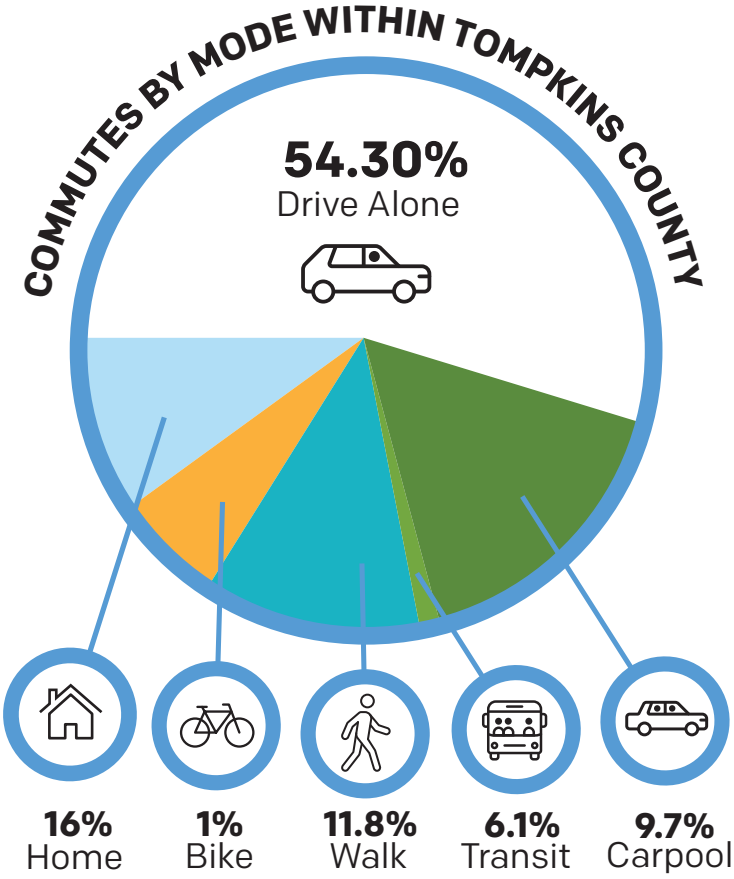
Source: 2020 5 American Community Survey (ACS)

TOMPKINS COUNTY COMMUTER FLOW

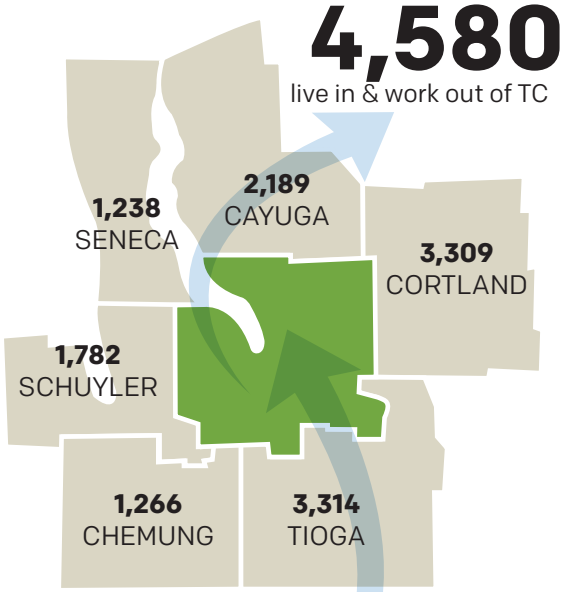
45,028
live & work in TC

54.3% drive alone commutes

Source: 2022 5 Yr American Community Survey (ACS)



7% outbound commute increase since 2016



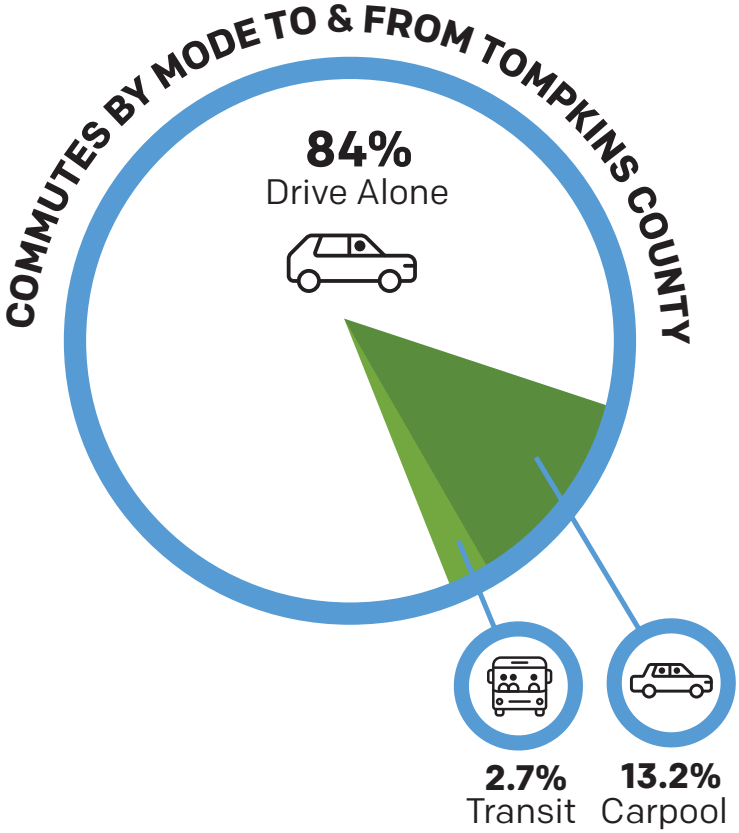
.6% inbound commute increase since 2013

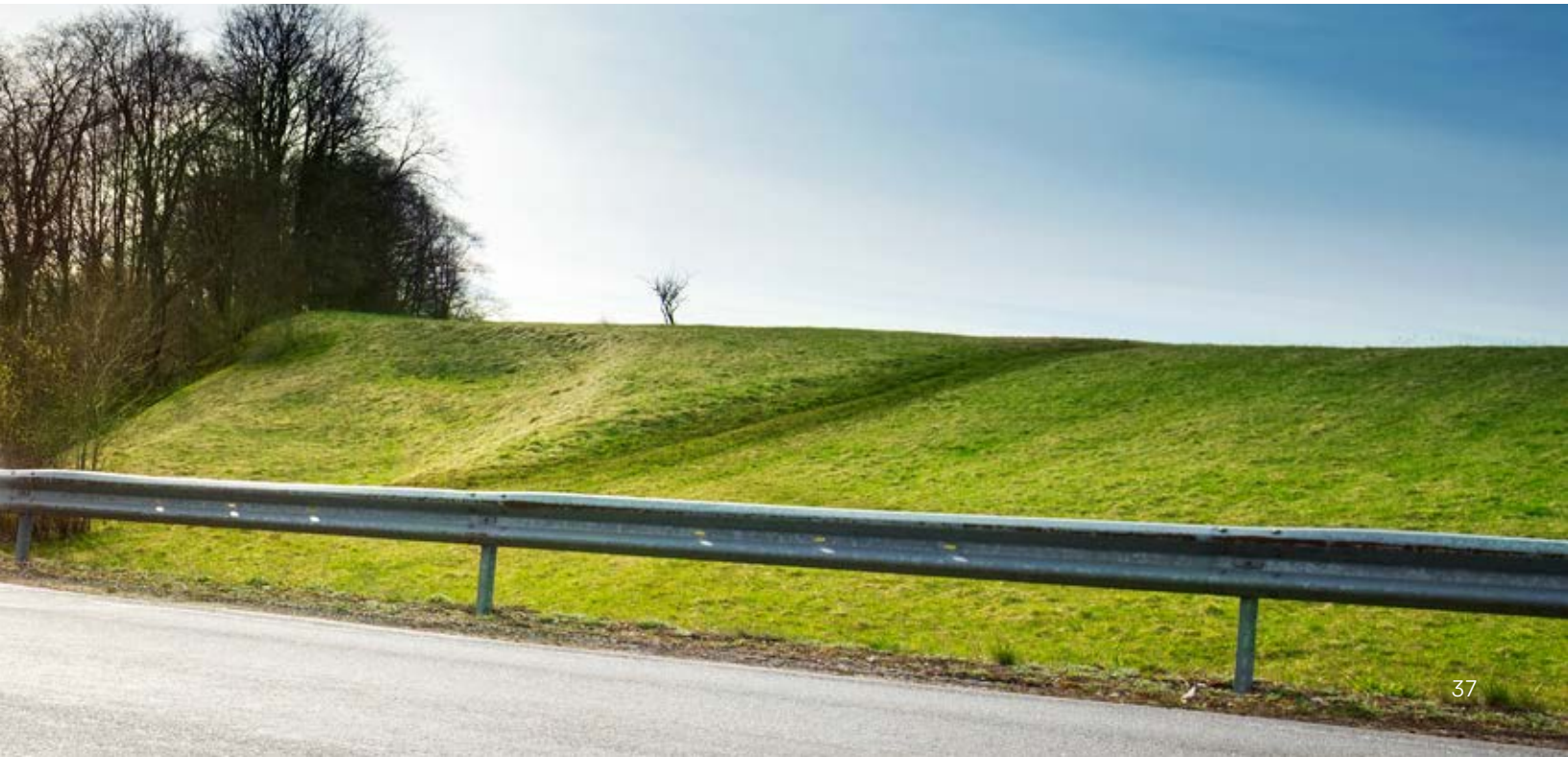
15,735

live out of county & work in TC

84% drive alone commutes

Source: 2022 5 Yr American Community Survey (ACS)





HOW PEOPLE GET TO WORK – COMMUTE MODE

Knowing what mode of transportation is used to get to work is useful to help understand how people travel and what opportunities exist to provide commuters with safer, more economical and convenient options for their travels. This information can also be used to determine potential current and future demand for bicycle and pedestrian facilities, ridesharing (carpooling) programs, transit service, and other facilities.

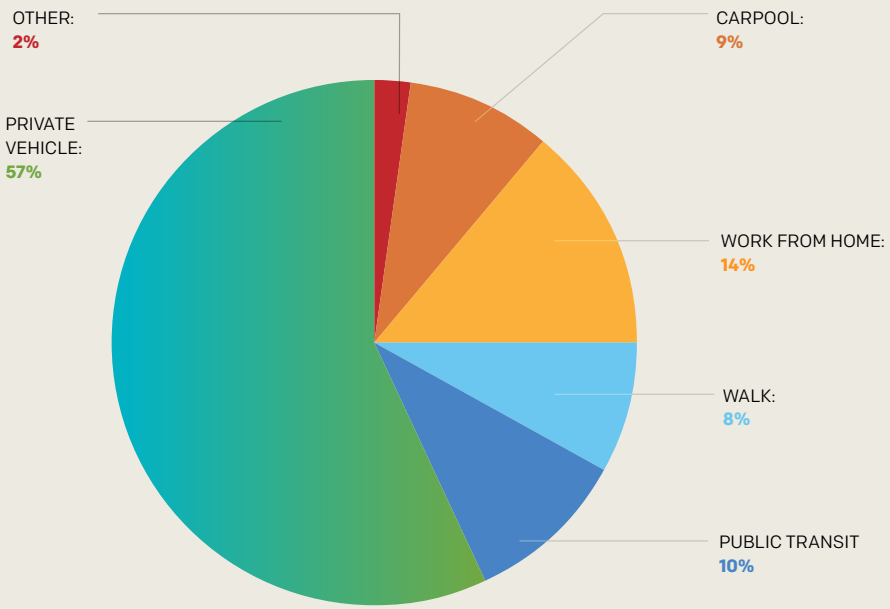
The desired trend is to decrease the percentage of drive alone vehicles. Drive alone trips will need to be reduced significantly over the next 20 years to meet the 80% reduction in carbon emission goal established in the Tompkins County Comprehensive Plan and to manage congestion in the transportation system (www.tompkinscountyny.gov/planning/energy-greenhouse-gas).

While it may seem that the recommendations of this Plan place an unusually high emphasis on transit, ridesharing (carpool), bicycle and pedestrian strategies and investments, consider that Tompkins County is already benefiting from lower car dependency for the trip to work. When combined into a category termed by some as "alternative modes of transportation", transit, ridesharing/carpool, pedestrian and bicycle trips account for the following percentages of work trips in 2022: 16.6% for the U.S., 37.9% for New York State, and 29.5% for Tompkins County (the figures for New York State are skewed by the disproportionately large participation in public transportation in the New York City metro area). Regardless, the 29.5% figure for Tompkins County, which does not include those 13.7% of workers that work at home, is almost twice the national average. This figure indicates that a significant number of trips are taking place by moving more people in fewer vehicles, or better yet without motor vehicles. These are enviable figures compared to many other urbanized areas but, clearly, there is room for improvements as Tompkins County strives to reduce carbon emissions and fossil fuel use, manage congestion and provide more equitable transportation options. To meet those goals the Tompkins County transportation system must be ready to accommodate and encourage increased use of transit, ridesharing (carpool), vanpooling, bicycling and walking not just for work based trips, but for all trip needs, i.e. family and personal business, social/recreational, educational. The non-drive alone alternative modes contribute to increased transportation system efficiency - i.e. transportation with reduced negative impacts. Programs like vanpools, car sharing, guaranteed/back-up ride home, employee incentives, etc. can also contribute to shifting travelers to non-drive alone modes.

The tables below and on the next page provides information on the distribution of the work trips by mode of transportation for each town and village in Tompkins County. This table gives a good indication of where the largest numbers of users for each mode are located.

- 57% of Tompkins County's workforce drove alone to work, a 4% reduction from 2017 figures, due mostly to the jump in work from home and an increase in public transit.
- Non-drive alone modes of transportation to work:
  - 9% rideshare (carpool)
  - 8% walk to work
  - 10% use public transportation
  - 2% Other (includes bicycling)
  - 14% working at home
- The walking to work percentage for Tompkins County (14.2%), the City of Ithaca (28%) and the Town of Ithaca (12%), including the Village of Cayuga Heights (13%), are all substantially higher than the national (2.4%) and state (5.7%) averages.
- The bulk of people who walk to work are in the City and Town of Ithaca (including the Village of Cayuga Heights), illustrating the transportation efficiency of the urban form.

TOMPKINS COUNTY MODE TO WORK 2022



MEANS OF TRANSPORTATION TO WORK

CIVIL DIVISION	DRIVE ALONE	Row %	CARPOOL	Row %	PUBLIC TRANSPORTATION	Row %	BICYCLE	Row %	WALK	Row %	WORK AT HOME	Row %	TAXI, MCYCLE, OTHER	Row %	TOTAL
TOWN OF CAROLINE	1,275 **4.86%**	68.4%	229 **4.89%**	12.3%	13 **0.45%**	.7%	0 **0.00%**	0.0%	18 **0.32%**	1.0%	328 **4.23%**	17.6%	0 **0.00%**	0.0%	1,863 **3.86%**
TOWN OF DANBY	1,342 **5.12%**	82.8%	149 **3.18%**	9.2%	0 **0.00%**	0.0%	0 **0.00%**	0.0%	19 **0.33%**	1.2%	111 **1.43%**	6.8%	0 **0.00%**	0.0%	1,621 **3.36%**
TOWN OF DRYDEN	4,354 **16.61%**	65.5%	976 **20.85%**	14.7%	146 **5.00%**	2.2%	49 **9.72%**	0.7%	337 **5.90%**	5.1%	745 **9.62%**	11.2%	43 **8.83%**	0.6%	6,650 **13.78%**
TOWN OF ENFIELD	1,207 **4.60%**	80.4%	66 **1.41%**	4.4%	0 **0.00%**	0.0%	0 **0.00%**	0.0%	98 **1.72%**	6.5%	112 **1.45%**	7.5%	19 **3.90%**	1.3%	1,502 **3.11%**
TOWN OF GROTON	2,335 **8.91%**	86.7%	90 **1.92%**	3.3%	11 **0.38%**	0.4%	5 **.99%**	0.2%	53 **0.93%**	2.0%	162 **2.09%**	6.0%	37 **7.60%**	1.4%	2,693 **5.58%**
CITY OF ITHACA	3,970 **15.14%**	27.5%	948 **20.25%**	6.6%	1687 **57.75%**	11.7%	234 **46.43%**	1.6%	3,998 **69.97%**	27.7%	3,356 **43.33%**	23.2%	250 **51.33%**	1.7%	14,443 **29.92%**
TOWN OF ITHACA	4,214 **16.08%**	49.8%	833 **17.80%**	9.8%	636 **21.77%**	7.5%	97 **19.25%**	1.1%	981 **17.17%**	11.6%	1,594 **20.58%**	18.8%	110 **22.59%**	1.3%	8,465 **17.54%**
TOWN OF LANSING	3,986 **15.21%**	63.7%	881 **18.82%**	14.1%	368 **12.60%**	5.9%	119 **23.61%**	1.9%	108 **1.89%**	1.7%	787 **10.16%**	12.6%	7 **1.44%**	0.1%	6,256 **12.96%**
TOWN OF NEWFIELD	1,997 **7.62%**	77.5%	246 **5.26%**	9.5%	24 **0.82%**	0.9%	0 **0.00%**	0.0%	59 **1.03%**	2.3%	252 **3.25%**	9.8%	0 **0.00%**	0.0%	2,578 **5.34%**
TOWN OF ULYSSES	1,534 **5.85%**	69.9%	263 **5.62%**	12.0%	36 **1.23%**	1.6%	0 **0.00%**	0.0%	43 **0.75%**	2.0%	299 **3.86%**	13.6%	21 **4.31%**	1.0%	2,196 **4.55%**
TOMPKINS COUNTY	**26,124**	54.3%	**4,681**	9.7%	**2,921**	6.1%	**504**	1.0%	**5,714**	11.8%	**7,746**	16.0%	**487**	1.0%	**48,267**
NEW YORK STATE	**50.52%**	4,746,319	**6.33%**	594,392	**23.36%**	2,195,003	**0.76%**	71,839	**5.69%**	534,971	**11.59%**	1,088,789	**1.74%**	163,681	**100%**
NATIONAL US	**71.67%**	112,314,702	**8.54%**	13,388,082	**3.79%**	5,945,723	**0.46%**	722,251	**2.43%**	3,807,792	**11.69%**	18,316,685	**1.41%**	2,208,388	**100%**

Source: Census: 2022 5 American Community Survey. Percentages may not add to 100% due to rounding.
Note: Row percentages are provided to the right of the numeric entry, while column percentages appear below the number (% of total individual modal share for Tompkins County total)
Note: Village population statistics are included as part of respective Town totals

CIVIL DIVISION	DRIVE ALONE		CARPOOL		PUBLIC TRANSPORTATION		BICYCLE		WALK		WORK AT HOME		TAXI, MCYCLE, OTHER		TOTAL
VILLAGE OF CAYUGA HEIGHTS	556 **2.12%**	34.3%	298 **6.37%**	18.4%	270 **9.24%**	16.7%	43 **8.53%**	2.7%	216 **3.78%**	13.3%	213 **2.75%**	13.1%	25 **5.13%**	1.5%	1,621 **3.36%**
VILLAGE OF DRYDEN	506 **1.93%**	63.1%	116 **2.48%**	14.5%	26 **0.89%**	3.2%	9 **1.79%**	1.1%	0 **0.00%**	0.0%	123 **1.59%**	15.3%	22 **4.52%**	2.7%	802 **1.66%**
VILLAGE OF FREEVILLE	148 **0.56%**	66.1%	40 **0.85%**	17.9%	5 **0.17%**	2.2%	0 **0.00%**	0.0%	5 **0.09%**	2.2%	24 **0.31%**	10.7%	2 **0.41%**	0.9%	224 **0.46%**
VILLAGE OF GROTON	801 **3.06%**	80.5%	47 **1.00%**	4.7%	11 **0.38%**	1.1%	5 **0.99%**	0.5%	39 **0.68%**	3.9%	77 **0.99%**	7.7%	15 **3.08%**	1.5%	995 **2.06%**
VILLAGE OF LANSING	1,043 **3.98%**	45.6%	516 **11.02%**	22.5%	326 **11.16%**	14.2%	101 **20.04%**	4.4%	50 **0.88%**	2.2%	253 **3.27%**	11.1%	0 **0.00%**	0.0%	2,289 **4.74%**
VILLAGE OF TRUMANSBURG	401 **1.53%**	64.1%	12 **0.26%**	1.9%	36 **1.23%**	5.8%	0 **0.00%**	0.0%	23 **0.40%**	3.7%	133 **1.72%**	21.2%	21 **4.31%**	3.4%	626 **1.30%**
TOMPKINS COUNTY	**26,214**	54.3%	**4,681**	9.7%	**2,921**	6.1%	**504**	1.0%	**5,714**	11.8%	**7,746**	16.0%	**487**	1.0%	**48,267**
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Source: Census: 2012 5yr American Community Survey. Percentages may not add to 100% due to rounding.
Note: Row percentages are provided to the right of the numeric entry, while column percentages appear below the number (% of Tompkins County total)

Vehicle Population

- The number of personal vehicles registered in Tompkins County increased steadily from 1998 to 2011. The data showed a reduction in 2017, but the numbers rebounded by 2023 to their highest level.
- The great majority of registered vehicle are personal vehicles (cars, SUV, vans, pickup trucks).

Vehicles per Household

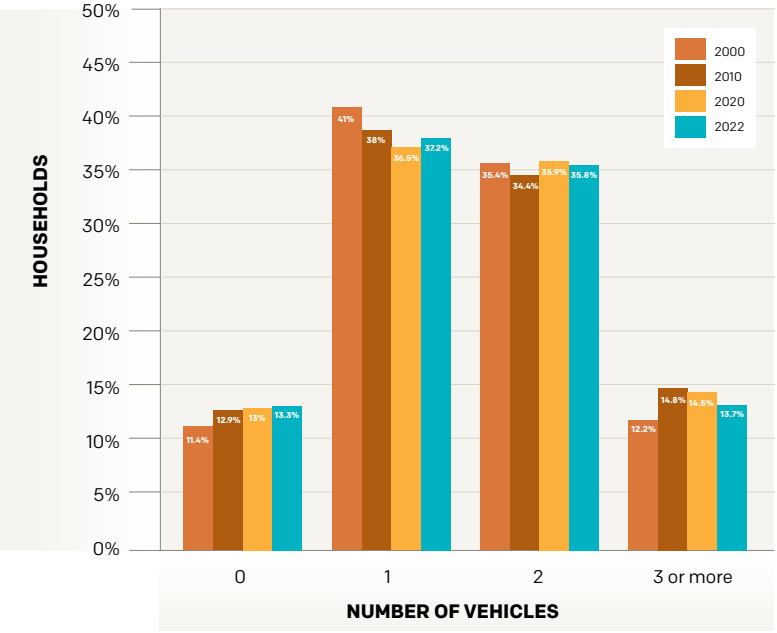
- Percentage of zero vehicle households is the only category to increase for every data period. This may be influenced the number of college student households.
- The percentage of three vehicle households has been decreasing since 2010.
- The percentage of one vehicle households has an overall decreasing trend.

TOTAL VEHICLE REGISTRATIONS IN TOMPKINS COUNTY

YEAR	PERSONAL VEHICLES	COMMERCIAL VEHICLES	TRAILERS	MOTORCYCLES	MOPEDS	AMBULANCE	FARM	TOTAL
1998	44,829	10,643	2,561	1,535	107	9	53	**59,737**
2000	47,182	10,733	2,903	1,592	88	9	57	**62,564**
2003	49,042	9,442	2,480	1,915	94	9	52	**63,034**
2007	50,985	8,136	2,918	2,466	146	13	63	**64,727**
2011	51,695	7,198	3,099	2,984	150	14	92	**65,232**
2017	48,515	6,078	1,751	2,817	98	13	205	**59,477**
2023	52,210	6,226	4,221	2,359	63	15	151	**65,245**

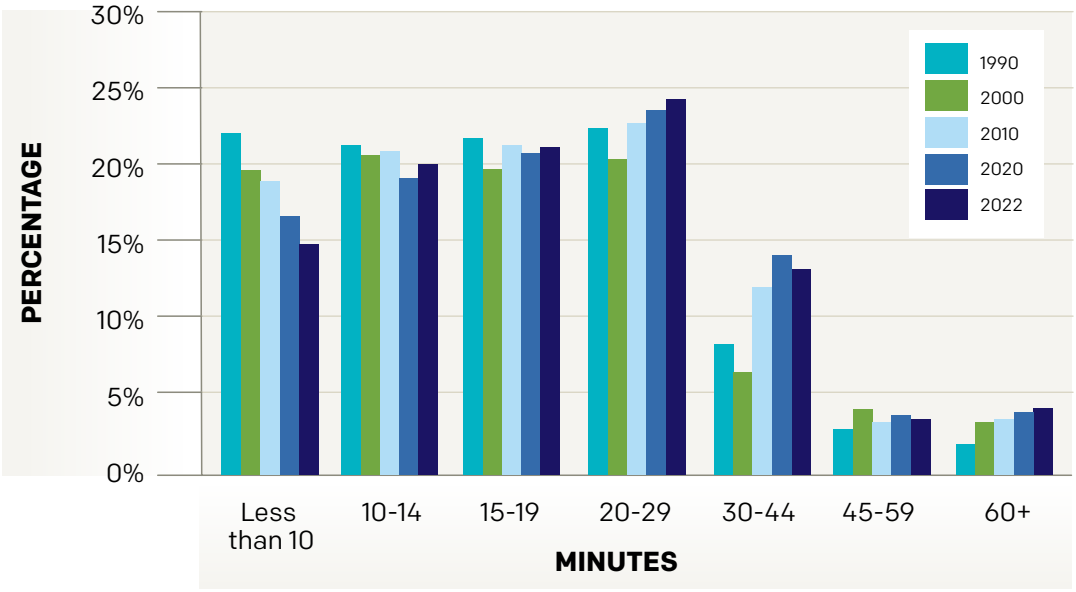
Source: New York State Department of Motor Vehicles – Statistics

NUMBER OF VEHICLES PER HOUSEHOLD TOMPKINS COUNTY NY



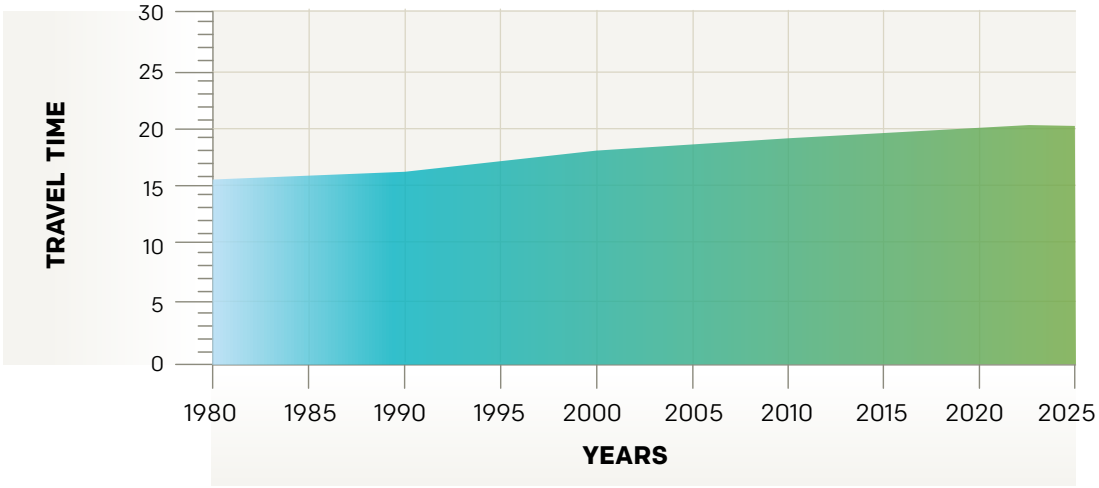
SOURCE: 2000 & 2010 Decennial Census and 2020 & 2022 5 Yr American Community Survey

TRAVEL TIME TO WORK (WORKERS AGE 16+, NOT WORKING AT HOME)



Source: 1990, 2000 Decennial Census and 2010, 2020, and 2022 5 Yr American Community Survey

MEAN TRAVEL TIME TO WORK (WORKERS AGE 16+, NOT WORKING AT HOME)



Source: Census 1980-2000 Decennial Census and 2010 & 2020 5 Yr American Community Survey

Travel Time to Work

- Travel time to work is a function of the time, speed, and distance of the average trips, in a given study area. The Census gathers data on travel time to work as part of its Journey-to-Work effort. As explained before, the Journey-to-Work data is of importance to transportation planning because of its impact on the peak travel period.
- The most significant percentage increase in travel time is in the 20-29 minute trip interval
- The percentage of shorter trips (less than 10 min.) has been decreasing steadily since 1990.
- Percentage of 30-44 minute trips increased every decennial census since 2000. The total number of these trips is significantly less than trips below 30 min.
- The mean travel time to work has been continually increasing since 1980 (15.7 min.) with the 2022 estimate (20.2 min.) surpassing 20 minutes for the first time.

Traffic Accidents

- Despite the continued increase in the number of vehicles registered, number of licensed drivers, and the amount of vehicle miles of travel, the number of crashes in all categories is flat or declining, while the rate of crashes is declining.
- Many factors may interact to explain the decreasing rates of crashes and fatalities:
  - improved safety design for cars and highways
  - promotion of safety belt, child safety seat, and motorcycle helmet use
  - measures to discourage drunk driving and distracted driving
  - better and prompter medical attention for victims of transportation crashes and accidents

The NY State Department of Transportation has an automated traffic crash reporting system called Crash Location & Engineering Analysis & Reporting (CLEAR), which provides crash data for Tompkins County. (This system replaced the previoulsy used Accident Location Information System-ALIS). The ITCTC produces crash summary reports that are available in the agency's website – www.tompkinscountyny.gov/itctc/statistics.

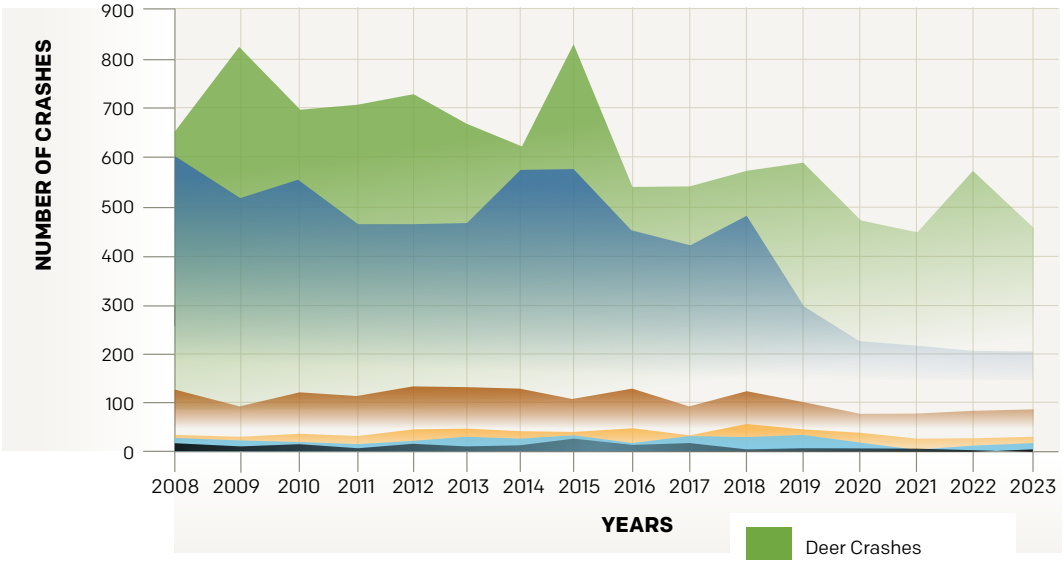
TRAFFIC CRASHES IN TOMPKINS COUNTY 2008-2023

YEAR	TOTAL CRASHES	BICYCLE CRASHES	PEDESTRIAN CRASHES	DEER CRASHES	CRASHES WITH INJURIES	SERIOUS INJURIES*	CRASHES WITH FATALITIES
2008	3,418	28	39	652	600	121	9
2009	3,422	25	32	820	515	99	7
2010	3,563	23	36	698	564	110	11
2011	3,508	17	32	700	478	106	6
2012	3,322	20	42	721	478	119	12
2013	3,516	24	39	673	479	123	6
2014	3,391	22	35	619	589	130	6
2015	4,170	26	34	834	589	101	20
2016	3,393	15	39	562	469	130	10
2017	3,051	23	20	550	413	94	7
2018	3,514	22	51	574	490	117	3
2019	3,295	24	36	578	305	96	7
2020	2,343	15	29	468	234	68	6
2021	2,550	6	24	453	231	70	9
2022	2,505	20	26	564	214	74	3
2023	2,590	21	31	462	207	76	8

Source: New York DOT - Accident Location Information System (ALIS) and CLEAR Data

*Serious Injuries include: skull fractures, internal injuries, broken or distorted limbs, unconsciousness, severe lacerations, and unable to leave the scene without assistance.

TRAFFIC CRASHES IN TOMPKINS COUNTY 2008-2023



Source: New York DOT - Accident Location Information System (ALIS)

*Serious Injuries include: skull fractures, internal injuries, broken or distorted limbs, unconsciousness, severe lacerations, and unable to leave the scene without assistance.

CRASH FACTORS

Fatal and serious injury crashes (2018-2022, Tompkins County)

Source: CLEAR Crash Data Viewer

Crash Factors resulting in death or serious injury:

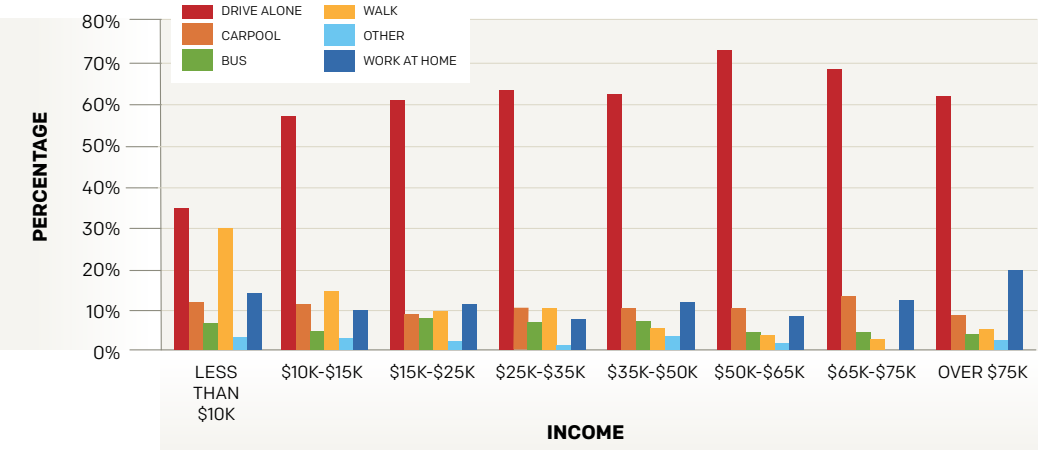
- Age: particularly young drivers, under 20 years old.
- Aggressive driving: particularly speeding.
- Behavior related: distracted, alcohol related, asleep.
- Crash type/location: roadway departures and at intersections.

Equity in Transportation

Another important dynamic is the multimodal nature of the work commute for minority and low income populations. These populations are more dependent on modes other than the privately owned vehicle for the critical 'trip to work'. The ability to have a dependable commute to work is essential for workers in low and moderate income households to retain their employment. This speaks strongly to the equity impacts of transportation decisions.

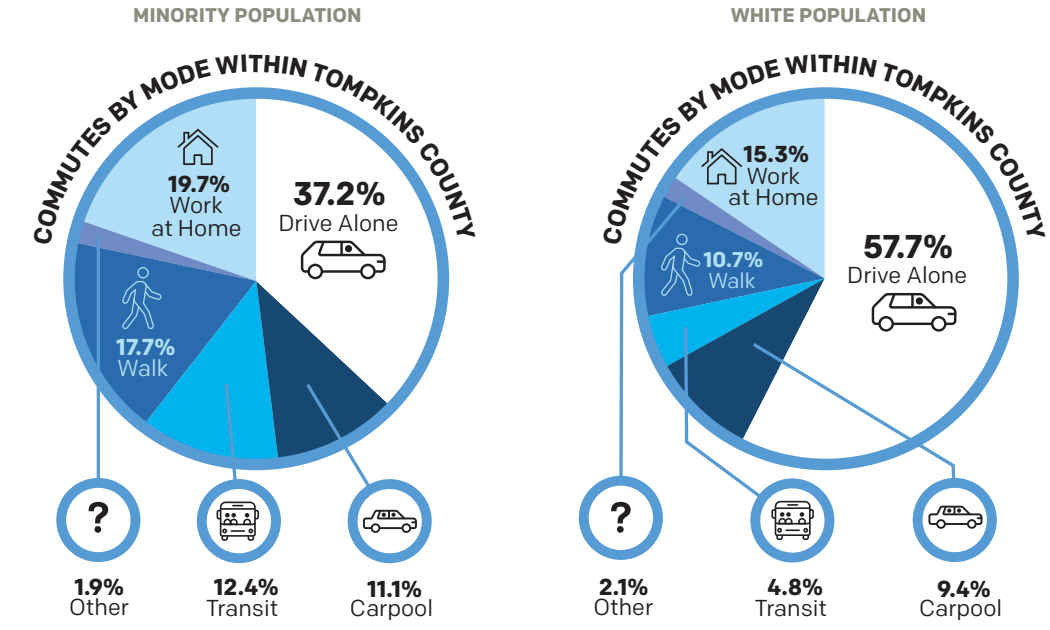
- Minority populations use transit, walk and carpool at a much higher rate than white (nonhispanics) for their work based trip.
- Minority populations also bike and carpool at a higher rate for their work based trip.
- A similar pattern for low income households. Although drive-alone is the dominant mode at all income levels, the lower income households are more dependent on other modes to help them get to work.

HOUSEHOLD INCOME BY MODE TO WORK – TOMPKINS COUNTY NY



Source: 2022 5 YR ACS DATA

COMMUTE MODE WITHIN TOMPKINS COUNTY



Source: 2022 5 Yr ACS DATA

Transportation Equity Needs Assessment

In 2020, public and private organizations that contribute to local transportation services formed the Tompkins County Transportation Equity Coalition. The Coalition meets regularly to understand and address factors that affect access to safe, efficient transportation for Tompkins County residents, particularly those from under served communities.

In order to gather valuable input from our communities, the Coalition conducted a county-wide needs assessment throughout 2022 and 2023.

The results are now available at CCETompkins.org/TENA.

The goals of these outreach efforts were to:

- Understand the strengths and weaknesses of the county transportation system;
- Focus on the experience of the under served;
- Provide under served residents the opportunity to contribute to transportation research and decision making; and
- Provide a framework for developing and identifying transportation services and solutions that will support and nurture the Tompkins County community

Who Was Included?

By design, outreach around the survey was to reach Tompkins County residents and transportation users identified as "underserved." This included those whoself-identified as under 17 years old or 55+; LGBTQI+; Black, Indigenous, People of Color (BIPOC); Hispanic/Latino/Latina/Latinx; with limited English proficiency; having a fixed/low/no income; without a car/restricted license; having a physical or mental disability or impairment; or living in a rural area.

KEY FINDINGS

Connectivity

- Most common mode of transportation: personal vehicle; unsurprisingly most did not find it hard to get around Tompkins County.
- Over 20% of the low-income underserved said getting around the County is "hard" or "very hard."

Barriers

- For low-income underserved, the top difficulties were "no buses when needed" (46%), and "no car/can't drive" (33%).
- Underserved, low-income respondents were almost twice as likely to report experiencing discrimination as their not underserved counterparts.

Strengths

- For underserved low-income — Bus (TCAT) works best (44%).
- In comments however, where respondents mentioned barriers, almost half discussed barriers within TCAT.

Effects of Barriers

- "Stress" was a significant response for all groups.
- "Limited autonomy" was an important response for under served groups (43%) with "late/missed appointments" being another significant effect.

SOLUTIONS AND RECOMMENDATIONS

Top Solution

- "Better bus service"
  - Investment in and support for drivers
  - More times available

Other Key Recommendations

- Additional transportation services, including van pool and on-demand shuttle services, particularly for rural areas
- Improved walking infrastructure for safety
- Bike lane network
- Subsidized or free transportation

CONGESTION

The ITCTC utilized existing traffic counts to help estimate Volume-to-Capacity ratios (V/C ratio) for the principal roadways in the county. This was supplemented with information generated by runs of the ITCTC travel demand model. V/C ratios relate the traffic volumes to the roadway traffic capacity based on the road's geometry, traffic flow speeds and adjacent land uses. The accompanying maps display the output of the data analysis.

Notes on Congestion in Tompkins County

- Five different numbered state routes converge in a relatively small area at the City of Ithaca's West End (aka The Octopus). This area of short blocks, numerous traffic lights, high traffic volumes and a rail line, experiences delays at the rush hours, and periodically due to the presence of railroad trains, vehicular crashes or other seasonal community events. At rush hour, the congestion extends to the state route approaches. This area is expected to continue to be prone to congestion.
- Advanced traffic signal systems and transportation demand management (TDM) strategies and incentives that reduce the number of cars or shift work hours to reduce peak hour traffic, can help mitigate recurring congestion in this area.
- State Route-13 northeast from the Ithaca Urbanized area, carries the highest traffic volumes in the county, specifically the SR-13/SR-366 Overlap section in the Town of Dryden.
- The travel demand model indicates that suburban areas will see an increase in the number of congested roadway links in future years.

CONGESTED ROADS IN TOMPKINS COUNTY 2024

- Cornell University has a huge impact as a traffic origin and destination. Several of the roads serving as approaches to the University are prone to congestion.
- GoIthaca (www.goithaca.org) and Cornell University offer TDM programs to help commuter reduce drive-alone trips. These programs need continuous support and enhancement.

ABOUT CONGESTION

As explained in the TDM Encyclopedia (www.vtpi.org/tdm/), a resource of the Victoria Transport Policy Institute, "traffic congestion is a non-linear function, meaning that a small reduction in urban-peak traffic volume can cause a proportionally larger reduction in delay. For example, a 5% reduction in traffic volumes on a congested highway such as from 2,000 to 1,900 vehicles per hour may cause a 10-30% reduction in delay. As a result, even relatively small changes in traffic volume on congested roads can provide relatively large reductions in traffic delay" (Victoria Policy Transport Institute, 2003). Therefore, polices and projects that move even a small percentage of trips from automobiles to alternative modes or that shift traffic volumes from peak hours will result in noticeable reductions in congestion and improved performance of the roadway system. Additional secondary benefits will result from lower emissions, more active lifestyles, reduced energy consumption, reduce costs in roadway system expansion, etc.


30

SUMMARY

The Ithaca Urban area is a regional employment center which attracts a significant number of daily in-commuters. The local economy, anchored in the education sector, is stable and growing. The county's population is also growing at a moderate rate and, like many other areas, it is getting older. However, due to the presence of institutions of higher education, the cohort of age 20-24 will remain significant into the future.

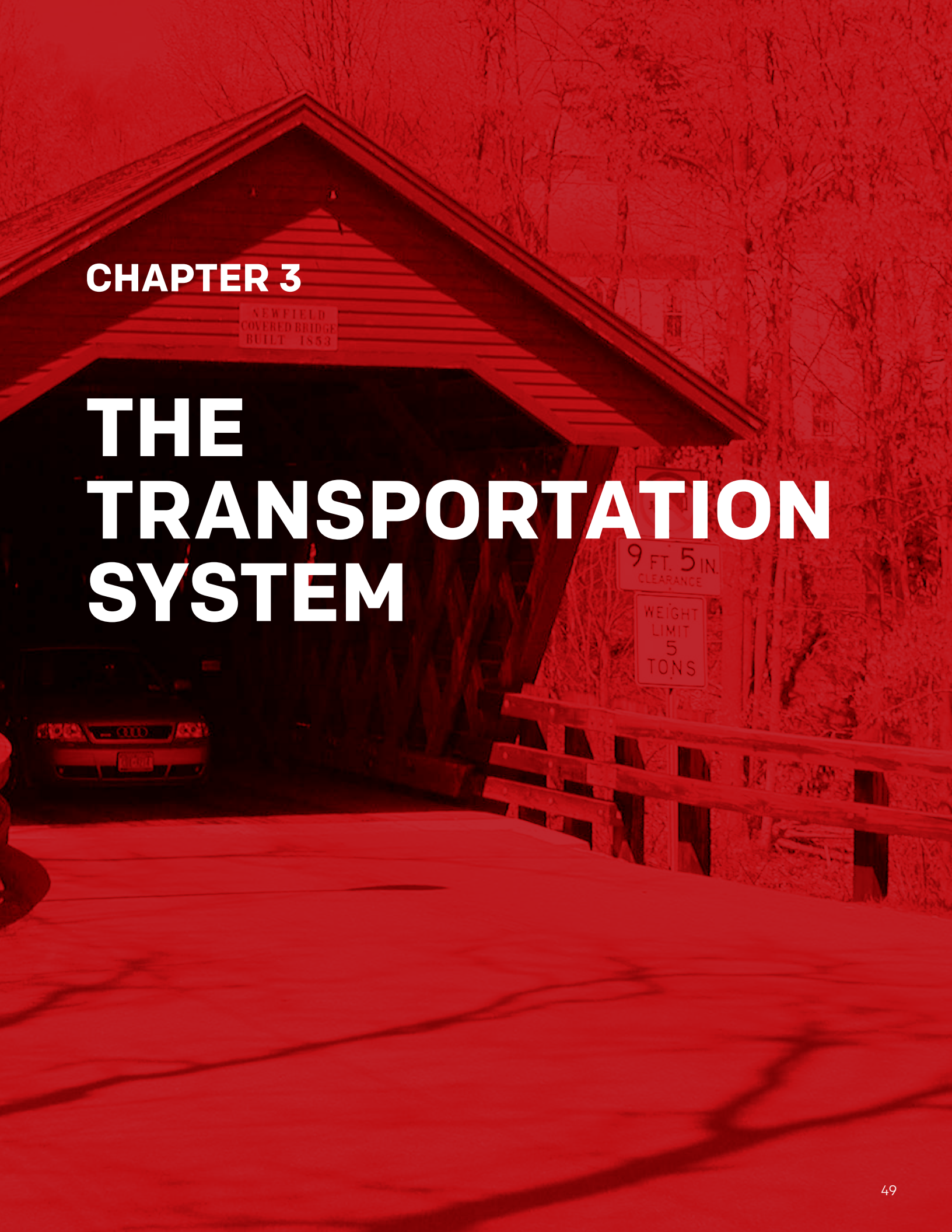
The general travel patterns for the greater Ithaca-Tompkins County show stronger than average participation in walking, public transportation and rideshare/carpooling for most trip purposes, and particularly for the journey to work. Nevertheless, there remains room for improvements. There continues to be a significant dependency on the automobile and drive alone trips to fulfill transportation needs. In particular, into-county and out-of-county commuting trips are overwhelmingly drive alone trips (81%). These patterns will continue unchanged unless there are continuous and coordinated efforts to facilitate mode shift away from single occupancy automobile use.

TCAT offers excellent service in the urbanized area of Ithaca but is more limited in the rural area. There continues to be a latent demand for transit that is evidenced by increased ridership. TCAT is working to enhance transit service to rural areas through application of new communication technologies and on-demand strategies.

Bicycle use for transportation has increased in the urban area, even when the data does not reflect the advent of bikeshare services. Bicycling remains an underutilized and underdeveloped mode. With 42% of all trips less than two miles in length and 61% less than four, bicycling has great potential to positively impact mobility in the urban/suburban area.

Equity considerations in the transportation sector require that affordable and convenient alternatives to private automobile use be made available. This is essential for minority, low income and the continuously expanding senior population to be able to participate effectively in the economy, which in turn generates multiple societal benefits.

Shifting even a small percentage of trips from automobiles to alternative modes will result in noticeable reductions in congestion and improved performance of the roadway system. Limited local financial resources for surface transportation and the growing evidence of the negative externalities (emissions, safety, fossil fuel energy use, congestion, noise, etc.) of continued over-dependency on the automobile as the principal mode of transportation have made it particularly important to understand and seek to maximize the role of transportation modes, and programs and policies that serve to reduce automobile dependency.



CHAPTER 3

THE TRANSPORTATION SYSTEM

THE TRANSPORTATION SYSTEM

INTRODUCTION

This chapter provides a description of the existing transportation system in Tompkins County and identifies future challenges and initiatives. For more than twenty years the transportation system in Tompkins County has been evolving to provide a menu of options for the traveling public. The private automobile continues to be the dominant mode of transportation. This condition is expected to extend into the future, however, as of 2024, surface transportation options to the private automobile in Tompkins County include walking, bicycling, transit (TCAT/Gadabout), intercity bus service, taxi, car rental, car sharing, bike sharing, ridesharing/ carpooling and ride hailing. The ITCTC and its transportation sector partners recognize the importance of continuing to expand transportation options that reduce automobile dependency and drive alone trips.

Infrastructure can be defined as the basic facilities, equipment, and installations needed for the functioning of a system. This chapter describes the existing capital transportation infrastructure including roadways, bridges, the transit system, intercity bus service, pedestrian and bicycle facilities. In addition, transportation related programs and initiatives are also mentioned as they play a key role in informing/educating and providing more options for the traveling public.

The existing transportation system in Tompkins County directly impacts the accessibility components of the LRTP Goals-mobility, connectivity, proximity. The layout and operation of the metropolitan transportation system also affects the sustainability components-environment, quality of life and equity- of the plan's goals.

The primary focus areas of connectivity in Tompkins County are the different transportation networks, including roads, bridges, transit, pedestrian, etc., that help to move people and goods in our community. A well-connected region has transportation networks with many links, numerous modal options, and minimal service dead-ends. Connectivity is related through land use to the proximity of trip origins and destinations. Improved connectivity with greater proximity result in greater mobility potential.

Mobility is enhanced by the integration of different strategies such as, congestion mitigation, transportation demand management (TDM), transportation system management, access to alternative travel modes, freight movement and intermodal links. These strategies help the transportation system operate more effectively and efficiently. This, in turn, relates directly to the environmental impacts from the transportation sector. All programs and projects need to be deliberate in their implementation and analysis of impacts to ensure meeting the equity goals of the LRTP.

Also included in this chapter are safety and financial elements as required by federal regulations. Safety and emergency management programs are identified and their relationship to transportation is described. The financial elements address the Federal requirement for a financial plan. The section estimates financial federal resources, along with their state ad local contributions, available for the development, operation, and maintenance of the transportation system and demonstrates how the long-range transportation plan is fiscally constrained.

While this chapter touches on the topics listed above, the reader should be aware that substantial overlap does exist. Transportation issues are critically interconnected with activities in the areas of land use, housing, watershed protection, agriculture, economic development, etc. This plan focuses attention on transportation but the interdependency of transportation with other sectors cannot be overstated.

Even as we work towards a future of reduced car dependency, it is understood that the transportation system is, and will continue to be, heavily dependent on cars and trucks for the movement of people and goods. The road/bridge infrastructure in Tompkins County is a valuable existing asset that needs to be maintained for use by all modes of transportation in an increasingly complex transportation system.

Metropolitan Transportation System

Federal regulations state that the long-range transportation plan shall, at a minimum: "Identify existing and proposed transportation facilities (including major roadways, transit, multimodal and intermodal facilities, pedestrian walkways and bicycle facilities, and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions" (23 CFR§450.324.f(2), June 2, 2014). One of the functions of this section will be to meet this legislative requirement.

ROADWAYS

Highways and bridges form the backbone of the transportation system. These are used by all modes – automobiles, trucks, buses, bicycles, pedestrians, etc. Their adequate maintenance is critical to ensure safe and efficient movement of goods and people.

ROADWAY DESIGN

Roadway design can influence how transportation corridors operate: i.e. are they safe for non-motorized modes? Do they facilitate the provision of transit? How do they relate to adjacent land uses?

One can expect the roadway design on a rural road to differ significantly from that in an urban area. Rural roads connect longer distances with undeveloped or low density land uses. This eliminates the need for curbs, sidewalks, etc. In contrast, within urbanized areas there are many different settings: main streets, residential neighborhoods, commercial districts, etc. In each of these, roadway design can play an important role facilitating the safe operation of different modes.

It is now understood, that in most settings, particularly in smaller urban areas like the villages and City of Ithaca in Tompkins County, road designs that accommodate walking, bicycling and transit are safer and more efficient than single-mode automobile oriented road design. Multi-modal complete streets serve all modes without losing capacity while encouraging reduced automobile dependency and its accompanying negative impacts. Road design can be the catalyst to move away from sprawl development to a smarter, more efficient land use development pattern.

ROAD SYSTEM BY ROUTE TYPE

ROAD TYPE	CENTERLINE MILES	PERCENT OF TOTAL MILES
STATE ROADS	182.1	12.5%
COUNTY ROADS	305.7	20.9%
TOWN ROADS	652	44.7%
CITY STREETS	61.5	4.2%
VILLAGE STREETS	77.9	5.3%
INSTITUTIONAL STREETS (CU, IC, TC3)	20	1.4%
PRIVATE ROADS	62.1	4.3%
ABANDONED/VACANT	55.6	3.8%
NO INFO/NO PUBLIC ACCESS	42.6	2.9%
TOTAL	1459.5	100%

- Tompkins County is served by a network of roads that extends approximately 1,460 miles
- County and municipal roadways comprise 54.2% of the roadway miles
- State Roads comprise 12.5% of road miles
- Daily vehicle miles of travel in Tompkins County total approximately 1,872,000 miles (Source: NYSDOT, 2022). This figure has ranged from 1,650,000 to 2,100,000 over the 2011-2022 time period.

Road System Summary

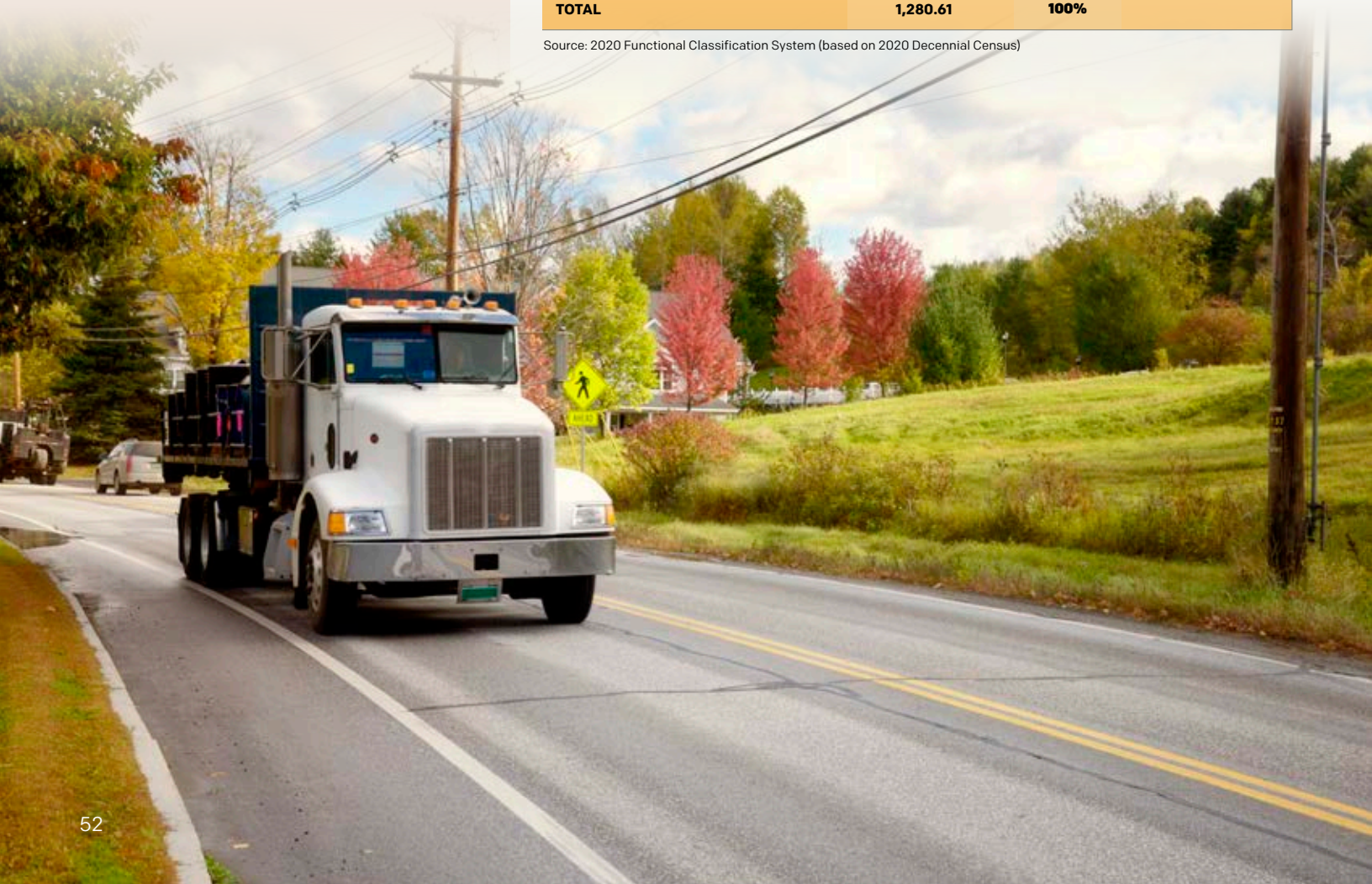
Our nation's roadway system is a vast network that connects places and people within and across national borders. This network has been developed with particular travel objectives in mind. These objectives range from serving long-distance passenger and freight needs to serving neighborhood travel from residential developments to nearby shopping centers. The functional classification of roadways defines the role each element of the roadway network plays in serving these travel needs. Ultimately, the coordinated and systematic maintenance of an accurate roadway functional classification system ensures that Federal Aid funds are allocated where they are most needed, to enable people and goods move fluidly through our modern transportation system.

Urban and rural designations are reevaluated every 10 years after the decennial census.

FEDERAL AID ROAD SYSTEM – DESCRIPTIVE STATISTICS

FUNCTIONAL CLASS	CENTERLINE MILES (2024)	PERCENT	FHWA GUIDELINES
URBAN ROADWAYS		% Urban	
URBAN PRINCIPAL ARTERIAL - FREEWAY	**10.04**	3.54%	
URBAN PRINCIPAL ARTERIAL	**15.62**	5.51%	
TOTAL URBAN PRINCIPAL ARTERIAL	**25.66**	9.04%	5-10%
URBAN MINOR ARTERIAL	**52.06**	18.35%	
TOTAL URBAN ARTERIAL	**77.72**	27.40%	15-25%
URBAN COLLECTOR	**50.69**	17.87%	5-10%
URBAN LOCAL STREET	**174.94**	61.68%	65-80%
SUB-TOTAL URBAN	**303.35**		
RURAL ROADWAYS		% Rural	
RURAL PRINCIPAL ARTERIAL	**28.71**	2.90%	2-4%
RURAL MINOR ARTERIAL	**50.24**	5.08%	
TOTAL RURAL ARTERIAL	**78.95**	**7.99%**	6-12%
RURAL MAJOR COLLECTOR	**120.84**	12.22%	
RURAL MINOR COLLECTOR	**82.94**	8.39%	
TOTAL RURAL COLLECTOR	**203.78**	**20.61%**	20-25%
RURAL LOCAL ROAD	**694.53**	**70.25%**	65-75%
SUB-TOTAL RURAL	**977.26**		
TOTAL	**1,280.61**	**100%**	

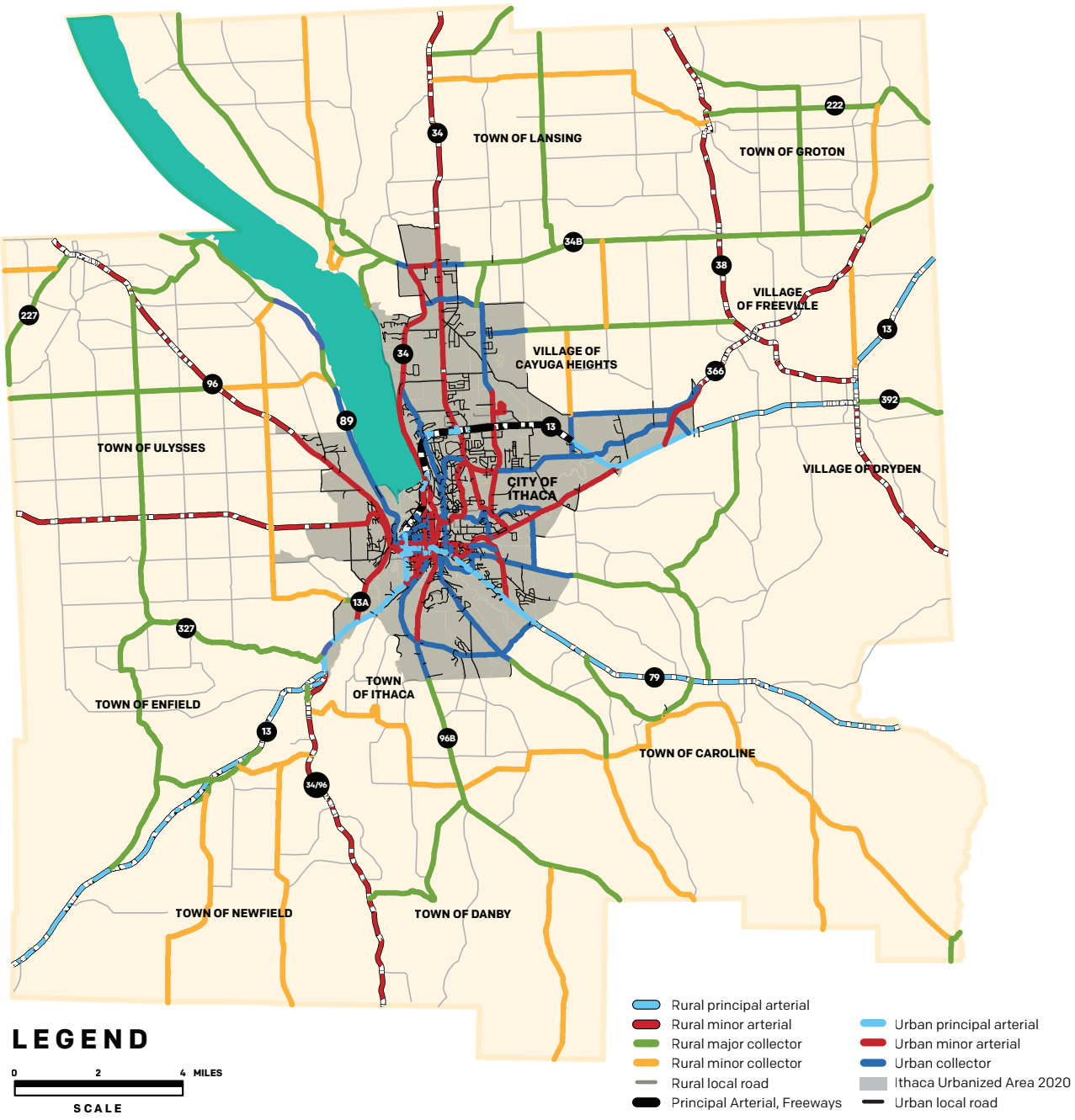
Source: 2020 Functional Classification System (based on 2020 Decennial Census)



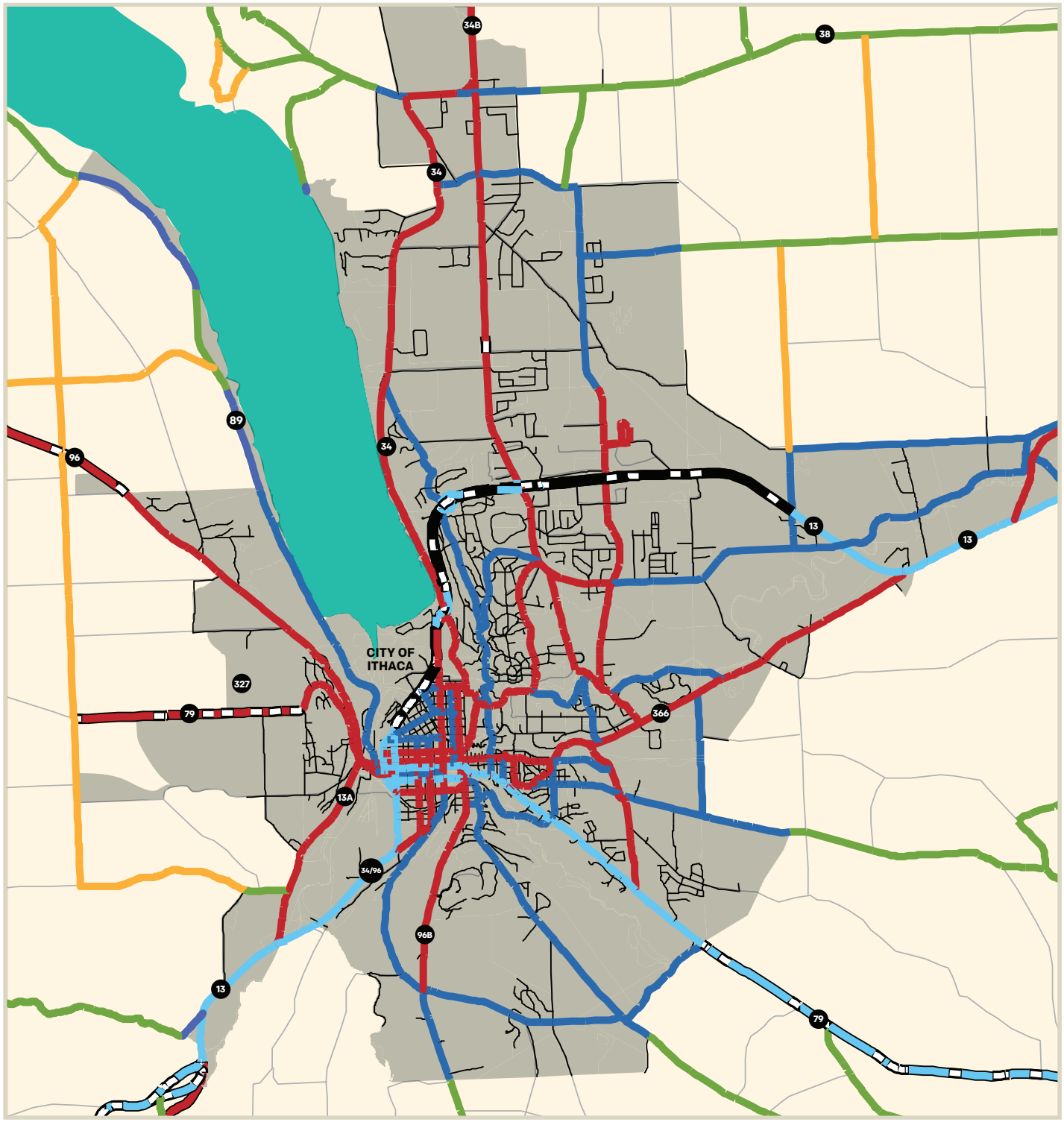
FUNCTIONAL CLASSIFICATION SYSTEM MAP

- The Highway Functional Classification System includes a network of roads providing connectivity to the most important trip origins and destinations.
- This functional classification scheme is legislatively required as a prerequisite to the use of federal transportation funds.
- Functionally Classified roadways are eligible for federal aid.
- Rural minor collectors and local roads are not eligible for federal aid funding, with some limited exceptions.
- Tompkins County has two principal arterial roadways, which are also the only Tompkins County roadways included on the National Highway System (NHS): all of New York State Route 13 and SR-79 from SR-13 southeast to Tioga County.

2020 TOMPKINS COUNTY HIGHWAY FUNCTIONAL CLASSIFICATION SYSTEM COUNTY WIDE



2020 TOMPKINS COUNTY HIGHWAY FUNCTIONAL CLASSIFICATION SYSTEM URBANIZED AREA



BRIDGES

- Due to its topography, Tompkins County roadways include numerous bridges.
- There are 209 bridges, including nine pedestrian-only bridges in Tompkins County (source: NYSDOT). Of these, 55 are under state jurisdiction (NYSDOT), 144 are locally owned. The remaining ten are owned by 'other' parties; five by Cornell University, five by NY State Parks.
- NYSDOT performs periodic inspections of all bridges.
- 'Structurally Deficient' bridges are candidates for rehabilitation work or replacement. A 'Structurally Deficient' rating does not mean a bridge is unsafe. A bridge that is considered unsafe would be closed to further use. Overall, there are 26 bridges considered Structurally Deficient.
- The ITCTC recognizes the importance of bridge maintenance as a critical factor in having a safe and efficient transportation system. Over the years numerous bridge projects have received funding through the TIP. The ITCTC will continue to include bridge maintenance as an important component of project development efforts.

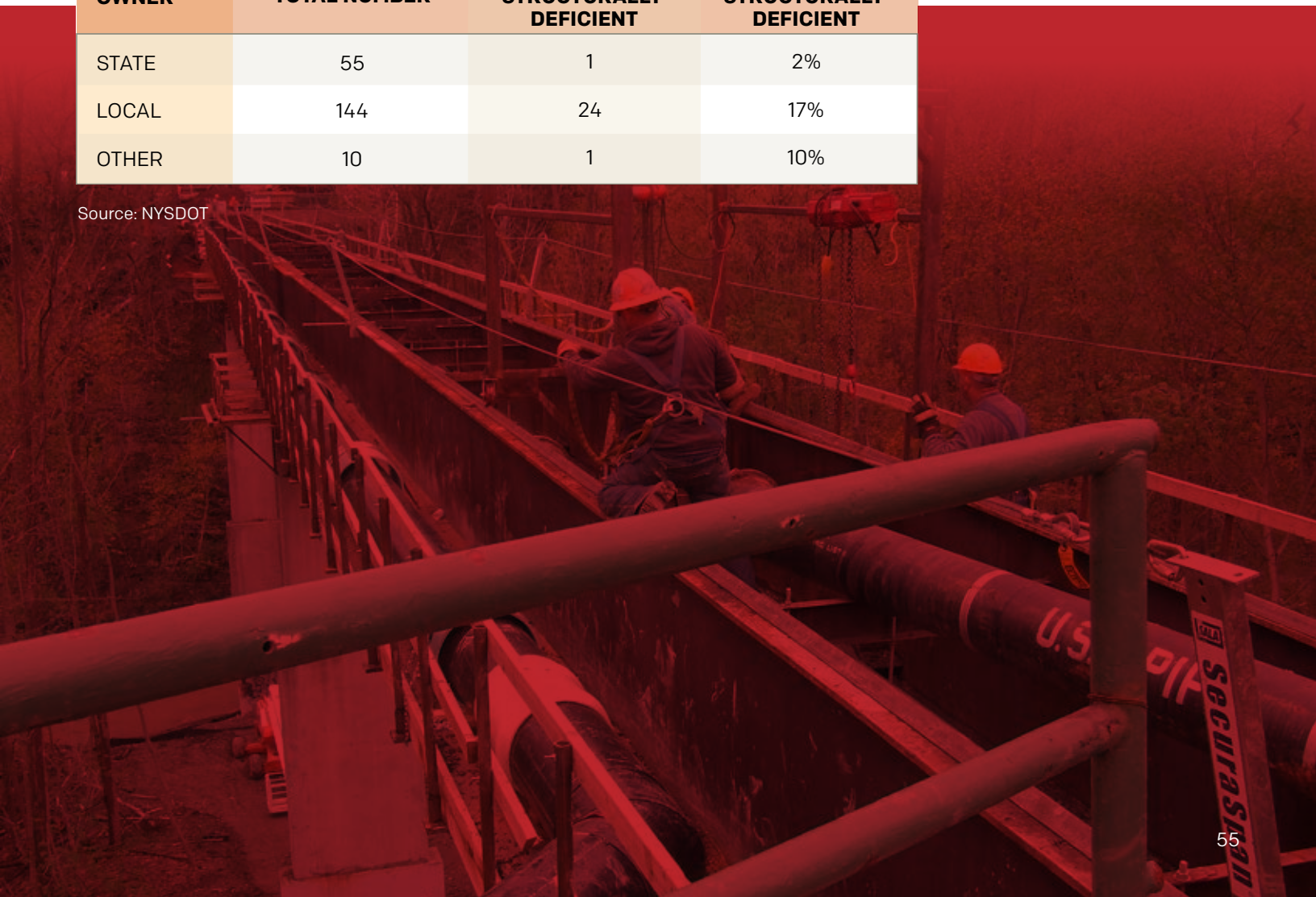
BRIDGE CONDITION RATINGS EXPLAINED

Bridge condition ratings are assigned on a scale from 3 to 9, where 9 is excellent. The scale uses a weighted formula that accounts for several structural components of a bridge: deck condition, superstructure condition and substructure condition. Bridges that score 4 or less for any component are considered 'Structurally Deficient'.

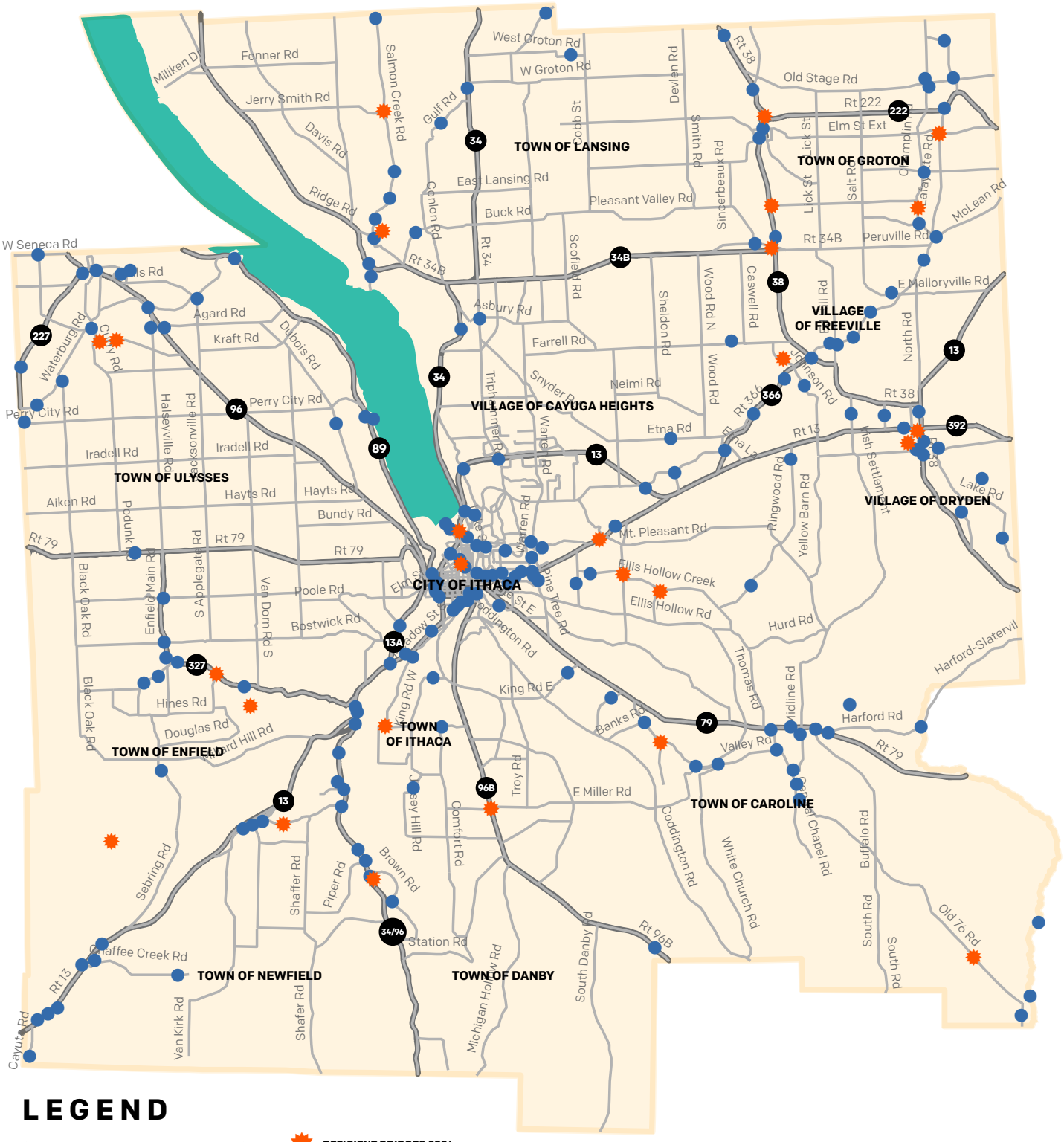
2024 BRIDGE CONDITION

OWNER	TOTAL NUMBER	NUMBER STRUCTURALLY DEFICIENT	% STRUCTURALLY DEFICIENT
STATE	55	1	2%
LOCAL	144	24	17%
OTHER	10	1	10%

Source: NYSDOT



LOCATION OF STRUCTURALLY DEFICIENT BRIDGES TOMPKINS COUNTY 2024



LEGEND

0 2 5 MILES

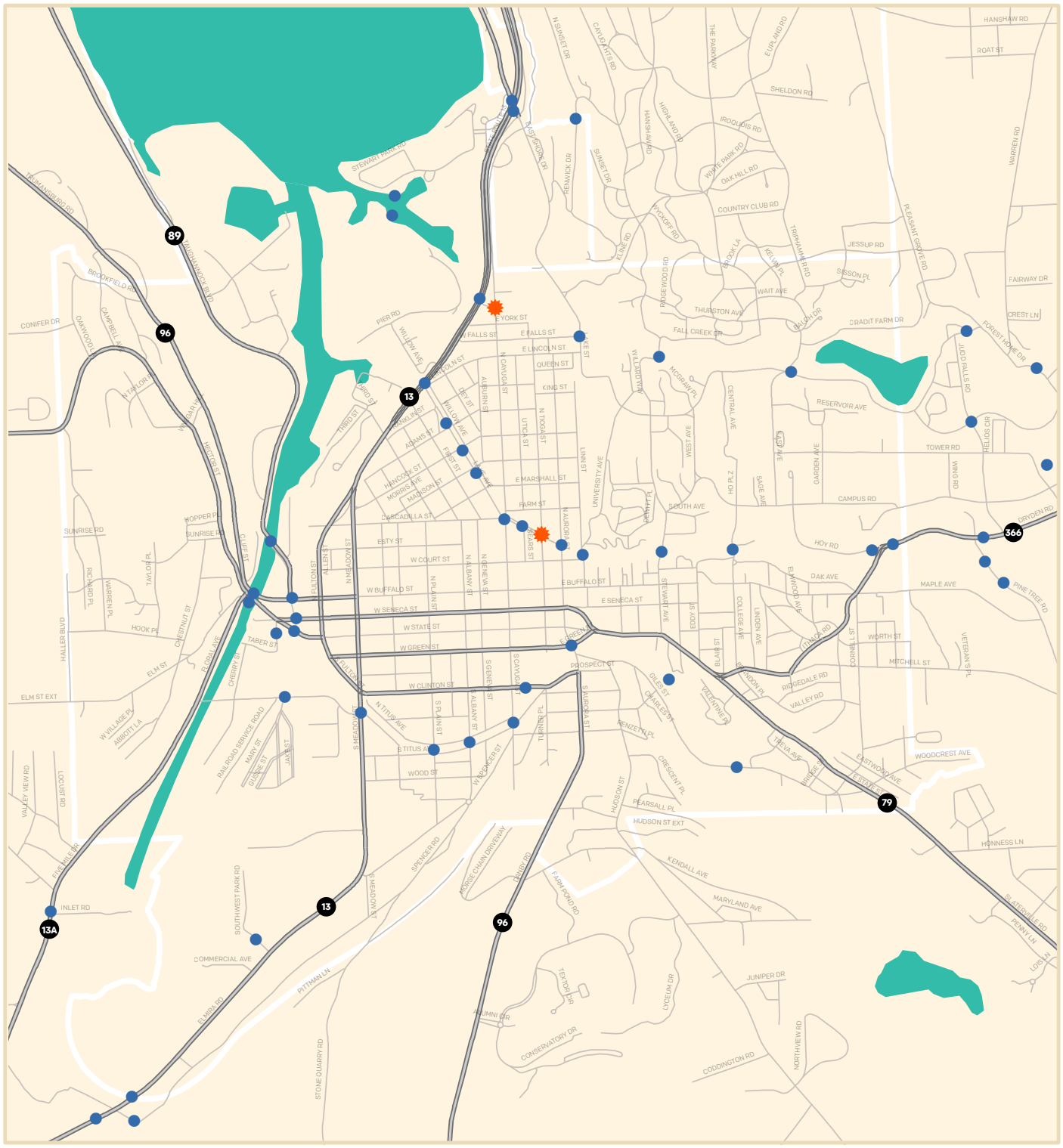
SCALE

DEFICIENT BRIDGES 2024

BRIDGES

NOTE: per NYSDOT If Deck, Superstructure or Substructure has an inspection rating of 4.0 or less

STRUCTURALLY DEFICIENT BRIDGES ITHACA URBANIZED AREA 2024



LEGEND

DEFICIENT BRIDGES 2024

BRIDGES

0 .5 1 MILES

SCALE

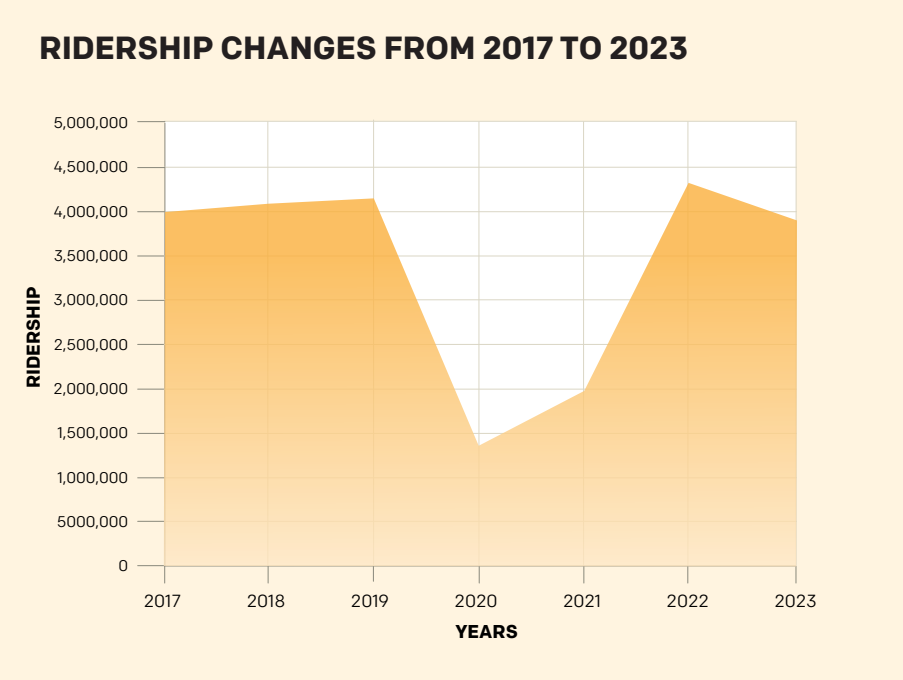
NOTE: per NYSDOT If Deck, Superstructure or Substructure has an inspection rating of 4.0 or less

Prepared by the Ithaca-Tompkins County Transportation Council - June 2024

TRANSIT

Existing Conditions:

- Public transit service in Tompkins County is provided by Tompkins Consolidated Area Transit (TCAT) - www.tcatbus.com.
- As of 2024, TCAT, along with many transit agencies nationwide, continues to feel the effects of the COVID pandemic induced shifts in ridership and access to materials, equipment and staff, particularly bus operators and mechanics. TCAT operates in every town in Tompkins County.
- TCAT contracts with GADABOUT Transportation Services, Inc. for demand responsive paratransit service required by the Americans with Disabilities Act (ADA paratransit).
- Nearly 62% of Tompkins County residents live within one quarter (¼) mile of a bus route, with 88% for urban and 31% for rural populations.
- TCAT uses approximately 53 buses to operate service on 33 routes (including one summer-only route and one 'demand and response' route) with a diverse range of schedules for academic year, summer and yearlong service.
- TCAT service is affected disproportionately by congestion - just a few minutes delay per trip can cause operational costs to go up as they are forced to add another bus and driver to maintain the existing level of service.



- TCAT routinely adjusts its service three times per year as it continually analyzes ridership, route timings, service change requests and their own operational capacity.
- The principal activity nodes are Downtown Ithaca, Collegetown, Cornell University, and the Shops at Ithaca Mall.
- TCAT ridership in the 2010's fluctuated around 4 million rides per year, with a peak of 4.4 million in 2013. The Covid pandedmic resulted in a dramatic loss of ridership. Numbers have rebounded but continue to fluctuate.

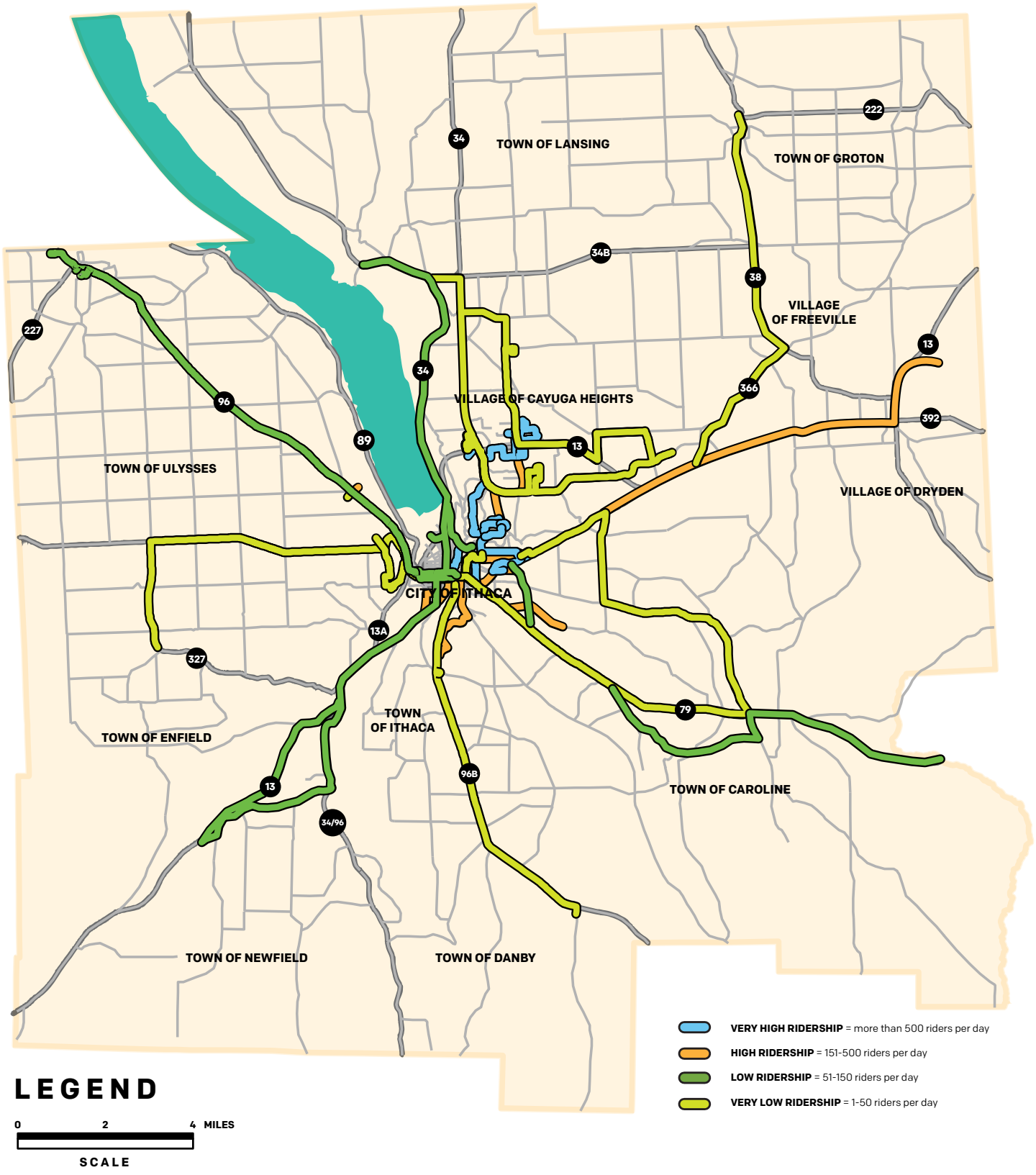
There is a clear demand for an expanded role for transit in Tompkins County based on ridership expectations, mobility needs and environmental and energy use community goals. The recently completed Transportation Equity Needs Assessment also clearly showed the importance of public transportation services for low-income, minority, senior and youth populations. To provide any realistic opportunity of enhancing public transportation, TCAT will need significant and continuous additional funding, which may require an entirely new paradigm of how the community selects and funds its priority transportation options. The ITCTC will continue to work closely with TCAT and other community partners to support high quality public transportation for Tompkins County.

TCAT completed its most recent Transit Development Plan (TDP) in 2022. TDP's offer a comprehensive review of the transit network, aimed at improving service - https://www.tcatbus.com/tdp-2020/2021.

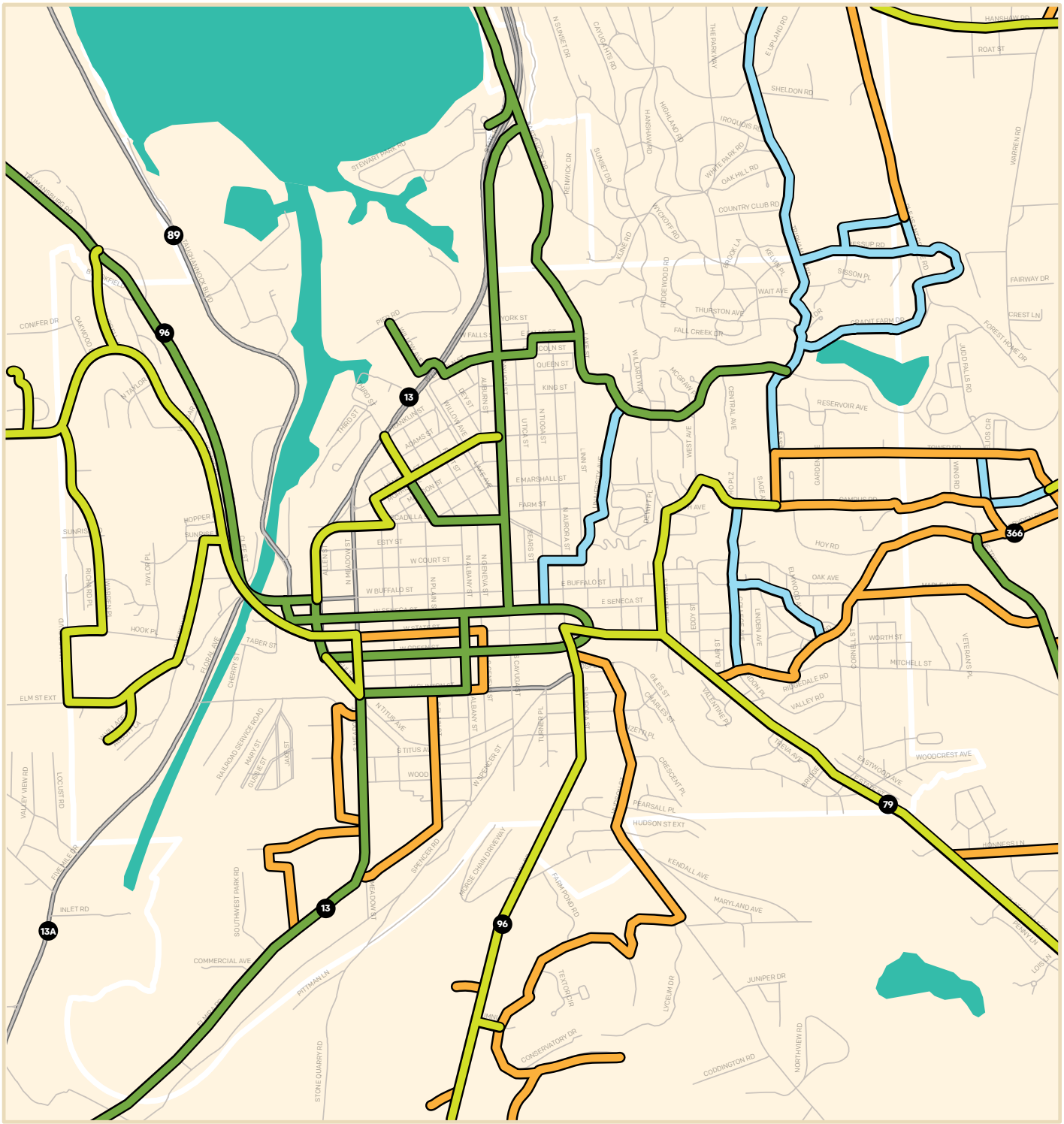
Transit needs over the next 20 years–

- Build a transit center in a new location that can accommodate an increased fleet size to meet growing demand for bus service in Tompkins and surrounding counties.
- Planning and implementation of initiatives to replace fossil fueled based buses with non-fossil fuel powered vehicles - electric, hydrogen, other.
- •Developing/enhancing park and ride facilities;
- Implementing/enhancing communication technologies to improve service and passenger experience;
- Maintain updated fare collection system to automate fare accounting;
- Additional and renovated passenger shelters to increase accessibility, security and ease of use;
- With the aging population, the demand for mobility services (transit and paratransit) for seniors is expected to increase significantly;
- Implementation of new services such as on-demand routes, microtransit, bus rapid transit (BRT), etc.;
- Like many other transit agencies, TCAT faces funding shortfalls for timely bus replacement, operations, and particularly for hiring and retaining bus operators and mechanics. Neither federal nor state capital assistance programs are adequate to the task, specially in a transit intensive community like Tompkins County. In addition to rolling stock, there will be substantial capital facility need to be addressed in the next twenty years.

TCAT BUS ROUTE SYSTEM RIDERSHIP - 2023 TOMPKINS COUNTY



TCAT BUS ROUTES - 2023 ITHACA URBAN AREA



LEGEND

0 .5 1 MILES

SCALE

- **VERY HIGH RIDERSHIP** = more than 500 riders per day
- **HIGH RIDERSHIP** = 151-500 riders per day
- **LOW RIDERSHIP** = 51-100 riders per day
- **VERY LOW RIDERSHIP** = 1-50 riders per day

PARATRANSIT

- GADABOUT Transportation Services, Inc. provides wheelchair accessible, demand responsive service for people over 55 years of age and persons with disabilities in Tompkins County.
- GADABOUT Transportation Services, Inc. was developed in 1976 and re-organized as a non-profit transportation corporation in 1981. Provides paratransit services under agreement with TCAT.
- Fleet size as of 2019 is 18 vehicles. System operates best with 30-31 vehicles.
- GADABOUT completes approximately 53,000 trips per year. Numbers dropped significantly due to the COVID pandemic, but, by the end of 2023 , ridership had surpassed 2019 levels.
- Combines use of paid and volunteer drivers.
- GADABOUT's administration and operations center and paratransit buses are based and maintained at TCAT's transit facility.
- Over the next twenty years, with the aging population, the demand for mobility services for seniors is expected to increase significantly.
- Automating dispatch and communications, acquisition of additional vehicles and driver staffing will be important priorities in the near- and long-term.

SHARED TRANSPORTATION

Shared transportation other than public transit used to consist exclusively of taxi service. Thanks to advances in wireless communication and computer technologies the last 15 years have seen an explosion of shared transportation options. Several services are currently present in Tompkins County. This is a transportation sector that is rapidly evolving and will have significant impacts to traveling decisions for residents and visitors to the area.

Ithaca Carshare

Ithaca Carshare is a program of the locally based non-profit Center for Community Transportation. with the mission of enhancing community access to transportation while reducing negative environmental and economic impacts of car use. Ithaca Carshare is closely aligned and supportive of the public transit system. Ithaca Carshare is a membership service offering 24/7 self-serve access to a fleet of well maintained, efficient vehicles. This service has been in operation since 2008 and is fully integrated into the transportation sector of the community - www.ithacacarshare.org.

Bikeshare

Starting in the fall of 2022, bikeshare services have been offered in Tompkins County by Ithaca Bikeshare. The service launched successfully in the City of Ithaca and the adjacent urban areas - www.ithacabikeshare.org

Transportation Network Companies (TNC)

Also known as ride-hailing services. Currently there are two private companies offering service in the Ithaca area – Lyft and Uber. Service has been available since mid-2017. Service is most dependable in the urban area and includes a variable rate structure.

Taxi

As of 2024 there were approximately 5 taxi companies offering service in the Ithaca-Tompkins area. This is a rapidly changing service with numerous startups and closures.

Limousine and other private services

There are several private companies offering limousine and other private transportation services. These companies focus on airport connections, others on tours/tourism travel and private events.

Finger Lakes Rideshare

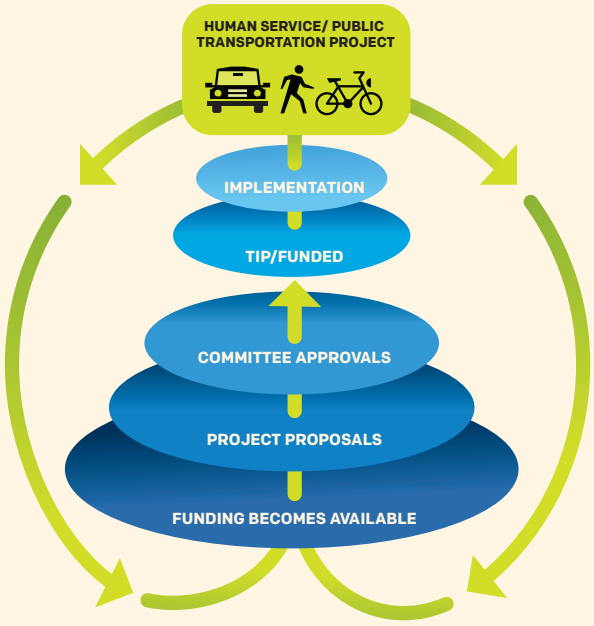
This service offers a web based interface for persons offering and seeking rides. The goal is to facilitate carpooling for one-time rides and also for recurring trips or work commute trips. Finger Lakes Rideshare is hosted by 511NY.org - www.fingerlakesrideshare.org.

COORDINATED PLAN

The Tompkins County Department of Planning and Sustainability and ITCTC have worked cooperatively to develop the Coordinated Public Transit - Human Services Transportation Plan for Tompkins County (the Coordinated Plan - www.tccoordinatedplan.org/). This planning process is used to identify and fund mobility programs and services targeted to low income persons and special needs populations. In 2024, a mobility plan vision was developed that identified barriers and strategies to break down those barriers with the development and implementation of a mobility management program, one call one click center, First Mile/Last Mile and rides to recovery programs.

- The Coordinated Plan is required under the Federal Transit Administration's program for enhanced mobility of seniors and individuals with disabilities.
- FTA considers the coordinated planning process as a best practice for developing mobility management and job access operating assistance projects.
- Under the Coordinated Plan, human services and transportation agencies work together to identify resources (federal and otherwise), service gaps, and annual project priorities to improve community mobility, increase the capacity of providers to supply more service, and to increase the efficient delivery of transportation for human service needs.

COORDINATED PLANNING PROCESS



- The County's Mobility Management program, in the Department of Planning and Sustainability, coordinates project implementation. Federal transportation funds programmed through the Coordinated Plan process are included in the ITCTC Transportation Improvement Program and receive additional review through that process.
- The ITCTC will continue to work with its local partners to implement and maintain the Coordinated Plan process. The Coordinate Plan process is an important example of collaborative planning in the transportation sector in Tompkins County.

INTERCITY BUS SERVICE

- The Ithaca area has a substantial amount of intercity bus service. In some cases, Ithaca serves as a stop between cities, i.e. Rochester to New York City. In other instances, service originates locally. Cornell University and Ithaca College both draw students from a large regional area and generate much of the demand for intercity bus travel.
- The Ithaca intercity bus station closed in 2018. Currently intercity buses are accommodated in the 100 block of East Seneca Street, and in the 100 block of E. Green Street, sharing space with TCAT buses. The City of Ithaca is actively planning and considering other locations to best accommodate intercity buses.
- At its current location intercity bus passengers have easy access to many services in downtown Ithaca, along with ready connections toTCAT, carshare vehicles and bike share.
- Intercity bus service in Tompkins County as of 2024 includes four commercial carriers – Coach USA, Ourbus, Trailways and FlixBus - and Cornell's Campus to Campus

INTERCITY BUS DEPARTURES FROM ITHACA AS OF MARCH 2024

PROVIDER	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
COACH USA	2	2	0	0	2	2	2
OURBUS	6	6	6	6	6	7	4
TRAILWAYS	2	2	2	2	2	2	2
FLIXBUS	5	5	3	4	5	5	4
CAMPUS TO CAMPUS	2	2	1	2	2	3	1
TOTAL	17	17	12	14	17	19	13

Number of buses per day-figures will vary

REGIONAL PUBLIC TRANSPORTATION

REGION	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
CORTLAND	4	2	2	2	4	2	3
ELMIRA	2	2	2	2	2	0	0
WATKINS GLEN	5	5	5	5	5	0	0
CORTLAND-DRYDEN	5	5	5	5	5	0	0
TOTAL	16	14	14	14	16	2	3

Number of buses per day-service to Ithaca area unless specified otherwise

- service to New York City. There are 12 to 17 bus departures per day depending on day of the week and season.
- Intercity bus service is variable. Announcements of new bus service and service cancellations are common.
- The COVID pandemic impacted inter-city bus travel. The 2024 level of service is approximately 34% lower than in 2018. There were 166 weekly departure in 2018 compared with 109 in 2024.
- Service to Owego, Binghamton, Scranton is offered as stops along the route to New York City.
- Additional service is offered to Rochester and Syracuse.
- Service during university breaks and holidays usually exceeds regular service levels.
- Cornell University offers Campus-to-Campus (C2C) bus service express to New York City 1-2 times per day depending on the day of the week.
- Intercounty public transportation is available to Cortland, Elmira area, Watkins Glen area. The service is targeted to the work commute, focusing on destinations in the City of Ithaca and Cornell University as the principal employment centers.
- The Central New York Regional Transportation Authority (Centro), out of Syracuse, is expected to take over offereing public transportation service in Cortland County sometime in 2025.

MULTIMODAL AND INTERMODAL FACILITIES

Multimodal facilities refer to the accommodation of various modes of transportation. Intermodal facilities facilitate transfer/use between modes. All modes, including transit, bicycle and pedestrian facilities, are considered under the "multimodal" aspect of this section. To obtain the most efficient operation, transportation system users must be able to select the most appropriate mode for each segment of a trip and have safe and convenient transfer options. Invariably the transfer of people and goods within a transportation system will represent costs and time delays. The emphasis of intermodal planning is to provide users with the opportunity to choose between modes and provide them with the ability to transfer between them in a manner that minimizes costs and time delays.

The major intermodal (transfer) facilities in Tompkins County include: Ithaca-Tompkins Regional Airport, intercity bus facility, park-and-ride facilities, and the principal TCAT bus stops and stations.

Passenger Services

Connections to Bus Service

- TCAT's public transportation system serves as the backbone for multimodal travel in Tompkins County. The system serves all intermodal facilities. Travelers routinely transfer at bus stops and stations between pedestrian, bicycle and transit modes. TCAT's City Center bus stations on Seneca St. and Green St., adjacent to the Ithaca Commons, are the principal hubs in the transit system, providing a point of contact between multiple routes. The stops are located on opposite sides of the Ithaca Commons and are connected by excellent pedestrian accommodations.
- Other TCAT stops at Cornell and the Shops at Ithaca Mall also serve a substantial number of customers and function as important intermodal facilities.
- City Center bus stations have direct access to car share and bike share services.
- Currently, inter-city bus service connections are provided at Green St. adjacent to the TCAT bus stops. This allows for convenient transfers between services.
- All TCAT buses are equipped with bicycle racks. The Bikes on Buses program has been in place for many years and serves thousands of customers every year. This program allows riders to combine their bicycle trips with transit in those occasions were a bicycle-only trip is not possible.
- Tompkins County has a widespread network of 13 rural park and ride lots which receive a high level of use.

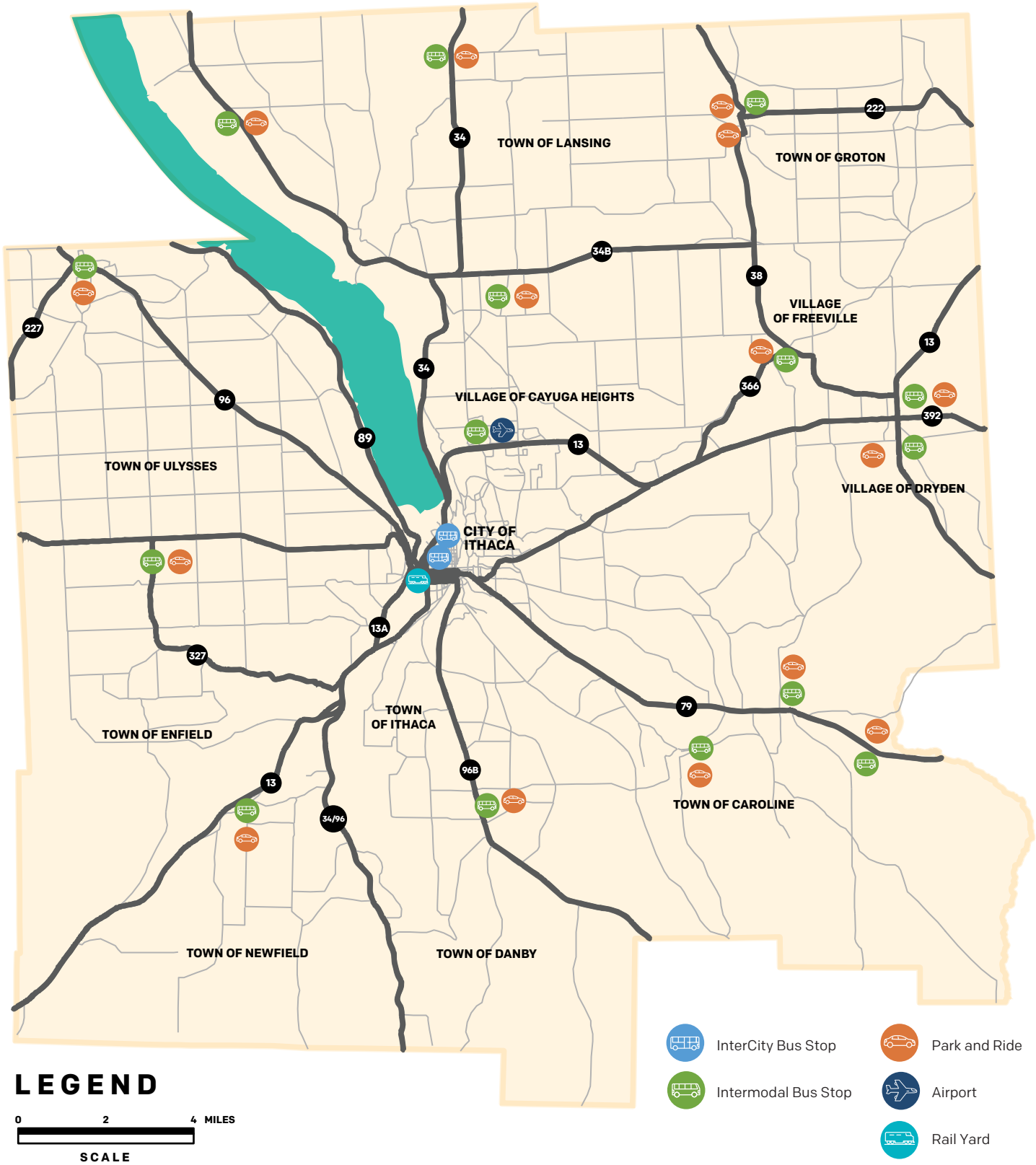
Other Private Sector Traveler Services

Other transportation options in Tompkins County include taxi services, Limousine services, Car rental, and Transportation network companies (TNC)-currently Uber and Lyft.

Future Needs

- Continue to improve bus stops in ways that facilitate intermodal use. Projects may include: connecting bus stops to sidewalks, providing safe road crossings to reach bus stops (particularly in rural areas), providing bicycle parking, providing protected shelters and lighting, providing traveler information (next bus arrival time) – depending on the needs of individual stops.
- Rural service – implement initiatives to provide more cost-effective and convenient service to rural areas. Support pilot projects and trials that help identify effective solutions such as first mile-last mile connectors, on-demand or flex service, etc.
- Improve coordination between transportation providers to provide service enhancements that increase customer satisfaction – i.e. single payment systems, service frequency and quality, access to information, etc.
- Implement projects to reduce drive-alone commuter traffic – i.e. coordinate transit connections with neighboring counties, provide enhanced park and ride facilities, support ride sharing/carpooling programs, etc.
- Pilot Program Support: Provide support to transportation partners to implement pilot programs identified in the Tompkins County Mobility Plan Vision.
- One Call-One Click Transportation Information Center: Establish a comprehensive transportation resource center for county residents.
- Affordable Transportation Options: Collaborate with Ithaca Bikeshare and Carshare to ensure these services are accessible to low income and undeserved residents.
- Employer Partnerships: Work with employers and carpool/vanpool services to implement programs that address transportation barriers faced by potential employees.
- Interagency Collaboration: Facilitate conversations among agencies and transportation service providers to explore opportunities for collaboration and service expansion.
- Mobility Management Program: Develop and implement a program to provide transportation information, particularly in rural low income and underserved communities. This program would also assist with creating and implementing solutions that break down transportation barriers and improve access to employment, food sources, medical services, education, and recreation (all considered social determinants of health).
- Intercounty Collaboration: Partner with neighboring counties to facilitate seamless transfers between transportation systems, enabling easier intercounty travel for customers.
- Funding Exploration: Collaborate with key stakeholders (including nonprofits, for profits, foundations, and government agencies) to research shared funding opportunities and areas of possible collaboration. This includes but is not limited to funding for bus passes, bikeshare/carshare, and demand-response transportation services.
- Increased TCAT Ridership: Work with TCAT to implement initiatives that boost ridership, such as expanding the First Mile/Last Mile program with the aim of restoring pre-pandemic service levels.
- Enhanced Services for Seniors and People with Disabilities: Partner with Gadabout to enhance transportation access for these populations. This collaboration would involve community education, travel training programs, and scheduling assistance tailored to their specific needs.
- Improved Medicaid Transportation: Collaborate with MAS (New York State's call center for Medicaid rides) to provide community agencies serving Medicaid clients with clear and accessible information on scheduling transportation services, completing authorization forms, handling missed trips and no-shows, and other essential procedures.
- Rides to Recovery Program: Implement this program to provide crucial transportation for individuals in active recovery, connecting them to vital services and opportunities that support their overall well-being, including employment, grocery stores, healthcare, education, and recreation.
- First Mile/Last Mile Program: Develop and implement this program, using all available transportation modes to connect residents in outlying areas to the nearest bus stop or transportation hub, ensuring they can connect to their desired destinations.
- Expanding Transportation Network: Build partnerships with a broad group of stakeholders, including nonprofits serving the elderly and people with disabilities, medical facilities, educational institutions, existing transportation providers, school districts transportation departments and volunteer driver programs, to create a more robust and inclusive transportation system.

TOMPKINS COUNTY INTERMODAL FACILITIES 2024



Freight Movements

Freight movement in the Greater Ithaca-Tompkins County area must be addressed in a different manner than in larger metropolitan areas. This region does not serve as a major hub for the transport of goods, but rather serves mostly as a destination to which goods are brought. The area relies heavily on trucking for the movement of freight. Rail is used sporadically to transport materials to the Cayuga Power Plant. The railroad is also used to ship salt from the Cargill, Inc. salt mine in Lansing. A minimal amount of freight is flown into Tompkins County Airport and there are no specific plans to increase freight movement in this mode.

There is a single active short-line rail line in Tompkins County: the Ithaca Central Railroad, operated by Watco (Watco Companies, L.L.C. The line stretches 48.8 miles from north Lansing, south along Cayuga Lake, through the City of Ithaca and on to Sayre, PA. The railroad is used primarily to ship salt from the Cargill, Inc. salt mine in Lansing. Rail is also used sporadically to transport materials to the retired Cayuga Power Plant (originally known as Milliken Station). A minimal amount of freight is flown into Tompkins County Airport and there are no specific plans to increase freight movement in this mode.

Tompkins County is served by a network of NY state roads that carry the bulk of truck traffic. Major freight destinations include downtown Ithaca, retail areas (i.e. Southwest Ithaca, NE Ithaca), Cornell University, Cargill Salt Mine, and various industrial parks. The ITCTC will work with NYSDOT and local governments to help implement projects and programs that lead to increased safety in freight movement and help mitigate the negative impacts of truck traffic in Tompkins County.

MAJOR FREIGHT GENERATORS AND MAJOR FREIGHT CORRIDORS IN TOMPKINS COUNTY

NON-MOTORIZED TRANSPORTATION FACILITIES

Active Transportation-Bicycle and Pedestrian Facilities

A fundamental policy position is that bicycling and walking are legitimate forms of transportation that must be incorporated in the design for transportation facilities and land use development. The Ithaca Urban area is well served with an extensive network of sidewalks and trails. Bicycling however continues to be the 'missing mode'. A few bicycle lanes have been installed in various municipalities and the Cornell campus, but they are not connected or part of a greater network. Creating a network of formal and coordinated on-road bike facilities will minimize the potential for conflict with motorized vehicles, thus making the system safer and more efficient for all modes. Together, the bicycle and pedestrian modes of transportation carry a significant percentage of the journey to work trips in Tompkins County (pedestrian = 14%; bicycling = 1.6%). These figures are significantly higher within urbanized areas, for example, in the City of Ithaca pedestrian = 36%; bicycling = 2.5%). To achieve most goals of the LRTP, every effort should be made to maintain and enhance the trip share of these alternative modes to the automobile.

Bicycle

The need to develop an integrated system of bicycling facilities is crucial. Various efforts have contributed to this end, but more work is needed.

- There are approximately 8 miles of dedicated bicycle lanes, mostly in the Ithaca urbanized area ,and 35 miles of multi-use trails across Tompkins County.
- The City of Ithaca adopted a Bicycle Plan in 1997. Much background and data work has been completed to help facilitate a plan update, possibly as part of a broader transportation plan for the city. An important bicycle planning effort that remains a resource is the Bicycling for Everyone Plan developed by Bike Walk Tompkins - https://everyone.bikewalktompkins.org/
- The City of Ithaca has built a Bicycle Boulevard network that consist of about 3 miles of low-traffic and traffic-calmed streets in downtown Ithaca. In these streets, cyclist must share the travel lane with motor-vehicles.
- Bicycle parking is available throughout the Ithaca urban area, including the college campuses. However, more is needed at strategic origin and destination points. Covered and secure bicycle parking is also limited.
- The ITCTC produces a bicycling suitability map that is updated every two years – www.tompkinscountyny.gov/itctc/projects#bicyclemap. City of Ithaca cycling suitability is determined by vehicular traffic volume-ie. high volume streets are considered less suitable. Outside the city, suitability is determined by an index that includes traffic volume, road surface condition and availability of space on the road for cyclists.

2018AND 2020 ITHACA BICYCLE USE AND ATTITUDES SURVEYS

www.bikewalktompkins.org/blike-survey

Bike Walk Tompkins and the Ithaca-Tompkins County Transportation Council have collaborated in implementing Ithaca Bicycle Use and Attitudes Surveys in 2018,2020 and 2023. Hundreds of randomly chosen residents were contacted to learn about their current bicycling use, their interest in bicycling, the barriers they face, and the infrastructure they would like to have available.

The 2020 survey was conducted in May 2020, in the midst of the COVID-19 lock-down, to capture the use of bicycling pre-pandemic and receive information on how the pandemic has affected interest and barriers to bicycling.

The results show that there is a growing number of people bicycling, and a majority of people are interested in bicycling more often and want more bike infrastructure.

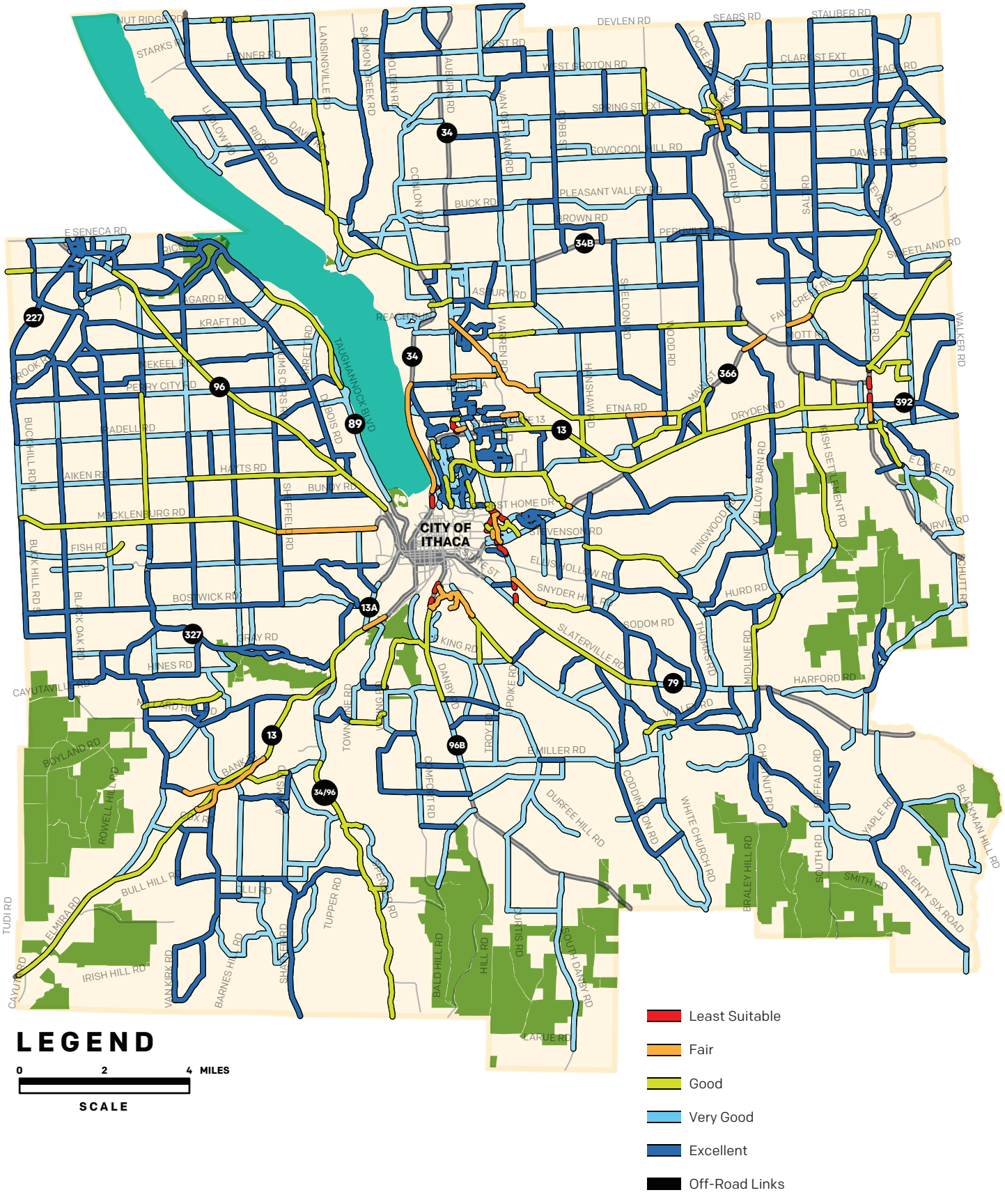
Principal Findings from 2023 Survey:

- 74% of student and 83% of non-student survey respondents agree that bicycling is a transportation option in and around Ithaca.
- 80% student and 73% of non-student survey respondents indicated an interest in bicycling more often in and around Ithaca.
- Only 20% of student and 27% non-student respondents explicitly expressed disinterest in bicycling.
- 91% of students and 89% of non-students agree there should be more bike infrastructure on the streets in and around Ithaca.
- 61% of non-student residents indicated that they would drive alone less often if they cycled more.
- The discrepancy between interest in cycling and current use means that there's a sizable group of people that would bicycle more often if their concerns were addressed. The City of Ithaca and Tompkins County could significantly advance multiple public policy goals (environmental, economic and social equity related) by supporting bicycling and shifting more trips to that mode of transportation.
- Main barriers to bicycling include hilly terrain, weather concerns, discomfort cycling next to moving vehicles (i.e lack of safe infrastructure).
- Discomfort next to moving vehicles is the top barrier to bicycling in Ithaca that can be directly addressed, particularly through infrastructure improvements.

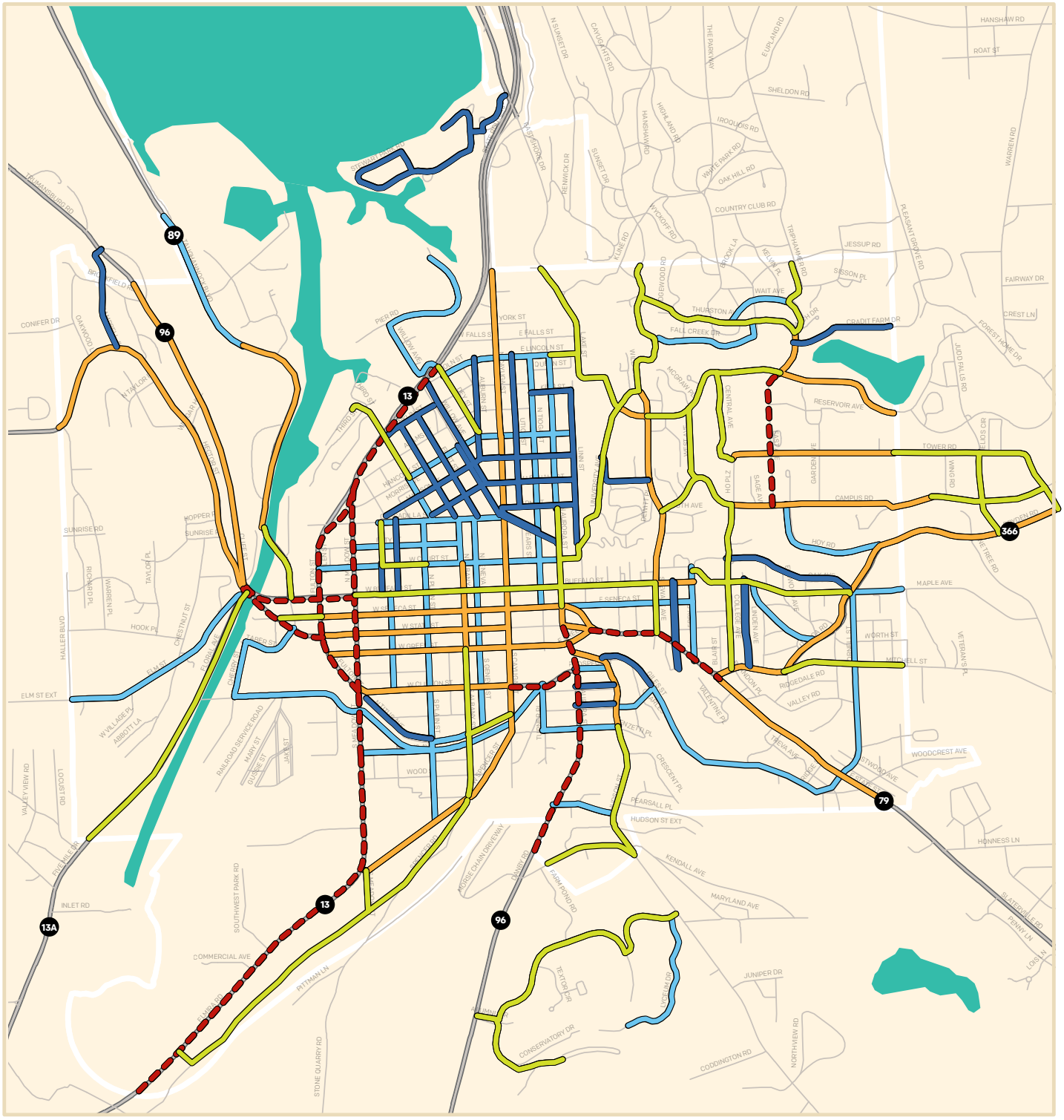
From Previous Surveys:

- Previous surveys indicate that people are most comfortable biking on protected bike lanes, traffic-calmed streets, and bicycle paths.
- It is necessary in and around Ithaca is that these types of facilities be part of a connected network.

BIKE SUITABILITY 2024 COUNTY WIDE



BIKE SUITABILITY 2024 CITY OF ITHACA



LEGEND

0 .45 .9 MILES

SCALE

- Very Heavy Volume
- Heavy Volume
- Medium Volume
- Low Volume
- Very Low Volume

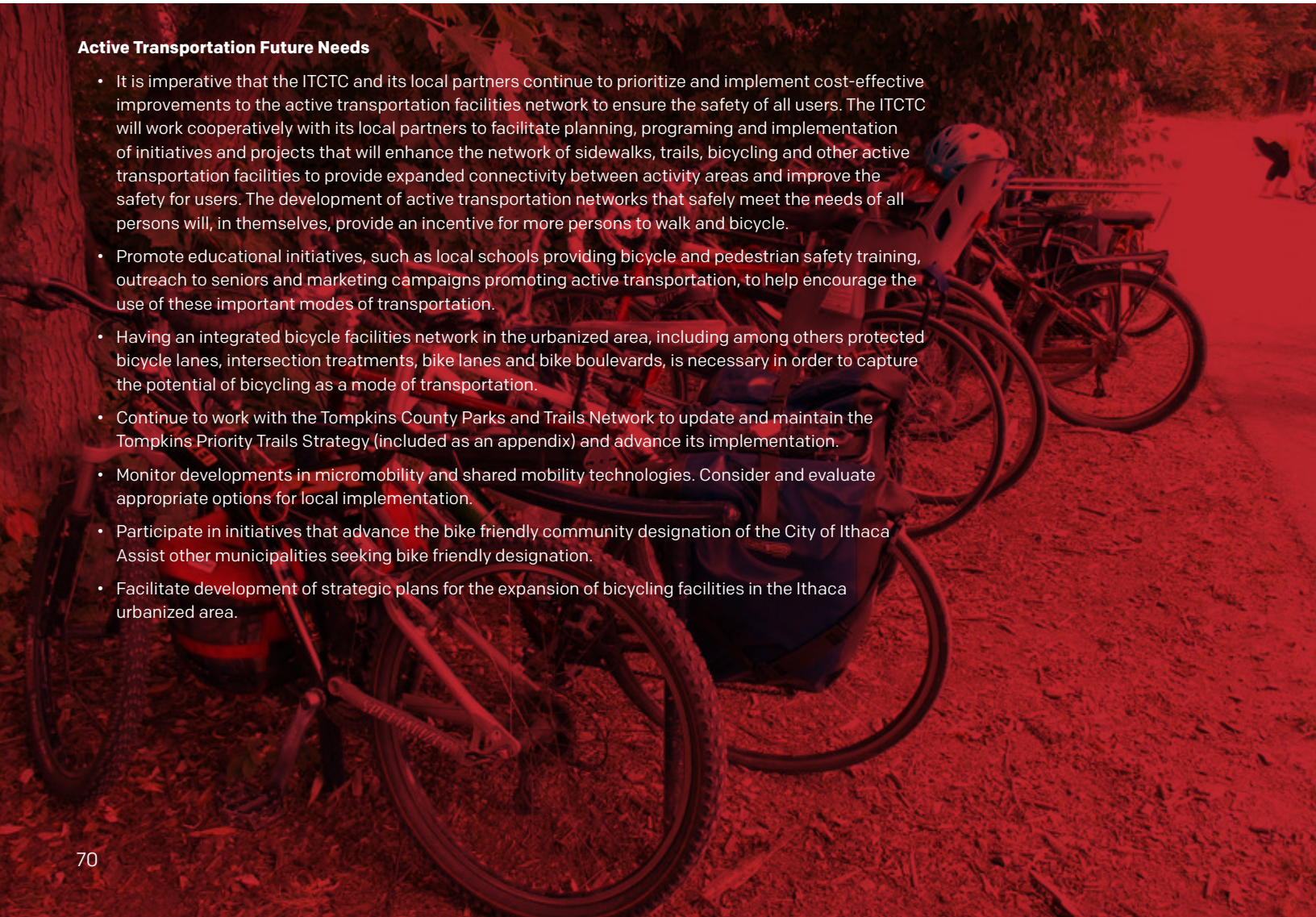
Pedestrian

Pedestrian movements are an extremely important component of local transportation planning. The ITCTC seeks to enhance the pedestrian experience to maintain and increase the number of people who choose this mode of transportation to complete their daily trips.

- The City of Ithaca has a comprehensive network of sidewalks. Through its exemplary sidewalk policy, the city is systematically maintaining existing sidewalks and providing new facilities to help close gaps in network. The Sidewalk Policy dates to 2014 and moved away from burdening individual property owners with the entire cost of installation and maintenance for sidewalks adjoining their property, by creating five Sidewalk Improvement Districts funded by an annual sidewalk assessment fee.
- Outside the City of Ithaca, sidewalks are found mostly in the Tompkins County villages and in areas of the Town of Ithaca where there are denser settlement patterns.
- The need to comply with ADA standards, and to consider issues such as how traffic signal (phase) timing may affect an elderly/ disabled person's ability to safely cross a street, is an important consideration in pedestrian planning. The importance of this issue will continue to increase as the average age of the population increases over the next 20 years.

STREETS WITH SIDEWALKS

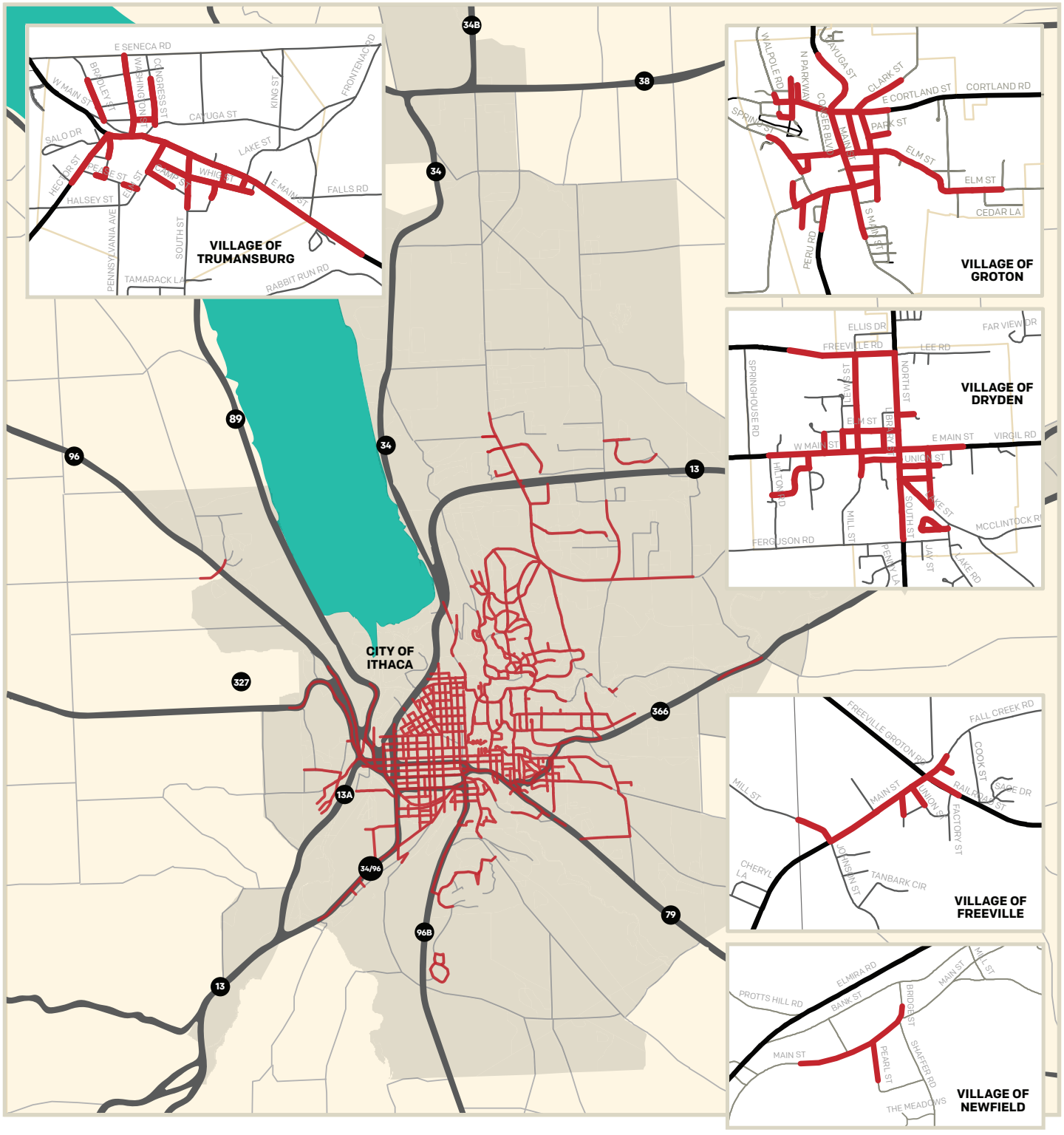
MUNICIPALITY	ROAD MILES	SIDEWALK MILES	% ROADS W/ SIDEWALKS
CITY OF ITHACA	90.10	56.61	62.8%
TOWN OF ITHACA (W/O V.CAY.HGTS)	123.61	18.39	14.9%
VILLAGE OF CAYUGA HEIGHTS	24.80	10.56	42.6%
VILLAGE OF DRYDEN	13.58	5.85	43.1%
VILLAGE OF FREEVILLE	6.62	1.14	17.2%
VILLAGE OF GROTON	12.34	6.45	52.3%
VILLAGE OF LANSING	35.44	2.75	7.8%
VILLAGE OF TRUMANSBURG	12.99	3.9	30.0%



Active Transportation Future Needs

- It is imperative that the ITCTC and its local partners continue to prioritize and implement cost-effective improvements to the active transportation facilities network to ensure the safety of all users. The ITCTC will work cooperatively with its local partners to facilitate planning, programing and implementation of initiatives and projects that will enhance the network of sidewalks, trails, bicycling and other active transportation facilities to provide expanded connectivity between activity areas and improve the safety for users. The development of active transportation networks that safely meet the needs of all persons will, in themselves, provide an incentive for more persons to walk and bicycle.
- Promote educational initiatives, such as local schools providing bicycle and pedestrian safety training, outreach to seniors and marketing campaigns promoting active transportation, to help encourage the use of these important modes of transportation.
- Having an integrated bicycle facilities network in the urbanized area, including among others protected bicycle lanes, intersection treatments, bike lanes and bike boulevards, is necessary in order to capture the potential of bicycling as a mode of transportation.
- Continue to work with the Tompkins County Parks and Trails Network to update and maintain the Tompkins Priority Trails Strategy (included as an appendix) and advance its implementation.
- Monitor developments in micromobility and shared mobility technologies. Consider and evaluate appropriate options for local implementation.
- Participate in initiatives that advance the bike friendly community designation of the City of Ithaca Assist other municipalities seeking bike friendly designation.
- Facilitate development of strategic plans for the expansion of bicycling facilities in the Ithaca urbanized area.

TOMPKINS COUNTY SIDEWALK INVENTORY 2024

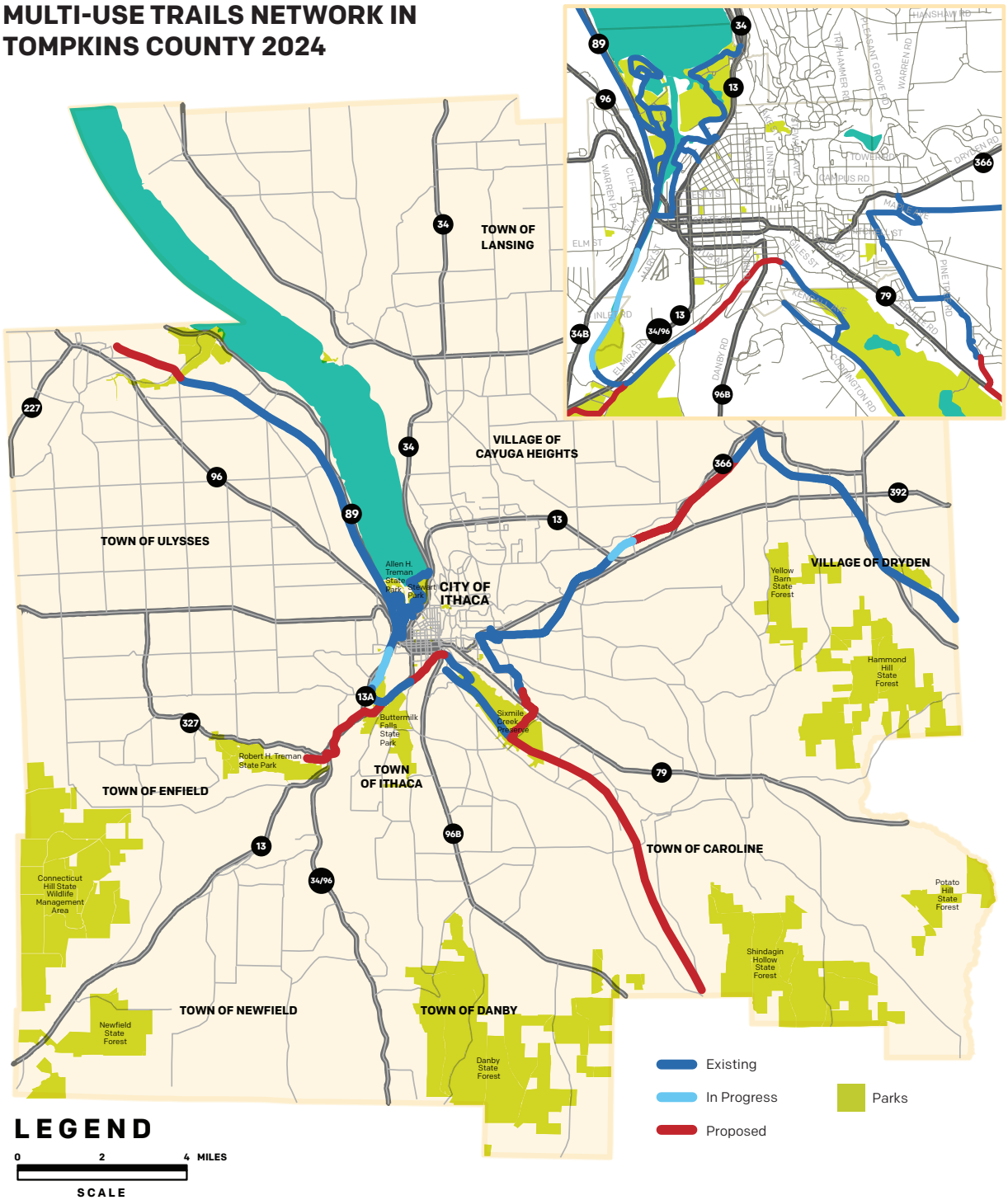


Multi-Use Trails

The Tompkins Priority Trails Strategy is included as an appendix to this plan. It identifies a network of trails, the Tompkins County Priority Trails and Urban Connectors, and specifies steps needed to reach trail development. The Tompkins Priority Trails Strategy includes plans for up to 51 miles of connected multi-use trails that will provide regional pedestrian and bicycle connections to many population centers and important destinations.

- There are approximately 35 miles of existing multi-use trails Tompkins County.
- The Black Diamond and Cayuga Waterfront Trails meet at Cass Park in the City of Ithaca. Together they extend approximately 14 mile linking Taughannock Falls State Park near Trumansburg to the City of Ithaca and ending at Stewart Park.
- The Dryden Rail Trail is partially open. A bridge over State Route 13 will go to construction in the short term. Eventually this trail will link the Villages of Freevile and Dryden to the Ithaca urban area.

MULTI-USE TRAILS NETWORK IN TOMPKINS COUNTY 2024

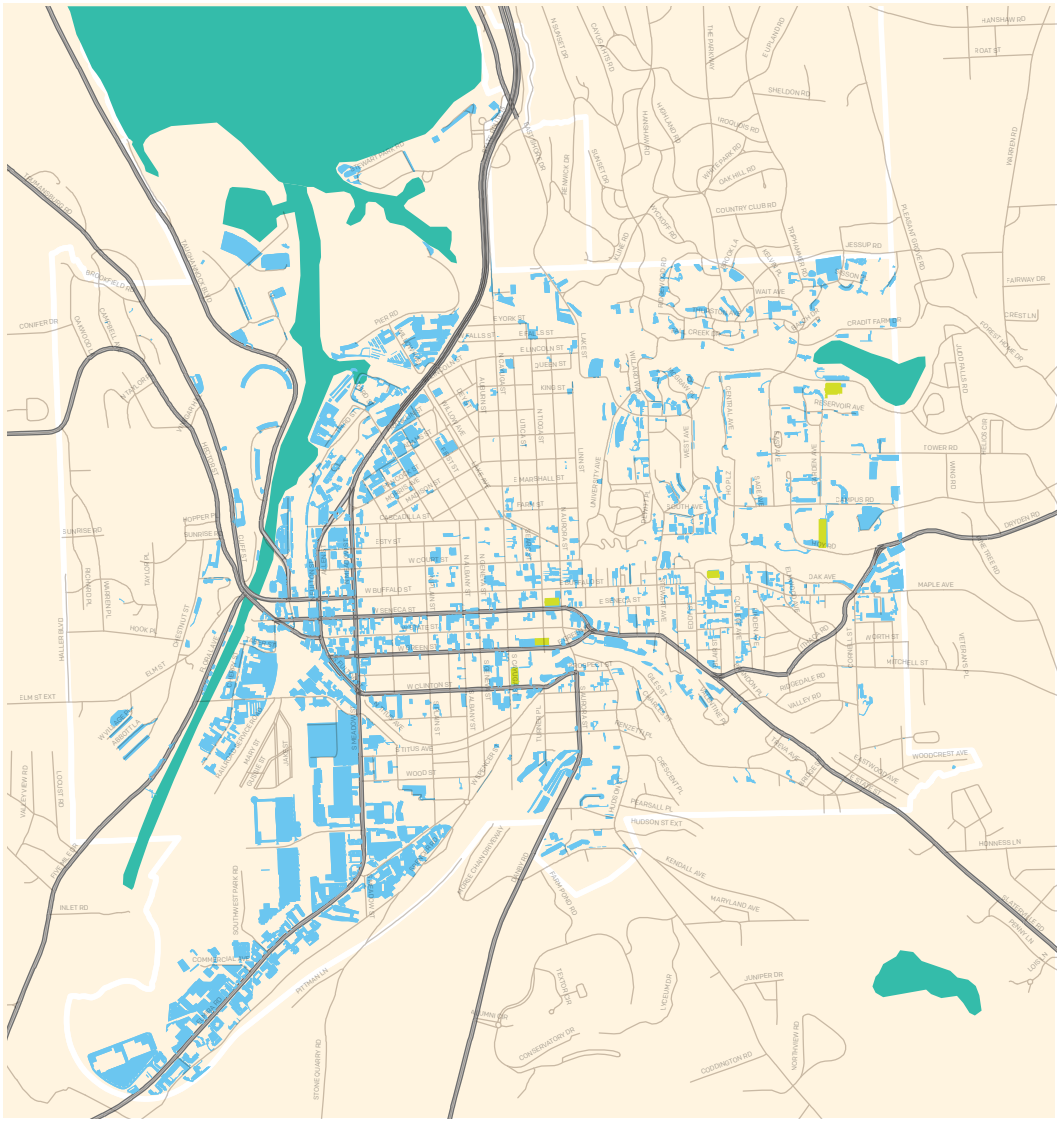


PARKING FACILITIES

Parking areas are an integral part of the transportation system. Their construction, maintenance (including snow removal), and performance must be considered as part of any planning process. The City of Ithaca and Cornell University include the principal employment centers in Tompkins County. In addition, they generate a significant number of recreational and other personal trips. Parking management in these two critical areas is crucial to addressing traffic circulation and public transportation issues.

- Approximately 7% of the City of Ithaca's land area is dedicated to parking (not counting on-street spaces).
- The City of Ithaca has three structural parking garages that serve the downtown area and one in Collegetown.
- There is extensive on-street parking including metered parking in the vicinity of downtown Ithaca.
- Many businesses also offer parking to their customers particularly in the automobile-oriented retail developments along State Route 13/Elmira Road.
- Cornell offers a network of parking facilities located on the campus periphery including two parking garages and two major surface lots.
- The ITCTC will work with municipal, non-profit, business and higher education partners to facilitate implementation of Transportation Demand Management programs and strategies that reduce private vehicle dependency, particularly for work based trips, and help reduce demand for parking.

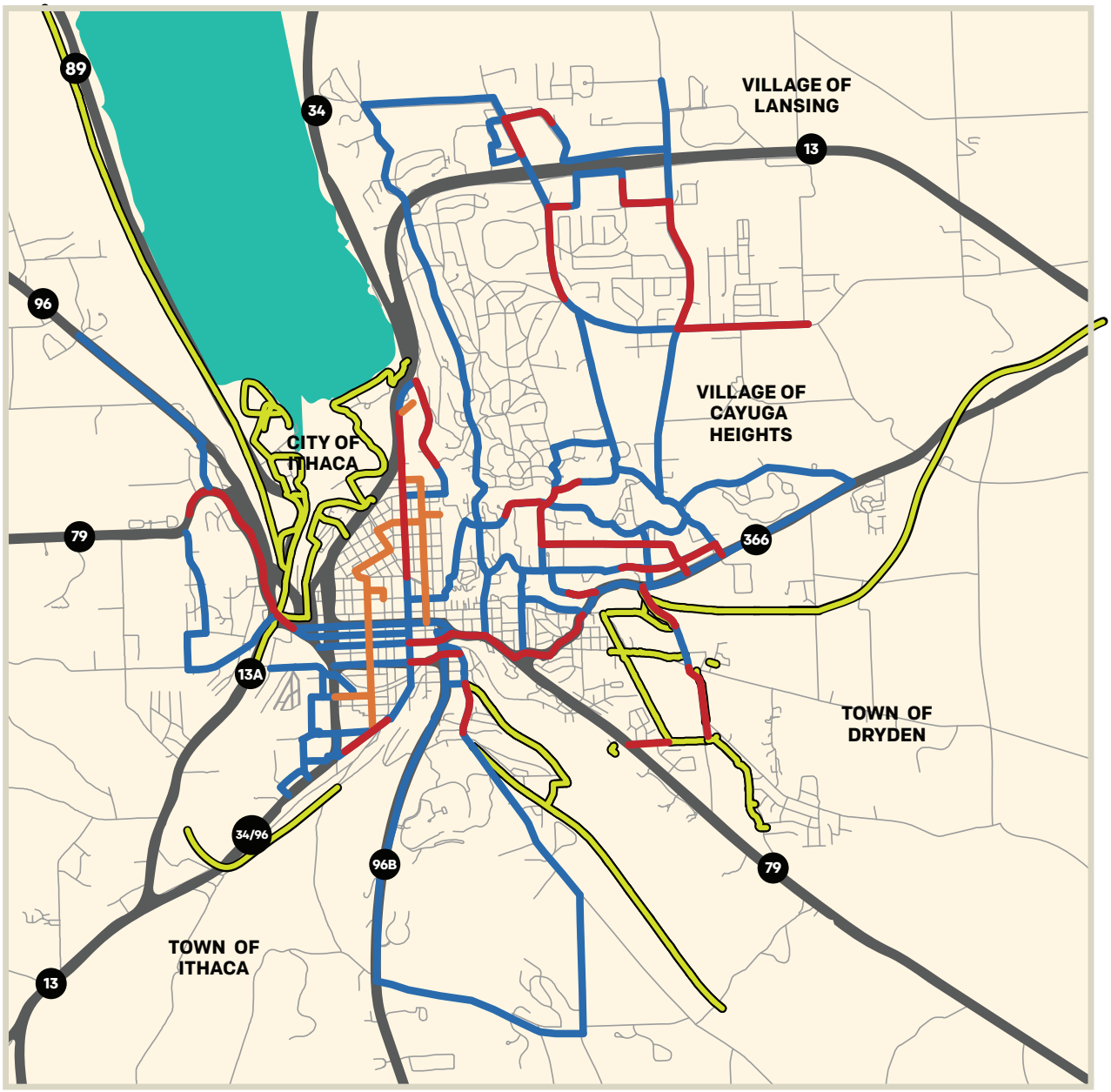
LOCATION OF PARKING AREAS CITY OF ITHACA 2024



COMPLETE STREETS NETWORK

The Planning Committee of the ITCTC, identified a well-coordinated network of roads to form a Complete Streets Network for the urbanized area of Tompkins County. A 'Complete Street' is a street designed and operated to enable safe access for all users regardless of their mode of transportation, so that pedestrians, bicyclists, motorists or public transportation users of all ages and abilities can move safely along and across the street. The roadways selected have been inventoried to determine existing complete street design components. Over time, as maintenance and construction take place on these roads, the ITCTC will work with local project sponsors to include additional complete street components. As the network is completed it will tie together numerous residential, employment and activity centers so that travelers will have multiple transportation options to reach their destinations.

COMPLETE STREETS NETWORK MAY 2024



LEGEND

0 1 2 MILES

SCALE

Complete Street definition:
- Sidewalk on at least one side of the street
- Marked Bicycle Lane, Wide Road Shoulder, or Bicycle Boulevard
- Within 1/4 mile of hourly (minimum) Bus service

- Current Complete Streets - meets all modes
- Bike Boulevard
- Proposed Complete Streets Inventory
- Existing Multi-Use Trails and Paths

Environmental Concerns

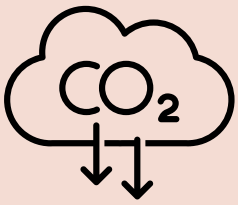
The transportation system must balance the protection of our natural, social, cultural, and historical resources with the need to address transportation demands. It is undeniable that the provision of transportation, particularly a system based on internal combustion engine cars and trucks, generates significant undesirable environmental impacts. Environmental concerns range from the more vehicle related issues (e.g. air quality, noise impacts, energy use, etc.), to project design and construction issues (location relative to sensitive lands, impacts to water resources, habitats, energy use during construction, etc.) to more community-level planning concerns (e.g. neighborhood preservation/impacts, jobs/housing balance, appropriate mixed-use development, etc.). As a result, addressing environmental impacts related to transportation will necessarily result in considerable overlap between multiple planning disciplines, i.e. land use, economic development, neighborhood planning, natural areas planning, etc.

Air Quality-Greenhouse Gas Emissions (GHG)

- The Tompkins County Comprehensive Plan includes an 'Energy and Greenhouse Gas Emissions Element' and a ''Greenhouse Gas Emissions and Energy Use Inventory' (2016). This remains the latest available data for Tompkins County. The inventory is scheduled to be updated in 2025.
- ITCTC staff worked with the Tompkins County Department of Planning and Sustainability to ensure that their plans and the ITCTC's Long Range Transportation Plan were mutually supportive.
- The Tompkins County community has established a goal to reduce GHG emissions at least 80% from 2008 levels.
- Currently, Tompkins County is in attainment of National Ambient Air Quality Standards. However, it is understood that failure to consider emission issues in an integrated and comprehensive manner could lead to continued and unacceptable degradations in air quality.
- Nationwide the transportation sector produces the most direct GHG emission, approximately 28% of total emissions (Source: U.S. Environmental Protection Agency (EPA), Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022, April 2024). Trucks and cars account for 80% of the transportation related emissions.
- In Tompkins County, transportation (31%) and commercial (34%) are the two largest sectors contributing to GHG emissions, with near equal emissions totals.
- Gasoline is the fuel that emits the highest level of greenhouse gases. In the Tompkins County transportation sector, the vast majority of energy use and GHG emissions are from gasoline (81.1%), followed by diesel (15.1%). Approximately 95% of vehicle miles of travel are from passenger vehicles and light trucks. This means that to have a real impact on emissions reductions the focus needs to be on cars, SUVs, vans, minivans and light trucks, less so on buses and heavy trucks.

REDUCING EMISSIONS

Future scenario analyses by the ITCTC demonstrate that there is no single solution to the challenge of reducing GHG emissions from transportation. In order to reduce GHG emissions to match county goals, it is necessary to reduce overall vehicle miles of travel and replace internal combustion engines with electric or plug-in hybrid electric technologies.



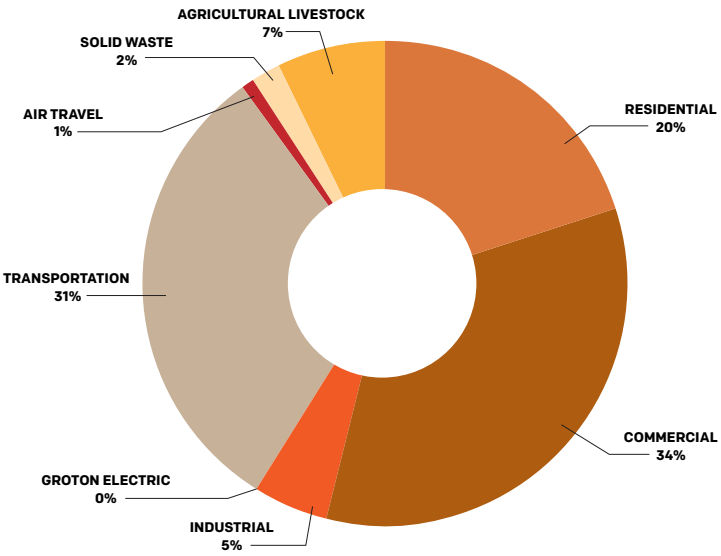
The policies, projects and initiatives in the LRTP support the development of transportation systems and programs that reduce dependence on automobiles, and particularly single occupancy vehicle use. This is encouraged by providing improved services and facilities for other modes, by supporting transportation demand management (TDM) programs and by supporting land use development practices that facilitate multiple modes of transportation. Concurrent with the above, the LRTP recommends fleet efficiency improvements that reduce fossil fuel use (shift to battery electric, plug-in hybrid electric and hybrid vehicles) and improvements in transportation system operations that result in enhanced system efficiency, reducing congestion and idle time. Together, these will result in reduced GHG emissions and other negative impacts of fossil fuel powered automobile use.

SUMMARY OF 2014 ENERGY CONSUMPTION AND GHG EMISSIONS BY SECTOR

SECTORS	ENERGY IN MMBTu	% OF TOTAL	EMISSIONS MTCO2e	% OF TOTAL
RESIDENTIAL	3,444,657	24%	197,241	20%
COMMERCIAL	5,435,572	38%	349,579	34%
INDUSTRIAL	854,854	6%	48,141	5%
GROTON ELECTRIC	86,457	1%	2,137	0%
TRANSPORTATION	4,275,412	30%	304,923	31%
AIR TRAVEL	152,969	1%	12,172	1%
SOLID WASTE	0	0%	15,114	2%
AGRICULTURAL LIVESTOCK	0	0%	66,612	7%
TOTAL	14,249,921	100%	995,919	100%

Source: 2014 Tompkins County Community Greenhouse Gas Emissions and Energy Use Inventory
MTCO2e–metric ton of carbon dioxide equivalent-a measure of the combined ability of emitted GHGs to trap heat.
MMBtu–Million British Thermal Units-measure of energy content in fuel; used in comparing energy content of various fuels.

EMISSIONS BY SECTOR-TOMPKINS COUNTY-2014



TRANSPORTATION FUELS: 2014 ENERGY CONSUMPTION AND GHG EMISSIONS – TOMPKINS COUNTY

FUEL	US GALLON	ENERGY IN MMBTu	% OF TOTAL	EMISSIONS MTCO2e	% OF TOTAL
GASOLINE	29,034,150	3,631,500	82.0%	257,272	81.1%
DIESEL	4,673,058	643,912	14.5%	47,651	15.0%
JET FUEL	1,241,929	149,031	3.4%	11,898	3.8%
AVIATION GASOLINE	32,820	3,938	0.1%	274	0.1%
TOTAL	34,981,957	4,428,381	100%	317,095	100.0%

Source: 2014 Tompkins County Community Greenhouse Gas Emissions and Energy Use Inventory

Land Use Planning

In New York, land use and transportation planning have occurred in relative isolation from each other. The July 1994 edition of the Land Use Law Reporter (Pace University School of Law, Albany, New York) stated the following:

> **"...failure to coordinate land use and transportation planning has:**
>
> - **made it very difficult if not impossible, to predict transportation demand and plan effective regional transportation systems;**
> - **created land use patterns that are automobile dependent, energy inefficient, environmentally damaging and that cannot be serviced properly by public transportation systems;**
> - **generated traffic congestion that increases air pollution..."**

These statements are still valid thirty years later as communities across New York continue to struggle with containing sprawl development, and managing congestion, energy and air pollution issues. Municipalities in Tompkins County have had some success in seeking to direct development to areas already served by utilities, which roughly match where there is higher population density - villages, hamlets, and the Ithaca urban area. This strategy is supported by the Tompkins County Comprehensive Plan. Nevertheless, powerful economic forces, particularly high housing costs and existing tax structures, are leading many to move to rural areas, creating a low density, widely distributed settlement pattern that is intrinsically car dependent.

- Land use patterns are fundamental determinants of the number of trips that people make.
- Zones that offer a mix of complementary land uses (e.g., commercial, residential, recreational) together with supporting design guidelines, enable persons to combine trips, encourage more pedestrian and bicycle trips, facilitate the provision of transit, reduce the number and length of automobile trips, and result in reductions in congestion, and consequently, energy consumption and vehicular emissions. The ITCTC will work with municipalities in support of developing and implementing land use policies and projects that take advantage of these urban efficiencies.
- In all cases transportation challenges must be managed based on the conditions of each location and considering the need and desires of the community. There is no single strategy or recommendation that will serve all locations or address all issues.
- Equity considerations. Proposed transportation projects must be evaluated to ensure environmental, social, cultural, and economic impacts are not disproportionately affecting any neighborhood, community or group, so as to not unfairly burden or advantage any socioeconomic group or community. Transportation related technical project evaluations are important, but it is also crucial to analyze the transportation system to ensure that social and environmental justice and ecological sustainability goals are achieved. Not all population groups have similar demands from our transportation system. Census data shows that minority and low-income populations use a greater variety of modes than white non-Hispanics for the important trip to work. These differences must be recognized in order to best serve the needs of all communities.

Minimizing Negative Impacts on the Natural Environments and Historic Resources

Although transportation projects can have undesirable impacts on the natural environment, measures can be taken to reduce and minimize them. The ITCTC will continue to monitor proposed federally funded projects and programs to make sure they don't impact environmentally sensitive areas. Projects with severe environmental impact, such as construction of new roadways, are rare within the ITCTC planning area. Nevertheless, Tompkins County features a high concentration of natural and historic resources that may be subject to adverse impacts from transportation projects. These resources include gorges, forests, and wetlands, as well as significant architectural sites.

To that end, the ITCTC will continue to coordinate with the Tompkins County Department of Planning and Sustainability (TCDPS) and their Natural Resources and Agriculture initiatives – www.tompkinscountyny.gov/planning/nri. TCDPS has identified Unique Natural Areas, Federal and State Wetlands, and Historic Bridges and Structures in the ITCTC region. This information is used to track potential impact of transportation projects.

Additional recommended actions that reduce environmental impacts include:

- diverting storm-water runoff to retention basins to reduce salt, silt, and thermal contamination;
- collecting paint chips from bridge maintenance projects to protect streams from lead contamination;
- minimize the use of salt in winter;
- ensure sedimentation and herbicidal pollution are minimized during maintenance practices;
- minimize the use of defoliants and herbicides by planning for maintenance free plantings through State or National wildflower programs;
- maintain the health and effectiveness of roadside trees, shrubs and ground cover;
- Work to eliminate the use of herbicides;
- Cleaning roadside drainage systems has been identified as a major source of sedimentation in creeks feeding Cayuga Lake. Effective mitigation measures such as immediate reseeding of ditch sides after cleaning should always be implemented.

UNIQUE NATURAL AREAS (UNAs) IN TOMPKINS COUNTY, NY

LEGEND

0 2 4 MILES

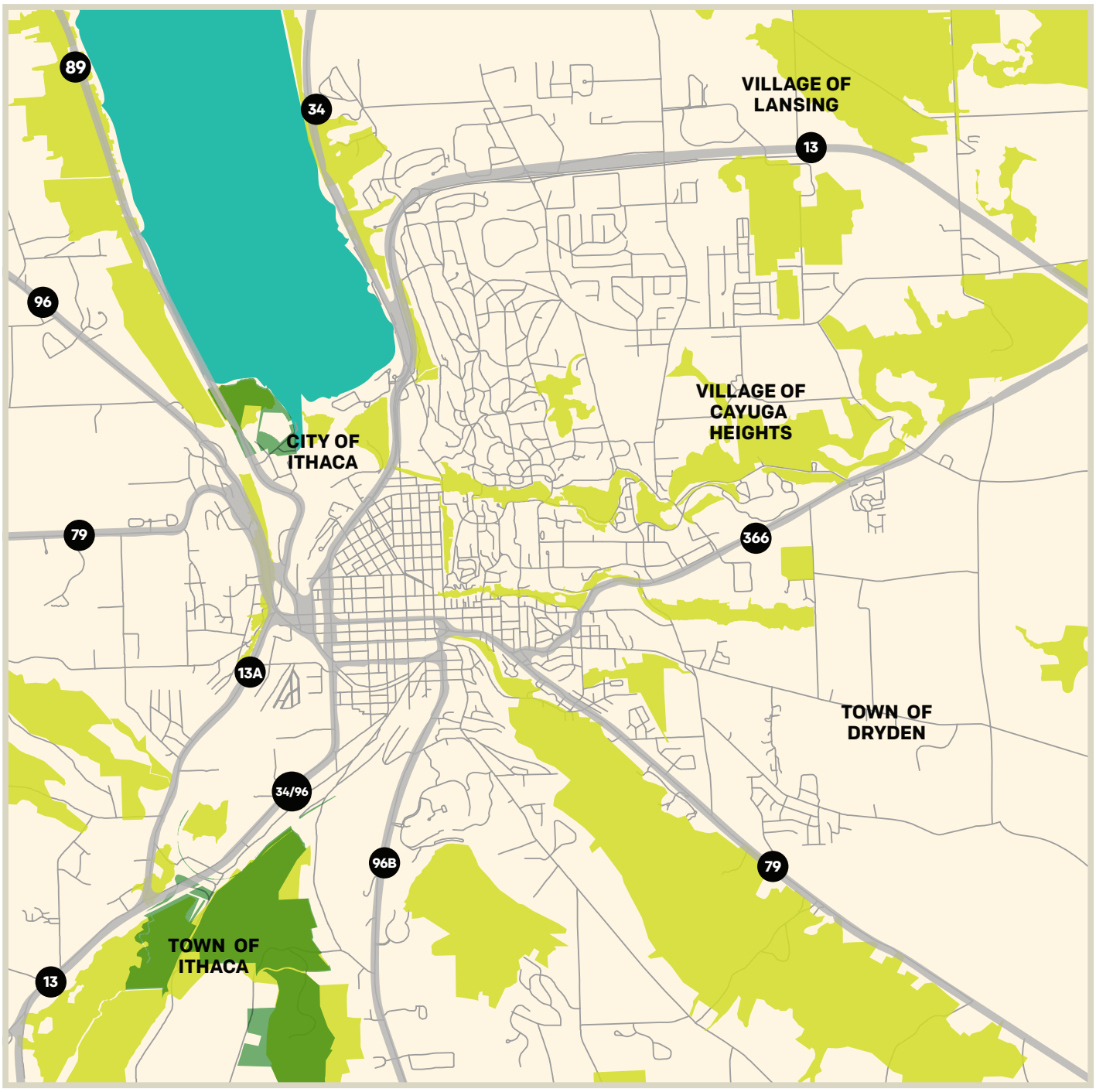
SCALE

Unique Natural Areas 2024

City and State Parks / Forests

NOTES: Delineation of Unique Natural Areas is from the Tompkins County Department of Planning and Sustainability - 2024. Prepared by the Ithaca-Tompkins County Transportation Council - 7/12/24

UNIQUE NATURAL AREAS (UNAs) IN ITHACA URBAN AREA



LEGEND

0 1 2 MILES

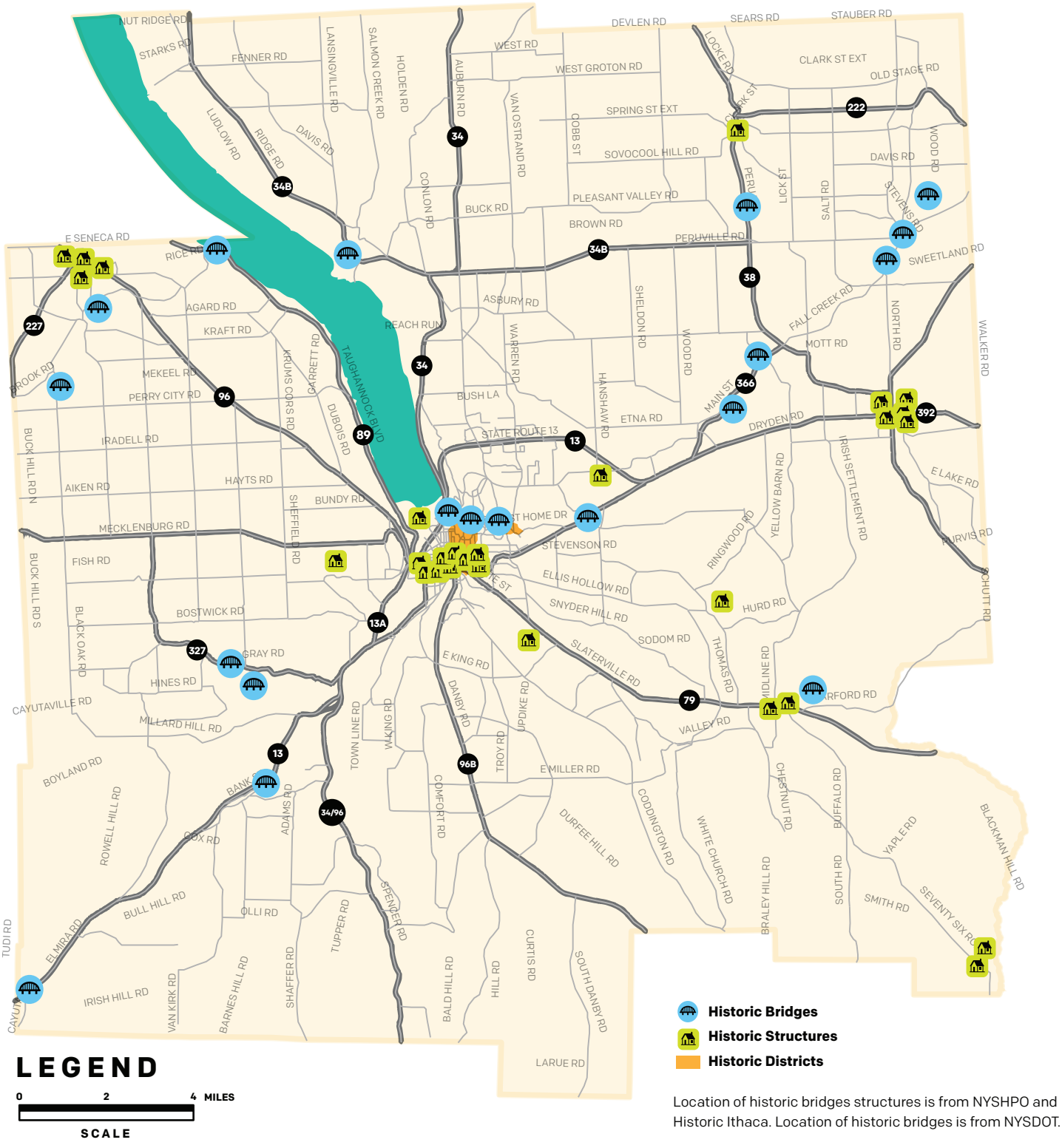
SCALE

Unique Natural Areas 2024

City and State Parks / Forests

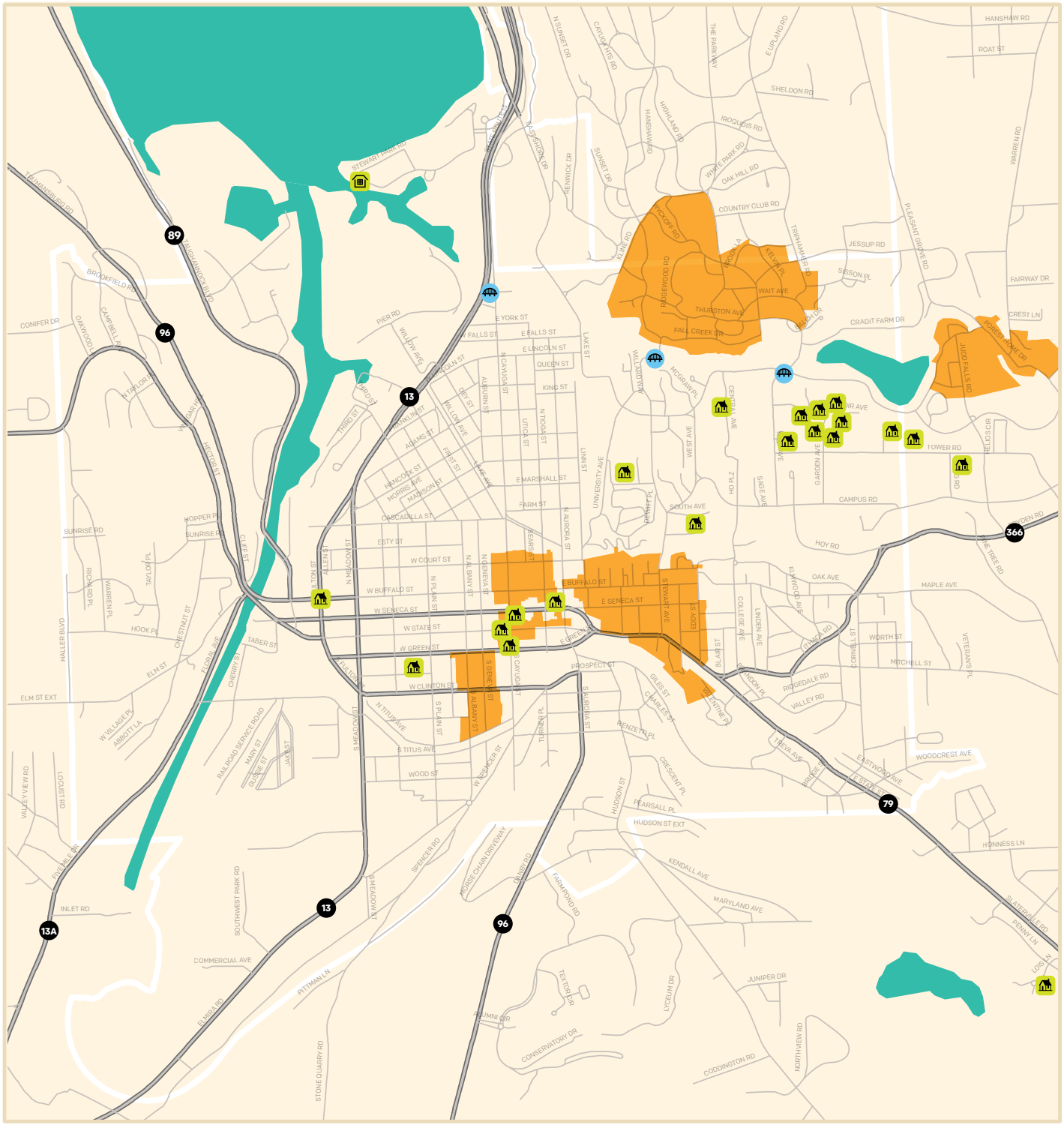
NOTES: Delineation of Unique Natural Areas is from the Tompkins County Department of Planning and Sustainability - 2024. Prepared by the Ithaca-Tompkins County Transportation Council - 7/12/24

HISTORIC BRIDGES AND STRUCTURES IN TOMPKINS COUNTY, NY



Location of historic bridges structures is from NYSHPO and Historic Ithaca. Location of historic bridges is from NYSDOT.

HISTORIC BRIDGES AND STRUCTURES IN THE CITY OF ITHACA, NY



LEGEND

0 .45 .9 MILES

SCALE

- Historic Bridges
- Historic Structures
- Historic Districts

Location of historic bridges structures is from NYSHPO and Historic Ithaca. Location of historic bridges is from NYSDOT.

Scenic Resources

Residents in Tompkins County have shown a strong desire to consider the aesthetics and impacts of roadway projects during the planning stages. The ITCTC supports the idea that "infrastructure should fit the land", through consideration of geographic and environmental conditions, but also through placement and design. To help identify and protect scenic areas, vistas, and corridors, Tompkins County completed a Tompkins County Scenic Resources Inventory, (www.tompkinscountyny.gov/planning/nri, click on Tools, Links and Resources.).

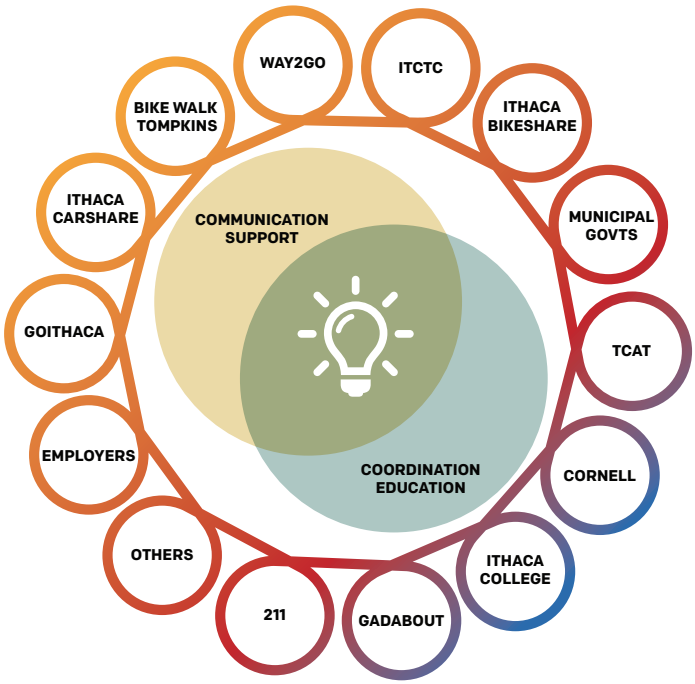
The New York State Scenic Byways Program designated the Cayuga Lake Scenic Byway (CLSB) as a scenic byway in 2001. The CLSB is an eighty-six-mile-long system of roads circumventing Cayuga Lake, including: State Roads 89, 90, 34, 34B and 5/20 (www.cayugalake.com). Currently, the non-profit corporation Cayuga Lake Scenic Byways, Inc., serves as the facilitator agency implementing the byway's corridor management plan, applying for funding and otherwise managing the development of the CLSB in cooperation with interested parties and all three counties with jurisdiction: Cayuga, Seneca and Tompkins. It is expected that, together with the Route 90 Scenic Byway, the CLSB will provide a solid foundation for the development of a broader Finger Lakes Scenic Byway network. The ITCTC will continue its support of the CLSB for the benefit of residents and visitors to Tompkins County.

Collaborations

Achieving the goals of this plan will require active collaboration between all stakeholder in the provision of transportation. This includes everyone from civic groups, to private non-profits, like the Center for Community Transportation, to municipalities and other government agencies. Most major achievements in transportation in Tompkins County are the result of significant collaborative efforts. Examples include:

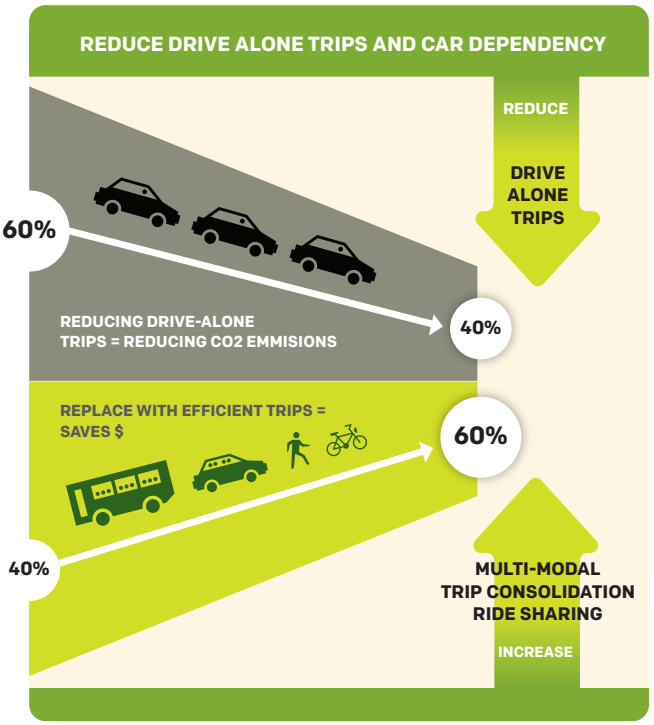
- TCAT – City of Ithaca, Cornell University and Tompkins County
- Ithaca Carshare – citizen involvement, Cornell University, Ithaca College, City of Ithaca, ITCTC
- Finger Lakes Rideshare – ITCTC, TC3, Way2Go, NY511
- Cayuga Waterfront Trail - Tompkins County Chamber of Commerce, City of Ithaca, ITCTC, citizen involvement
- School Success Transportation Coalition – https://ccetompkins.org/community/way2go/transportation-andschool-success - Ithaca City School District, Way2Go, ITCTC
- Ithaca Bikeshare - Center for Community Transportation, ITCTC, City of Ithaca
- Transportation Working Group - Tompkins County Mobility TCAT, Gadabout, Go Ithaca, Bikewalk Tompkins, Tompkins County Planning and Sustainability, CCE/Way2GO, Human Services Coalition 211ggt

This is just a small sampling of collaborations that have resulted in significant projects. There are many more already built or ongoing as well as in the planning stages. An important function of the ITCTC is to continue to foster and support collaborative efforts that help a small urban area like Ithaca-Tompkins County achieve success in the implementation of transportation projects and programs.



Looking to the Future

Experience and analysis show that in the transportation sector there is no single solution to meet the needs of all travelers. Every person has individual needs and although it will be possible to serve many with particular services such as fixed route transit, there will always be some that are left out and will need different strategies to meet their needs. There is also an operational imperative to increase safety and help reduce negative impacts to our communities and the environment. In summary, the ITCTC's action plan seeks to meet the transportation challenges in our community by maintaining existing infrastructure and systems, expanding and promoting multi-modal mobility, and expanding community collaboration for transportation demand management, mobility services, education and marketing.

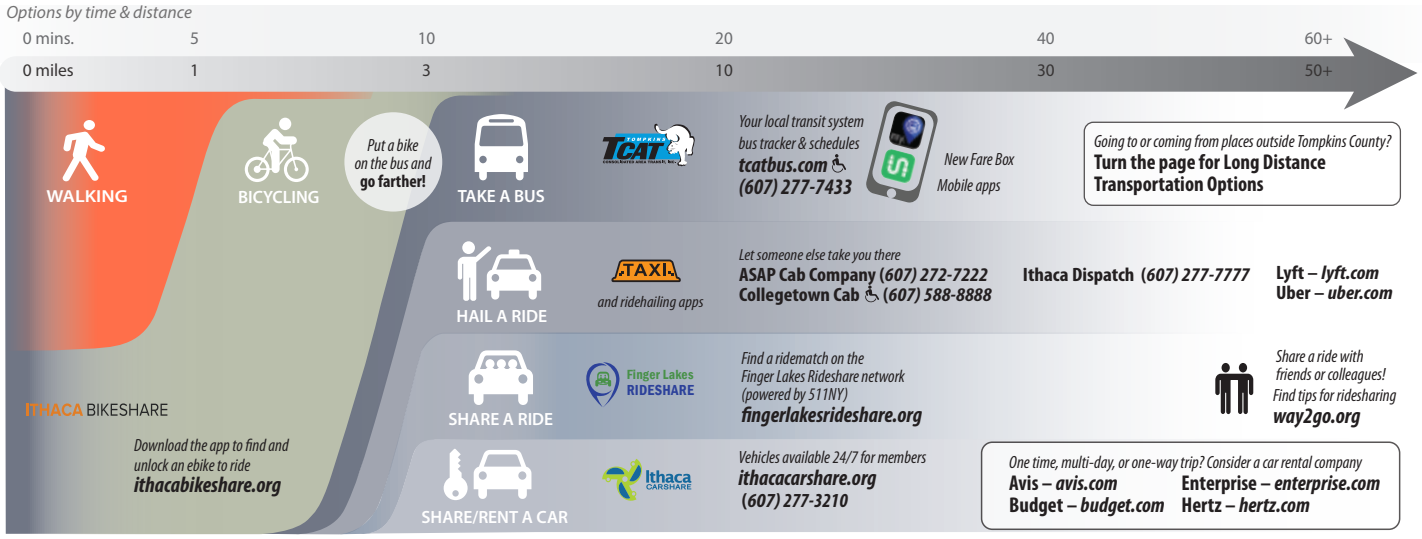


Expand and Promote Multimodal Mobility Options and Integration

The LRTP goals and objectives stress the need to facilitate the use of alternatives to the automobile. Having more options for transportation creates multiple community benefits such as: cost savings from reduced private automobile expenses; reduced Greenhouse Gas emissions and fossil fuel consumption; reduced water pollution from vehicular fluids; reduced congestion; less traffic crashes; health improvements from active transportation; transit enhancements; more equitable access to transportation; etc.

In Tompkins County the main strategy for improving mobility is founded on reducing drive-alone trips and miles traveled through the diversion of trips to other modes of transportation, primarily transit, ridesharing/carpooling, walking and bicycling. The increase of people working from home is also having a significant impact. As an area with moderate growth rates and a relatively small population base, there is the opportunity to develop and market effective programs that address the needs of different population groups. Overall in Tompkins County, drive-alone trips encompass 60% of all trips; shared, transit, bicycle and pedestrian modes accommodate the other 40%. The challenge identified in future scenario analysis is to essentially invert the proportion of drive-alone to active and shared modes, together with the shift to electric vehicles.

YOUR EVERYDAY TRANSPORTATION OPTIONS WITHIN TOMPKINS COUNTY



Programs & Rewards

BIKEWALK TOMPKINS
Find walking and biking maps, apps, shops, resources and events
bikewalktompkins.org

GO ITHACA
Sign up for perks to walk, bike, take the bus more often
goithaca.org

Specialized Transportation

FISH FRIENDS IN SERVICE HELPING
Volunteer transportation service to in-county medical appointments
fishoftc.org
2-1-1 or 1-(877) 211-8667

GADABOUT
For seniors (55+) and people with disabilities
gadaboutbus.org
(607) 273-1878

Additional Support

AVRE *avreus.org or* **(607) 724-2428**
Travel training for people who are visually impaired

Catholic Charities *(607) 272-5062 x27*
Bus passes and gas cards for people who qualify

Challenge *(607) 272-8990 x124*
Travel training for people with disabilities

County Office for the Aging *(607) 274-5482*
Referrals to people who can help seniors with transportation

FLIC *(607) 27 2-2433*
Resources for people with disabilities

ICSD School Liaisons *(607) 274-2101*
Transportation solutions for school success

Medicaid Answering Service *(800) 553-0112*
Medical transportation for medicaid recipients

Robin Fund *(607) 272-3622*
Limited transportation Aid for individuals who qualtify

Transportation Options Brochure (updated 05/2024)

As of 2019, surface transportation options to the private automobile in the Tompkins County area include transit (TCAT/Gadabout), intercity bus service, taxi, car rental, car sharing, bike sharing, ridesharing/car-pooling, ride hailing, bicycling and walking. The adequacy of walking and bicycling facilities varies across the county. Opportunities exist to enhance and expand the ridesharing/carpooling programs and possibly add vanpooling. In addition, the provision of public transportation needs to be constantly evaluated to ensure that service is always optimized and supported. Having robust alternatives to the private automobile for transportation will make Tompkins County more equitable, efficient, and economically and environmentally resilient.

Equity Considerations

It is important to include equity considerations in every facet of transportation planning and design. Each person has a particular set of needs and limitations that community wide, cannot be addressed by a single transportation-mode strategy. Providing options in transportation - transit, paratransit, car share, ride share, bicycling, pedestrian, taxi, etc. - will allow individuals to achieve mobility without the need and economic burden of private automobile ownership. The following should be considered:

(a) making transportation a consideration in the planning of programs and facilities serving the elderly and people with disabilities;

(b) studying and considering the development of day care facilities and other services in conjunction with major activity nodes/employment centers, and

(c) considering the need to link low income neighborhoods to employment opportunities, retail and service centers, and recreational facilities through a variety of transportation modes and program strategies.

Transportation Demand Management

Transportation Demand Management (TDM) is the name given to a series of strategies that can be utilized singly or in tandem to create a program whose purpose is to alleviate traffic problems through reduction of automobiles on the road, especially single occupancy vehicles. The strategies include combinations of improved alternatives to driving alone, incentives to use alternative modes, disincentives for driving alone, along with work hour management. Cornell University has a well established TDM program that serves its students and employees. GoIthaca, a local non-profit, is working with a variety of public and private partners, including the ITCTC, to offer opportunities and incentives to reduce drive-alone travel - www.goithaca.org.

Mobility as a Service

Mobility as a Service (MaaS) is an approach for the provision of transportation as a series of mobility solutions that are consumed as a service. This is achieved by coordinating all available transportation services, from private and public providers alike, through a unified process that creates and manages the trip with payment from a single account. The goal is to be customer focused, simplify access to multiple transportation modes and offer affordable payment plans for transportation services. In 2018 Tompkins County received an FTA Mobility on Demand On-Ramp grant for technical assistance to develop a MaaS pilot project. Programs that help simplify access and financing for different transportation options will be instrumental in facilitating the transition away from private automobile dependency.

Transportation System Management

Transportation System Management (TSM) involves managing the existing transportation system to obtain increased efficiency, which relates to the "supply side" of the transportation system equation. TSM projects are often used as cost-effective means of reducing intersection or corridor related congestion. TSM strategies focus on upgrades to coordinated traffic signals, establishing formal traffic incident management plans addressing accidents and weather events, advanced planning for detour routes, providing real time information to drivers and coordinated/shared data collection. Specific roadway design changes such as alleviating bottlenecks on a road, adding a turn lane at an intersection or the use of alternative intersection designs (e.g., roundabouts) may be considered as TSM strategies. However more intensive capacity expansion projects – adding new lanes or new roads –are not considered TSM. The appropriate use of TSM measures should be determined on a case-by-case basis within the framework of a regional plan of action. The ITCTC is supportive of implementing TSM projects that help improve operational efficiencies.

Support Regional Solutions

Tompkins County is a significant regional employment center. Thousands commute into the county daily for work. Tompkins County also offers services, recreation and shopping destinations that attract significant regional traffic. The ITCTC will continue to work cooperatively with neighboring agencies and governments to promote transportation programs and services that further the goals of the LRTP. For example, Move Together NY (www.movetogetherny.org/) is a project of the Cornell Cooperative Extension of Tompkins County (CCETC). The goal of the project is to improve transportation access to health care and employment, particularly in rural areas, where cross county travel is required. Move Together NY was formed after completion of the ITCTC sponsored seven-county 2013 Regional Transportation Study.

Mobility Management

Ensuring everyone has access to the transportation they need. A customer-focused mobility management program goes beyond simply connecting the general public with rides. It prioritizes meeting the specific needs of diverse populations, including older adults, people with disabilities, low-income workers, and youth. Recognizing their shared need for access to jobs, essential services, and opportunities to participate in community life is at the core of this Mobility Vision for Tompkins County. By identifying gaps and barriers in the current system, we can build on existing transportation programs to create new and improved ways for everyone to access the social determinants of health – factors like housing, education, and healthcare – ultimately promoting better well-being in our community.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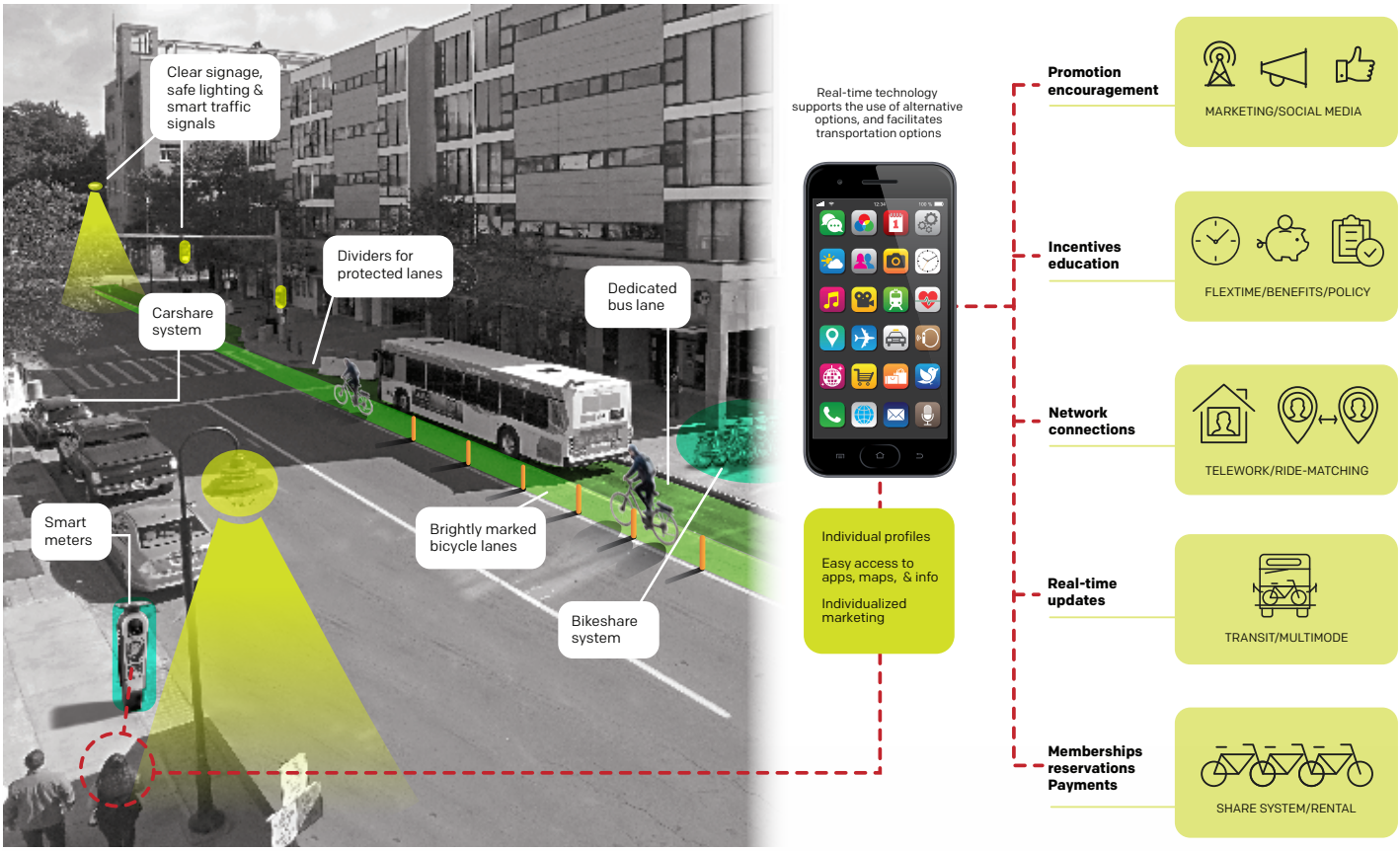
SMART URBANIZATION - URBAN EFFICIENCIES IN TRANSPORTATION



TECHNOLOGY AND URBAN DESIGN

Purposeful urban design and communication technologies can work together to facilitate the shift to efficient and convenient multiple transportation options. Urban centers, even in small settings like our villages, offer the opportunity to tap into urban transportation efficiencies – more affordable transit options, opportunities for bicycling and walking, potential access to shared transportation services. Having multiple transportation options allows programs like GoIthaca and Way2Go to help educate, coordinate and incentivize travelers to become less car dependent. Technology has made possible the explosion of shared transportation services such as car share, bike share, ride matching services, and access to bus location and next bus information. Technology is also allowing public transportation agencies to develop innovative on-demand services that offer great promise for harder to serve rural areas. Another important effect of access to communication technologies is the continuing increase of people working from home (up to 16% of workers in Tompkins County, up from 7% pre-pandemic), which helps reduce the number of people and congestion during the rush hour.

Safety Element

Traffic safety is the paramount concern of all ITCTC actions. The areas of traffic distribution, facility design, education, and enforcement emerge as the primary issues.

Transportation generated congestion, noise, vibrations and emissions all contribute to create legitimate health and safety concerns. The use of a variety of traffic calming techniques to "tame" the traffic moving through residential and other built-up areas is accepted practice with many local examples of implementation. The transportation planning profession including NYSDOT, and organizations such as the Transportation Research Board, the Institute of Transportation Engineers and the American Association of State Highway and Transportation Officials have all developed guidelines and positions that allow for the implementation of traffic calming techniques. In rural area with higher speed limits, there are roadway designs and treatments (i.e. safety road markings, clear line of sight, etc.) that can be implemented to improve safety. The ITCTC will continue to support the appropriate application of traffic calming to encourage the development of a transportation system that minimizes the negative impacts of motor vehicles without affecting overall mobility.

Education is a major component of any effort to address traffic safety. The idea of promoting multi-modal transportation, offering skills training, and raising public consciousness levels regarding the presence of different modes, principally pedestrians and

bicyclists, are all important. The ITCTC will work with local partners to continue and enhance existing efforts to reach more of the population. Programs, such as bicycling safety programs in our schools, need to be renewed and pursued with vigor.

Another area of constant concern regarding traffic safety is traffic law enforcement. Speeding traffic is an issue of overwhelming concern. While providing additional traffic control officers sounds like an easy solution, it is generally recognized that the costs of doing so are prohibitive. Technological solutions, such as remote radar "smart signs" and traffic light enforcement systems, might play a role in addressing this issue. Prioritized enforcement actions, based on data collected from traffic counters and vehicular crash and other incident information, offer another potential strategy for targeted enforcement implementation. Traffic calming techniques offer a menu of options to help deal with speeding traffic through roadway design.

Data from the statewide Crash Location and Engineering Analysis and Reporting (CLEAR) system, previously known as the Accident Information Location System (ALIS), are available to New York MPOs. The ITCTC distributes this information and will work with local partners and law enforcement agencies in planning and program development efforts that will lead to increased safety on our roadways. The Safe Routes to School (SRTS) program, funded through the Transportation Alternatives Program, brings to the forefront issues addressing the relationship of childhood obesity, safety and transportation. In the last ten years, funds from this program have been awarded in the City of Ithaca, Villages of Trumansburg, Cayuga Heights and Dryden and the Towns of Ithaca. The ITCTC will continue to provide data, technical assistance and funding opportunities to promote the safety of pedestrian and bicycle routes to schools in Tompkins County.

State and Regional Safety Planning

Federal legislation requires the Metropolitan Transportation Plan to include a safety element that incorporates or summarizes the priorities, goals and countermeasures or projects for the Metropolitan Planning Area (MPA) as contained in the State Strategic Highway Safety Plan. In addition, this section provides an overview of Federal, State and Local Government's participation in the development of Tompkins County's emergency response preparedness. The chapter outlines the general responsibilities of the operational departments and provides a chronology of some key legislation affecting the Tompkins County Comprehensive Emergency Management Plan and related documents. These topics are discussed below in Part I- New York State Strategic Highway Safety Plan and Part II-Tompkins County Emergency Preparedness.

PART I - NEW YORK STATE STRATEGIC HIGHWAY SAFETY PLAN

The purpose of the New York State Strategic Highway Safety Plan (SHSP) is to promote best practices and strategies that, if implemented, could have a substantial impact on reducing fatal and serious injury crashes (https://www.dot.ny.gov/divisions/operating/osss/highway/strategic-plan). Fatal and serious injury crashes have the most profound impact on those involved. The effects of these crashes are far reaching. Fatal and serious injury crashes were trending down in decade before the Covid pandemic. However, fatalities in NY rose 25.8% from 2019-2022 (1,175 fatalities in 2022). Three out of four vehicles involved in fatal crashes were personal vehicles and light duty trucks. There is an average of over 1,000 deaths on New York roads annually.

Safe Streets/Roads Tompkins

https://safestreetstompkins.com/

Tompkins County, NYSDOT and ten municipalities within Tompkins County successfully came together to apply for funds under the USDOT Safe Streets and Roads for All (SS4A) grants program. The City of Ithaca is the designated applicant and project manager for this effort.

The result of this initiative will be the creation of a Joint Safety Action Plan that meets all federal requirements and will facilitate applying for project implementation funding.

The Joint Safety Action Plan will provide recommendations and strategies to improve safety at identified locations and help eliminate deaths and serious injuries throughout the region. The goal is to help make Tompkins County safer for all road users including people who drive, walk, bike, or ride transit.

This Plan utilizes an innovative data-driven approach to improving safety in the County through first analyzing roadway characteristics, traffic volumes, and local crashes to understand the key factors affecting safety outcomes throughout the transportation network. Additionally, the crash analysis will be conducted to tell a story through data tables and figures about where, when, and why crashes are occurring in the region. As a part of this safety analysis, the project team will execute a network screening approach to evaluate individual corridors and intersections and prepare a prioritized list of location-specific and systemic network treatments.

Equity and inclusion considerations are a priority for each step of the Plan development including the analysis, engagement, location prioritization, and improvement selection process. This will improve the strategies by more accurately representing existing challenges and opportunities, while ensuring an emphasis on equitable countermeasure implementation.

The reduction of fatalities and serious injuries remains the primary goal of the New York SHSP. During the 2023- 2027 plan timeframe partners across the state will seek to reduce the number of fatalities and serious injuries.

The Vision Statement of the Tompkins County LRTP organizes its Goals and Objectives under the concept of a transportation system that is Sustainable and Accessible. Below are LRTP goals and objectives, which demonstrate how the LRTP's vision of a Sustainable Transportation System relates to the Vision Statement of the New York State Strategic Highway Safety Plan. A complete record of the goals and objectives can be found in the LRTP Chapter 2.

OVERARCHING GOALS THAT PERVADE ALL THE GOALS AND POLICIES:

1. Improve the safety of the transportation system.
2. Enhance coordination between transportation providers to the benefit and convenience of users.
3. Minimize negative environmental impacts of transportation.
4. Reduce vehicle miles of travel and number of drive-alone trips.
5. Ensure equitable availability of mobility options

LRTP GOALS

Sustainable Accessibility

Goal: To develop a transportation system for Tompkins County that is safe, sustainable, equitable and efficient resulting in Sustainable Accessibility for all travelers.

Mobility

Goal: To promote implementation of transportation services, programs and projects that enhance mobility.

Connectivity

Goal: To maintain and improve transportation networks to enhance safety, multimodal and intermodal connectivity and facilitate the movement of people and goods.

Proximity

Goal: To achieve land development patterns that enable the efficient and equitable provision of multimodal transportation services.

Integration

Goal: To develop an integrated transportation system for Tompkins County that is seamless, multimodal and coordinated to achieve greater operational efficiencies and increase the safety and convenience of users.

Quality Of Life

Goal: Develop a transportation system that sustains and enhances the quality of life for Tompkins County residents and visitors.

Environment

Goal: To work progressively towards a transportation system that will have zero-net negative impact on the environment.

Equity

Goal: To achieve equity in transportation policy and projects that spur fundamental improvements in communities across Tompkins County.

LRTP PERFORMANCE PLANNING OBJECTIVES

The LRTP includes a series of measurable safety, infrastructure and system reliability objectives that directly and indirectly will help promote and measure transportation safety progress in Tompkins County. These include:

- Reduce the number of motor vehicle crash fatalities and severe injuries
- Reduce the number of bicycle and pedestrian crashes
- Reduce the number of bicycle and pedestrian fatalities and injuries
- Reduce the percentage of structurally deficient bridges
- Reduce the percentage of roads in 'fair or poor' condition
- Increase the provision and access to multiple transportation options

Measuring and locating motor vehicle, bicycle and pedestrian crashes, fatalities and injuries will assist in planning to make targeted safety improvements. The ITCTC reviews available data and compiles summaries and maps that are shared with staff from municipalities and are published on the agency's website. Continuous maintenance of bridges and pavements is important in reducing infrastructure factors in crashes. Providing more and enhanced transit, bicycle and pedestrian facilities will also serve to more safely accommodate these important modes in the transportation network.

PART II-TOMPKINS COUNTY EMERGENCY PREPAREDNESS

Organization Description

The County's emergency management program is a three-pronged effort implemented by the County's Department of Emergency Response, the County's inter-agency Emergency Management Planning Committee and its internal Emergency Management Strategic Group. The ITCTC fully supports the work of these groups and their efforts to address the emergency response needs of Tompkins County. The emergency management program is further described below.

Department of Emergency Response

The Department holds responsibility for managing the county's emergency dispatch and communications system, implementation of the county's 911 communications system, oversight of county mutual aid and disaster plans, and training and development of emergency medical and fire personnel. In addition, the Department provides Emergency Preparedness information to the public including development and maintenance of the Tompkins Ready website - www.tompkinsready.org.

The Tompkins County Emergency Planning Committee (TCEPC)

The TCEPC was established by resolution of the Tompkins County Legislature in 2000. Its mission is to facilitate the planning process for emergency management of disaster responses and to assist with operations during times of local emergencies. The committee is composed of representatives of county government, city government and other local response agencies. Its responsibilities include identifying appropriate local measures and resources to prevent disasters, developing mechanism to coordinate local resources, and delivering services to aid citizens during and after disasters. Among the Committee's responsibilities, are to annually update the Tompkins County's Comprehensive Emergency Management Plan. A diverse team of individuals and local agencies participate in support of TCEPC and the County's emergency management programs.

The Emergency Management Strategic Group

The Emergency Management Strategic Group chaired by Deputy County Administrator and is an internal team of County department staff, focusing on readiness issues within county government and related to maintaining services in the event of an emergency. Responsibilities involve assessment of the county government infrastructure, internal countywide emergency planning and developing a workforce emergency management plan.

Background

Federal and State agencies and their rules provide support and mandates for Tompkins County emergency management efforts. The Federal Emergency Management Agency's (FEMA) mission is to support citizens and first responders to ensure that the nation works together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards. The New York Division of Homeland Security and Emergency Services (DHSES), previously the Office of Emergency Management, serves as the lead state agency responsible for the maintenance and 5-year update of the State Hazard Mitigation Plan (SHMP). This plan was last updated and approved by FEMA on December 2018 (www.mitigateny.availabs.org). The 2019 New York State Hazard Mitigation Plan represents the State's approach to mitigating the adverse impacts of natural disasters within its borders and to fulfill its Federal obligations to mitigate the risks resulting from natural hazards.

The 2023 SHMP offers a comprehensive focus on climate change, and new data visualizations to support state and local hazard mitigation planning and implementation efforts. The SHMP meets the requirements defined by FEMA's State Mitigation Planning Policy Guide from April 2023.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act, enacted by Section 104 of the Federal Disaster Mitigation Act of 2000 (DMA2K) provided new emphasis on mitigation planning. Operationally, Hazard Mitigation is defined as the process whereby hazards are identified, risks and vulnerabilities are quantified, risk elimination or reduction measures are identified, awareness is created, and cooperative efforts are undertaken to prevent, reduce or eliminate losses.

The DMA2K emphasizes the need for State and Local governments to closely coordinate mitigation planning and implementation efforts as well as continuing the requirement for a State Mitigation Plan as a condition of disaster assistance. This plan is also intended to serve local jurisdictions as a guide in completing and updating natural hazard mitigation plans that will meet the requirements set forth in DMA2K. To be eligible for future disaster mitigation funding, FEMA requires that all local governments have an approved Federal hazard mitigation plan. Tompkins County completed the Tompkins County Hazard Mitigation Plan (www.tompkinscountyny.gov/planning/community-planning), which was approved by FEMA in 2014. The plan covers all jurisdictions in Tompkins County. This document will be updated by the end of 2020. The new plan will be expanded to cover other disaster recovery components in addition to hazard mitigation. The propose new plan will be covered in the Tompkins County Resiliency and Recovery Plan.

The RRP seeks to reduce the risks associated with hazards and the changing climate, as well as to better prepare for long-term recovery from disaster events. The RRP provides a foundation for collaborative action with each of the municipalities in Tompkins County and with a broad group of stakeholders in an effort to reach these goals. It was developed in close coordination with local and regional partners, including the County Departments of Emergency Response, Facilities, Health, Highway, and Recycling and Materials Management. More information at: www.tompkinscountyny.gov/planning/climate-adaptation.

Financial Element

INTRODUCTION

A difficult part in any planning process involves estimating and forecasting financial resources, particularly when working with a long planning horizon. This is also complicated when funding is dependent on the political process. The federal transportation program is vulnerable to political and procedural vagaries, where a legislative body sets one level of funding ("authorized") but may appropriate a lesser amount or change funding levels with other legislation. Given the unpredictability of the funding process, inflation and other economic factors, it is difficult to make accurate annual projections, and impractical when projections are forecast for twenty years. In addition, the multi-agency/governmental arena of an MPO makes it difficult to determine exact equivalences of diverse funding streams.

This financial element will focus on the transit and highway federal funding resources that are managed by the ITCTC and which are eligible for use in federal-aid projects. Federal funds are available for federal-aid highways and transit. It is important to note that federal transportation expenditures are only part of the total resources assigned to transportation. Municipal, County and State governments utilize significant amounts of their resources to maintain, operate and expand non-federal aid eligible transportation networks and facilities within their jurisdictions.

This financial analysis is largely based on a continuation of the priority guidance to "preserve existing facilities". The analysis is based on past revenue and expenditure levels and does not attempt to incorporate fundamental cost changes that may result from the implementation of this plan. For instance, implementing some measures may lead to increased governmental expenditures (e.g., computer models, computerized traffic signals, real-time transit information, new and improved bicycle/pedestrian facilities, etc.), but may also result in reduced societal and actual costs (e.g., reduction in the costs of congestion, improved air quality, improved personal health, reduced traffic crashes, injuries and fatalities, etc.).

TIP YEARS	APPROXIMATE TOTAL FHWA FUNDING
2007-2012	$53 million
2011-2015	$49 million
2014-2018	$24.5 million
2017-2021	$26.2 million
2020-2024	$33.8 million
2023-2027	$49.6 million

Others may lead to decreased government expenditure (e.g., prioritized snow removal plans, local roadways built to more modest design standards, less rigorous maintenance practices, etc.), but may lead to other undetermined costs. This type of comprehensive, cumulative analysis is beyond the scope of this plan.

RESOURCE ESTIMATION

Information on fiscal resources was gathered from four sources: the New York State Department of Transportation, Tompkins Consolidated Area Transit, Tompkins County and ITCTC records. In all cases resources were estimated to the 20-year planning horizon based on historical funding trends that are reflective of variations and inflationary forces.

At the time of this writing, federal funding for transportation is flowing from the Bipartisan Infrastructure Law (BIL). The BIL increased overall levels of funding and also introduced a significant number of grant based funding programs. These last are difficult to predict since they are available only in a community applies and wins a grant. Appropriations nationwide and thus, locally, are substantially higher than in past years thanks to increased appropriations in the BIL.

The calculations for this financial element are based on highway and transit federal funds that flow through the ITCTC's five-year Transportation Improvement Program (TIP). Future year estimates are based on past averages which help balance the effects of high and low funding years. The basic source is the current 2023-2027 TIP.

Future year estimates for annual average programmed federal funds and their local and state matches for highway projects were determined applying varying inflation rates. The the average Consumer Price Index (CPI) for the 15-year period from 2009-2023, 2.34%, was used for the first five years 2025-2029. This inflation rate was reduced to 2.30% for the following 5 year period, and by .5% every five years through 2044. The

purpose of this reduction is to mitigate the compounding effect of using the same inflation rate for 20 years. This is particularly important in a region like Tompkins County which has a very moderate rate of population growth and minimal highway network expansion rates.

As a final step in the 20-year projections the analysis includes a present value calculation that reflects 'year of expenditure' dollars for the funding resource projections. The sections below describe the estimated federal resource projections and their accompanying state and local matches.

Finally, figures in this analysis are rounded for ease of use.

FEDERAL AID RESOURCE PROJECTIONS

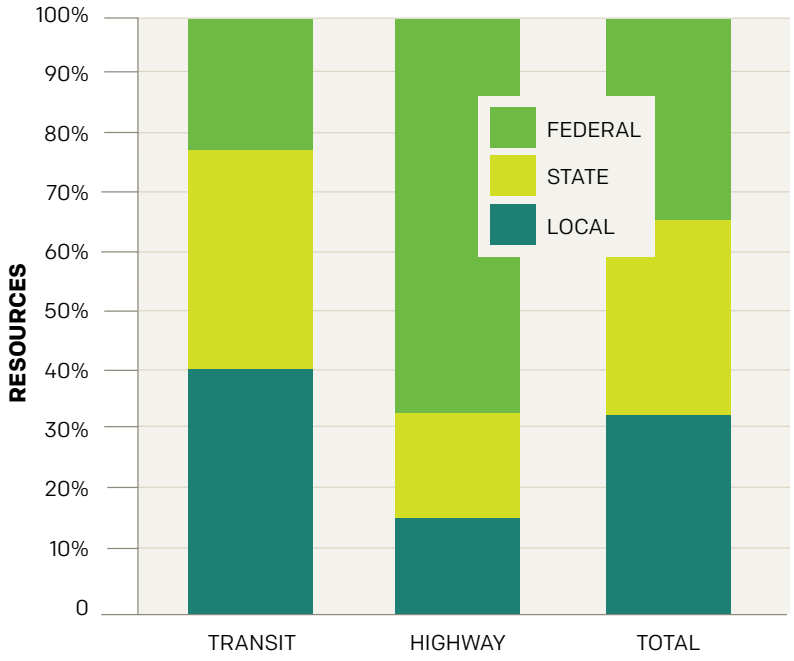
Highway

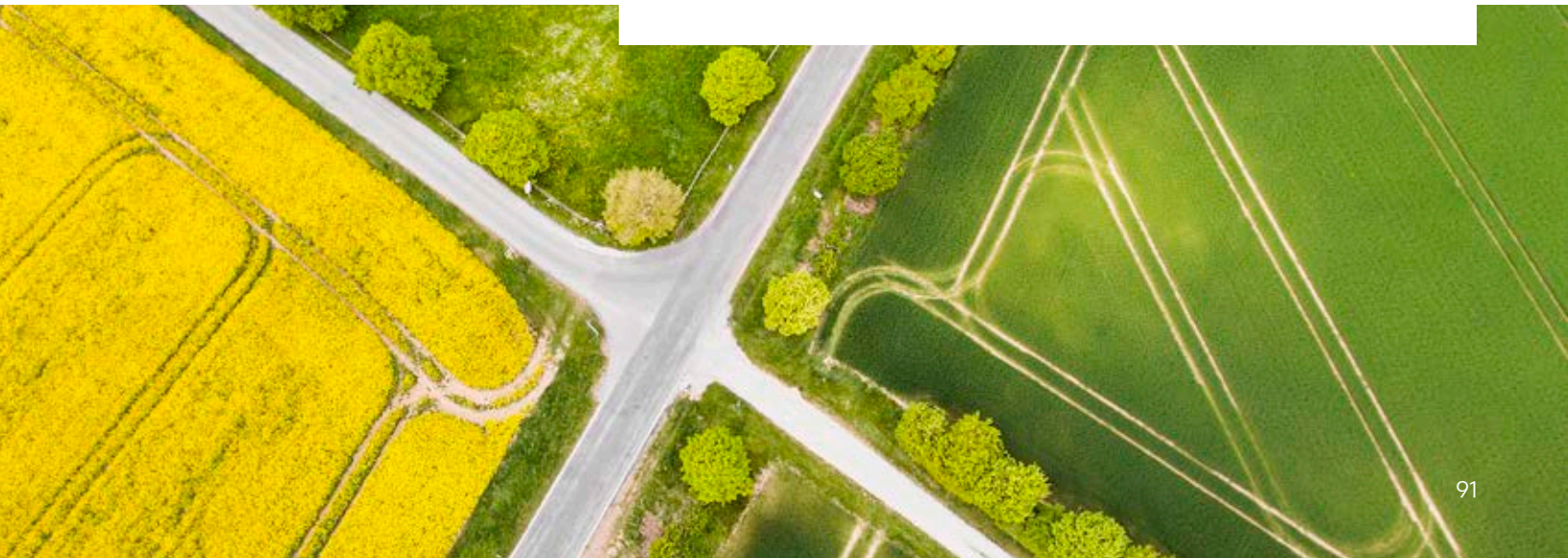
Federal aid for highway programs was estimated at $219.8 million after applying CPI and year of expenditure calculations. This figure is based on the approximately $9,000,000 per year that were programmed in the 2023-2027 ITCTC TIP. The total federal aid for highways also incorporates projects that are funded outside the regional formula allocation to the ITCTC in programs such as the Transportation Alternatives Program (TAP) and Bridge-NY. TAP funds were included in the analysis of federal funds at the rate of approximately $878,500 per year to reflect their availability.

Local Resource Projections

A 20-year projection of local resources for federal aid highway transportation projects were developed based on annual funding of approximately $1.6 million per year programmed in the 2023-2027 TIP. This accounts for private sector contributions, estimated at approximately $3.2 million over 20 years. Private contributions are transportation funds that originate from non-governmental sources. The estimated number was calculated by setting the private contributions to 10% of the local resources in the TIP. Private contributions are most common in the form of participation in the local share of federally funded projects and are often in-kind in nature. This component of project funding may see substantial change in future years. Crowd sourcing and other technology-based strategies can be used to help expand the private sector contributions in the future. Already a variety of fundraising strategies have been used to help supplement municipal contributions to the local share of certain projects. The resulting total local resource projection after applying CPI and year of expenditure calculations is $44.7 million.

2025-2044 SUMMARY OF ESTIMATED FEDERAL TRANSPORTATION RESOURCES





FEDERAL HIGHWAY AND TRANSIT RESOURCE ESTIMATE 2025-2044

FUNDING PROGRAM	LOCAL	STATE	FEDERAL	TOTAL
NATL. HIGHWAY PERFORMANCE PROGRAM - NHPP	$ 18,327,531	$ 24,246,157	$ 90,142,586	$ 132,716,275
SURFACE TRANSPORTATION BLOCK GRANT FLEXIBLE - STBG-FLEX	$ 12,963,376	$ 17,149,721	$ 63,759,390	$ 93,872,487
HIGHWAY SAFETY IMPROVEMENT PROGRAM - HSIP	$ 3,129,091	$ 4,139,588	$ 15,390,198	$ 22,658,876
TRANSPORTATION ALTERNATIVES PROGRAM - TAP	$ 3,576,104	$ 4,730,958	$ 17,588,797	$ 25,895,858
OFF-SYSTEM BRIDGE - STBG-OSB	$ 6,705,194	$ 8,870,545	$ 32,978,995	$ 48,554,735
HIGHWAY PROGRAM SUB-TOTAL[1]	**$ 44,701,296**	**$59,136,969**	**$219,859,966**	**$323,698,231**
% of Highway	13.81%	18.27%	67.92%	
TRANSIT[2]:				
SECT. 5307 – URBAN FORMULA (CAPITAL)[5]	$ 12,040,456	$ 12,040,456	$ 96,323,645	$ 120,404,557
SECT. 5339 – URBAN DISCRETIONARY CAPITAL	$ 6,104,135	$ 6,104,135	$ 48,833,083	$ 61,041,354
SECT. 5339 – FEDERAL COMPETITIVE[3]	$ 3,748,089	$ 3,748,089	$ 29,984,711	$ 37,480,888
SECT. 5310 – PARATRANSIT (CAPITAL)	$ 1,163,773	$ 0	$ 4,655,091	$ 5,818,864
SECT. 5311 – RURAL CAPITAL[5]	--	--	--	--
SDF – STATE DEDICATED FUNDS (CAPITAL)	$ 0	$ 131,147,541	$ 0	$ 131,147,541
TOMPKINS COUNTY MORTGAGE REPORTING TAX[4]	$ 16,453,468	$ 0	$ 0	$ 16,453,468
SUBTOTAL TRANSIT CAPITAL	$ 39,509,920	$ 153,040,221	$179,796,531	$ 372,346,672
TRANSIT OPERATIONS*	$341,232,406	$196,642,403	$ 40,485,201	$578,360,010
TRANSIT SUB-TOTAL	**$380,742,326**	**$349,682,624**	**220,281,731**	**$950,706,682**
% Of Transit	40.05%	36.78%	23.17%	
TOTAL TRANSPORTATION	**$425,443,623**	**$408,819,593**	**$440,141,697**	**$1,274,404,913**
% Of Total	33.38%	32.08%	34.54%	

Sources and Notes:
[1]Based on distribution of funding categories in the 2023-2027 Transportation Improvement Program. Includes estimates for Transportation Alternatives Program and other competitive award programs (BridgeNY, PaveNY, PSAP-HSIP).
[2]Source: Tompkins Consolidated Area Transit and Gadabout
[3] Incorporates costs of new/expanded TCAT facility at $30 million
[4]Mortgage Reporting Tax (MRT) estimated at $800,000 per year increasing 1% per year after 10 years.
[5]Sectoin 5307 includes funds transferred from Sect 5311 - (approximately average = $530,000 per year)

*Funds for Transit Operations come from the following sources:
Local: – fare revenue+MRT+local subsidy -- based on 2023 adopted TCAT budget, increasing at 3%/yr. first ten years & 2.5%/yr. thereafter.
– Gadabout 2024 budget increasing 3% per year
State: – New York State Transit Operating Assistance
Federal: – FTA Grant Funding. Note: Section 5307 funds includes transfer from 5311 to 5307

NY State Resource Projections

The NY State TIP based contributions to federally funded projects in Tompkins County average approximately $3 million per year. This amounts to approximately $59.1 million over 20 years after applying CPI and year of expenditure calculations.

Transit

TCAT and Gadabout provided the information required to develop the transit estimates. The local and State "matching" contributions to these funds were calculated based on current program requirements. The FTA Section 5307 (urban area transit service) figures for capital and operating assistance were based on actual Federal Fiscal Year 2023 figures. The estimates from TCAT reflect the most recent changes in funding formula and appropriate fund levels.

Summary

In summary, for the 2025-2044 planning horizon, local resource are estimated to provide approximately 40% of the transit funds, 14% of the highway funds, and 33% of the total federal transportation program funds. State resources are calculated at 37% of the transit funds, 18% of the Highway funds, and 32% of the total federal program funds. Federal government funds are estimated to contribute 23% of the transit funds, 68% of the highway funds, and 35% of the total federal transportation program funds.

EXPENDITURE ESTIMATION

The estimation of expenditures is based on several factors. Due to the flexibility included in federal transportation legislation, it is expected that funds will be transferred between programs to best meet the expenditure demands of the area. This section does not attempt to differentiate federal from state from local fund sources, nor does it address project level details of the distribution of different federal fund categories. That information is presented in detail in the ITCTC's Transportation Improvement Program.

A clear division between "transit" and "highway" projects has been maintained since this distinction continues to be in effect in federal transportation funding. These estimates are based on "historic trends" which are subject to variables such as annual state and federal appropriations. Transit expenditure allocations were based on expenditures proportions utilized by TCAT. The Capital Facilities include projects with a high probability of implementation.

No attempt has been made in this plan to allocate costs by individual project year. The expenditures reflect 'year of expenditure dollars' based on the analysis used above under Resource Estimation. The accompanying table provides a summary of the estimated expenditure allocations.

Highways

Federal and state highway funds were distributed one-third to bridges, one-third to pavement projects. The last third of distributed to cover safety (approximately 10%) and mobility projects (approximately 24%). Transportation Alternatives Program funds and other competitive funding, such as Bridge NY and Pave NY, are included as part of the annual average calculations. This proportion in the distribution of funds adequately reflects plan goals and continues a pattern used in previous long-range plans.

The proposed expenditure allocations support LRTP goals to maintain existing transportation infrastructure, with two thirds of projected federal funds allocated to bridge and pavement maintenance projects. The aim of the bridge and pavement programs is to maintain and improve the condition of the highway infrastructure. Pavement and bridge project are expected to include active transportation components in their design.

Increased safety has been a priority of the ITCTC since its initial LRTP. Even so, few projects get funded exclusively from surface transportation program "safety" funds. This, however, does not detract from the importance of the safety focus in the ITCTC program. The fact is that safety features are designed and constructed as principal or incidental aspects of nearly every type of transportation project. This plan includes an allocation of highway funds for safety projects at approximately 10% of the total transportation program. While this may underestimate the "needs" for safety improvements, it also under-represents the commitment and investment to safety that is part of every TIP project.

The LRTP goals and vision strongly recommend the need to expand mobility options in Tompkins County. This emphasis will help meet multiple energy efficiency, emissions reduction, equity and sustainable accessibility goals and objectives.

Funds under mobility projects are intended to be used for Transportation System Management (TSM) activities (e.g., signal synchronization, traveler information systems, traffic circles, bike lanes, "flex" to transit, etc.); for expansion of multimodal facilities and programs (primarily bicycle, pedestrian and transit); and for the implementation of transportation demand management and transportation mobility programs such as ridesharing, car sharing, vanpools, back-up/ emergency ride home, Mobility as a Service, volunteer driving programs, etc. Implementation of these transportation strategies coupled with more efficient land use development patterns provide a framework for long-term sustainable transportation in Tompkins County.

Transit

Estimated expenditures generally follow the expenditure patterns found in the current TCAT transit system. Operating and maintenance expenditures make up the bulk of transit expenses.

Capital Facilities: This category includes funding for TCAT facility rehabilitation, and replacement of passenger facilities and shelters. Funds have also been included to account for the anticipated relocation or expansion of the Tompkins County Transit Center. The estimate for capital facilities, particularly the transit center initiative, assumes TCAT will be successful in getting funding from different non-formula Federal sources (i.e. competitive grant programs).

Operating: The total operating budget estimate reflects an annual growth rate of 3%/year over the first 10 years and 2.5%/year over the last 10 years of the 20-year planning horizon. The Operating projections include all aspects of operations of transit service including administrative costs. This is, by far, the largest expenditure category for transit.

Maintenance/Miscellaneous: This category includes vehicle and facility regular maintenance plus a variety of projects that may range from short-range planning to implementation of special transit projects; from communications and data processing equipment replacements to improved signage.

Buses: The 'buses' estimate includes urban, rural and paratransit buses operated by TCAT, its contractors, and GADABOUT. The resources estimate for purchasing buses includes purchases for GADABOUT under the Section 5310 program. The estimate for bus acquisition assumes TCAT will be successful in getting funding from different non-formula

Federal sources (i.e. competitive grant programs). Further, the estimate assumes regular allocations from the New York State Dedicated Transportation Fund.

TCAT's faces a significant long-term funding challenge in securing capital funding. This is the case for specific projects like the transit center initiative, but it is also a recurring challenge when addressing the need for replacement buses. The size of TCAT's bus fleet requires capital funding at a level that far exceeds its annual urban formula allocation (Sec. 5307). Therefore, TCAT must compete for discretionary capital funding from federal and state programs. The cost of not being able to replace buses in a timely fashion is

ESTIMATED FEDERAL FUNDING EXPENDITURE ALLOCATIONS 2020-2039

PROJECT TYPE	EXPENSE ALLOCATION	PERCENT OF TOTAL*	PERCENT OF CATEGORY*
HIGHWAY			
BRIDGE	$ 106,820,416	8.4%	33.0%
PAVEMENT	$ 106,820,416	8.4%	33.0%
SAFETY	$ 32,369,823	2.5%	10.0%
MOBILITY PROJECTS	$ 77,687,575	6.1%	24.0%
SUBTOTAL	**$323,698,231**	**25.4%**	**100.0%**
TRANSIT			
CAPITAL FACILITIES	$ 148,938,669	11.7%	15.7%
OPERATING	$578,360,010	45.4%	60.8%
MAINTENANCE/MISC.	$ 148,938,669	11.7%	15.7%
BUSES	$ 74,469,334	5.8%	7.8%
SUBTOTAL	**$950,706,682**	**74.6%**	**100.0%**
TOTAL	**$1,274,404,913**	**100%**	

*Discrepancies in the figures are due to rounding errors

reflected in the high maintenance costs of an aging bus fleet. As part of its strategic planning, TCAT with local partners identify strategies for funding replacement buses, bus rehabilitation and re-manufacturing.

CONCLUSIONS

Funding transportation programs in Tompkins County is all about collaborations and partnerships. Over the decades programs like Gadabout, TCAT, Ithaca Carshare, Way2Go, GoIthaca, Ithaca Bikeshare and others have been created by bringing together government agencies, institutions of higher education, civic groups, community non-profit corporations and interested citizens to work on solutions. As a result, Tompkins County offers an unusually rich menu of transportation options for a small upstate NY urban area.

Despite its size, and missing the economies of scale of larger urban areas, Ithaca-Tompkins County transportation providers and planners have worked together to improve service efficiency and take advantage of all available funding opportunities. The ITCTC will continue to lead in efforts to forge strong partnerships and coalitions in the transportation sector.

CHAPTER 4

PROJECTS FOR IMPLEMENTATION

PROJECTS FOR IMPLEMENTATION

INTRODUCTION

This chapter lists selected transportation related initiatives and projects for implementation. Where possible, the narratives will define the appropriate party(ies) to implement the project or initiative. This plan aims to capture the activities of all groups and agencies dealing with transportation in Tompkins County. Therefore, principal project responsibility may lie with municipalities, state agencies, other public/private agencies or a combination of these. When there is sufficient detail or previous experience in conducting such projects or initiatives, a cost estimate will be included.

The initiatives and projects that are presented here are intended to help advance the community's vision as expressed in the plan goals and objectives.

This section of the Long-Range Transportation Plan is organized around the functional headings of:

PLANNING EFFORTS **MOBILITY EFFORTS**

While not every initiative fits neatly under one of these headings, they provide a useful organizational framework. The projects and initiatives listed in this chapter exist at different stages of implementation. Many are listed as desirable projects but have not been implemented. Others have been started and exist at some stage of implementation. The action item description will indicate if implementation is ongoing. Otherwise, the expected implementation time interval is indicated following the project title as short, intermediate, or long as represented below. It is understood that implementation for many of these projects will be continuous in nature, stretching over several years:

SHORT = 1-5 YEARS

INTERMEDIATE = 5-10 YEARS

LONG = 10-20 YEARS

PRIORITY AREAS

For the activities listed in this chapter, the ITCTC has chosen to focus on the following priority areas to facilitate implementation:

- **Expand and Promote Multimodal Mobility Options and Integration**
- **Maintain and Improve Existing Transportation Infrastructure and Systems**

These priority areas seek to secure existing infrastructure investments while enhancing the efficiency of the current transportation system through technology and physical enhancements while also providing for services that reduce automobile dependency.

COMPLETED INITIATIVES FROM 2040 LRTP

The projects and initiatives listed below were implemented in the period between 2019 and 2024.

- **Back Up Ride Home Program -** Transportation Equity Needs Assessment (TENA) - A project of the Tompkins Count Transportation Equity Coalition. The TENA project sought to better understand factors that affect access to safe, efficient transportation for Tompkins County residents, especially those from undeserved communities. www.ccetompkins.org/community/way2go/transportation-equity-needsassessment
- **Bike Sharing** – Ithaca Bikeshare commenced operations November 2022, two years after Lime bike sharing left the community during the Covid pandemic. The service experienced a high rate of use right from the start. The number of bikes has grown but more work is needed to facilitate expansion to neighboring communities. This impactful program is likely play a key role in local transportation in coming years. www.ithacabikeshare.org
- **Finger Lakes Rideshare (ride-matching) Program** – The program provides computerized ride-matching services in support of carpooling for commuters and for one-time ride needs. This service is on-going and is housed and powered by NY511. https://511nyrideshare.org/web/finger-lakesrideshare
- **Transportation Demand Management program for the Ithaca Urbanized Area** - GoIthaca has been established as the TDM program for all commuters to and from the urbanized are of Ithaca. GoIthaca works with a coalition of interested agencies, businesses and the City of Ithaca to provide incentives, discounts and other benefits to developers, employer and individuals to help reduce single occupancy vehicle travel . The project is ongoing and evolving. www.goithaca.org
- **State Route 13 Corridor Study** - This corridor planning study between Warren Rd. and the Village of Dryden was completed in 2020. https://www.tompkinscountyny.gov/planning/transportation-choicesrt13corridor
- **Inter-City Station Location Evaluation** - the Downtown Ithaca Alliance sponsored an effort to evaluate potential locations for staging inter-city buses in the downtown area. Further evaluation will be needed when a final station location is identified.
- **Mobility as a Service** - Funded by FTA in 2018, this project will be finalized by the end of 2024. The resulting strategies for single point of transportation information will be utilized in the implementation of the Tompkins County Mobility Vision.

TRANSPORTATION INITIATIVES

PLANNING EFFORTS

TRANSPORTATION PLANNING INITIATIVES

Several important transportation planning initiatives are scheduled for 2019 to 2023. These efforts can play a significant role in advancing the implementation of LRTP goals and objectives. The ITCTC will participate and support these planning efforts. Currently anticipated and ongoing initiatives include:

- **Move Ithaca - 2024-2025**, Active Transportation Plan for the City of Ithaca with a goal to reshape the way that people of all ages and abilities, walk, bike, and roll around the city. https://www.moveithaca.com/
- **City of Ithaca Transportation Plan** – a focus area plan included in the City's Comprehensive Plan
- **Safe Streets/Roads Tompkins** - 2024-2025 – Multiple jurisdictions teamed together to implement a Safe Streets and Roads for All grant funded project. This effort will result in traffic safety action plans for participating jurisdictions. https://safestreetstompkins.com/
- **SMART Grant-Phase One** - City of Ithaca traffic signal priority. Ongoing project to design and implement a traffic signal priority system on 18 city intersections. The system will work with transit buses, fire department vehicles and school buses. Implementation is ongoing.

PROMOTIONAL AND EDUCATIONAL STRATEGIES

1. Safety Education

IMPLEMENTATION

1-5

To be jointly conducted by various participants	**$:** To be determined

General safety education has been identified as a priority. Education efforts may be directed towards a variety of audiences, which may range from elementary school programs to programs for seniors. Community partners can include health services providers, County Health Department, public transportation operators, Way2Go, School Success Transportation Coalition and active transportation advocacy groups.

2. Transit Promotions

IMPLEMENTATION

1-5

Ongoing project managed by TCAT Marketing Division	**$:** Varying, to be determined

TCAT follows a marketing strategy with comprehensive public outreach. In addition to advertising, TCAT operates a website (**www.tcatbus.com**) that includes an automated trip planner and on-line bus pass sales. In addition, TCAT data is available in various transit apps and schedule information can be found at bus stops and in widely distributed printed schedules and route maps. ITCTC will provide support and assistance in continuing and expanding the promotion of public transportation.

3. Bicycle Promotions

IMPLEMENTATION

To be jointly conducted by various participants

$: To be determined

Efforts, such as the organization of Streets Alive! and Bike to Work and School day events, communicate a positive message for bicycling. These efforts need to be continued and enhanced. The ITCTC will provide support for local government and civic groups promoting the expansion of bicycling in Tompkins County. All programs should ensure that bicycling safety is addressed.

4. Pedestrian Promotions

IMPLEMENTATION

To be jointly conducted by various participants

$: To be determined

The ITCTC will provide support to local government and civic groups which promote walking as transportation. This effort should be linked to other education programs to ensure that pedestrian safety is addressed.

Transportation Infrastructure

Work with municipalities and other local partners to assess transportation infrastructure needs, including roadways, transit, bicycles and pedestrians, to support local planning efforts.

The ongoing Move Ithaca project, funded with carbon reduction program funds, will result in bicycle and pedestrian infrastructure recommendations for the City of Ithaca.

1. Bicycling Facilities Planning and Improvements

IMPLEMENTATION

To be completed by various participants in conjunction with the ITCTC

$: To be determined

The ITCTC will assist with efforts to enhance the provision of bicycling infrastructure such as: bike lanes, bicycle boulevards, parking facilities, etc. The ITCTC will also support efforts to produce bicycle plans at the local and regional levels.

2. Pedestrian Facilities Planning and Improvements

IMPLEMENTATION

To be completed by various participants in cooperation with the ITCTC

$: To be determined

The ITCTC will assist with efforts to enhance the provision of pedestrian infrastructure such as: sidewalks, multi-use and hiking trails. The ITCTC will assist local governments interested in facilitating planning for their pedestrian facilities and will help identify funding sources.

3. Transit Infrastructure and Capital Needs

IMPLEMENTATION

To be completed by TCAT in cooperation with Tompkins County and the ITCTC

$: To be determined

TCAT has a detailed capital needs plan that addresses the acquisition/replacement of vehicles, communications equipment, transit facility equipment, safety and security equipment, and bus stops and shelters. The ITCTC will work in coordination with TCAT and Tompkins County to ensure that its facilities and equipment needs are met in order to provide the highest quality public transportation system for the residents of Tompkins County.

4. Passenger Facilities Improvements

IMPLEMENTATION

To be conducted by TCAT

$: Up to $2.5 Million over 5 years to complete planning and installation of facility improvements

TCAT has assessed needs at passenger stops and shelters for signage, ADA and pedestrian access, lighting, safety, communications, bike storage and physical and design integration with surroundings, including the need for bus pull-offs and road shoulder improvements. These efforts will be coordinated with planned pedestrian facility improvements. In addition, TCAT would like to explore passenger facility luxuries, such as wireless internet access at key stops and on vehicles, energy-efficient lighting and heating, etc. The ITCTC will work to meet identified needs with TCAT and other relevant agencies, such as NYSDOT, the County Highway Department, and other municipalities.

5. Complete Streets Network

IMPLEMENTATION

To be completed by highway project sponsors in cooperation with the ITCTC

$: To be determined

A 'Complete Street' is a street designed and operated to enable safe access for all users regardless of their mode of transportation, so that pedestrians, bicyclists, motorists or public transportation users of all ages and abilities can move safely along and across the street. The ITCTC has identified a coordinated network of roads to form a Complete Streets Network for the urbanized area of Tompkins County. The ITCTC will work with local project sponsors to facilitate the incorporation of Complete Streets features in the roads identified in the network.

6. Electric Vehicle Charging Infrastructure

IMPLEMENTATION 5-10

Tompkins County, NYSDOT, municipal partners with support from the ITCTC.

$: To be determined

Develop and implement initiatives that will expand the availability of publicly accessible electric vehicle charging infrastructure across Tompkins County. This initiative is likely to encompass multiple projects.

7. Cayuga Waterfront Revitalization (BUILD)

IMPLEMENTATION 10-20

City of Ithaca and NYSDOT with support from the ITCTC

$: To be determined

Support implementation of projects included in the Cayuga Waterfront Revitalization design study of State Route 13 from Meadow/Fulton Streets to Dey St. This effort was funded with a federal Better Utilizing Investments to Leverage Development (BUILD) grant.

8. East Hill Transportation Initiatives

IMPLEMENTATION 5-10

City of Ithaca, Town of Ithaca, Cornell University and other municipal partners with support from the ITCTC

$: To be determined

Support collaborative planning by Cornell University, neighboring municipalities, and other involved parties to identify and implement high-priority transportation projects and programs.

MOBILITY EFFORTS

Transportation Demand Management Programs

1. Employer and Employee Commute Education Program

IMPLEMENTATION 1-5

Lead agency Way2Go. To be conducted with participation from the ITCTC, TCAT and other interested civic groups, with the cooperation of local employers

$: To be determined

Initiatives to reach out to employers and human resources managers with transportation information and education that benefits employers and their employees. This project may be implemented in coordination or as part of a Transportation Demand Management (GoIthaca) program.

Transit Programs

1. Rural Public Transportation Services

IMPLEMENTATION 1-5

To be conducted by TCAT in association with Gadabout and other interested parties

$: up to $1.2 Million depending on service provided

TCAT sees provision of rural commuter transportation service as a key need and growth opportunity over the next ten years. The components of TCAT's rural transportation strategy include: coordination of TCAT's fixed-route services with service in neighboring counties, and exploring the feasibility of implementing alternative service delivery models in rural areas such as an expanded park-and-ride system and/or use of demand-response feeder service.

2. Bikes to Buses

IMPLEMENTATION 1-5

ITCTC, in collaboration with TCAT, Bike Walk Tompkins, municipalities.

$: To be determined

Study the feasibility and potential of a program that incentivizes and facilitates first mile/last mile bicycle use, particularly in rural and suburban areas, to connect to fixed route buses. Consider impact of use of e-bikes.

Other Mobility Initiatives

1. 2024-2027 Tompkins County Mobility Vision

IMPLEMENTATION

1-5

Tompkins County in coordination with public/ private/nonprofit transportation providers, planners and educators, social service agencies, interested employers.

$: Will vary depending on what projects are implemented

The Mobility Vision seeks to implement strategies to break down transportation barriers by identifying and addressing transportation needs and demands of Tompkins County residents, with a focus on low income and other underserved community members.

One Call-One Click Transportation Information Center

The One Call-One Click Transportation Information Center would aim to simplify access to transportation for Tompkins County residents. By making a single phone call or using a website or app, residents would obtain information about all the transportation services available in the community. The system would allow users to schedule rides, receive confirmations, and pay for their trips. A key component of this proposal is the inclusion of a volunteer driving program.

The center would also be responsible for developing and implementing the volunteer driver program, if approved. This program would connect volunteer drivers and passengers to get them access to employment, food sources, medical services, education, recreation facilities, and support programs.

Tompkins County currently has a small volunteer driver program called Friends in Service Helping (FISH) that transports residents to medical appointments. This new system, if implemented, would expand these services to encompass a wider range of needs.

Mobility Management Program

Develop and implement a program to provide transportation information, particularly in rural low income and undeserved communities. This program would also assist with creating and implementing solutions that break down transportation barriers and improve access to employment, food sources, medical services, education, and recreation (all considered social determinants of health).

- Providing training for seniors, people with disabilities, and residents in undeserved and low income areas of Tompkins County to help them navigate public transportation more effectively.
- Scheduling and coordinating outreach events to inform the community about available transportation options and resources.
- Coordinating with area agencies, businesses, and other stakeholders to identify barriers that existing public transportation programs don't readily address.
- Partnering with the One Call-One Click Transportation Information Center to find solutions or transportation barriers in the county.

First Mile/ Last Mile

This initiative would provide connections to and from bus stops, as well as car- share and bike- share locations, for trips that start or end more than a mile away. The service would be aiming to increase ridership, especially in rural areas with limited public transportation options.

Rides to Recovery

This program would connect individuals in active recovery with essential services like employment, food sources, medical care, education, and recreation, addressing key social determinants of health.

This access would enable individuals to meet their basic needs, engage in meaningful social interactions, and maintain overall health and well-being. The primary focus of the program would be employment-based transportation, including access to educational resources for long-term career advancement. Additionally, the program would provide transportation for healthy food access and medical needs, such as prescription pickup and social services appointments.

By offering consistent access to these essential services, Rides to Recovery would aim to promote equal opportunities for good health, professional growth, and social engagement throughout our community.

School Buses

Look at piloting programs with School buses. They serve every portion of the county, and the districts have their own transportation operations. The buses might be able to serve the general public and use the schools as transportation hubs for connections to other transportation systems.

Transportation Systems Management

1. Traffic Signal Upgrade Program for Downtown City of Ithaca

IMPLEMENTATION

5-10

To be conducted by the City of Ithaca in cooperation with NYSDOT

$: Up to $6 Million depending on scope of work and technologies implemented

The upgrade of the traffic signal system in the core urban area of the City of Ithaca is one of the most important capital projects facing the area. Developing a linked, interconnected system using sensors to actuate signals in the presence of vehicles, bicycles, and pedestrians and to allow real time adjustments would help maximize operational efficiency, reduce congestion, reduce emissions and improve safety. Effort to be coordinated with ongoing transit traffic signal priority system project. Additional resources are needed to address the continuing deployment of the advanced traffic signal system.

2. State Route 13 Signal Management Program

IMPLEMENTATION

1-5

To be conducted by the NYSDOT in cooperation with the City of Ithaca

$: To be determined

Periodic review and evaluation of the signal system operations in the West End area of the City of Ithaca. This project needs to be repeated periodically to respond to changing traffic conditions.

Assistance To Local Trail Development Efforts

1. Implementation of Trail Development Strategy

IMPLEMENTATION

10-20

To be conducted by ITCTC staff, in coordination with the Tompkins County Planning Department, in support of local trail development efforts

Development of a comprehensive multi-use trails network in Tompkins County has the potential for a significant positive impact on the transportation system. In addition, multi-use trails serve as a regional asset, providing harder to quantify but no less important, economic and quality of life benefits to residents of Tompkins County.

On March 1996 the ITCTC completed the Transportation Trail/ Corridor Study. The ITCTC has expressed its support and priority for the aggressive and effective implementation of the trail network described in the Trail/Corridor Study.

In 2013, a trails coalition representing municipalities, Tompkins County, the ITCTC, numerous community organizations and interested private individuals, prepared a plan called the Tompkins Priority Trails Strategy: a vision for networked trails in Tompkins County (see Appendices). This plan was updated in 2023. It identifies a network of trails, the Tompkins County Priority Trails and Urban Connectors, and specifies steps needed to reach trail development. The ITCTC will continue to work and support the work of the trails coalition, including working towards implementation of the Tompkins Priority Trails Strategy.

The ITCTC will provide trail development technical assistance, i.e. mapping, data, grant applications, funding information, to interested municipalities and other government and civic agencies advancing development of the Tompkins County Priority Trails and Urban Connectors network.

APPENDICES

A. Tompkins Priority Trails Strategy

B. Glossary of Acronyms, Definitions and Transportation Web Sites

C. Summary of Comments and Responses

APPENDIX A:
TOMPKINS COUNTY PRIORITY TRAILS STRATEGY

UPDATED DOUCMENT TO BE INCLUDED.
TOMPKINS COUNTY PRIORITY TRAILS STRATEGY CAN BE SEEN AT: https://www.tompkinscountyny.gov/itctc/projects#Priority%20Trails%202023

APPENDIX B: GLOSSARY OF ACRONYMS, DEFINITIONS AND WEBSITES

ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
AADT	Average Annual Daily Traffic
AAR	American Association of Railroads
ARRA	American Recovery and Reinvestment Act – February 17, 2009
ACS	Advanced Communication System
ACS	American Community Survey
ADA	Americans with Disabilities Act of 1990
ADT	Average Daily Traffic
ADP	Advance Detail Plans
AFC	Automated Fare Control
AFV	Alternative Fuel Vehicle
A/I	Accident Incident
AICP	American Institute of Certified Planners
ALIS	Accident Location Information System (NYSDOT)
APA	American Planning Association or Adirondack Park Agency (New York State)
AQMP	Air Quality Management Plan
APTA	American Public Transit Association
APTS	Advanced Public Transportation System
ARTS	Advanced Rural Transportation Systems
ARRA	American Recovery and Reinvestment Act of 2009
ASCE	American Society of Civil Engineers
ATIIP	Active Transportation Infrastructure Investment Program Grant
ATIS	Advanced Traveler Information System
ATMS	Advanced Traffic Management System
ATS	Automated Transportation Systems
ATV	Accurate Traffic Volume
ATV	All Terrain Vehicles
AVCS	Advanced Vehicle Control System
AVI	Automated Vehicle Identification
AVO	Average Vehicle Occupancy
BAC	Bicycle Advisory Council
BFU	Bicycle Facilities Unit
BIL	Bipartisan Infrastructure Law (aka: IIJA)
BPM	Best Management Practice
BMS	Bridge Management System
BNAM	Bridge Needs Assessment Model
BPAC	Bicycle Pedestrian Advisory Committee
BSA	Bridge Safety Assurance
BTP	Bicycle Transportation Plan
BTS	Bureau of Transportation Statistics (USDOT)
BUILD	Better Utilizing Investments to Leverage Development Grant
CA	Certification Acceptance
CAA	Clean Air Act of 1970
CAAA	Clean Air Act Amendments of 1990 (previously 1977)
CADD	Computer Aided Design and Drafting
CAFE	Corporate Average Fuel Economy Standards of 1975
CBD	Central Business District
CBO	Community-Based Organization
CBP	Comprehensive Business Plan
CDL	Commercial Driver's License
CDBG	Community Development Block Grant
CFC	Chloroflourocarbon
CH4	Methane
CHAS	Comprehensive Housing Affordability Strategy
CIP	Capital Improvements Program
CMAQ	Congestion Mitigation and Air Quality program
CMP	Congestion Management Plan
CMS	Congestion Management System
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO2	Carbon Dioxide
COG	Council of Governments
CPI	Consumer Price Index
CPMIS	Capital Program Management Information System
CRA	Community Redevelopment Agency
CRP	Carbon Reduction Program
CSS	Context Sensitive Solutions
CSSQ	Cost, Schedule, Scope and Quality
CSSQA	Cost, Schedule, Scope and Quality Agreement
CTAA	Community Transportation Association of America
CTPP	Census Transportation Planning Package
CVO	Commercial Vehicle Operations
CU	Cornell University
DA	Design Approval
DAD	Design Approval Document
db	Decibels
DBE	Disadvantaged Business Enterprise
DDR	Draft Design Report
DEC	New York State Department of Environmental Conservation
DEIS	Draft Environmental Impact Statement
DIA	Downtown Ithaca Alliance
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOT	Department of Transportation
DSS	Department of Social Services
EA	Environmental Assessment

EAP	Environmental Action Plan
ECO	Employee Commute Options
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EV	Electric Vehicle
FAA	Federal Aviation Administration (USDOT)
FARS	Fatal Accident Reporting System (USDOT)
FDR	Final Design Report
FEIS	Final Environmental Impact Statement
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration (USDOT)
FIPS	Federal Information Processing Standards
FISH	Friends in Service Helping
FLIC	Finger Lakes Independence Center
FRA	Federal Railroad Administration (USDOT)
FTA	Federal Transit Administration (formerly UMTA, USDOT)
FTIP	Federal Transportation Improvement Program
FTS	Freight Transportation Study
FY	Fiscal Year
GAO	General Accounting Office
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GNP	Gross National Product
GPS	Global Positioning Satellite
HBRR	Highway Bridge Rehabilitation & Replacement
HBW	Home-Based Work (trip type)
HC	Hydrocarbons
HCM	Highway Capacity Manual
HEV	Hybrid Electric Vehicle
HNW	Home Non-Work (trip type)
HOT	High Occupancy Toll Lane
HOV	High Occupancy Vehicle
HPMS	Highway Performance Management System
HRDB	Human Resource Development Bureau
HSC	Human Services Coalition
HSIP	Highway Safety Improvement Program
HUD	U.S. Department of Housing & Urban Development
IC	Ithaca College
ICC	Interstate Commerce Commission
IIJA	Infrastructure Investment and Jobs Act (aka: BIL)
IM	Interstate Maintenance
IMS	Intermodal Management System
INAM	Infrastructure Needs Assessment Model
IPP	Initial Project Proposal
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITCTC	Ithaca-Tompkins County Transportation Council
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation System
JTW	Journey-to-Work (US Census survey)
KPH	Kilometer Per Hour
LHI	Local Highway Inventory
LNG	Liquefied Natural Gas
LOS	Level of Service
LPG	Liquefied Petroleum Gas
LRP	Long Range Plan
LRRT	Light Rail Rapid Transit
LRTP	Long Range Transportation Plan
LTC	Local Transportation Commission
LULU	Locally Unwanted Land Use
MAB	Metropolitan (Planning) Area Boundary
MAP-21	Moving Ahead for Progress in the 21st Century
MSA	Metropolitan Statistical Area
MOVES	Motor Vehicle Emission Simulator
MOU	Memorandum of Understanding
MPG	Miles Per Gallon
MPH	Miles Per Hour
MPO	Metropolitan Planning Organization
MTIS	Major Transportation Investment Study
MTP	Metropolitan Transportation Plan
MUTCD	Manual of Uniform Traffic Control Devices
N2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESTS	North East Subarea Transportation Study
NHB	Non-Home Based (trip type)
NHPP	National Highway Performance Program
NHS	National Highway System
NHTS	National Household Travel Survey
NHTSA	National Highway Traffic Safety Administration (USDOT)
NIMBY	Not In My Back Yard
NOx	Nitrogen Oxides
NPS	National Park Service
NTPP	NESTS Transit Planning Project
NTS	National Transportation System
NYPTA	New York Public Transit Association
NYSDOT	New York State Department of Transportation
O3	Ozone
OMB	Office of Management and Budget
OPPM	Office of Planning and Program Management (NYSDOT Main Office)
OPRHP	New York State Office of Parks, Recreation & Historic Preservation
OTAQ	Office of Transportation and Air Quality
PE	Professional Engineer
PFR	Project Feasibility Report
PIN	Project Identification Number
PIP	Public Involvement Procedures
PM	Project Manager
PMP	Project Management Plan
PMS	Pavement Management System
PMSA	Primary Metropolitan Statistical Area
PMT	Person Miles of Travel
PRT	Personal Rapid Transit

PS&E Plans, Specifications and Estimate
PTMS Public Transportation Management System
RFB Request for Bids
RFP Request for Proposals
RFQ Request for Qualifications
RHME Regional Highway Maintenance Engineer
ROW Right of Way
RPPM Regional Planning and Program Manager
RREGGAE Roadway & Rail, Energy& Greenhouse Gas Analysis Extension
RSTP Regional Surface Transportation Program
RTIP Regional Transportation Improvement Program
RTPA Regional Transportation Planning Agency
RTP Regional Transportation Plan
SAFE Service Authority for Freeways and Expressways
SAFETEA-LU Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users
SDF State Dedicated Fund
SDL Safety Deficient Location
SEQR New York State Environmental Quality Review
SEQRA New York State Environmental Quality Review Act
SFY State Fiscal Year (April 1 - March 31)
SHPO State Historic Preservation Officer
SIC Standard Industrial Classification
SMART Strengthening Mobility and Revolutionizing Transportation Grant
SMS Safety Management System
SMSA Standard Metropolitan Statistical Area
SOV Single Occupant Vehicle
SOx Sulfur Oxides
SPDS State Pollution Discharge Elimination System
SRTP Short Range Transit Plan
SS4A Safe Streets and Roads for All Grant
STBG Surface Transportation Block Grant
STIP State Transportation Improvement Program
STOA State Transit Operating Assistance
STP Surface Transportation Program
STPP Surface Transportation Policy Project
SWS Statewide Significant
TAC Technical Advisory Committee
TAP Transportation Alternatives Program
TC3 Tompkins Cortland Community College
TCI Transit Capital Improvement
TCM Transit Control Measure
TAZ Traffic Analysis Zone (see TSZ)
TCAT Tompkins Consolidated Area Transit
TCM Transportation Control Measure
TCRP Traffic Congestion Relief Program
TDC U.S. Travel Data Center
TDM Transportation Demand Management
TEA-21 Transportation Equity Act for the 21st century
TEP Transportation Enhancement Program
TIA Transportation Improvement Area
TIF Transportation Improvement Fund
TIGER Topologically Integrated Geographic Encoding and Reference System
TIGER Transportation Investment Generating Economic Recovery (Federal Grant Program)
TIP Transportation Improvement Program
TMA Transportation Management Area (metropolitan areas over 200,000 pop.)
TMA Transportation Management Association
TOD Transit Oriented Development
TOS Traffic Operation System
TP Total Particulate Matter
TPA Transportation Planning Agency
TPB Transportation Planning Board
TRB Transportation Research Board
TSM Transportation System Management
TSZ Traffic Survey Zone (see TAZ)
UA Urbanized Area (Census Bureau)
UBC Uniform Building Code
UNIPCC United Nations Intergovernmental Panel on Climate Change
UOP Unified Operations Plan
UPWP Unified Planning Work Program
USC United States Code
USDOT U.S. Department of Transportation
USGS U.S. Geological Survey
USTTA U.S. Travel and Tourism Information Association
UZA Urbanized Area (FHWA, revised)
V2V Vehicle to Vehicle Technologies
V/C Volume to Capacity Ratio
VHT Vehicle Hours Traveled
VLS Vehicle Location System
VMT Vehicle Miles Traveled
VNTSC Volpe National Transportation Systems Center
VOC Volume Over Capacity
VPD Vehicles Per Day
VPH Vehicles Per Hour
VPHH Vehicles Per Household
VOC Volatile Organic Compounds
WBE Women (owned) Business Enterprise
WIC Women, Infants and Children

DEFINITIONS

The definitions below are for commonly used terms and concepts in transportation planning. The listing below may be supplemented by an online glossary maintained by the Federal Highway Administration at: http://www.fhwa.dot.gov/planning/glossary/glossary_listing.cfm .

Accelerated Retirement of Vehicles (a.k.a. "Cash for Clunkers") - programs that allow industries that exceed federal emission standards to purchase older model vehicles from the general public to remove them from the road (for air quality and energy reasons).

Access, Accessibility - The opportunity to reach a given destination within a certain time frame, or without being impeded by physical or economic barriers. Accessible also means, with respect to vehicles and facilities, complying with the accessibility requirements of 49 CFR parts 37 and 38 (ADA transportation provisions).

Aggregate Demand Model - Model obtained by combining travel observations for individuals into geographic zones.

Air Quality Conformity Analysis - Analysis that determines if certain transportation plans and programs conform to federal air-quality goals, namely that the plans and programs won't increase vehicular emissions. Federal Clean Air Act requires these analyses for areas that in non-attainment of federal air quality standards.

Allocation - An administrative distribution of funds among the States, done for funds that do not have statutory distribution formulas. The State of New York also allocates funds among its eleven administrative regions.

Alternative Fuels - Any motor fuel other than ordinary gasoline which generally results in lower levels of air pollutants (e.g., reformulated gasoline, methane, ethanol, natural gas, liquid propane, and vegetable oils). See "Clean Fuels" and "Oxygenated Fuels", below.

Americans with Disabilities Act of 1990 (ADA) - Federal Law which requires accessible public transportation services for persons with disabilities, including complementary or supplemental paratransit services in areas where fixed route transit service is operated. Expands definition of eligibility for accessible services to persons with mental disabilities, temporary disabilities, and the conditions related to substance abuse. The Act is an augmentation to, but does not supersede, Section 504 of the Rehabilitation Act of 1973 which prohibits discrimination on the basis of disability against otherwise qualified individuals in programs receiving federal assistance.

Annual Element (A.E.) - The section of the Transportation Improvement Program which lists all transportation improvement projects proposed for the first year of the program.

Apportionment - A term that refers to a statutorily prescribed division or assignment of funds. An apportionment is based on prescribed formulas in the law and consists of dividing authorized obligation authority for a specific program among the States.

Appropriations Act - Action of a legislative body that makes funds available for expenditure with specific limitations as to amount, purpose, and duration. In most cases, it permits money previously authorized to be obligated and payments made, but for the highway program operating under contract authority, appropriations specify amounts of funds that Congress will make available to liquidate prior obligations.

Arterial - Roadways designed to carry large volumes of traffic to and from collector streets. The emphasis is on mobility, not access to adjoining land uses.

Assignment - The last step in a transportation model in which the estimated trips are loaded on to the simulated travel network (e.g., highway or transit).

Attainment Area - An area considered to have air quality that meets the National Ambient Air Quality Standards for a given pollutant. An area may be in attainment for one pollutant while being in non-attainment for others.

Average Daily Traffic (ADT) - The average number of vehicles passing a fixed point in a 24-hour time frame. A convention for measuring traffic volume.

Average Annual Daily Traffic (AADT) - The total number of vehicles passing a fixed point in a 365-day time period divided by 365. AADT figures may also be derived from ADT counts using monthly adjustment factors derived from continuous count station readings.

Average Vehicle Occupancy (AVO) - A measure of the number of people using each automobile. A higher AVO assists in the reduction of traffic congestion and improving air quality.

Base Year - The first year of data and analysis used in a study (usually the current year).

Bicycle Boulevard – A roadway that has been modified to enhance bicyclists' safety and convenience. Bicycle Boulevards are ideally incorporated into a network that allows bicyclists to travel between major points activity. Bicycle Boulevards frequently incorporate traffic calming strategies to enhance multi-modal transportation, especially bicycling.

Bikeway - Any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Bike Facilities - A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking facilities, mapping all bikeways, and shared roadways not specifically designated for bicycle use. See "Shared Roadway", below.

Bike Lane - A portion of a roadway, which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bike Path - A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right of way or within an independent right of way.

Bike Route - A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without specific bicycle route number.

Budget Authority - Empowerment by the Congress that allows federal agencies to incur obligations to spend or lend money. This empowerment is generally in the form of appropriations. However, for the major highway program categories, it is in the form of "contract authority." Budget authority permits agencies to obligate all or part of the funds that were previously "authorized." Without budget authority, federal agencies cannot commit the Government to make expenditures or loans.

Bus Lane - A lane reserved for bus use only. Also known as a "diamond lane."

Capacity - The maximum number of vehicles that can pass over a given section of a lane or roadway in one direction (or in both directions for a two-lane or three-lane highway) during a given time period under prevailing roadway and traffic conditions. It is the maximum rate of flow that has a reasonable expectation of occurring. In the absence of a time modifier, capacity is an hourly volume.

Capacity Restraint - The modeling process by which the assigned volume on a link is compared with the practical capacity of that link and the speed of the link adjusted to reflect the relationship between speed, volume, and capacity. The procedure is iterative until a realistic representation of traffic flow is achieved.

Carbon Monoxide (CO) - A colorless, odorless gas emitted primarily from the incomplete combustion of fossil fuels. CO is absorbed into the bloodstream through the respiratory tract and reacts primarily with the hemoglobin in the red blood cells, decreasing the blood's oxygen carrying capacity.

Carsharing - A model of car rental where people rent cars for short periods of time, often by the hour. They are attractive to customers who make only occasional use of a vehicle, as well as others who would like occasional access to a vehicle of a different type than they use day-to-day.

Catenary - The overhead power line system for electrically propelled rail vehicles, including light-rail cars.

Central Business District (CBD) - The most intensely commercial sector of a city.

Clean Air Act (CAA) - Originally adopted in 1970, substantially amended in 1977. The act established maximum allowable emission levels for various pollutants and required the development of State Implementation Plans (SIPs) that monitor air quality and enforce emission standards.

Clean Air Act Amendments of 1990 (CAAA) - Federal law establishing criteria for attaining and maintaining National Ambient Air Quality Standards. A nonattainment area is a region that fails to meet one or more of the standards. The CAAA have shifted the emphasis of conformity analysis from a system-level review of the SIP towards a more project-oriented approach. Transportation agencies are concerned with projects that help to reduce pollutant levels by reducing vehicle congestion and vehicle miles of travel.

Clean Fuels - Blends and/or substitutes for gasoline. Compressed natural gas (CNG), methanol, ethanol, and others are considered clean fuels. The addition of oxygenated compounds directly to gasoline can improve the efficiency of combustion and lower the output of CO and reactive organic emissions. See "Alternative Fuels", above and "Oxygenated Fuels", below.

Closed Barrier System - A type of toll collection system in which vehicles pay at toll booth "barriers" across the highway, rather than at toll booths at each exit from the highway.

Collector - A roadway that both provides access to adjoining land uses, as well as conducts traffic from local streets to arterial streets and freeways.

Commercial Driver's License (CDL) - A standard state requirement for trucking, bus, and some for-profit passenger bus services. The CDL is becoming a standard driver qualification for employment in professional paratransit organizations.

Commuter Rail - Local and regional passenger train operations between a central city, its suburbs, and/or another central city. Commuter rail usually has only one or two stations in the CBD. Also known as "suburban rail".

Complete Streets - In urban planning and highway engineering, roadways designed and operated to enable safe, attractive, and comfortable access and travel for all users. Pedestrians, bicyclists, motorists and public transport users of all ages and abilities are able to safely and comfortably move along and across a complete street.

Conformity - Process to assess the compliance of any transportation plan, program, or project with air quality control plans. The conformity process is defined by the Clean Air Act.

Congestion Management and Air Quality Improvement Program (CMAQ) - A categorical type of funding program which directs funding to projects within air quality nonattainment areas that contribute to meeting national air quality standards. CMAQ funds generally may not be used for projects which result in the construction of new capacity available to SOVs (single occupant vehicles).

Congestion Management Process (CMP) - Each Transportation Management Area (see "TMA", below) is required to develop a CMP that provides for effective management of new and existing transportation facilities through the use of travel demand reduction and operational management strategies.

Consolidation - Restructuring transportation services to serve the same market with fewer service providers.

Context Sensitive Solutions - A collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist.

Contract Authority - A form of budget authority that permits obligations to be made in advance of appropriations. The Federal-Aid Highway Program operates mostly under contract authority rules due to the existence of a dedicated trust fund.

Controlled Access - A roadway design that permits no access to adjoining land, just access to other public roads.

Coordination - When agencies share responsibilities related to transporting clients (e.g., carrying other clients, arranging with other agencies to carry clients, sharing vehicles or vehicle support services including maintenance, etcetera). For example, a provider whose major activity is transporting elderly clients may make mid-day schedule space to serve clients of an AFDC, WIC, or substance abuse prevention program.

Core-Based Statistical Area - An area defined by the Census Bureau for statistical reporting purposes. Such areas have an urban core of 10,000 persons or more, as well as adjacent counties that are socioeconomically linked to the urban center due to commuting patterns. See "Metropolitan Statistical Area" below.

Corporate Average Fuel Economy Standards (CAFE) - Refers to the federal fuel efficiency standards for automobiles.

Crosswalk – A point along a street that is identified by striping, signage, and/or signal lights that designate it as a spot for pedestrians to cross the street.

Curb Cut - a ramp leading smoothly down from a sidewalk to a street, rather than abruptly ending with a curb and dropping roughly 4–6 inches.

Deadhead - Refers to bus travel between a garage and a passenger route. Less deadhead time means more efficiency.

Demand-Responsive System - Any system of transporting individuals, including the provision of designated public transportation service by public entities and the provision of transportation service by private entities, including but not limited to specified public transportation service, which is not a fixed route system. Trips are usually requested and scheduled in advance by the trip maker. See "Dial-A-Ride" and "Paratransit", below.

Desire Line - The straightened path between the origin and destination of a trip. Desire lines are mapped by analysts, where the width of the line is correlated to the patterns of travel intensity.

Dial-a-Ride - A door-to-door, demand responsive transit operation similar to a taxicab (zone cab) service. Trip reservations may be required. See "Demand-Responsive", above and "Paratransit", below.

Discretionary Funding - Projects are selected for construction or reconstruction at the discretion of the U.S. Secretary of Transportation. These projects usually involve high cost or require long periods of construction time.

Ecological Sustainability - Based on the principles of ecology which recognize the connectedness and interrelationship of all living things. Long-term survival (sustainability) of any species in an ecosystem depends on a limited resource base. See "Sustainable Society", below.

Energy Descent - is the post-peak oil transitional phase, when humankind goes from the ascending use of energy that has occurred since the industrial revolution to a descending use of energy. Commonly used to refer to the retraction of oil use after the peak oil availability.

Environmental Capacity - Environmental capacity (EC) quantifies the impact that traffic has on the human environment (noise, air pollution, vibration, pedestrian safety, etc.). It was first quantified by Buchanan (Traffic in Towns, HMSO,1963, London), and has been expanded and refined by many authors since. A road's environmental capacity is determined by both the physical environment through which the road passes (land use, building set-back, vegetation, etc.) and by the characteristics of the road itself (width, number of lanes, traffic speed, percent trucks, etc.). As a rule, roads in residential areas have a low EC (200-300 vph, 800-1200 vpd), while commercial areas have higher ECs (perhaps twice as high). Environmental capacity is rarely a limiting factor in undeveloped or heavy industrial areas. Many methods can be used to keep a road operating within its EC: reduce the amount of traffic, reduce vehicle speeds, reduce pavement width, plant trees and shrubs along the road, or move the road further from the land-use focal point (e.g., building, playground, etcetera). While it is possible to modify a road to make it operate within its EC without necessarily decreasing the amount of traffic, typical carrying capacity improvements (e.g., wider, straighter, faster) decrease the road's EC. Local examples of successfully implemented measures to improve EC include: prohibiting through-trucks in some residential areas, reducing speed limits near schools, restricting through-traffic from the Cornell University campus, and eliminating all traffic from the Ithaca Commons. [Source: Bruce Brittain]

Environmental Impact Statement (EIS) – A written report that (1) details any adverse economic, social, and environmental effects of a proposed project for which federal funding or approval is sought, (2) examines alternatives to the project, and (3) discusses possible mitigation measures for the negative impacts of the project. It is intended to be a disclosure document, to provide decision-makers with necessary information to make an informed decision. Adverse effects could include air, water, or noise pollution; destruction or disruption of natural resources; adverse employment effects; injurious displacement of people or businesses; or disruption of desirable community or regional growth.

Environmental Protection Agency (EPA) - EPA is the source agency of air quality control regulations affecting transportation.

Expressway - A divided arterial highway for through traffic with controlled access, the intersections of which are usually separated from other roadways by differing grades.

Federal-Aid Highway Program - An umbrella term generally referring to all activities funded through the FHWA and administered by the States' highway/transportation agencies or, in some cases, by local transportation agencies. While there are many components to the Program, the principal categories are: (1) the Interstate Maintenance Program, (2) the National Highway Performance Program (NHPP), (3) the Surface Transportation Block Grant Program (STBG), and (4) the Congestion Mitigation and Air Quality Improvement Program (CMAQ).

Federal Fiscal Year (FFY) - Since FFY 1977, the yearly accounting period beginning October 1 and ending September 30 of the subsequent calendar year. Fiscal years are denoted by the calendar year in which they end (e.g., FY 2020 began October 1, 2019, and ended September 30, 2020). See "Fiscal Year" and "State Fiscal Year", below.

Federal Highway Administration (FHWA) - The agency within the U.S. Department of Transportation responsible for the administration of the Federal-Aid Highway Program.

Federal Transit Administration (FTA) - The agency within the U.S. Department of Transportation responsible for administering the provisions of the Urban Mass Transportation Act of 1964 (as amended). Formerly named the Urban Mass Transportation Administration (UMTA).

Fiscal Year - The program and budget year of a given business, agency, or other enterprise. See "Federal Fiscal Year", above and "State Fiscal Year", below.

Fixed Route - A system of transporting individuals (other than by aircraft), including the provision of designated public transportation service by public entities and the provision of transportation service by private entities, including, but not limited to, specified public transportation service, on which a vehicle is operated along a prescribed route according to a fixed schedule.

Fragmentation - A situation stemming from the lack of effective and efficient integration of programs, facilities and services.

Freeway - A divided arterial highway designed for the unimpeded flow of large traffic volumes. Access to a freeway is rigorously controlled; grade separated intersections are the rule.

Gasohol - A special motor fuel that is a blend of 90% ordinary gasoline and 10% ethanol which is fermented from biomass (e.g., corn).

Headway - Time spacing between transit vehicles (e.g., 10-minute headways means a bus comes by a particular location every 10 minutes).

High Accident Location - A location that has experienced eight or more accidents within the previous three years and that has a "critical rate" of accidents greater than 1. "Critical rate" is a statistic that compares the accident experience among similar locations. A "critical rate" greater than 1 indicates a higher than average rate of accidents for the location given its traffic volume and other characteristics.

High Occupancy Vehicles (HOVs) - Generally applied to vehicles carrying three or more persons. Freeways, expressways and other large volume roads may have lanes designated for the exclusive use of HOVs

(carpoolers, vanpools, and buses). The term HOV is also sometimes used to refer to high occupancy vehicle lanes themselves.

Highway - Term applies to roads, streets, and parkways, and also includes rights-of-way, bridges, railroad crossings, tunnels, drainage structures, signs, guard rails, and protective structures in connection with highways.

Home-Based Work (HBW) - A trip for the purpose of one's employment, with either trip end being one's home.

Home Non-Work (HNW) - A trip for a purpose other than employment (e.g., shopping, recreation, social, school, etcetera), with either trip end being at one's home.

Infrastructure - A term connoting the physical underpinnings of society at large, including, both human made -- including, but not limited to: roads, bridges, transit, water systems, public housing, sidewalks, utility installations, parks, public buildings, and communications networks -- and the natural (environmental) infrastructure of land, water, air, and life-forms.

Initial Project Proposal (IPP) - The first step in developing NYSDOT capital project, the IPP begins as a two-page form that provides a thumbnail sketch of the proposed improvement. The IPP describes the specific problem, possible solutions to it, and the possible benefits and costs resulting from the project's implementation. It serves as the point of departure for subsequent planning and design.

Intelligent Vehicle Highway Systems (IVHS) - Uses computer and communications technology to provide information to travelers about road and transit conditions and to monitor, guide, or control the operation of vehicles. Included concepts such as "freeway management systems," "urban signal control systems," and "automated highways." Similar to Intelligent Transportation System.

Intermodal - A term that refers to connectivity between modes as a means of facilitating linked trip making. It emphasizes connections (transfers of people or freight in a single journey), choices (provisions of transportation options to facilitate trip making), and coordination and consolidation (collaboration among transportation organizations).

Intermodal Facility - A transportation element that accommodates and interconnects different modes of transportation and serves intrastate, interstate, and possibly international movement of people and goods.

Interstate System - That system of highways which connects the principal metropolitan areas, cities, and industrial centers of the United States. The interstate system also connects at suitable border points with routes of continental importance in Canada and Mexico. The routes of the interstate system are selected by joint action of the state highway department of each state and the adjoining states, subject to the approval of the U.S. Secretary of Transportation. May be referred to as the Dwight D. Eisenhower National System of Interstate and Defense Highways.

Land Use - The way specific portions of land or the structures on them are used. Basic land use categories are: single family residential, multi-family residential, retail, commercial/office, industrial, agricultural, recreation, and so on.

Letting - The term used to describe the acceptance of a contract bid. The letting date follows or coincides with the obligation of funds and is followed by a notice to proceed. See "Obligation Date", below.

Level of Service (LOS) - A qualitative measure of the degree of mobility on a roadway. There are six levels of service defined, ranging from LOS "A" to LOS "F":

- LOS A:
  free-flow conditions; delays are minimal or nonexistent
- LOS B:
  stable flow, but motorists begin to experience some delays
- LOS C:
  flow is still stable, but delays lengthen and maneuvering within the traffic stream is noticeably more difficult
- LOS D:
  flow is still stable, but speed and maneuverability are severely restricted; moderately long delays (25 to 40 seconds per vehicle) at intersection
- LOS E:
  road is at or near capacity; speeds are reduced to low, uniform flow; delays at intersection of 40 to 60 seconds per vehicle
- LOS F:
  roadway is operating under "breakdown" conditions; intersection delays of more than 60 seconds per vehicle

Link - The abstract representation of a discrete roadway or transit route segment in a travel demand model network. See "Network", below.

Local Street - A street intended only to provide access to abutting properties.

Long-range - Typically, long-range plans address a period of at least twenty years. Federal regulations specify that transportation plans must address "at least a twenty-year planning horizon". See "Metropolitan Transportation Plan", below.

Maintenance Area - Any geographic region of the United States designated nonattainment pursuant to the Clean Air Act, and subsequently re-designated in attainment and required to develop a maintenance plan.

Matching Funds - Funds which one funding source requires from others as a condition of receiving the funds from that funding source. Generally, the match is set as a percentage of the total project, or project phase, cost. Federal legislation establishes a 20% matching share for nearly all federal-aid transportation programs.

Metropolitan Planning Area Boundary (MAB) - The geographic area in which the metropolitan transportation planning process must be carried out. This area must, at minimum, include the Census defined Urbanized Area and the area expected to be urbanized within twenty years. The MAB may encompass the entire metropolitan statistical or consolidated metropolitan statistical area (defined by the Census Bureau) and shall include the boundaries of air quality nonattainment and maintenance areas, if applicable. In addition, the MAB should be defined to reflect a comprehensive and effective transportation planning process that ensures connectivity between modes, reduces access disadvantages experienced by modal systems, and promotes efficient overall transportation investment strategies.

Metropolitan Planning Organization (MPO) - The organizational entity designated by law with lead responsibility for developing transportation plans and programs for urbanized areas of 50,000 or more in population. MPOs are established by agreement of the Governor and units of general purpose local government which together represents 75% of the affected population of an urbanized area.

Metropolitan Statistical Area (MSA) - An area defined by the Census Bureau for statistical reporting purposes. Such areas have a core City of 50,000 persons or more and an Urbanized Area of 50,000 persons or more (provided total county/counties population is 100,000 persons or more). MSAs may also be designated on the basis of various economic variables (i.e., regional employment destinations). See "Core-Based Statistical Area" above.

Metropolitan Transportation Plan - A long-range transportation plan, which federal legislation requires be completed by Metropolitan Planning Organizations (MPOs). See "Long-range", above.

Mobility - The ease with which desired destinations can be reached.

Mobility Impaired - A descriptive, non-regulatory definition that generally applies to those persons who, for one reason or another (e.g., age, physical, economic, or other), do not have personal access to or the ability to use an automobile. In general, these persons are elderly, disabled, youths, or economically disadvantaged.

Modal Balance - The percentage of all forms of transportation in use (e.g., 85% autos, 7% pedestrian, 5% bus, 3% bicycle) that represents an optimal mix of modes. Modal balance is influenced by such factors as price, speed, ease of access, demographics (age, economics, education, occupation, etcetera), and land use composition.

Modal Interface - The interaction between two or more modes of transportation (e.g., the ability to change from the pedestrian to bicycle to bus modes in order to complete a trip).

Mode - Means of travel, whether by automobile, transit, bicycle, walking, or other available methods of transportation. Modes also apply to freight movements.

Mode Choice Model - A mathematical model used as part of the transportation modeling process to determine what mode of transportation (principally automobile or mass transit) a specific trip is inclined to use. May also be referred to as "mode split".

Model - A mathematical and geometric projection of activity and the interactions in the transportation system in an area. This projection must be able to be evaluated according to a given set of criteria which typically include criteria pertaining to land use, economics, social values, and travel patterns. The transportation planning process relies heavily on the use of travel demand models that predict travel behavior in order to assess the feasibility, effectiveness, and efficiency of current and future transportation alternatives.

National Ambient Air Quality Standards (NAAQS) - Those standards established pursuant to section 109 of the CAAA and included standards for carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.

National Highway System (NHS) – Federal legislation specifies that "the purpose of the National Highway System is to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel". The NHS is comprised of the Interstate Highway System, urban and rural principal arterials, and the strategic defense highway system.

Network - A graphic and/or mathematical representation of multimodal paths in a transportation system. Highway network representations used in travel demand modeling are comprised of "links", representing the discrete roadway or transit route segments, and "nodes", representing roadway intersections or activity locations.

Node - Designates intersections or changes in characteristics/attributes in a network representation. Nodes may also represent areas of concentrated activity in both network or land use terms.

Nonattainment Area - Any geographic region of the United States that the Environmental Protection Agency (EPA) has designated as a nonattainment area for transportation related pollutant(s) for which a National Ambient Air Quality Standard (NAAQS) exists. Nonattainment is generally declared when air quality monitors reveal that the NAAQS levels have been exceeded for one or more hours on two or more separate days.

Non-Home-Based (NHB) - A trip that takes place between two points, neither of which is the home end of the trip-maker.

Obligation Date - The point in the life of a project at which the administering agency (usually the state DOT) commits a portion of its allocated federal funds to a project. See "Letting", above.

Obligations - Commitments made by Federal agencies to pay out money as distinct from the actual payments, which are "outlays." Generally, obligations are incurred after the enactment of budget authority. However, since budget authority in many highway programs is in the form of contract authority, obligations in these cases are permitted to be incurred immediately after apportionment or allocation. The obligations are for the Federal share of the estimated full cost of each project at the time it is approved regardless of when the actual payments are made or the expected time of project completion.

Operating Cost - The costs of operating a transportation system. These are separate from capital costs, and include such items as: wages, fuel, oil, maintenance, etcetera.

Operating Revenues - Money received from users of a transportation system such as fares, tolls, charter fees, etcetera.

Origin-Destination Survey (O-D Survey) - A survey typically undertaken of travelers (motorists or transit passengers) to identify travel patterns, habits and needs.

Oxygenated Fuels - Gasoline blended with alcohol or ether containing oxygen. Use of such fuels reduces carbon monoxide production and other emissions. See "Alternative Fuels" and "Clean Fuels", above.

Paratransit - Comparable transportation service required by the ADA for individuals with disabilities who are unable to use fixed route transportation services. See "Demand-Responsive System" and "Dial-A-Ride", above.

Park-and-Ride Lots - Commuter parking lots located on the periphery of the urban area adjacent to major travel corridors, where commuters may park their cars and ride transit to the CBD or other major employment centers/destinations.

Peak Hour - The sixty-minute period observed during either the AM or PM peak period that contains the largest amount of travel.

Peak-Hour Factor - The fraction of the average daily traffic volume occurring during the highest volume sixty-minute period during the day.

Peak Hour-Peak Direction - The travel direction which, during the sixty-minute peak hour, contains the highest percentage of travel.

Peak Period - The two consecutive AM or PM sixty-minute periods which collectively contain the maximum amount of AM or PM travel. Peak period can be associated with person-trip movement, vehicle trip movement, or transit stops.

Pedestrian Walkway - Secured walkway provided as an alternate to auto travel. Sidewalks.

Performance Measures - Indicators of how well the transportation system is performing regarding such things as mode share, accident rates, congestion, etc. Used as feedback in the decision-making process.

Person-Trips - The sum of trips made as passengers of an automobile, bus, taxi, truck, and the like, plus as an automobile driver. Auto person-trips are trips made as a passenger or driver in an automobile.

Personal Rapid Transit (PRT) - A public transportation concept that offers on-demand, non-stop transportation, using small, automated vehicles on a network of specially-built guideways.

Planner - In the transportation field, a title likely having to do with the management and analysis of data which directly supports qualitatively oriented, strategic, or "macro" decision-making.

Plans, Specifications and Estimate (PS&E) - The preliminary data submitted by the state to FHWA so that federal funds are set aside for a specific highway project.

Podcars – see Personal Rapid Transit

Preliminary Engineering (PE) - The cost of preparing the detailed design of a project. PE entails surveying, mapping, preparation of plans and contract documents, environmental analyses, all required public hearing, and any other required state or federal procedures. In addition, PE may include "right-of-way incidental activity" which is the field and office work preparatory to the actual purchase of property.

President's Budget - A document submitted annually (due by the first Monday in February) by the President to Congress. It sets forth the Executive recommendations for the Federal budget for the upcoming fiscal year.

Privatization - Concept or theory having to do with for-profit business supplying goods and services for government, public programs or systems, with the intent of enhancing cost-efficiency.

Project Identification Number (PIN) - Identification number given to each project by NYSDOT.

Programmed Funds - Funds proposed for use on the transportation improvement projects which appear in the Transportation Improvement Programs of the State and/or MPOs.

Provider - An agency that provides services that causes clients to be transported, as opposed to an agency whose role is limited to funding programs.

Public Authority - A Federal, State, city, county, town, township, Indian tribe, municipal or other local government or instrumentality with authority to finance, build, operate, or maintain toll or toll-free transportation facilities. Authorities usually have some type of enabling legislation and are usually authorized to fund projects through the sales of bonds with its dedicated revenue stream (tolls, taxes, etcetera) pledged to repayment of the bonds.

Public Participation - The active involvement of the public in the development of transportation plans and improvement programs. Federal legislation requires that state departments of transportation and MPOs "shall provide citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, and other interested parties with a reasonable opportunity to comment on the development of the long-range plan and the TIP".

Public Road - Any road or street open to public traffic, which is under the jurisdiction, ownership, and maintained by a public authority.

Regionally Significant Project – A project that has significant impact on regional transportation due to its location, operational impacts and/or cost.

Request for Bids, Proposals, Qualifications (RFB, RFP, RFQ) - Preliminary stages of a competitive procurement process, most commonly associated with procurement of capital items or consulting services. The RFP is a request for project proposals and includes a description of cost and methodology; the RFQ is a request for information on the qualification of the proposing firm; the RFB is a request to receive project bids.

Rescission - A legislative action to cancel the obligation of unused budget authority previously provided by Congress before the time when the authority would have otherwise lapsed. Rescission may be proposed by the executive branch but requires legislative action to become effective.

Ridesharing - Sharing a ride (and related costs), usually to an employment location, with other commuters, usually by carpooling or vanpooling.

Right-of-Way (R/W or ROW) - Priority paths for the construction and operation of transportation facilities (highways, rail, trails, etc.). Right-of-Way is usually acquired by the public authority either by fee title or by easement real estate transactions.

Scenic Byway Program - Roadways that provide an enjoyable and relaxing experience or that offer cultural or historical enrichment to travelers are legislatively designated as part of a Scenic Byway System. Scenic byways are typically secondary roads having significant cultural, historic, scenic, geological, or natural features. They often include vista, rest areas, and interpretive sites in harmony with the scenic characteristics of the road. The Federal-Aid Highway Program includes limited funding for such statewide systems.

Shared Roadways - Any roadway upon which a bicycle lane is not designated, and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway.

Shuttle - Usually a service provided with a 20-or-less passenger vehicle connecting major trip destinations and origins on a fixed- or route-deviation basis. Shuttles can provide feeder service to main transit routes or operate in point-to-point or circular fashions.

Single Occupant Vehicles (SOVs) - A SOV is a vehicle used to get just one person to a destination.

Social Equity, Justice - The provision of affordable, efficient and accessible transportation services to all people regardless of race, ethnicity, income, gender, or disability. A socially equitable transportation system provides all people with convenient access to meaningful jobs, services and recreational opportunities.

State Environmental Quality Review Act (SEQR or SEQRA) - New York State law and regulations (Article 8 of the Environmental Conservation Law and Part 617 of 6NYCRR) that requires that every state and local agency examine the environmental impacts (including social and economic factors) and mitigation methods in agency decision-making.

State Implementation Plan (SIP) - A portion (or portions) of an applicable implementation plan approved or promulgated, or the most recent revision thereof, under the Clean Air Act. The SIP establishes emissions budgets, monitoring and enforcement procedures, and other procedures designed to control air pollution in order to meet the national air quality standards established by the Clean Air Act.

Statewide Transportation Improvement Program (STIP) - Required by federal legislation as a prioritized, fiscally constrained list of

transportation projects that covers at minimum a three-year period. STIPs are compiled by the state DOT in order to program authorized levels of federal funding.

Surface Transportation Block Grant Program (STBG) - A categorical funding program in federal legislation. Funds may be used for a wide variety of purposes, including: roadway construction, reconstruction, resurfacing, restoration, and rehabilitation; roadway operational improvements; capital costs for transit projects; highway and transit safety improvements; bicycle and pedestrian facilities.

State Fiscal Year (SFY) - The State of New York operates on a fiscal year beginning April 1 and ending March 31. This period may be referred to by the two affected years (e.g., SFY1019-20 began April 1, 2019 and will end March 31, 2020) or by the calendar year in which it ends. See "Federal Fiscal Year" and "Fiscal Year", above.

Tax Incentives – A means of employing the tax code to stimulate investment in or development of a socially desirable economic objective without the direct expenditure from the budget of a given unit of government. Such incentives can take the form of tax exemptions or credits.

Toll Booth Collection system - A type of toll collection system in which vehicles pay at toll booth "barriers" across the highway, rather than at toll booths at each exit from the highway.

Tompkins Consolidated Area Transit (TCAT) – Authorized by New York State Legislature in 1996, to combine Tompkins County transit services into one service.

Traffic Analysis Zone (TAZ) - The smallest geographically designated area for analysis of transportation activity. Zones vary greatly in size depending on such factors as: homogeneity of land use, amount of transportation network, level of analysis desired, and physical geography. Zones can range in size from a city block to very large rural areas (census tract size).

Traffic Calming - A variety of techniques designed to reduce the speed of motor vehicles by affecting driver behavior rather than through enforcement. Traffic calming creates an environment that facilitates the mix of different transport modes and allows a form of "peaceful coexistence" between them.

Transit - Public mass transportation such as buses, subways, commuter rail, etc.

Transit Dependent - Persons who must rely on public transit or paratransit services for most of their transportation. Typically refers to individuals without access to a personal vehicle.

Transit Oriented Development (TOD) - is a mixed-use residential or commercial area designed to maximize access to public transport, and often incorporates features to encourage transit ridership.

Transportation Control Measures (TCMs) - Local actions to adjust traffic patterns or reduce vehicle use in order to reduce air pollutant emissions and ease congestion. These may include: transportation system management techniques (e.g., signal optimization, ramp metering, incident detection, special events planning, etcetera), transportation demand management techniques (e.g., reduced transit fares, preferential parking, telecommuting, compressed work hours, etcetera), facilities development (e.g., HOV lanes, fixed guideway transit, on-site child care facilities, etcetera), or growth management policies (e.g., mixed use developments, transit corridor development, job/housing balances, etcetera).

Transportation Demand Management (TDM) - The reduction of traffic congestion by reducing the number of automobiles, especially SOVs, on the road. Measures that can reduce demand include: ridesharing, mass transit, "flex" time, telecommuting, employer incentives to use alternative modes, and restriction on the amount of free or cheap parking, among others.

Transportation Improvement Program (TIP) - Required by federal legislation as a prioritized, fiscally constrained list of transportation projects that covers at minimum a three-year period. TIPs are compiled by the MPO in order to program authorized levels of federal funding. The state DOT is responsible for creating a statewide version of the TIP called the Statewide Transportation Improvement Program (STIP).

Transportation Management Association (TMA) - A voluntary association of public and private agencies and firms joined to cooperatively develop transportation-enhancing programs in a given area. TMAs are appropriate organizations to better manage transportation demand in congested suburban communities.

Transportation Modeling - A computerized procedure to predict future trip making. Also referred to as a travel demand model. The traditional model has four steps: trip generation, trip distribution, mode choice, and assignment to a simulated transportation network (e.g., highway or transit).

Transportation System Management (TSM) - The concept of managing the existing transportation system for increased efficiency through the use of generally lower cost projects such as exclusive bus lanes, improved traffic signal systems, improvements to increase capacity of the facility, intersection channelization, and provisions for parking.

Trip Distribution - The process by which the movement of trips between zones is allocated in a travel demand model. Trip distribution is generally based on a gravity model.

Trip Length Frequency Distribution - The array which relates the trips, or the percentage of trips made at various time intervals or various trip distances.

Trust Funds - Accounts established by law to hold receipts that are collected by the Federal Government and earmarked for specific purposes and programs. These receipts are not available for the general purposes of the Federal Government. The Highway Trust Fund is comprised of receipts form certain highway user taxes (e.g., excise taxes on motor fuel, rubber, and heavy vehicles) and reserved for use for highway construction, mass transportation, and related purposes.

Trip Generation - The process by which the number of trips within each analysis zone are estimated in a transportation model. Trips are generated on the basis of demographic (number of households, household size, income, etcetera) and economic (number and type of employers, commercial activities, etcetera) attributes, and are given in the form of attractions and productions.

Unified Operations Plan (UOP) - The by-laws of an MPO.

Unified Planning Work Program (UPWP) - A document describing the transportation planning activities for an urbanized/metropolitan area for a fiscal year. Federal legislation requires that each MPO develop this document as a prerequisite for obtaining federal planning funds.

U.S. Department of Transportation (DOT) - The principal direct federal funding and regulating agency for transportation facilities and programs. Contains FHWA and FTA.

Urban - The Census Bureau defines urban as: (a) the population living in urbanized areas; plus (b) the population in other incorporated or census designated places of at least 2,500 population at the most recent national census.

Urbanized Area (UA) - An area defined by the Census Bureau according to specific criteria, designed to include the densely settled area around a large place. The definition is based primarily on population density rather than governmental unit boundaries. An urbanized area must have a total population of at least 50,000 persons.

Vehicle Hours Traveled (VHT) - A measure of motor vehicle use over some period of time, usually a day or a year. It represents the total time spent on the roadway system by all vehicles combined, over the specified period of time.

Vehicle Location System (VLS) - Information Technology enabling the ever-changing locations of vehicles to be monitored at a central location. For public transit, VLS enables passengers waiting for rides to continuously be informed of the status of service.

Vehicle Miles Traveled (VMT) - An areawide measure of motor vehicle use. VMT is calculated by summing data on a link basis or by multiplying average trip length (in miles) times the total number of vehicle trips.

TRANSPORTATION RELATED WEB PAGES

There are too many transportation related web sites to include them all in a document such as the LRTP. The list below includes some of the organizations and agencies where ITCTC staff have found useful sources of information, and others that address different transportation components in Tompkins County.

Local

Bike Walk Tompkins - www.bikewalktompkins.org

Cayuga Lake Scenic Byway - http://cayugalake.com

Cornell Bicycles - https://fcs.cornell.edu/content/cycling-campus information about bicycling at Cornell University

Finger Lakes Cycling Club - https://fingerlakescycling.org

Finger Lakes Trail Conference - http://www.fingerlakestrail.org/

Finger Lakes Rideshare - https://511nyrideshare.org/web/finger-lakes-ridership ridesharing for travelers to, from and in Tompkins County, surrounding regions and academic institutions

Ithaca Carshare - www.ithacacarshare.org

Ithaca-Tompkins County Transportation Council http://www.tompkinscountyny.gov/itctc

Tompkins Consolidated Area Transit, Inc. (TCAT) - http://www.tcatbus.com/

Tompkins County - http://www.tompkinscountyny.gov/

Tompkins County Comprehensive Plan - http://tompkinscountyny.gov/planning/comprehensive-plan

Tompkins County Department of Planning and Sustainability - www.tompkinscountyny.gov/planning

Way2Go of Tompkins County - http://ccetompkins.org/community/way2go Way2Go works collaboratively to help people save money, stress less, go green and together, improve our mobility options.

State

New York State Association of MPOs (NYSAMPO) - http://www.nysmpos.org/ links to all New York State MPOs.

New York Department of Transportation (NYSDOT) - http://www.dot.ny.gov/

National

American Public Transportation Association - www.apta.com

America's Byways - National Scenic Byways - http://www.byways.org/

Association for Commuter Transportation - www.actweb.org

Association of MPOs - national - www.ampo.org

Car Sharing Network - http://www.carsharing.net/ includes links to car sharing programs nationwide and international.

Center for Neighborhood Technology - http://www.cnt.org/ "The Neighborhood Works" site

Congress for New Urbanism - http://www.cnu.org/

Federal Highway Administration (FHWA) - https://www.fhwa.dot.gov/ FHWA Home Page

FHWA Office of Environment and Planning - http://www.fhwa.dot.gov/environment

Federal Transit Administration (FTA) - http://www.fta.dot.gov/ FTA Home Page web site

Institute of Transportation Engineers (ITE) - https://www.ite.org/

National Highway Traffic Safety Administration - http://www.nhtsa.dot.gov/

National Transportation Library-bts – https://ntl.bts.gov/

National Transit Institute at Rutgers University (NTI) - https://www.ntionline.com/-

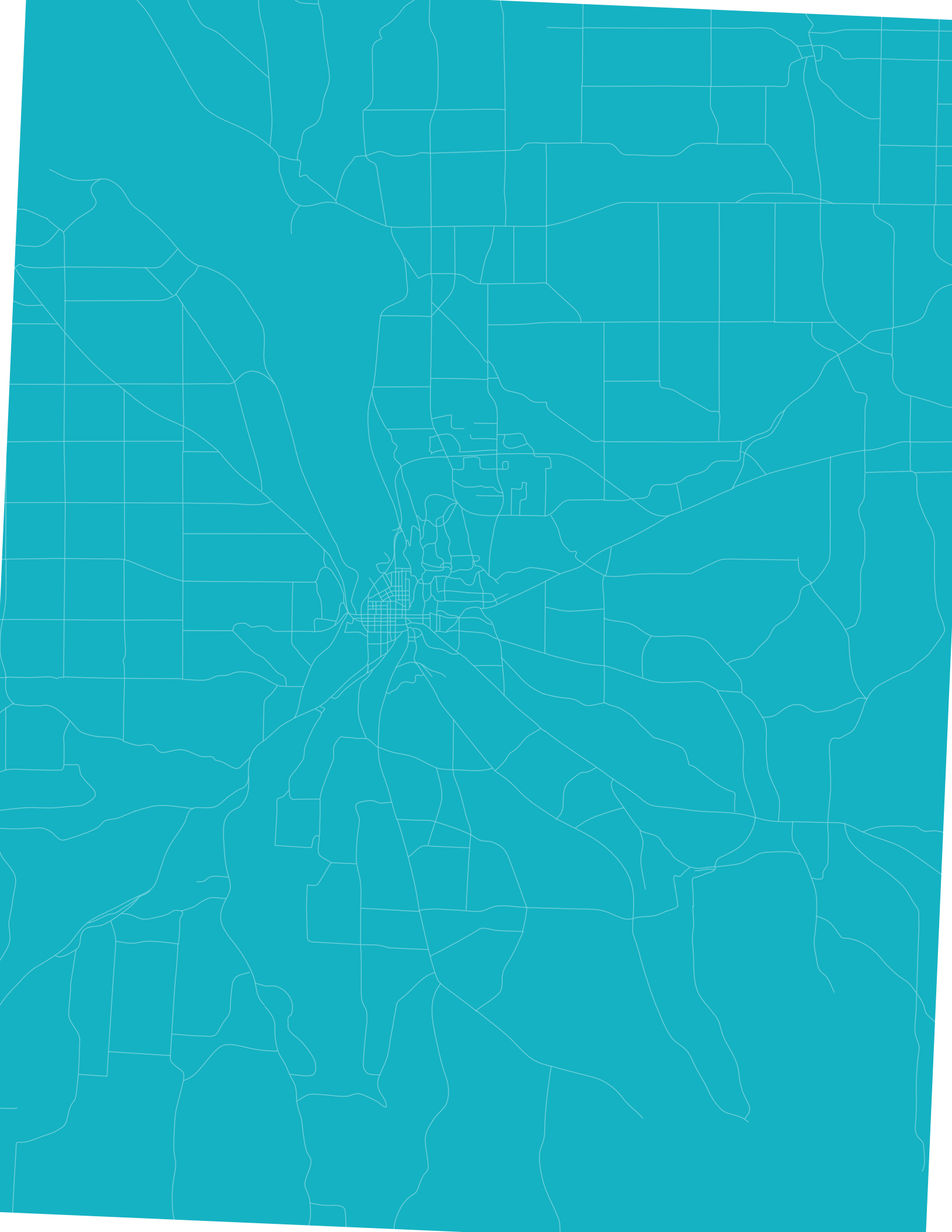
Rails to Trails Conservancy - http://www.railstotrails.org

USDOT Research and Technology - https://www.transportation.gov/policy/OST-R

Victoria Transport Policy Institute - https://www.vtpi.org/ "an independent research organization dedicated to developing innovative and practical solutions to transportation problems."

APPENDIX D:
SUMMARY OF COMMENTS AND RESPONSES

UNDER DEVELOPMENT



Ithaca-Tompkins County Transportation Council
121 E. Court St.
Ithaca, NY 14850
607-274-5570
email info@XXXX.org
web tompkinscountyny.gov/itctc