



ELMIRA-CHEMUNG TRANSPORTATION PLAN 2035 CHALLENGES and OPPORTUNITIES



Approved by the ECTC Policy Committee December 2014

This Plan has been developed with funding from the Federal Highway Administration and the Federal Transit Administration. The content solely represents the views and policies of the Elmira-Chemung Transportation Council and not the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA).



This Long-Range Plan was prepared by RSG in cooperation with
CDM Smith, Inc., Fitzgerald Halliday Inc., and Twaddell Associates, LLC.



LIST OF ABBREVIATIONS

AADT	Annual Average Daily Traffic
AADTT	Average Annual Daily Truck
ADA	Americans with Disabilities Act
AVL	Automated vehicle locators
BACPAC	Bicycle Advisory Committee and Pedestrian Advisory Committee
CARD	Centerline Audible Roadway Delineators
CEATS	Corning Erwin Area Transit System
CHP	Creating Healthy Places
CTC	Coordinated Transportation Committee
DAV	Disabled American Veterans
DOT	Department of Transportation
ECTC	Elmira-Chemung Transportation Council
EIS	Environmental impact statement
EV	Electric vehicle
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HAL	High-Accident Locations
HAR	Highway advisory radio
HOST	Horseheads Sand and Transload
HPMS	Highway Performance Monitoring System
HSIP	Highway Safety Improvement Program
HTF	Highway Trust Fund
IRI	International Roughness Index
ITS	Intelligent Transportation System
LRP	Long-range transportation plan
MPO	Metropolitan planning organization
MUTCD	Manual on Uniform Traffic Control Devices
NAICS	North American Industry Classification System
NBI	National Bridge Inventory
NEPA	National Environmental Policy Act
NHTS	National Household Travel Survey
NYSDOT	New York State Department of Transportation
NYSTOA	New York State Transit Operating Assistance
PIL	Priority Investigation Locations
QWI	Quarterly Workforce Indicators
RWIS	Road Weather Information Stations
SFY	State Fiscal Year
SHARD	Secondary Highway Audible Roadway Delineators
SHSP	Strategic Highway Safety Plan
SRTS	Safe Routes to School

STBL	Southern Tier Bicycle League
TAMP	Transportation Asset Management Plan
TDM	Transportation Demand Management
TIP	Transportation Improvement Program
TSMO	Transportation system management and operations
USDOT	US Department of Transportation
UZA	Urbanized Areas
VMS	Variable message signs
VMT	Vehicle Miles of Travel
YOE	Year of expenditure



**ELMIRA-CHEMUNG TRANSPORTATION PLAN 2035:
CHALLENGES AND OPPORTUNITIES**

**PREPARED FOR:
ELMIRA-CHEMUNG TRANSPORTATION COUNCIL**

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INTRODUCTION

The Elmira-Chemung Transportation Council (ECTC) is the metropolitan planning organization (MPO) serving the Elmira urbanized area. Federal law requires that all urbanized areas with a population greater than 50,000 people have an MPO, which is assigned certain planning responsibilities.

The purpose of this subpart is to implement 23 U.S.C. 134 and section 8 of the Federal Transit Act, as amended, which requires that a Metropolitan Planning Organization (MPO) be designated for each urbanized area and that the metropolitan area has a continuing, cooperative, and comprehensive transportation planning process that results in plans and programs that consider all transportation modes and supports metropolitan community development and social goals. These plans and programs shall lead to the development and operation of an integrated, intermodal transportation system that facilitates the efficient, economical movement of people and goods.

23 CFR450.300

Chief among these responsibilities is the preparation and adoption of a long-range transportation plan (LRP). The LRP must look at least 20 years into the future and, at a minimum, be updated every five years. The LRP must cover the same geographic area as the MPO's Metropolitan Planning Area, which is adjusted using the US Census urbanized area boundary. This long look forward is invaluable. Transportation facilities can take a long time to move from idea to plan to design to construction. While bus routes can be changed quickly in response to changes in demand, the built environment of roads, railroads, sidewalks, trails, and airports has permanence. The LRP provides citizens and decision-makers with a structured means to be thoughtful about the future, and the role played by transportation. The LRP is an investment plan; in an era of limited financial resources, it states how available funds can best be used to meet regional priorities. Federal law requires that the sum of LRP investments be constrained by an agreed-upon estimate of reasonably available revenue. That prevents the LRP from being a wish list, and forces explicit choices on projects, programs, and strategies.

OPPORTUNITIES AND CHALLENGES

This is a challenging time for all agencies involved in transportation planning and program implementation; however, these challenges include opportunities:

- **Federal transportation funding.** Programs of the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) provide a significant proportion of capital funds in New York State's transportation program. All FHWA program funds, and a portion of FTA funds, come from the Highway Trust Fund (HTF). The primary source of revenue for the HTF is tax on gasoline and diesel fuel. These taxes



have not been increased since 1993, leaving their purchasing power diminished by two decades of construction-cost inflation. At the same time, receipts have been diminished by use of more fuel-efficient cars and alternate fuels that are not taxed. Since 2008, Congress has transferred over \$50 billion from the US General Fund to the HTF so that it can meet expenditure obligations. Congress has provided sufficient funding to extend the HTF through May 2015.

- **Federal transportation authorization.** The current federal surface transportation law, Moving Ahead for Progress in the 21st Century (MAP-21), which authorizes funding for FHWA and FTA programs, expired on September 30, 2014, but has been extended by Congress to May 2015. Because of the issue of funding the programs, it is unclear how Congress will proceed with passing new legislation.
- **State and local transportation funding.** The New York State Dedicated Highway and Bridge Fund has its own challenges, related to substantial debt service payments resulting from past borrowing, and use for noncapital purposes. Local governments receive state funds through the Consolidated Local Street and Highway Improvement Program (CHIPS), but they must rely primarily on property tax and sales tax receipts to pay for transportation projects. Other states permit local option sales and gasoline taxes, but this is not the case in New York. Public transit is supported separately in the state, with operators receiving State Transit Operating Assistance, and a portion of the nonfederal share of capital project costs.
- **Aging infrastructure.** The New York State Department of Transportation (NYSDOT) notes in the recently released Transportation Asset Management Plan that like much of the rest of the country, New York's roads and bridges, transit systems, and railroads are characterized by aging infrastructure. Depending on the type of construction and materials used, each of these elements has a predictable life span. That life may be extended by preventive maintenance and rehabilitation, or decreased by neglect. These are issues of investment, but also of timing. From the late 1950s to the early 1970s, the nation built much of the Interstate Highway System and other facilities. Fifty years later, much of this infrastructure is reaching the end of its service life, creating large program demands.
- **Transportation and communications technology.** A five-year planning cycle is a long time in the world of advanced technology. There will likely be automated cars entering the general fleet in future decades, with many vehicles in testing and development. Vehicles also have more on-board safety features, like lane-departure warning and automatic braking in certain situations. Pervasive wireless communications has enabled US Department of Transportation's (USDOT's) Connected Vehicle program. By allowing cars to communicate with each other and the roadside infrastructure, safety is enhanced. Commercial GPS guidance systems are also now found in cars and trucks, and on smartphones and similar devices. Drivers receive real-time traffic and road information, enabling them to make smart choices on route, mode, and time of travel.

- **Alternative energy development.** Chemung County is a likely location for natural gas exploration using hydraulic fracturing. This is not currently permitted by New York State, but may be sometime in the future. There has also been interest in developing wind energy installations in the Towns of Catlin and Veteran. Each of these developments brings unique transportation challenges resulting from truck traffic and oversize/overweight loads. This LRP provides an opportunity to analyze the potential impacts and assist the County in being prepared to respond in a thoughtful manner should they occur.
- **Changing attitudes about land use.** People of all ages are making different decisions about where they choose to live based on changing notions of what contributes to a positive quality of life. Whether urban or suburban, more people want a human-scaled neighborhood that is walkable and bikeable, has access to schools and shopping, and has convenient public transit. New York State has passed a Smart Growth Public Infrastructure Policy Act and a Complete Streets Act. Both pieces of legislation respond to public interests and guide state and local government decisions about transportation projects—from a singular auto-centric view to one that looks at the accessibility and mobility needs of all users regardless of travel mode.
- **Focus on freight and economic development.** There has been a trend in federal transportation policy over recent years to pay more attention to freight movement and how it supports the regional, statewide, and national economy. Chemung County is an important freight hub and is well positioned to take advantage of developments related to the forthcoming National Freight Strategic Plan and Primary Freight Network.
- **Public health and active transportation.** Transportation planners are bringing new partners into the conversations. The public health community has begun to turn its understanding of the value of physical activity into participation in active transportation. They have become valued stakeholders in supporting the construction of sidewalks and trails, and promoting Safe Routes to School and similar walking programs.

MOVING AHEAD FOR PROGRESS IN THE 21ST CENTURY

Because MPOs are required by federal law, the framework of the LRP is defined by legislation. The current surface transportation authorization is Moving Ahead for Progress in the 21st Century (MAP-21). MAP-21 retains many of the planning requirements of previous laws, while also instituting some new approaches.

The LRP framework begins with an outline of content. As noted, the LRP is expected to address several topics:

- (A) support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;



- (B) increase the safety of the transportation system for motorized and non-motorized users;
- (C) increase the security of the transportation system for motorized and non-motorized users;
- (D) increase the accessibility and mobility of people and for freight;
- (E) 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;
- (F) enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- (G) promote efficient system management and operation; and
- (H) emphasize the preservation of the existing transportation system.

MAP-21, §1203(b)(1)

In that context, there is a longstanding recognition that every metropolitan area is different. There is inherent flexibility to establish the most appropriate priorities among these planning factors.

PERFORMANCE-BASED PLANNING AND PROGRAMMING

The biggest change in MAP-21, a paradigm shift in transportation planning for states and MPOs, is the requirement that an outcome-oriented approach be used. MPOs must look at how the regional transportation system performs across several dimensions. They are also expected to longitudinally assess the outcome of their project and program investments, and document how conditions have changed. What are the overall before-and-after conditions of pavements and bridges, safety for all users, and reliability and efficiency of travel? Are trends moving in the right direction? Were the expected results of certain projects not realized? All of this information is used in a continuous manner to shape the next LRP update and project investment choices. It is also used to inform the public, making the process of planning for and investing in the regional transportation system much more transparent.

MAP-21 establishes seven National Goal areas as the basis for performance measurement:

GOALS:

- (1) Safety.--To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- (2) Infrastructure condition.--To maintain the highway infrastructure asset system in a state of good repair.
- (3) Congestion reduction.--To achieve a significant reduction in congestion on the National Highway System.
- (4) System reliability.--To improve the efficiency of the surface transportation system.
- (5) 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.
- (6) Environmental sustainability.--To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- (7) 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.

MAP-21, §1203

In addition, there are other safety- and infrastructure-related performance management plans. States must adopt a Strategic Highway Safety Plan that establishes priorities for improving safety and metrics for determining success. Transit operators will be required to adopt a Transit Agency Safety Plan with the same overall objective. States will develop a Transportation Asset Management Plan (TAMP). New York was selected by FHWA as one of three pilot states to develop a TAMP as guidance for the rest of the country. A draft TAMP was released in May 2014. This plan addresses pavement and bridge assets on the National Highway System.

The specifics of implementing all of these pieces of Performance-Based Planning and Programming will be contained in federal rules. The first of these rulemakings, for National Safety Performance Measures, was initiated in March 2014. None of these rules are expected to become final until 2015.

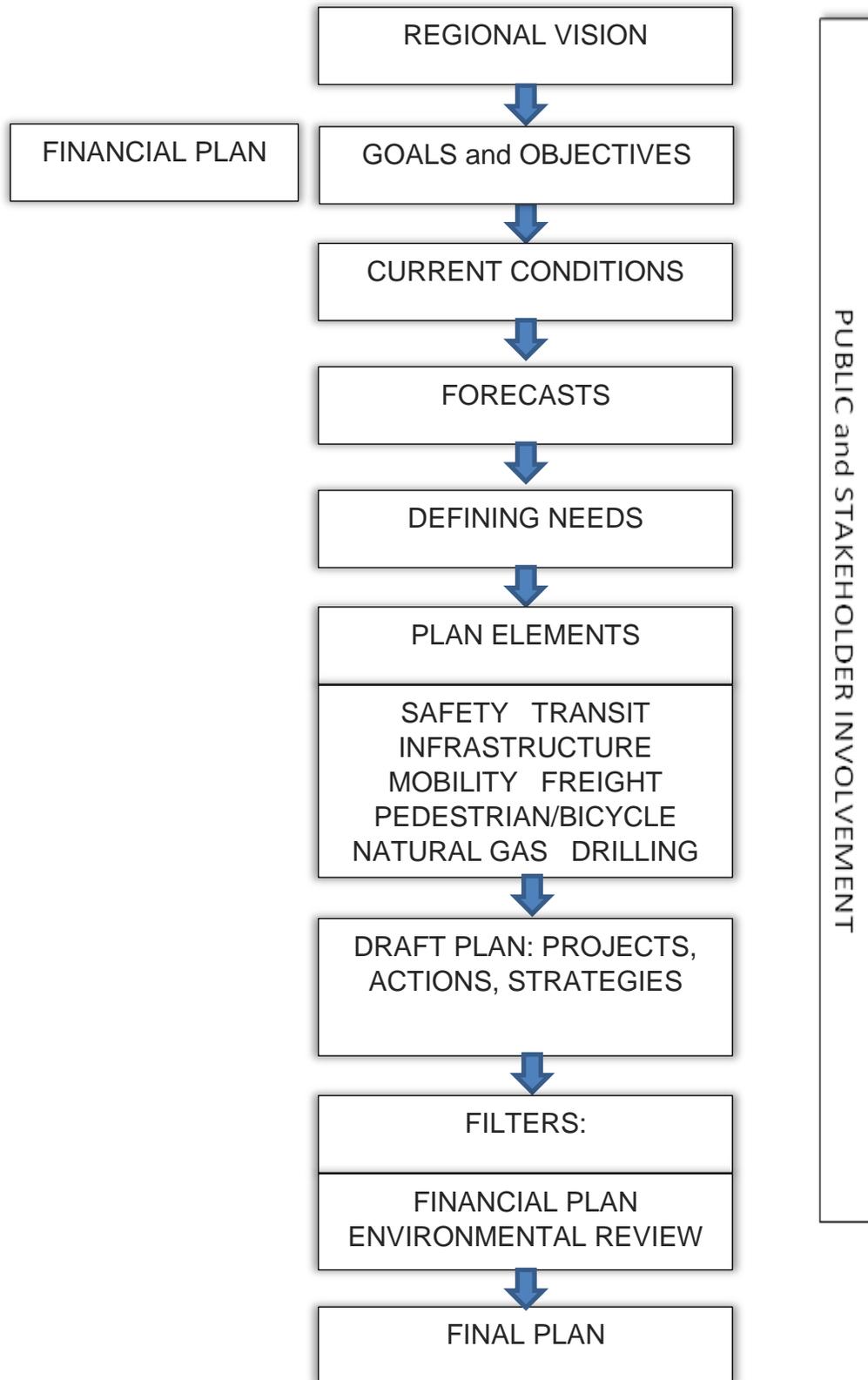
It is important that this LRP set the stage for implementing Performance-Based Planning and Programming. This will be done through a framework of specific objectives and related performance measures. An important aspect of performance management is setting targets by which progress can be measured. Like objectives, targets are specific and time bound. There may be a target for improvement in average pavement condition, or reduction in pedestrian injury crashes, with a milestone every five years. Annual measurement tells transportation system owners, decision-makers, and the public whether progress is being made. An assessment of which targets are met, and which are not, will influence the choices made in the next LRP.

THE PLAN DEVELOPMENT PROCESS

There is a well-established process for developing a long-range transportation plan, a series of steps that rationalize the planning process. This is depicted on the following page.



FIGURE 1: LONG-RANGE PLAN PROCESS



- **Regional Vision.** The essence of an LRP is establishing how transportation investment over the next 20 years can play a positive role in achieving community development goals. The first step is to understand the vision that community leaders and the public in the ECTC region have for the future. This step was accomplished through a series of Community Visioning Workshops and discussions with key stakeholders.

“If you don’t know where you are going, any plan will do.”

ECTC does not want “any plan.” It is the regional vision that provides direction and definition to the LRP.

- **Goals and Objectives.** The next step is establishing what ECTC wants to achieve through explicit statements of goals. These will include preserving the investment in transportation infrastructure, improving mobility and accessibility, and supporting economic development. Goal statements are aspirational, but the objectives that underlie them are specific, measurable, and time bound. A safety objective, for example, may specify a reduction in fatal crashes by a certain number over a 10-year period. Each objective is accompanied by a performance measure so that it can be tracked over time and achievements reported to the public.
- **Financial Plan.** As noted earlier, federal law requires that the LRP be fiscally constrained to agreed-upon forecasts of revenue for each fund source. The law further states that these forecasts are to be developed by the MPO, the state DOT, and the transit operator. NYSDOT takes the lead on the Financial Plan in order to have statewide consistency in revenue forecasting. This plan aggregates revenue forecasts for each fund source into five-year blocks that conform to Transportation Improvement Program (TIP) development.
- **Current Conditions.** This is the “Where are we now?” step. The LRP must begin with a clear picture of the condition of roads, bridges, sidewalks, trails, and transit; safety performance; congestion; and mobility. Because travel demand is created by people traveling from home to work, school, and other destinations, the population and land use must be known.
- **Forecasts.** Once the baseline is established, the next step is a forecast of future conditions. Using an agreed-upon forecast of population and employment and economic growth for the 20-year LRP period, a tool called SmartGAP will be employed to forecast future travel on the regional transportation system. These forecasts may be performed in terms of a limited number of scenarios that reflect the uncertainty inherent in population and economic forecasts.
- **Defining Needs.** Once the forecasts are complete, regional transportation system needs can be defined based on current deficiencies measured against adopted goals and objectives. Needs are defined for each of the LRP elements in terms of what must be accomplished to achieve the objective.

- **Plan Elements.** The LRP is broken down into plan elements. While some projects or actions will have impacts on more than one plan element (e.g., an infrastructure project improving safety and mobility in addition to pavement condition), this framework provides an easy way to understand the LRP. Elements include safety, infrastructure, mobility, transit, bicycle/pedestrian/trail, freight, and transportation impacts of natural gas drilling. The latter three elements are being written as separable documents to facilitate ease of use by ECTC. Each element is discussed in depth in terms of current conditions, forecasts, and needs.
- **Draft Plan.** This step brings all of the preceding work together, and defines proposed projects, actions, and strategies that will be applied to achieve the objectives. Major projects will be listed individually, while some capital work like pavement rehabilitation will be referenced as a funding amount with projects to be determined annually. There may be programs (e.g., incident management to improve the safety and reliability of travel) that do not require capital expenditure. There may also be policy recommendations to improve the functionality of the ECTC in certain areas. All projects and programs are listed in five-year increments to conform to the Financial Plan, and planning-level cost estimates are developed and calculated in terms of “year-of-expenditure” dollars, using standard inflation factors provided by NYSDOT.
- **Filters.** The initial draft LRP is then reviewed in terms of two important filters. The first filter is fiscal constraint. Total planned expenditures are sorted by fund source in five-year blocks. These are then compared to the Financial Plan. If costs exceed revenue, the draft LRP is then adjusted by adding, deleting, or changing projects. The second filter is environmental review. While detailed review occurs at the project development level, this filter evaluates overall potential impact on the environment of the projects and actions in the draft LRP. A consultation process with state and federal environmental resource agencies had occurred early in the planning process. These stakeholders are then provided the opportunity to review the draft LRP and note any concerns.
- **Public and Stakeholder Involvement.** As noted Figure 1, there are efforts to involve the public, local officials, and stakeholders throughout the development of the LRP, from the Community Visioning workshops at the beginning, to review of the draft LRP at the end. This outreach uses multiple techniques and platforms to be as effective as possible.

“We plan best when we plan WITH the community, not FOR the community.”
- **Final Plan.** Based on all of the technical review and stakeholder and public input, the final LRP is prepared for adoption by the ECTC Policy Committee.

CHAPTER 1: ESTABLISHING THE COMMUNITY VISION

“If you don’t know where you’re going, any Plan will do.”

The foundation of any effective plan is a comprehensive vision that clearly defines desired outcomes and that is linked to goals, objectives, performance measures, and priorities. The vision paints a picture of how the community wants the future to look, feel, and function in the future. It establishes where the residents, business owners, and elected officials of Chemung County and its constituent communities want to go. Once the vision is defined, ECTC can compare the desired future state with the present state in order to identify what’s working, what’s missing, and what needs to be changed.

“Community vitality and quality of life can and will improve if we work together. Over the next 20 years, our region will receive millions of dollars in federal and state transportation funds, which can be used for a wide variety of projects that preserve our transportation infrastructure, give us a sustainable transportation system, and improve our quality of life. To be smart about how we spend that money, we must coordinate community development initiatives with regional transportation investments. That’s why the ECTC is spearheading an initiative to focus the region’s transportation plan on projects that clearly support a shared vision for the future.”

Thomas Santulli

Chemung County Executive and Chair of the ECTC Policy Committee

The visioning process conducted for the ECTC LRP was designed to gather insights that would help the MPO to pinpoint opportunities for transportation investments that enrich current assets and that cultivate opportunities to advance the vision in coordinated, strategic ways.

To develop the vision, the ECTC gathered input and ideas from community members and stakeholders to construct a picture of the desired future that is full, vivid, and specific with regard to the built environmental, natural world, and transportation systems. Through a series of five community workshops conducted in mid-May 2014, the ECTC engaged a variety of community members to consider questions such as “What is your vision of Elmira and the surrounding Towns in 2035?” and “How can a sustainable transportation system support a great quality of life for our residents and businesses?”



VISION WORKSHOP PROCESS

During the first half of each 90-minute workshop, participants completed a facilitated exercise in which each person jotted down ideas on large index cards to complete the following statement: *“In the year 2035, our community is a place where....”* The facilitator collected the cards, posted them randomly on the wall, and then asked participants to group the cards into themes (Figure 2). The ideas and themes (listed in their entirety as an appendix) ranged from broad desires (e.g., revitalizing urban centers, preserving historic areas and small towns, and improving mobility for people of all ages and abilities) to specific ideas (e.g., attracting “21st century” technology-oriented workers, creating incentives to reclaim and restore abandoned houses, and building multimodal transportation connections). The collective ideas formed the basis for the Vision Statement shown in the next section of this report.

Following the card exercise, participants marked up maps with colored dots and notes that identified specific places and issues relevant to their vision. Through the mapping exercises, participants provided the study team with perspectives that helped to validate, refine, and flesh out the elements of the vision, paying particular attention to the ways in which transportation investments could support the desired future. Some locations featured places that people wanted to preserve, enhance, and make more accessible, such as the historic and beautiful Eldridge Park. In other areas, people wanted to see some sort of change for the better, such as reclaiming abandoned houses and fixing decayed sidewalks in urban neighborhoods, or extending transit to rural areas like Erin and regional job centers such as Corning and Ithaca. This report includes a series of three maps that display the collective ideas from all the workshops, organized around the three basic themes of the Vision.

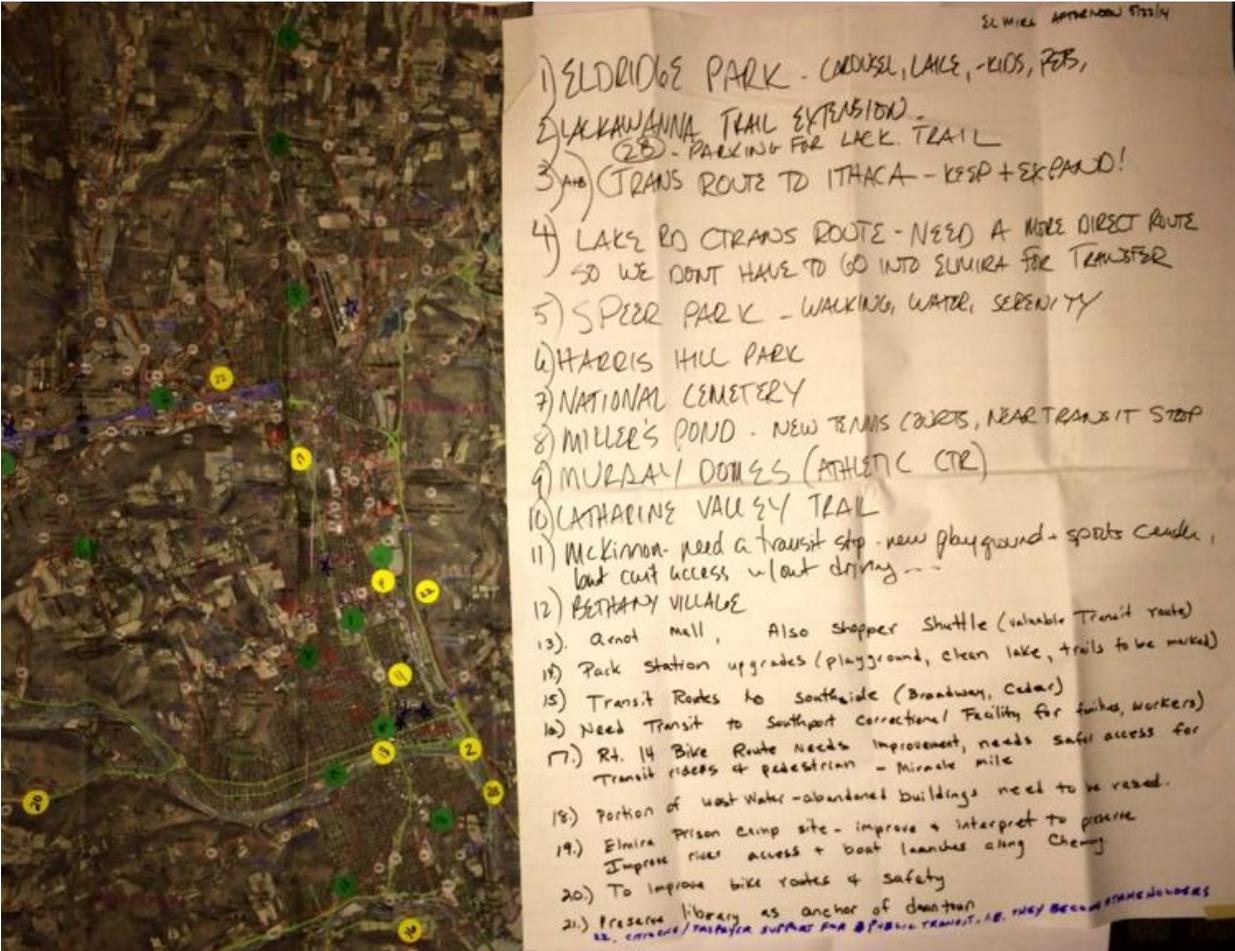
FIGURE 2: CARD EXERCISE RESULTS (SEE APPENDIX FOR COMPLETE LIST OF COMMENTS AND IDEAS)



Using the workshop input, the project team will work with the steering committee to shape a comprehensive set of goals, objectives, and performance measures that support the vision. Some goals may be similar to those in the 2009 LRP. Others may encompass new ideas from the workshops and/or from local, regional and statewide initiatives such as Elmira’s

Southside Rising plan, the regional transit study, the Southern Tier Regional Economic Council's strategic plan, and NYSDOT's "Forward Four" principles. The complete statement of vision and goals will clearly reflect the shared values, concerns, and priorities of the Elmira-Chemung region.

FIGURE 3: MAPPING EXERCISE RESULTS (SEE APPENDIX FOR COMPLETE SET OF WORKSHOP MAPS)



COMMUNITY VISION STATEMENT

The following statement is a synthesis of the themes and concepts expressed throughout the course of the visioning workshops.

TABLE 1: COMMUNITY VISION STATEMENT

IN THE YEAR 2035, OUR COMMUNITY IS...
ATTRACTIVE
<ul style="list-style-type: none">• Residents stay downtown after work and come in often for cultural, recreational, and educational events• Tech-savvy young professionals flock here for jobs in flourishing industries such as energy, tourism, and health care• Visitors discover an unexpected wealth of historic, cultural, and natural resources in this "gateway" to the Finger Lakes• The countryside is filled with thriving villages, working farms, and quiet natural areas
ACCESSIBLE
<ul style="list-style-type: none">• Drivers can navigate easily around our networks of streets and highways• Communities are interconnected and walkable• Everything you need is around the corner• Trails and the river provide transportation and recreation• Transit is a choice, not a captive requirement
AT HOME
<ul style="list-style-type: none">• Children can grow up safely and enjoy biking, walking, and playing outside• Older adults and people with disabilities can go wherever they wish and engage fully in community life• Homes, parks, and playgrounds are well-kept and full of life• The front porch is popular again

VISION OF PLACES TO PRESERVE AND TO CHANGE

The following maps depict the ideas and comments shared during the mapping exercises, grouped according to three core elements of the vision.



FIGURE 4: VISION OF PLACES TO PRESERVE AND TO CHANGE (MAP 1)

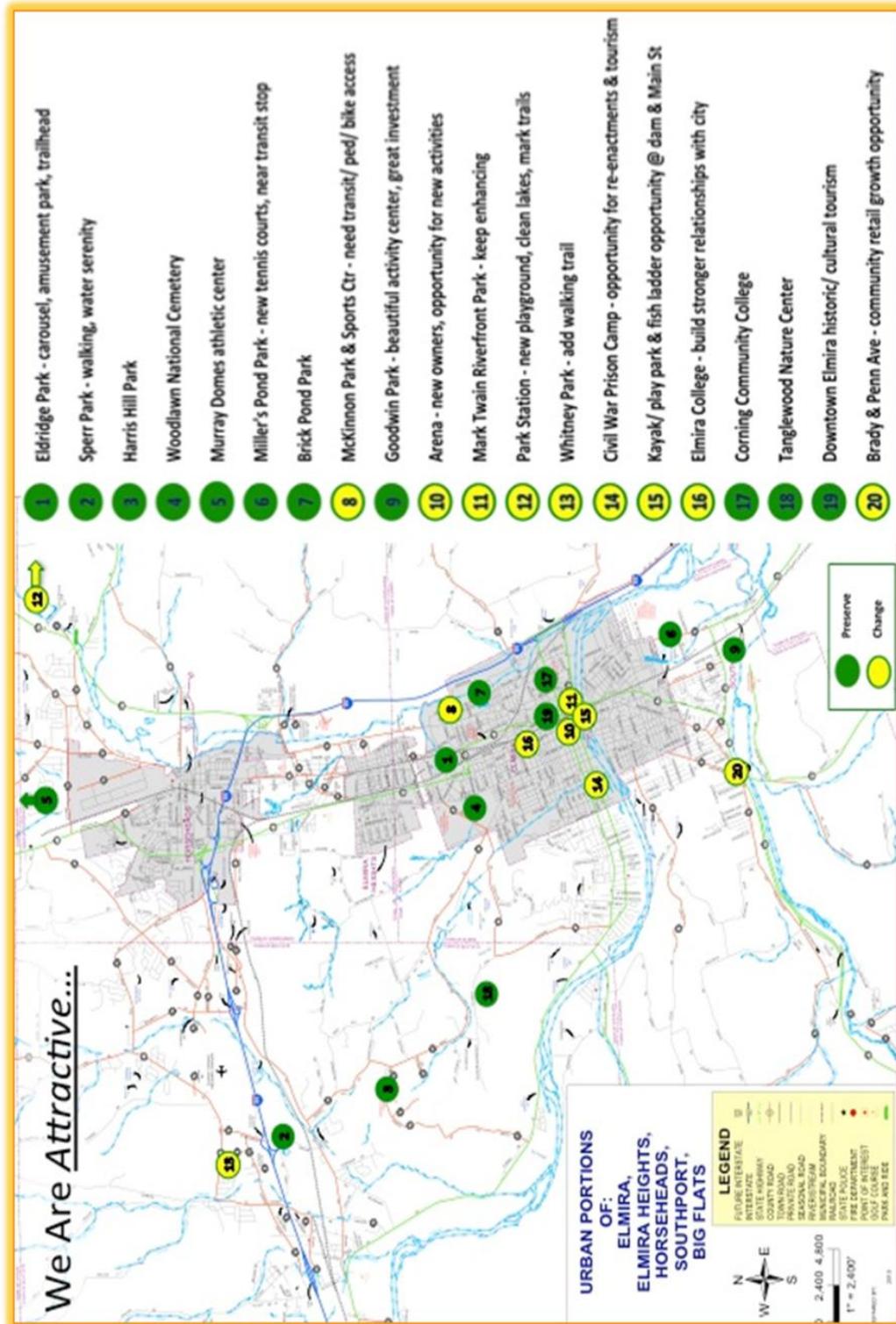


FIGURE 5: VISION OF PLACES TO PRESERVE AND TO CHANGE (MAP 2)

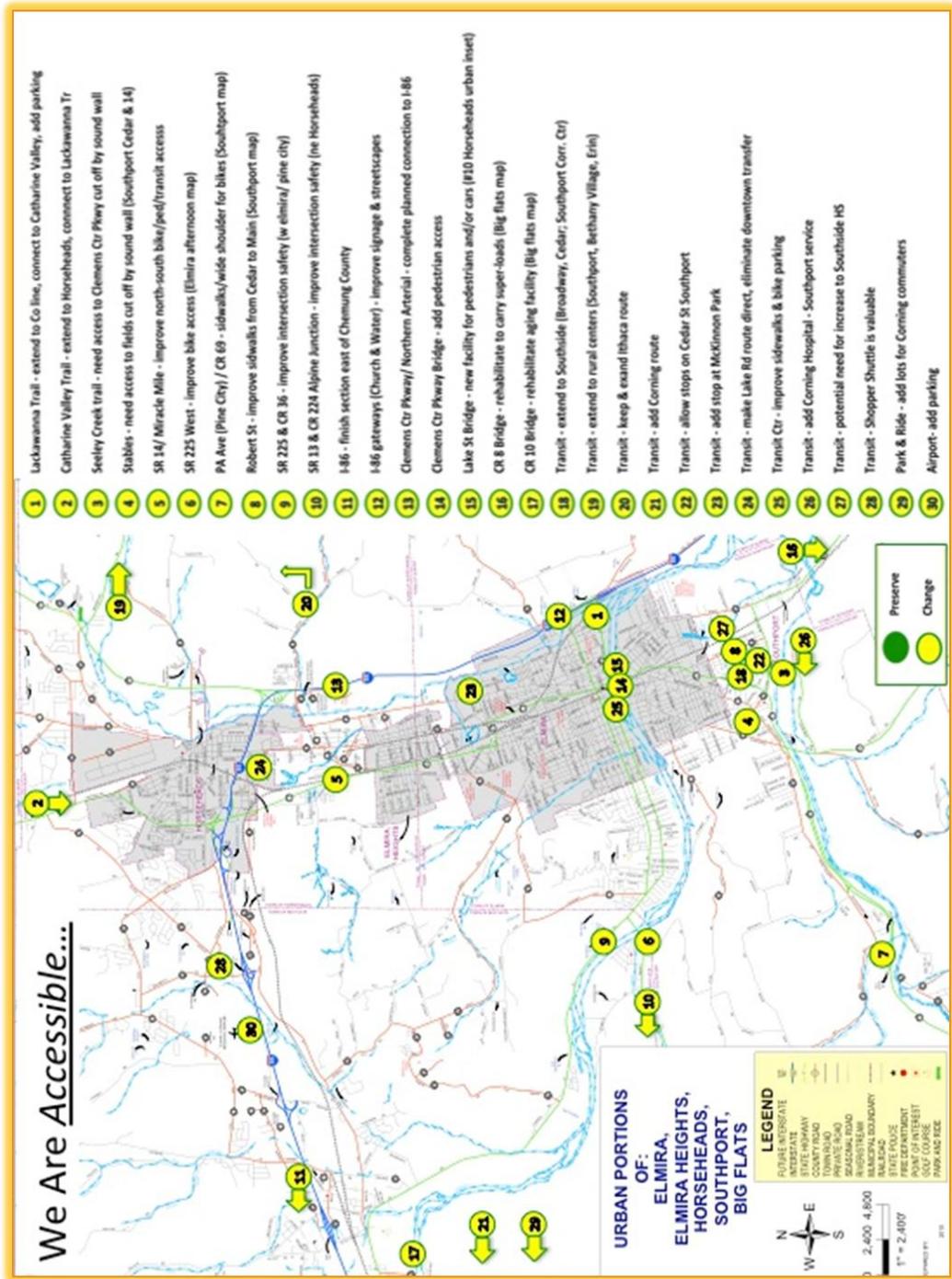
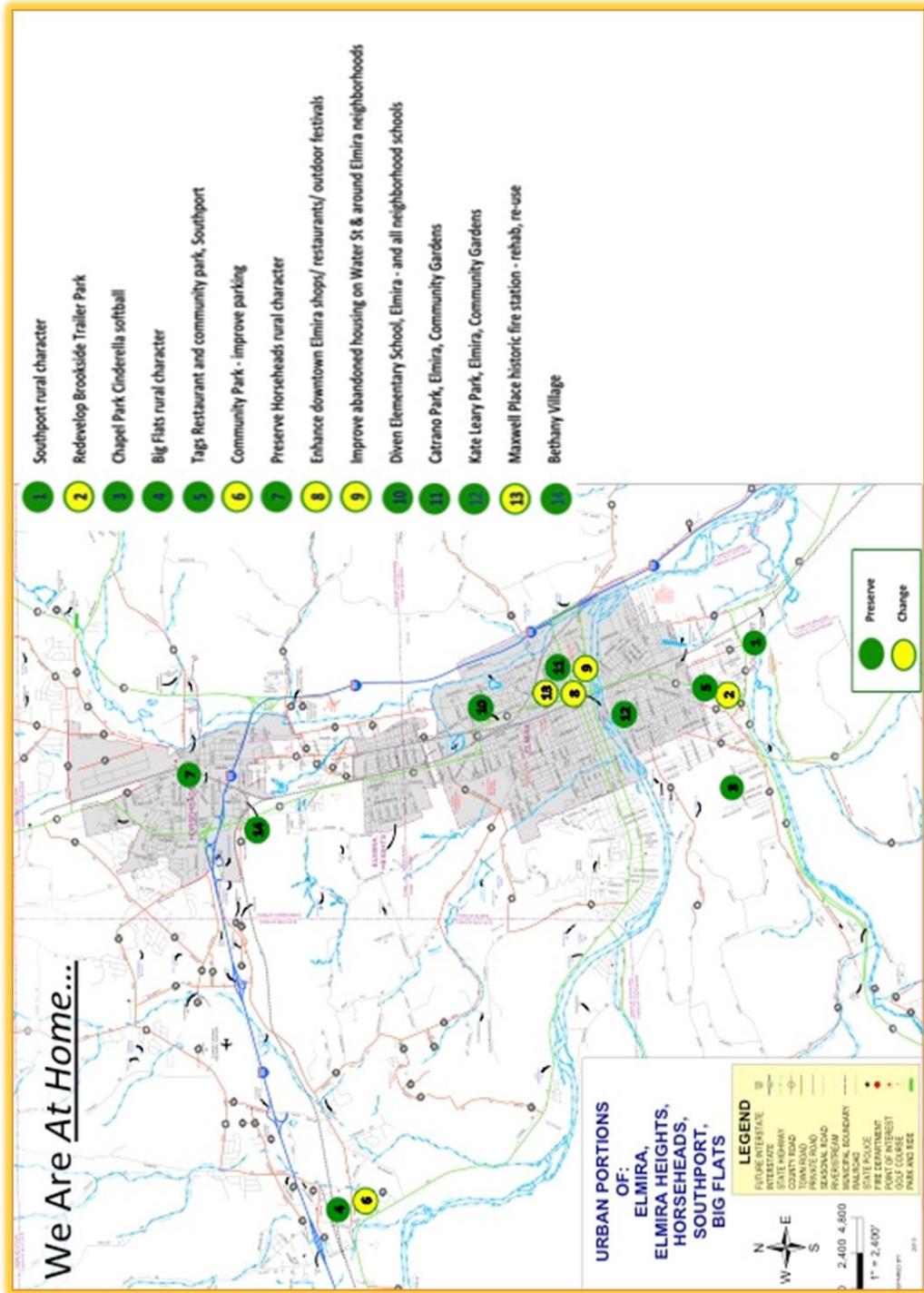


FIGURE 6: VISION OF PLACES TO PRESERVE AND TO CHANGE (MAP 3)



CHAPTER 2: GOALS AND OBJECTIVES

Goals and objectives form the foundation of the LRP. Goals offer explicit guidance on the priorities of the ECTC, and what they want to achieve for the region over the next 20 years.

NYSDOT Forward Four principles:

1. Preservation first
2. Systems, not projects
3. Maximize return on investment
4. Make it sustainable

Part of this foundation is the understanding that transportation is not an end in and of itself, but a means to serve the community. People use the transportation system to travel to work, school, and for personal needs. They may also use it for recreation, or to improve their physical wellbeing. The transportation system serves businesses by giving them access to customers, the workforce, and to meet their goods movement needs. People drive, walk, ride the bus, or use a bicycle. Long-distance travel may be done by air, intercity bus, or car. Freight moves by truck, train, air, and pipeline. Accommodating all users and all uses of the transportation system is

complex, and involves setting priorities for investment, and accepting tradeoffs in programming projects.

Goals and objectives were developed by using the following sources of input:

- ECTC leadership, through the Long-Range Plan Steering Committee. Members responded to a survey on LRP goals.
- Public outreach, through the Community Visioning Workshops and the ECTC website.
- MAP-21, which established seven National Goals that all states and MPOs must use as a basis for performance-based planning (see Introduction).
- NYSDOT, which has a set of principles called the Forward Four. These principles define NYSDOT's overall approach to its stewardship of the State Highway System.

ECTC Mission

ECTC's mission is to maintain, operate, and enhance where necessary a multimodal transportation system within the Chemung County planning area. This system will support and sustain commerce and will showcase communities that are attractive and accessible to all by providing for safe, efficient, and reliable modes of transportation.

Goals

The following represent broad goal statements to guide the implementation of the LRP. Use a system-driven approach to:

- **Ensure the safety and security of the transportation system for all users.** Safety is fundamental to all transportation agencies, and to all users of the transportation system. ECTC is committed to monitoring the system in order to make investments that improve safety and security for drivers, transit riders, pedestrians, and cyclists, along with the workforce that runs and maintains the system.



- **Invest in the transportation system infrastructure to bring all facilities and modes into a state of good repair.** There has been an enormous investment in transportation infrastructure over many years. ECTC is committed to continuously evaluating the condition of its roads and streets, bridges, sidewalks, transit buses and facilities, traffic signals and other devices, utilizing an asset management approach, and in harmony with the Forward Four principles, in order to bring them into a state of good repair.
- **Actively operate the transportation system to maximize efficiency and reliability of travel.** Advances in technology, from variable message signs (VMS) to smartphones, have given transportation system owners the capability to manage and operate the transportation system to achieve greater efficiency and safety. ECTC will take advantage of evolving technology for transportation system management and operations. In addressing reliability issues caused by weather events or unanticipated transportation facility failure, ECTC will develop plans to maintain the reliability of key elements of the system.
- **Promote connectivity among all modes of transportation to meet the region's mobility and accessibility needs.** In order to have a vibrant community, people and goods need access to their destinations. ECTC recognizes that a well-connected multimodal transportation system serves vital needs.
- **Ensure the efficiency of freight movement throughout the region to maximize support of the economy.** Freight moves primarily by truck and rail in the region. Businesses depend on efficient freight movement from local factories, warehouse/distribution centers, and parcel deliveries to small businesses. ECTC will support the efficiency and reliability of freight movement on the region's highway and railroads.

Use the benefits of a well-managed transportation program to:

- **Integrate transportation and land-use planning to promote economic development, sustainability, and enhanced livability.** ECTC supports the close collaboration of land-use and transportation planning as the means to take mutual actions that enhance the prosperity and quality of life throughout the planning area.
- **Protect and enhance the natural environment, reducing energy consumption and greenhouse gas emissions.** Creation of transportation infrastructure and operation of transportation facilities have impacts on the natural environment, from consumption of land to emissions generation. ECTC will promote environmentally friendly practices that will ensure that the projects, actions, and programs in the LRP will work toward minimizing any potential negative impacts.

Objectives and Performance Measures

Goals become actionable by creating objectives that explain what is intended to be accomplished. Accompanying each objective is the related performance measure. Care is

taken to craft the objectives so that performance data are available without a disproportionate expenditure of resources. As displayed below, there are a number of objectives for each goal to allow for specificity. Objectives may address different aspects of the goal (e.g., pavement and bridge condition for the infrastructure goal). They may also address different periods within the LRP's 20-year span, noting what is expected to be achieved in the first 10 years and in the second 10 years.

Each Goal Statement is reproduced below with its objectives; and for each objective, the performance measures are noted, indicating how progress will be measured.

Overarching Objective

Comply with MAP-21 National Performance Management Final Rule when it is issued in 2015. Note that this may result in modification of some of the following objectives as a result of the requirement that states and MPOs set targets for each of the National Goals.

- **Goal 1: Ensure the safety and security of the transportation system for all users.** Safety is fundamental to all transportation agencies, and to all users of the transportation system. The ECTC is committed to monitoring the system in order to make investments that improve safety and security for drivers, transit riders, pedestrians, and cyclists, along with the work force that runs and maintains the system.
- **Objective 1.1:** Reduce the number of fatalities and serious injuries resulting from motor vehicle crashes in each five-year period from 2020 to 2035, using 2015 to 2019 as the base five years.
 - **Performance measure:** Number of fatal and serious injury crashes reported through New York State crash records system (ALIS).
- **Objective 1.2:** Maintain the low number of pedestrian crashes that result in death or personal injury in each five-year period from 2020 to 2035, using 2015 to 2019 as the base five years.
 - **Performance measure:** All reported pedestrian crashes reported through NYS crash records system (ALIS).
- **Objective 1.3:** Maintain the low number of bicycle crashes that result in death or personal injury in each five-year period from 2015 to 2035, using 2010 to 2014 as the base five years.
 - **Performance measure:** All reported bicycle crashes reported through NYS crash records system (ALIS).
 - **Performance measure:** Number of bike safety education events held in May National Bike Month and at other times during the year, collected annually.

- **Objective 1.4:** Maintain C TRAN buses such that the NYSDOT safety inspection pass rate is 90% or higher per year, every year.
 - **Performance Measure:** NYSDOT and private operator reports on NYSDOT inspections.
- **Objective 1.5:** Reduce the number of reported security incidents involving C TRAN passengers on buses and at bus stops, and C TRAN drivers over the life of the LRP.
 - **Performance measure:** Police reports of transit security incidents.
- **Objective 1.6:** Improve work zone safety by reducing the number of work zone motor vehicle crashes in each five-year period from 2020 to 2035, after establishing a base in the period 2015 to 2019, and providing work zone safety training for all workforce employees that operate the system.
 - **Performance measure:** All reported work zone crashes using ALIS and other reporting.
 - **Performance measure:** Annual reporting for training classes held and employees receiving work zone safety training.
- **Goal 2: Invest in the transportation system infrastructure to bring all facilities and modes into a state of good repair.** There has been an enormous investment in our transportation infrastructure over many years. The ECTC is committed to continuously evaluating the condition of our roads and streets, bridges, sidewalks, transit buses and facilities, traffic signals and other devices, utilizing an asset management approach and in harmony with the Forward Four principles in order to bring them to a state of good repair.
- **Objective 2.1:** Disinvestment by developing a list of local highway segments, bridges, and traffic signals that would not be considered for rehabilitation or replacement funding and closed (removed) when no longer viable, starting in 2016 TIP and update with each new TIP.
 - **Performance measure:** Perform an analysis of the vehicle usage, alternative routes, and economic value of the local highway segments, bridges, and traffic signals to provide a ranking of facilities that would be considered for abandonment.
- **Objective 2.1(a):** Reduce or maintain the number of structurally deficient bridges on the New York State highway system to less than 10% by 2025.
 - **Performance measure:** Number of structurally deficient bridges in the National Bridge Inventory (NBI).
- **Objective 2.1(b):** Reduce or maintain the number of structurally deficient bridges on the local federal aid system to less than 10% by 2025.
 - **Performance measure:** Number of structurally deficient bridges in the NBI.

- **Objective 2.2:** Reduce the lane-miles of state and local federal aid system pavements rated poor or fair in the base period of 2015 to 2019, and continue that trend for the remainder of the LRP.
 - **Performance measure:** NYSDOT and ECTC pavement score files.
- **Objective 2.3:** Improve sidewalk condition and Americans with Disabilities Act (ADA) compliance for publically owned and maintained streets and roads as they are reconstructed.
 - **Performance measure:** Number of projects where the sidewalks and ADA access were improved.
- **Objective 2.4:** Replace buses in the C TRAN fleet on a schedule that complies with FTA guidelines on transit vehicle life for the life of the LRP.
 - **Performance measure:** C TRAN fleet profile updated on an annual basis and reported to the County.
- **Objective 2.5:** Upgrade NYSDOT and locally owned traffic signals to best practicable technology on a five-year cycle for the life of the LRP.
 - **Performance measure:** Traffic signal inventory and maintenance records.
- **Goal 3: Actively operate the transportation system to maximize efficiency and reliability of travel.** Advances in technology, from VMS to smartphones, have given transportation system owners the capability to manage and operate the transportation system to achieve greater efficiency and safety. The ECTC will take advantage of evolving technology for transportation system management and operations. In addressing reliability issues caused by weather events or unanticipated transportation facility failure, the ECTC will develop plans to maintain the reliability of key elements of the system.
- **Objective 3.1:** Update the Intelligent Transportation System (ITS) Regional Architecture and Implementation Plan on a five-year cycle for the life of the LRP; starting with an update in 2015, and implement high-priority actions as called for in the LRP.
 - **Performance measure:** ITS inventory and operational status.
- **Objective 3.2:** Implement active management and operation of the regional transportation system by 2025.
 - **Performance measure:** Operational status of transportation system elements.
- **Objective 3.3:** Create an ECTC Resiliency Plan that addresses operability of the regional transportation plan in unanticipated severe weather or facility failure by 2018.
 - **Performance measure:** Completion and implementation of the ECTC Resiliency Plan.

- **Objective 3.4:** Update the C TRAN communication, fare collection, and public information system (including real-time customer information) in the period 2015 to 2019.
 - **Performance measure:** Projects implemented.
- **Goal 4: Promote connectivity among all modes of transportation to meet the region’s mobility and accessibility needs.** In order to have a vibrant community, people and goods need access to their destinations. ECTC recognizes that a well-connected multimodal transportation system serves vital needs.
- **Objective 4.1:** Identify roadway access discontinuities that interfere with regional mobility; program highest-priority projects by 2025; program additional projects by 2035.
 - **Performance measure:** System continuity changes as demonstrated by network mapping.
- **Objective 4.2:** Identify deficiencies in public transit service in terms of geographic coverage and time-of-day coverage; modify transit operations to address highest-priority needs by 2020 and every five years thereafter.
 - **Performance measure:** Review and report on C TRAN route and schedule structure every five years, or more frequently, if needed, in relation to identified needs and funding, beginning in 2014.
 - **Performance measure:** Chemung County Transportation Coordination Plan is updated every four years.
- **Objective 4.3:** Implement and market ridesharing, and other Transportation Demand Management (TDM) approaches, to improve help meet the mobility needs of those without access to a vehicle. Enlist a minimum of 1,000 registered ride-match requests by 2019.
 - **Performance measure:** 511NY Southern Tier Rideshare registrant data.
- **Objective 4.4:** Identify discontinuities in sidewalks, bicycle facilities, and trails. Complete the Regional Trail System by 2035.
 - **Performance measure:** All new C TRAN buses are purchased with bike racks.
 - **Performance measure:** Completion of regional trail system segments.
- **Goal 5: Ensure the efficiency of freight movement throughout the region to maximize support of the economy.** Freight moves primarily by truck in the region, and to a lesser extent by rail. Businesses depend on efficient freight movement from local factories, warehouse/distribution centers, and parcel deliveries to small businesses. ECTC will support the efficiency and reliability of freight movement on the region’s highways and railroads.

- **Objective 5.1:** Identify and address bottlenecks on the highway network that interfere with the reliability of truck travel.
 - **Performance measure:** Truck travel-time reliability.
- **Objective 5.2:** Monitor and modify the local truck route system in response to changing goods movement needs.
 - **Performance measure:** Meeting freight movement needs of local businesses without unnecessary truck travel on local streets.
- **Objective 5.3:** Provide adequate overnight parking for trucks at public or private facilities within Chemung County.
 - **Performance measure:** Survey of truck drivers on parking availability.
- **Objective 5.4:** Assist NYSDOT in addressing the needs of the Norfolk Southern Railway’s Southern Tier line, especially the Portageville Viaduct.
- **Goal 6: Integrate transportation and land-use planning to promote economic development, sustainability, and enhanced livability.** ECTC supports the close collaboration of land-use and transportation planning as the means to take mutual actions that enhance the prosperity and quality of life throughout the planning area.
- **Objective 6.1:** Identify transportation facilities and services that are required for specific economic development opportunities, and prioritize them for timely implementation.
 - **Performance measure:** Explicit support of economic development proposals and jobs created.
- **Objective 6.2:** Identify transportation improvements that will improve neighborhood quality of life. For federal aid-eligible highways and bridges, Complete Streets treatments will be considered based on the New York State Complete Streets law, using the NYSDOT policy and review criteria starting with the next TIP in 2016.
 - **Performance measure:** NYSDOT and local officials report on 2016-2021 TIP projects, which will include Complete Streets improvements.
- **Objective 6.3:** Identify transportation actions that will support adopted land-use and development goals. Implement highest-priority actions by 2025 and remaining actions by 2035.
 - **Performance measure:** TIP and other projects that meet this objective reported.
- **Objective 6.4:** Encourage land-use development that has good accessibility to transit routes, including transit-friendly improvements, such as bus turnouts, bus shelters, and bus route signs.

- **Performance measure:** Information on transit accessibility is provided to City of Elmira and Town and Village code enforcement officers for their use.
- **Goal 7: Protect and enhance the natural environment, reducing energy consumption and greenhouse gas emissions.** Creation of transportation infrastructure and operation of transportation facilities have impacts on the natural environment, from consumption of land to production of emissions. ECTC will promote environmentally friendly practices that will ensure that the projects, actions, and programs in the plan will work toward minimizing any potential negative impacts.
- **Objective 7.1:** Based on consultation with state and federal environmental resource agencies, ensure that implementation of projects in the LRP avoids and/or minimizes environmental impacts.
 - **Performance measure:** National Environmental Policy Act (NEPA) and SEQRA determinations.
- **Objective 7.2:** Promote travel choices, including transit, shared-ride, and nonmotorized modes that will reduce energy consumption and greenhouse gas production for the life of the LRP.
 - **Performance measure:** Trip mode share, determined by National Household Travel Survey (NHTS) and transit ridership.
- **Objective 7.3:** Complete an ECTC Sustainable Communities/Sustainable Transportation Plan by 2020.

Performance Measures

As noted previously, MAP-21 creates the basis for requiring MPOs to shift their planning perspective to one that is performance based and outcome oriented. The ECTC agrees with this approach, in that it makes the planning process and the specific investments that will be included in the TIP more transparent to the public and their elected officials. The MPO Policy Committee will be able to point to investment decisions and convey to transportation system users the benefits they see in terms of improved safety, mobility, and/or reliability.

The caveat is that USDOT has not issued regulations on the performance measures that will be required for the national goals included in MAP-21. A Final Rule covering all of the measures is not expected until sometime in 2015.

With that uncertainty, the ECTC has begun to examine the means of performance-based planning. However, it is likely that some of the performance data are already being collected by member agencies:

- **Crash records:** available from NYSDOT through ALIS.
- **System utilization:** traffic counts from NYSDOT and Chemung County; transit ridership from Chemung County/C TRAN.

- **Pavement condition:** scoring files from NYSDOT and ECTC for all federal aid roads.
- **Bridge condition:** inspection files from NYSDOT.

There are other data elements that are not currently being collected. Travel speeds on major highways may be required in order to measure travel-time reliability; these data may be available from private vendors like INRIX (at additional cost). Information on truck movements will need to be enhanced. There may be a need for pedestrian and bicycle counts, at least on a sample basis.

As a small MPO, the ECTC's capabilities may be limited. However, NYSAMPO, through its Integrated Planning effort, is examining ways to share data procurement.

CHAPTER 3: FINANCIAL PLAN

At the heart of any MPO LRP is the Financial Plan. Federal law has required since 1991 that an MPO LRP must include a Financial Plan whose purpose is to ensure that the LRP is realistic in terms of the availability of adequate resources for implementation. The Financial Plan must meet the following criteria:

- Is developed cooperatively by the MPO, the state, and the transit operator.
- Demonstrates how the adopted LRP can be implemented.
- Enumerates the resources that are reasonably expected to be made available over the life of the LRP, including both public and private sources.
- May recommend additional financing strategies to fill identified funding gaps.
- May include “illustrative projects” that would be included in the LRP if additional resources became available.
- Demonstrates the financial capacity to maintain and operate the transportation facilities included in the LRP.

Further, all project and program cost estimates must be adjusted to year-of-expenditure dollars, using agreed-upon cost inflation factors. This adjustment contributes to a realistic LRP.

All of these steps lead to the creation of a fiscally constrained LRP that does not count on resources that are not reasonably expected to be available.

The ECTC LRP has met all of these conditions through the following actions:

- **Revenue forecasts (Table 2):** NYSDOT provided the initial forecasts for FHWA programs, and for New York State Dedicated Highway and Bridge Fund. Chemung County, in the role of transit operator, provided the forecasts for FTA programs. Chemung County and the City of Elmira provided estimates of their capital project spending. The agreement that was reached among these parties on the revenue forecasts includes the following:
 - Revenue forecasts are generated for five-year blocks. This was accepted as an acceptable level of detail for the LRP.
 - The baseline for calculating revenue forecasts for all FHWA and state fund sources is the current adopted ECTC Transportation Improvement Program. The baseline for calculating revenue forecasts for FTA programs are the FY 2014 FTA apportionments published in the Federal Register.
 - Funding for FHWA programs is held flat for the first five years (2015-2019), and then increased by 2% for each of the subsequent blocks.
 - **Caveat:** While the forecasts are made for current FHWA fund sources, it is understood that these may change over time. MAP-21 made

significant changes in FHWA programs. If FHWA programs are changed in the next federal transportation authorization, prior to the update of the LRP, the Financial Plan may be amended.

- Funding for FTA programs is held flat for the first five years (2015–2019), then increased by 2% for each of the subsequent blocks.
 - **Caveat:** While the forecasts are made for current FTA fund sources, it is understood that these may change over time. MAP-21 made significant changes in FTA programs through program consolidation. If FTA programs are changed in the next federal transportation authorization, prior to the update of the LRP, the Financial Plan may be amended.
- Funding for New York State programs for highway and bridge construction is held flat for the first five years (2015–2019), then increased by 2% for each of the subsequent blocks.
 - **Caveat:** The amount of combined NYS Dedicated Fund and Marchiselli programs is based upon 2014 levels and is intended as a combined amount only, with no specific level of Marchiselli funds used. The Marchiselli program is a longstanding legislative action that provides 75% of the nonfederal share of locally sponsored federal aid projects. (FHWA and FTA fund most projects at a maximum 80% share.) The availability of Marchiselli funding is contingent upon the annual budget/appropriations process. The revenue forecast assumes it will be funded at current levels and escalated, as indicated.
 - **Caveat:** The Consolidated Local Street and Highway Improvement Program (CHIPS) provides state funding to local governments for eligible capital projects. It is distributed on a formula basis, and also subject to the annual budget/appropriations process. The revenue forecast assumes it will be funded at current levels and escalated, as indicated.
- Funding for New York State transit programs is held flat for the first five years (2015-2019), then increased by 2% for each of the subsequent blocks.
- The New York State Transit Operating Assistance (NYSTOA) program is a formula-based program that provides funding to transit operators to subsidize their operations. Passengers and revenue-miles of service are multiplied by the formula rates. The numbers of annual passengers and miles are assumed constant for the purposes of projecting revenue. The program is subject to annual appropriation and periodic program and funding sources reauthorization by the State Legislature.
- The New York State Transit Capital Assistance program funds one-half of the nonfederal share of approved FTA capital projects. Funding is contingent on the annual budget/appropriations process.



- Local Funding for the County transit system is held flat for the first five years (2015-2019), then increased by 2% for each of the subsequent blocks.
 - **Caveat:** The County match to NYSTOA is currently, and is assumed to be, provided by the private transit operator from its total operations. The County will be requesting private operators for proposals for the contract period 2016 and beyond. The new contract may or may not have the operator providing the match to the NYSTOA subsidy.
 - **Caveat:** The County provides program funds for one-half (nominally 10%) of the nonfederal share of approved FTA capital projects. Funding is contingent on the annual budget/ appropriations process. The amount shown for 2014 consists of backlogged and prior discretionary projects and is not indicative of the annual amount that is needed to match the federal transit funds.

TABLE 2: ECTC LRP FUNDING RESOURCE ESTIMATE, 2015–2034

Funding Resource	Estimate Source	2014 Baseline	2015-2019 Funding	2020-2024 Funding	2025-2029 Funding	2030-2034 Funding	LRP Total
Base year of dollars	(in Millions)	2014 \$	2014 \$ (1)	2014 \$ (2)	2014 \$ (2)	2014 \$ (2)	
FEDERAL (Unmatched)							
FHWA Programs							
NHPP	NYSDOT	\$6.911	\$42.003	\$42.843	\$43.700	\$44.574	\$173.120
STP Flex	NYSDOT	\$5.221	\$19.216	\$19.600	\$19.992	\$20.392	\$79.201
STP Off System Bridge	NYSDOT	\$0.381	\$0.762	\$0.777	\$0.793	\$0.809	\$3.141
STP Discretionary	NYSDOT	\$4.970	\$4.970	\$0.000	\$0.000	\$0.000	\$4.970
HSIP (Highway & RR)	NYSDOT	\$0.221	\$3.610	\$3.682	\$3.756	\$3.831	\$14.879
Transportation (TEP, SRTS, TAP)	NYSDOT	\$0.078	\$1.000	\$1.020	\$1.040	\$1.061	\$4.122
FHWA sub-total		\$17.782	\$71.561	\$67.923	\$69.281	\$70.667	\$279.432
FTA Programs							
Sec 5307	FTA (3)	\$1.400	\$7.000	\$7.140	\$7.283	\$7.428	\$28.851
Sec 5339	FTA	\$0.100	\$0.500	\$0.510	\$0.520	\$0.531	\$2.061
FTA sub-total		\$1.500	\$7.500	\$7.650	\$7.803	\$7.959	\$30.912
Federal Subtotal		\$19.282	\$79.061	\$75.573	\$77.084	\$78.626	\$310.344
NEW YORK STATE							
Highways/Bridges							
NYS Dedicated Fund & Marchiselli	NYSDOT	\$2.689	\$12.630	\$11.761	\$11.996	\$12.236	\$48.623
CHIPS (Capital) (4)	NYSDOT	\$2.591	\$12.955	\$13.214	\$13.478	\$13.748	\$53.395
NYS Highway/Bridge subtotal		\$5.280	\$25.585	\$24.975	\$25.475	\$25.984	\$102.019
Transit							
NYS Transit Operating Assistance	NYSDOT	\$1.000	\$5.000	\$5.100	\$5.200	\$5.310	\$20.610
Capital match (10%)	NYSDOT	\$0.460	\$0.500	\$0.510	\$0.520	\$0.531	\$2.061
NYS Transit subtotal		\$1.460	\$5.500	\$5.610	\$5.720	\$5.841	\$22.671
State Subtotal		\$6.740	\$31.085	\$30.585	\$31.195	\$31.825	\$124.690
LOCAL							
Highways/Bridges							
Chemung County	Chemung County	\$3.700	\$10.000	\$10.200	\$10.404	\$10.612	\$41.216
City of Elmira	City of Elmira	\$0.700	\$4.100	\$4.182	\$4.266	\$4.351	\$16.899
Non - Highway							
City of Elmira	City of Elmira	\$0.075	\$0.375	\$0.383	\$0.390	\$0.398	\$1.546
Transit							
CTRAN - local match	Chemung County	\$0.460	\$0.500	\$0.510	\$0.520	\$0.531	\$2.061
Local Subtotal		\$4.475	\$14.475	\$14.765	\$15.060	\$15.361	\$59.660
TOTAL		\$30.497	\$124.621	\$120.922	\$123.339	\$125.812	
GRAND TOTAL 2015-2034							\$494.694

Notes:

1. The estimated funding allocations for Federal aid that is administered through FHWA is based on the average levels contained in the STIP and TIP along with some simple infrastructure demographic statistics which would lead to the likely average share of these funds to be spent within Chemung County.
2. The projected Federal aid and State funds are based on a flat level of funding for FFY 2015 - 2019, 2% increase from 2020 - 2024, 2% increase from 2025 - 2029, and 2% increase from 2030 - 2034.
3. FTA funding baseline reflects actual apportionment for FFY 2014
4. CHIPS funding are based on the SFY 2014/15 funding level
5. Marchiselli funds require state legislative approval every year. For this table, the funds shown are based on approved projects in 2014 and are estimated for the 2015-2019 period. They have not been estimated for the later years.



Years of Expenditure Inflation Factors

As noted previously, achieving fiscal constraint requires that project cost estimates be adjusted from current dollars to year-of-expenditure dollars. NYSDOT provided inflation factors that are based on their experience with construction costs and transit capital purchase costs. Both the ECTC, and Chemung County in its role as transit operator, have concurred with these factors, as displayed in Tables 3-2 and 3-3.

The following simple rates of inflation by State Fiscal Year (SFY) are the best available estimates of overall price trends for the transport public works sector in New York State for the programming period.

TABLE 3: YEARS OF EXPENDITURE INFLATION FACTORS

ANNUAL PERIOD	SIMPLE YEAR OVER YEAR INFLATION
SFY 14-15	0.00%
SFY 15-16	2.00%
SFY 16-17	4.00%
SFY 17-18	6.00%
SFY 18-19	8.00%
SFY 19-20	10.00%
SFY 20-21	12.00%
SFY 21-22 thru 34-35*	14.00%

**Because of the uncertainty of forecasting cost inflation, costs will be held constant beginning with SFY 2021-22*

To convert SFY 2014 un-inflated cost estimates (in the Program Support System, Bridge Model, or Pavement Model) to be year of expenditure (YOE) inflated cost estimates for the LRP, the factors are as follows:

TABLE 4: YEAR-OF-EXPENDITURE INFLATED COST ESTIMATES

YEAR OF EXPENDITURE	2014 \$ TO YOE \$	YOE \$ TO 2014\$
SFY 14-15	1.0000	1.0000
SFY 15-16	1.0200	0.9804
SFY 16-17	1.0400	0.9615
SFY 17-18	1.0600	0.9434
SFY 18-19	1.0800	0.9259
SFY 19-20	1.1000	0.9091

YEAR OF EXPENDITURE	2014 \$ TO YOE \$	YOE \$ TO 2014\$
SFY 20-21	1.1200	0.8929
SFY 21-22+	1.1400	0.8772

Cost Forecasts

With the revenue projections complete, the Financial Plan can now estimate the level of projects/programs that can be programmed within fiscal constraint. Project costs are matched to revenue forecasts by fund source and five-year time blocks. Since the first five years include projects already programmed in the TIP, cost estimates have a reasonably high level of accuracy. Projects further out in the LRP are defined by a planning-level design concept and scope. With each successive update of the LRP, projects move into the first time block with more refined estimates.



TABLE 5: ECTC LONG-RANGE PLAN EXPENDITURE ESTIMATE, 2015-2034

Funding Resource	Estimate Source	2015-2019 Expenditure	2020-2024 Expenditure	2025-2029 Expenditure	2030-2034 Expenditure	LRP Total
Base year of dollars	(in Millions)					
FEDERAL (Unmatched)						
FHWA Programs						
NHPP		\$42.003	\$42.843	\$43.700	\$44.574	\$173.120
Bridge block (projects TBD)	NYSDOT	\$14.281	14.567	14.858	15.155	\$58.861
Pavement block (Projects TBD)	NYSDOT	\$17.399	17.566	17.917	18.275	\$71.157
Other blocks (projects TBD)	NYSDOT	\$5.040	5.141	5.244	5.349	\$20.774
ECTC Bridge block (projects TBD)	ECTC	\$1.800	4.284	4.370	4.457	\$14.912
ECTC Pavement block (projects TBD)	ECTC	\$0.800	1.285	1.311	1.337	\$4.734
6754.67 E. Water St Bridge	City of Elmira	1.270	-	-	-	\$1.270
6754.68 NHS Preservation Block	ECTC	1.413	-	-	-	\$1.413
STP Flex		\$19.216	\$19.600	\$19.992	\$20.392	\$79.201
Bridge block (projects TBD)	NYSDOT	6.302	6.664	6.797	6.933	\$26.697
Pavement block (Projects TBD)	NYSDOT	7.329	8.036	8.197	8.361	\$31.923
Other blocks (projects TBD)	NYSDOT	2.285	2.352	2.399	2.447	\$9.483
ECTC Bridge block (projects TBD)	ECTC	-	1.960	1.999	2.039	\$5.998
ECTC Pavement block (projects TBD)	ECTC	-	0.588	0.600	0.612	\$1.800
6TEC.01 ECTC block	ECTC	0.672	-	-	-	0.672
6754.64 CR 10 Bridge	Chemung Co	1.076	-	-	-	1.076
6754.04 ECTC block	ECTC	1.413	-	-	-	1.413
6TEC.05 ECTC block	ECTC	0.139	-	-	-	0.139
STP Off System Bridge		0.762	0.777	0.793	0.809	\$3.141
Off Federal Aid System Bridge Insp.		0.762	0.777	0.793	0.809	\$3.141
STP Discretionary	NYSDOT	4.970	0.000	0.000	0.000	\$4.970
6754.77 North Main St Corridor	City of Elmira	3.920				\$3.920
6754.62 West Water Street	City of Elmira	1.050				\$1.050
HSIP (Highway & RR)	NYSDOT	3.610	3.682	3.756	3.831	\$14.879
State and Local safety projects (TBD)		\$0.753	\$3.682	\$3.756	\$3.831	\$12.021
NY Route 328	NYSDOT	2.857				2.857
Transportation Alternatives (TBD)	NYSDOT	\$1.000	\$1.020	\$1.040	\$1.061	\$4.122
FHWA subtotal		\$71.561	\$67.923	\$69.281	\$70.667	\$279.432
FTA Programs						
Sec 5307 (Operating Assistance)	FTA	\$7.000	\$7.140	\$7.283	\$7.428	\$28.851
Sec 5339 (capital bus purchase)	FTA	\$0.500	\$0.510	\$0.520	\$0.531	\$2.061
FTA subtotal		\$7.500	\$7.650	\$7.803	\$7.959	\$30.912
Federal Subtotal		\$79.061	\$75.573	\$77.084	\$78.626	\$310.344

CHAPTER 4: CURRENT TRANSPORTATION SYSTEM CONDITIONS

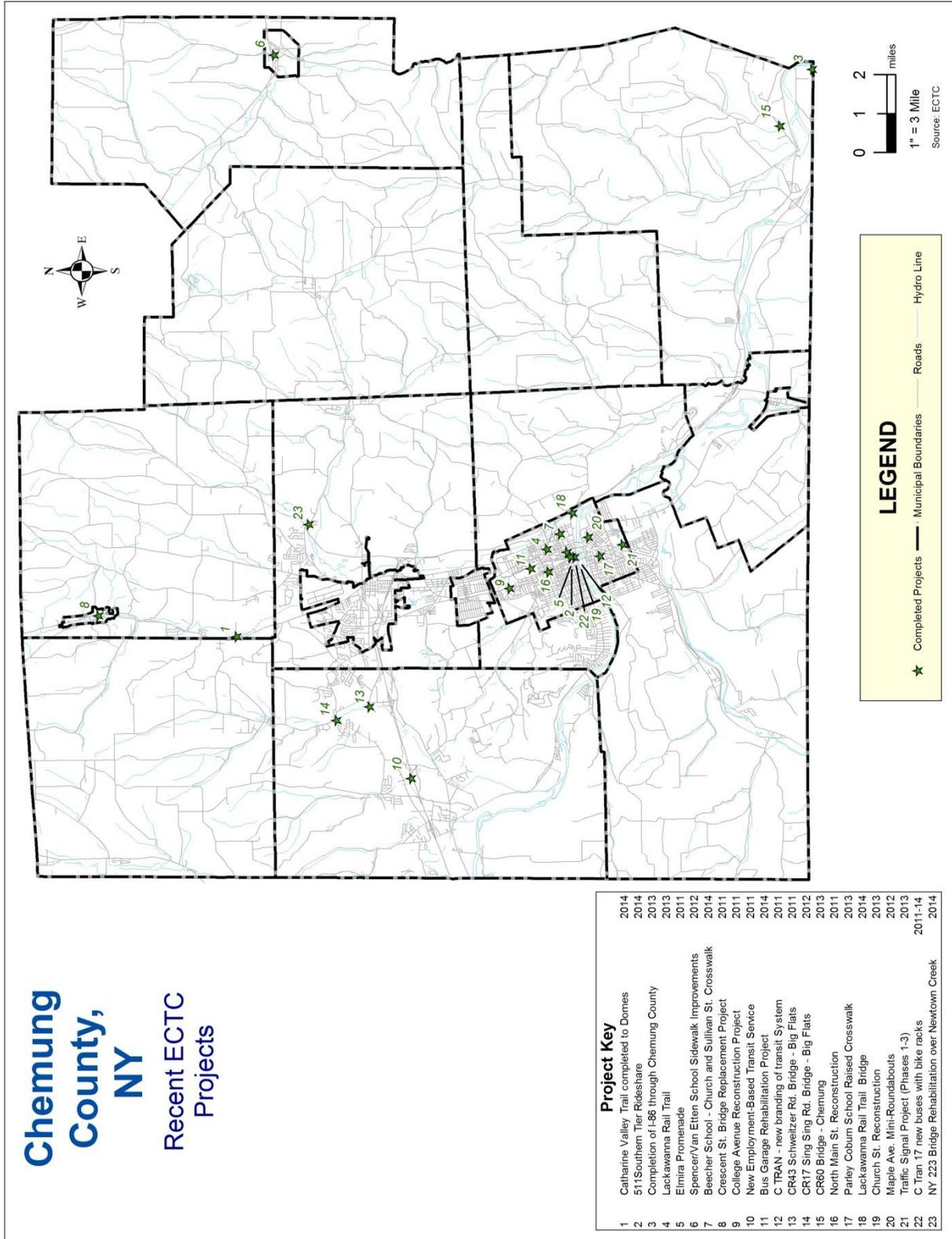
Establishing a baseline for regional transportation system characteristics and Chemung County demographics is critical to determining current and future trends that will ultimately inform transportation infrastructure and operations investment.

Roadway, transit, bicycle, pedestrian, freight railroad, and airway facilities and services in Chemung County were assessed to establish the transportation environment in terms of physical condition, operations, mobility, and accessibility. Socioeconomic elements, including population, housing, employment, and education enrollment provide information on where homes, job, and schools are located, thus indicating typical travel patterns for County residents. Additional factors, such as household income and poverty rates, provide an understanding of the transportation needs for populations in specific areas.

By connecting regional demographic trends with transportation infrastructure usage, gaps will be identified to show where transportation is needed in the future, and where current transportation facilities will need to be enhanced to accommodate changes in population and employment.

Figure 7 shows the projects that have been completed since the 2009 LRP update.

FIGURE 7: RECENT ECTC PROJECTS



TRANSPORTATION CONDITIONS

This section describes each element of the regional transportation system in Chemung County, including its physical condition, level of usage, and mode-specific features.

ROADWAYS

Roads are classified in two different ways: by jurisdiction and by function. Chemung County contains the City of Elmira, 11 Towns and five Villages. The roads are owned by New York State, the County, the City, and Towns, and Villages.

The other dimension is called functional class. This is a well-established system used by FHWA that reflects the way a road functions in the overall transportation network for both urban and rural areas. The following is a list of functional class road types:

- Principal Arterial
 - Interstate
 - Freeway/Expressway
 - Other
- Minor Arterial
- Collector
 - Major
 - Minor
- Local

The description of each functional class is based on access to property and accommodation of through travel. For example, a local street provides access to every parcel, but should not be used for through travel; conversely, a principal arterial/Interstate provides for through travel, but has no property access. When properly constructed, a functionally classified roadway system follows the hierarchy in a logical manner across geography. Residents should not have to drive too far on a local street to reach a collector street and then a minor arterial.

Finally, linear measurement of roadways is done in two ways: 1) lane-miles; and 2) centerline miles. For example, a 10-mile segment of four-lane highway constitutes 40 lane-miles, but 10 centerline miles. Table 6 summarizes centerline miles by each of these municipalities.

TABLE 6: LOCAL ROADS BY JURISDICTION—CENTERLINE MILES

MUNICIPALITY	CHEMUNG COUNTY ROADS	CITY/TOWN/VILLAGE	TOTAL
CITY OF ELMIRA	0.8	120.7	121.5
TOWNS			
ASHLAND	2.2	14.6	16.8
BALDWIN	14.5	34.4	48.9

MUNICIPALITY	CHEMUNG COUNTY ROADS	CITY/TOWN/VILLAGE	TOTAL
BIG FLATS	31.1	74.7	105.8
CATLIN	14.2	58.4	72.6
CHEMUNG	35.0	52.7	87.7
ELMIRA	15.6	45.7	61.3
ERIN	19.4	54.3	73.7
HORSEHEADS	31.8	63.4	95.2
SOUTHPORT	32.5	78.3	110.8
VAN ETTEN	15.4	47.2	62.6
VETERAN	27.0	45.4	72.4
VILLAGES			
ELMIRA HEIGHTS	0.0	20.8	20.8
HORSEHEADS	0.9	31.5	32.4
MILLPORT	0.2	2.3	2.5
VAN ETTEN	1.8	3.4	5.2
WELLSBURG	0.9	2.1	3.0
Total	243.6	749.8	993.4

Source: NYSDOT Local Roads Listing

TABLE 7: STATE-OWNED HIGHWAY LANE-MILES IN CHEMUNG COUNTY (FEDERAL AID-ELIGIBLE)

FUNCTIONAL CLASS	LANE-MILES		
	TOTAL	RURAL	URBAN
Principal Arterial/Interstate	110.12	54.92	55.2
Expressway	0	0	0
Principal Arterial/Other	103.2	17.55	85.65
Minor Arterial	55.78	30.43	25.35
Collectors	61.06	47.88	13.18
Total	330.16	150.78	179.38

After establishing the geography and function of the roadway system, the next important measure is system use. There are two measures that are used as determinants: Annual Average Daily Traffic (AADT) and Vehicle Miles of Travel (VMT). AADT is an important



measure of traffic volume that can be used to determine proper number of lanes and related design features. It is calculated from traffic counts, either from a Continuous Count Station, where a simple average is taken of a full year of daily counts; or from short-term traffic counts that are adjusted using experience-based seasonal and temporal factors.

TABLE 8: AADT BY JURISDICTION

MUNICIPALITY	COUNT	AVERAGE	AADT		TOTAL ALL COUNTS
			MINIMUM	MAXIMUM	
CITY OF ELMIRA	103	6,448	601	18,228	664,139
Ramp	3	6,790	3,359	8,581	20,371
Road	85	5,451	601	18,228	463,308
Route	15	12,031	6,277	16,446	180,460
TOWN OF ASHLAND	10	6,423	5,013	9,649	28,229
Ramp	4	1,367	1,334	1,407	5,469
Road	1	3,684	3,684	3,684	3,684
Route	5	7,645	5,604	9,649	19,076
TOWN OF BALDWIN	3	743	445	1,307	2,228
Road	3	743	445	1,307	2,228
TOWN OF BIG FLATS	62	5,264	164	32,767	326,365
Ramp	13	2,194	1,013	4,519	28,516
Road	42	4,248	164	16,272	178,412
Route	7	17,062	1,501	32,767	119,437
TOWN OF CATLIN	9	2,572	566	10,326	23,144
Road	7	1,084	566	2,523	7,587
Route	2	7,779	5,231	10,326	15,557
TOWN OF CHEMUNG	28	3,521	254	25,766	98,594
Ramp	8	945	684	1,291	7,558
Road	13	1,236	254	2,604	16,065
Route	7	10,710	849	25,766	74,971
TOWN OF ELMIRA	19	12,055	2,463	34,999	114,823
Ramp	8	8,835	5,290	14,866	41,110
Road	7	2,077	629	6,847	14,542

MUNICIPALITY	COUNT	AVERAGE	AADT		TOTAL ALL COUNTS
			MINIMUM	MAXIMUM	
Route	4	26,236	19,606	33,357	59,171
TOWN OF ERIN	7	1,101	360	2,794	7,706
Road	4	574	360	790	2,297
Route	3	1,803	940	2,794	5,409
TOWN OF HORSEHEADS	74	12,729	407	58,917	453,957
Ramp	13	4,557	1,641	7,352	29,976
Road	48	9,461	407	21,621	217,328
Route	13	32,003	11,568	58,917	206,653
TOWN OF SOUTHPORT	37	3,497	73	10,976	129,388
Road	26	1,839	73	6,032	47,802
Route	11	7,417	881	10,976	81,586
TOWN OF VAN ETTEN	13	3,297	561	6,132	15,733
Road	8	841	561	1,044	2,945
Route	5	5,412	4,604	6,132	12,788
TOWN OF VETERAN	16	2,422	107	8,875	38,752
Road	12	613	107	1,802	7,361
Route	4	7,848	6,851	8,875	31,391

ROADWAY PHYSICAL CONDITION

The other important performance indicator for the roadway system is its physical condition. NYSDOT has used for many years a visual scoring methodology. By examining the surface of the pavement for various signs of distress, the analyst can make a determination of its condition, including likely underlying causes. There are photographs of typical types of



pavement distress that are used to train the data collectors. Many MPOs also use this system to score federal aid-eligible roads that are not part of a state's highway system.

NYSDOT uses a 10- point scale for the visual scoring methodology. A score of 5 or less indicates that the portion of roadway is in poor condition and may require repairs or new pavement in the short-term. (Note that this category covers several pavement conditions, where a rating of five is considered poor but in better condition than a rating of one or two.) A

score of 6 to 7 indicates that the portion of the roadway is in fair condition and may require new pavement in the midterm, while a score of 8 to 10 indicates that the pavement is in good to excellent condition.

Another pavement performance metric is the International Roughness Index (IRI). FHWA notes the following:

Pavement smoothness is probably the single most important indicator of performance from the standpoint of the traveling public. National surveys of road users list smooth pavements as a top highway characteristic. Rough or uneven pavements adversely affect driver safety, fuel efficiency, ride quality, and vehicle wear and tear. Rough pavements also negatively impact pavement durability.

The IRI is required for pavement condition data submitted to FHWA’s Highway Performance Monitoring System (HPMS), and is based on measuring the road surface profile.

NYS DOT scores its pavements on a regular basis. Table 9 provides a summary of the lanes-miles by the scores received in the 2013 evaluation.

TABLE 9: NEW YORK STATE HIGHWAYS IN CHEMUNG COUNTY—PAVEMENT CONDITION

Functional Class	Total	Current Conditions		Poor (1-5)		Fair (6)		Good (7-8)		Excellent (9-10)	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Interstate	110.12	54.92	55.2	0	3.8	0	12	25.6	31.28	29.32	8.12
Principal Art	103.2	17.55	85.65	12.93	10.12	0.26	20.82	0	19.24	4.36	35.47
Minor Art	55.78	30.43	25.35	1.8	3.71	8.58	3.62	0	13.36	20.05	4.66
Collector	61.06	47.88	13.18	1.76	1.12	31.26	10.54	1.46	0	13.4	1.52
TOTAL	330.16	150.78	179.38	16.49	18.75	40.1	46.98	27.06	63.88	67.13	49.77

TABLE 10: NEW YORK STATE HIGHWAYS IN CHEMUNG COUNTY—PAVEMENT CONDITION (%)

Functional Class	Lane-Miles			Poor (1-5)		Fair (6)		Good (7-8)		Excellent (9-10)	
	Total	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Interstate	110.12	54.92	55.2	0.0%	6.9%	0.0%	21.7%	46.6%	56.7%	53.4%	14.7%
Principal Arterial	103.2	17.55	85.65	73.7%	11.8%	1.5%	24.3%	0.0%	22.5%	24.8%	41.4%
Minor Arterial	55.78	30.43	25.35	5.9%	14.6%	28.2%	14.3%	0.0%	52.7%	65.9%	18.4%
Collector	61.06	47.88	13.18	3.7%	8.5%	65.3%	80.0%	3.0%	0.0%	28.0%	11.5%
TOTAL	330.16	150.78	179.38								

While all rural interstate facilities were rated as good to excellent, the majority of urban Interstate lane-miles were categorized as fair to good, indicating that urban Interstate

highways may require repair in coming years. Rural principal arterial scores, on the other hand, were poor, with over 70% of lane-miles categorized with a score of 5 or less. These facilities may prove to be the most critical for maintenance and repair in the near-term. Minor arterials exhibited good to fair conditions both in rural and urban environments. Both rural and urban collector facilities showed fair condition.

ECTC staff members perform pavement scoring for the remainder of the federal aid-eligible highway system. These are all streets and roads functionally classified as collector or above. The staff are trained to use the NYSDOT Visual Scoring methodology, so the results are equivalent to the scoring of the NYS Highway system. This, in turn, facilitates comparison across a number of dimensions, including functional class, ownership, and utilization. The majority of the non-State federal aid road system consists of roads owned by the City of Elmira and Chemung County. There are seven other political jurisdictions with federal aid-eligible roads in the central-western portion of the County. Those seven other entities include: Town of Big Flats; Town of Catlin; Town of Elmira; Village of Elmira Heights; Town and Village of Horseheads; and the Town of Veteran. The following information reports on scoring performed in 2013.

2013 ROADWAY SCORING RESULTS

There were 141 miles of non-State federal aid-eligible roadways assessed and scored in Chemung County in 2013. Of those, 85 miles belonged to Chemung County, 35 to the City of Elmira and 21 to the seven other local municipalities mentioned previously. For the overall system, 10% of the roads were found to be in excellent condition, 65% were found to be in good condition, 20% were found to be in fair condition, and 5% were found to be in poor condition.

The roadways owned by Chemung County were found to have the following pavement surface conditions:

- **Excellent:** 6 miles or 7%.
- **Good:** 57 miles or 67%.
- **Fair:** 20 miles or 24%.
- **Poor:** 2 miles or 2%.

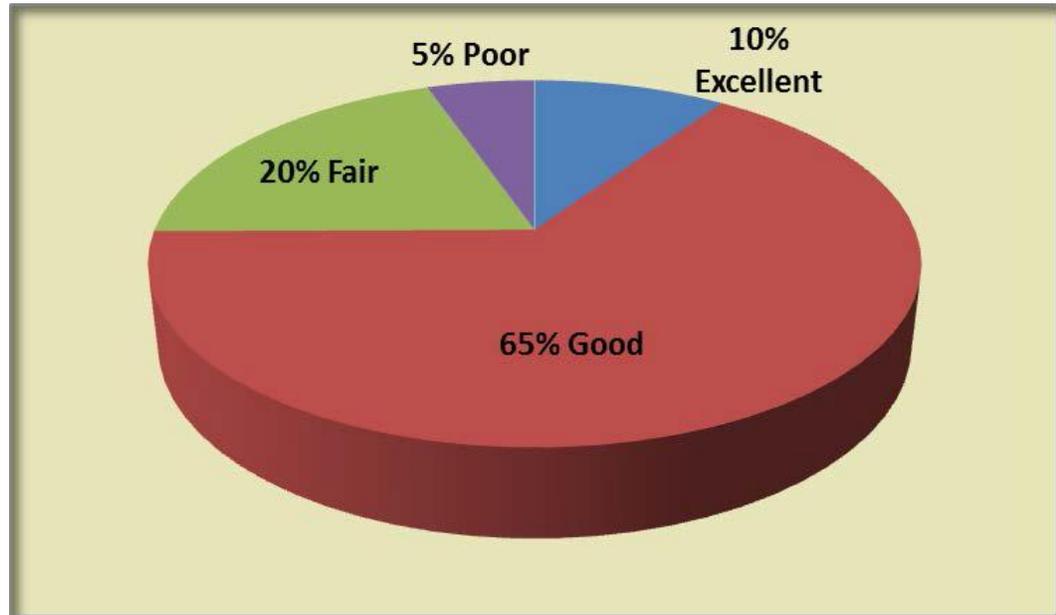
The roadways owned by the City of Elmira were found to have the following pavement surface conditions:

- **Excellent:** 6 miles or 18%.
- **Good:** 18 miles or 52%.
- **Fair:** 5 miles or 15%.
- **Poor:** 5 miles or 15%.

The seven other locally owned roads had the following pavement surface conditions:

- **Excellent:** 1 mile or 7%.
- **Good:** 17 miles or 80%.
- **Fair:** 3 miles or 13% fair.

FIGURE 8: CHEMUNG COUNTY LOCAL ROAD PAVEMENT SCORES



Pavement condition has also been sorted by functional class, which can be an important factor in selecting both pavement projects and pavement treatments for those projects. Table 11 displays this information.

TABLE 11: CHEMUNG COUNTY LOCAL ROADS—PAVEMENT CONDITION BY FUNCTIONAL CLASS

Functional Class	Centerline Miles (%)				Total
	Poor (1-5)	Fair (6)	Good (7-8)	Excellent (9-10)	
Principal Arterial	0 (0%)	1 (14%)	4.5 (81%)	.5 (5%)	6
Urban Minor Arterial	2 (4%)	6 (14%)	30 (68%)	6 (14%)	45
Urban Major Collector	4 (7%)	11 (20%)	34 (61%)	6 (11%)	55
Rural Major Collector	2 (5%)	10 (27%)	23 (66%)	1 (2%)	36
CATEGORY TOTALS	8 (6%)	28 (20%)	91.5 (65%)	13.5 (9%)	141

As is often the case, Principal Arterial highways are in the best condition; they carry the most traffic, and are a higher priority for pavement preservation and renewal. Urban collector streets and rural collector roads are used by fewer vehicles; their overall condition reflects a lower priority.

ROADWAY OPERATIONS

Active management and operation of transportation facilities is becoming more commonplace thanks to the advent of advanced communication technology and ITS tools. ITS-driven incident management programs can direct emergency responders to highway incidents more quickly with the most appropriate response tools, and clear the incident and reopen lanes sooner. Traveler information systems utilize a range of devices to provide motorists with real-time information that can affect their trip-making decisions. Even the most common traffic control device, the traffic signal, is becoming smarter, with adaptive signal control allowing rapid response to changing traffic conditions. The City of Elmira is completing a project in four phases to upgrade all of the signals they own and to remove some that may no longer be warranted.

Underlying all of this is the hardware involved and the cost to maintain it, from updating signal hardware to renewing software licenses.

NYSDOT operates a Traffic Management Center (TMC) from the Region 6 office in Hornell that includes Chemung County. The TMC can monitor traffic conditions, activate traveler information devices, and dispatch NYSDOT resources. The ITS installations in Chemung County include:

- Pad-mounted portable VMS used for communicating roadway and traffic conditions to motorists;
- Road Weather Information Stations (RWIS) that provide data on air and pavement temperature, and rain or snow conditions—used for maintenance dispatch and equipment decisions; and
- Closed-circuit television camera (CCTV) system used for incident detection and verification. The installation on I-86 in Horseheads is currently inoperable.

TABLE 12: CHEMUNG COUNTY TRAFFIC CONTROL DEVICES BY JURISDICTION

OWNER	TRAFFIC SIGNALS				ITS DEVICES	
	3-COLOR	FLASHER	BEACON	OTHER	VMS	RWIS
NYSDOT	53	1	4	--	4	2
Chemung County	12	--	--	2	--	--
City of Elmira	71	--	--	--	--	--
Village of Horseheads	--	3	--	--	--	--
Village of Elmira Heights	4	--	--	--	--	--

*Speed feedback signs

BRIDGES

Bridges cross waterways, railroads, and other roadways. They must have adequate load-bearing capacity to accommodate truck travel; they must also have appropriate geometry, including horizontal and vertical clearance for safety. Bridges in urban areas should include pedestrian accommodations. While pavement condition and rideability is important to travelers, bridge condition is considered more critical. A bridge failure can be catastrophic. A bridge that has a posted load weight limit can be disruptive to truck travel, emergency fire response, and winter maintenance by snow plows. The cost of rehabilitating or replacing a bridge can be large. In some cases, bridges may be taken out of service if there is an alternative crossing nearby.

FIGURE 9: CHEMUNG COUNTY RT 8 OVER CHEMUNG RIVER (LOWMAN CROSSOVER)



Federal law requires that all bridges with a span length greater than 20' be inspected no less than every two years. Annual inspections are required for bridges with noted deficiencies that remain open to traffic. Underwater inspections must be performed at least every five years to detect scour around the base of bridge piers. Bridge conditions are reported to the FHWA for inclusion in the NBI. The basic scoring methodology, based on a physical inspection of each bridge element, is based on a seven-point scale. A bridge performance measure used by FHWA is total deck area; using this results in larger bridges being a higher priority for repair.

Bridges that do not meet all standards may be classified as “structurally deficient” or “functionally obsolete.” In the first instance, there are structural elements that have deteriorated. These bridges do not necessarily present a safety problem depending on the element and the condition, although they may be load-posted. A rating of functionally obsolete is typically applied to an older bridge that does not meet current design standards in

terms of lane width, shoulder width, or vertical clearance. Substandard horizontal or vertical clearance may create a modest safety hazard, but a functionally obsolete bridge may be structurally sound and not in need of rehabilitation or replacement.

Chemung County has 158 locally owned bridges with an average condition rating of 5.6. Table 13 summarizes Chemung County’s bridges by municipality and condition ratings. Note that the Lake Street bridge in the City of Elmira is closed to traffic.

TABLE 13: AVERAGE BRIDGE CONDITION RATING, 2013

MUNICIPALITY	NUMBER OF BRIDGES	AVERAGE CONDITION RATING
Chemung County	148	5.6
City of Elmira	8	5.0
Town		5.6
Town of Big Flats	1	5.5
Town of Veteran	1	4.8
Total	158	5.6

Table 14 provides a summary provided by NYSDOT of 2013 bridge conditions by deck area, indicating the percentage of deficient bridges by state or local ownership. The majority of deficient bridges are on major and minor collector roads in both rural and urban areas. Other principal arterial facilities in urban areas on the state system are another area of high deficiency.

TABLE 14: STATE AND LOCAL BRIDGES: PERCENT DEFICIENT BY DECK AREA

FUNCTIONAL CLASS	URBAN		RURAL	
	STATE SYSTEM, % DEFICIENT	LOCAL SYSTEM, % DEFICIENT	STATE SYSTEM, % DEFICIENT	LOCAL SYSTEM, % DEFICIENT
Principal Arterial/Interstate	0.0	N/A	9.2	N/A
Principal Arterial/Other	17.5	0.0	0.0	N/A
Minor Arterials	0.0	8.1	7.2	0.0
Major/Minor Collector	14.6	41.7	37.0	21.9
Local	0	4.8	0	15.5

Source: NYSDOT Region 6



Structurally deficient bridges are of greatest concern, and are listed in Table 15. Functionally obsolete bridges are also important to note and are listed in Table 15.

TABLE 15: CHEMUNG COUNTY STRUCTURALLY DEFICIENT BRIDGES—STATE & LOCAL

Bin	Route	Crossed	Primary Owner	Condition Rating	Func. Class.
NHS					
1061342	I-86	CHEMUNG RIVER	10	4.422	01
1045940	SR 328	SEELEY CREEK	10	4.031	14
1045970	SR 14	NORFOLK SOUTHERN	10	4.746	14
1096330	SR 14	SLEEPERS CREEK	10	3.714	14
NON-NHS BRIDGES					
1041890	SR 224	LANGFORD CREEK	10	4.037	06
1061330	SR 427	CHEMUNG RIVER	10	4.672	07
3330970	CR 8 LOWMAN CROSS	CHEMUNG RIVER	30	4.88	07
3330850	CHURCH STREET	NEWTOWN CREEK	30	4.458	08
3331360	CR 51 LATTA BROOK	LATTA BROOK	30	3.163	08
3331370	CR 51 LATTA BROOK	LATTA BROOK	30	4	08
3331140	CR 23 DRY BROOK RD	DRY BROOK	30	3.878	09
3331150	CR 23 DRY BROOK RD	DRY BROOK	30	5.978	09
3331270	CR 37 FAIRVIEW RD	NEWTOWN CREEK	30	4.912	09
3331700	MCDOWELL ROAD	WYNCOOP CREEK	30	5.42	09
3331750	JENKINS ROAD	GOLDSMITH CREEK	30	4.314	09
3331880	WIDGER HILL ROAD	MUDLICK CREEK	30	6.414	09
3331910	CLARK HOLLOW RD	HENDY CREEK	30	5.2	09
3332040	VARGO ROAD	N BR NEWTOWN CRK	30	3.807	09
3332090	JACKSON CREEK RD	BULKLEY CREEK	30	4.122	09
3332100	BENJAMIN ROAD	BULKLEY CREEK	30	3.98	09
3332110	BENJAMIN ROAD	N BR NEWTOWN CRK	30	4.456	09
3357800	PINE VALLEY RD	TRIB CATHARINE CR	30	3.741	09
2270880	SEAFUSE ROAD	SLEEPER CREEK	40	5.933	09
3331450	CR 64 MAIN ST	SINGSING CREEK	30	5.317	16

Bin	Route	Crossed	Primary Owner	Condition Rating	Func. Class.
1010790	EAST AVENUE	I-86	10	4.016	17
3331410	CR 59 SMITH ROAD	CATHARINE CREEK	30	4.561	17
3331470	CR 69 PENNSYLVANIA	BIRD CREEK	30	4.237	17
2215550	LAKE STREET	CHEMUNG RIVER	42	3.694 (closed)	17
3331600	BROOKLINE AVENUE	HENDY CREEK	30	3.765	19

Notes:

1. Primary Owner: 10 - State, 30 - County, 40 - Town, 42 – City
2. Functional Classification: 01 - Rural Principal Arterial Interstate, 06 - Rural Minor Arterial, 07 - Rural Major Collector, 08 - Rural Minor Collector, 09 - Rural Local, 14 - Urban Principal Arterial, 16 - Urban Minor Arterial, 17 - Urban Collector, 19 - Urban Local

TABLE 16: CHEMUNG COUNTY FUNCTIONALLY OBSOLETE BRIDGES – STATE AND LOCAL

Bin	Route	Crossed	Primary Owner	Condition Rating	Func. Class.
NHS					
1090300	SR 14	HALDERMAN HOLLOW	10	4.722	14
NON-NHS BRIDGES					
3331230	CR 35 CHAMBERS RD	MADISON CREEK	30	4.246	07
3331630	MARY ROAD	SING SING CREEK	30	6.138	09
3331810	LANGDON HILL ROAD	NEWTOWN CREEK	30	5.789	09
3331890	KINNER HILL ROAD	MUDLICK CREEK	30	5.69	09
3331900	CLARK HOLLOW RD	TRB MUDLICK CREEK	30	5.022	09
3331940	BECKHORN HOLLOW	CAYUTA CREEK	30	5.87	09
3357770	CLARK HOLLOW RD	TRB MUDLICK CREEK	30	4.911	09
2215670	WASHINGTON AVE	NORFOLK SOUTHERN	42	5.611	16
2254510	WALNUT STREET	CHEMUNG RIVER	42	4.847	16
3331110	CR21 WYGANT RD	CHEMUNG CANAL AB	30	6.8	16
3331430	CR64 MAIN ST	TRB CHEMUNG RIVER	30	5.976	16
1046800	SR 367	BENTLEY CREEK	10	4.313	17
1054530	LATTA BROOK ROAD	I-86	10	5.306	17
3331090	CR 20 EAST FRANKLIN	NEWTOWN CREEK	30	5.951	17



Bin	Route	Crossed	Primary Owner	Condition Rating	Func. Class.
2255740	CLAIR STREET	TRB CATHARINE CRK	40	5.85	19
2255850	DAVENPORT RD	TRIB CHEMUNG R	40	5.533	19
3331530	BENNETT ROAD	HENDY CREEK	30	5.931	19
3331990	MILL STREET	CATHARINE CREEK	30	6.756	19

Note: BIN 1054530 is eligible for NHS funding as it is over I-86 but it is not on the NHS.

Notes:

1. Primary Owner: 10 - State, 30 - County, 40 - Town, 42 - City
2. Functional Classification: 01 - Rural Principal Arterial Interstate, 06 - Rural Minor Arterial, 07 - Rural Major Collector, 08 - Rural Minor Collector, 09 - Rural Local, 14 - Urban Principal Arterial, 16 - Urban Minor Arterial, 17 - Urban Collector, 19 - Urban Local

PUBLIC TRANSIT

FIXED-ROUTE BUS SERVICE

Chemung County’s public transit service uses the name C TRAN and is operated by First Transit, Inc., under contract to Chemung County. Formerly Chemung County Transit, the service provider received its new name (C TRAN) after conducting a comprehensive marketing campaign in 2011. The new branding included a new, modern logo, easier to read bus schedules and a new fleet of new buses with a new exterior design reflecting the change.

Routes

ROUTES

C TRAN’s fixed-route service comprises 12 routes in Chemung County. Nine of these 12 routes are considered to be urban routes, which operate primarily within the urbanized area from Southport to Big Flats. Table 17 details each of C TRAN’s 9 urban routes and associated points of interest. C TRAN provides route deviation services within three-fourths of one mile of fixed urban route service when requested in advance. The service operates on a “flag stop” basis; riders can request a stop anywhere on the route rather than at specified bus stops. Both of these practices improve rider service, but can also affect on-time performance.

TABLE 17: C TRAN URBAN BUS ROUTES SERVICE AREAS & FREQUENCIES

URBAN BUS ROUTES			
ROUTE #	ROUTE NAME	SERVICE AREA/POINTS OF INTEREST	SERVICE FREQUENCY
1	Southtown	Brand Park, Riverside School, Cherrywood Manor, Notre Dame High School, Southtown Plaza, Southside High School, Elmira Christian Center, Bragg Towers, St. Joseph's Elementary, Elmira City Hall	Hourly (Departures on the :00) Continues On as Route 4
3	Bulkhead	South Main Street Business District, Edward Flannery Apartments, Chemung County Human Resources, Southport Plaza, Broadway School, Parley Coburn Elementary School	Hourly (Departures on the :00) Continues On as Route 5
4	Hospital Loop	Grove Park, Hoffman Plaza, Arnot Ogden Medical Center, Hathorn Court, Wegman's, Capabilities, ARC/Southern Tier Industries, Elmira Psychiatric Center, St. Joseph's Hospital	Hourly (Departures on the :30) Continues On as Route 1
5	Crosstown	West Church Street, Hendy Avenue School, Woodland Apartments, West Elmira Library, Family Service – 1019 East Water Street, Elmira Psychiatric Center, St. Joseph's Hospital, Bragg Towers	Hourly (Departures on the :00) Continues On as Route 3
6	Lake Road	Bragg Towers - Madison Avenue, St. Joseph's Hospital, CCC & Workforce - 318 Madison Avenue, Dewitt Avenue Apartments, Villa Serene - Elmira Heights, Hanover Square Business District, Bethany Village, Westinghouse Road Medical Offices, Jubilee Plaza, Grand Central Plaza	Hourly (Departures on the :00)
7	FREE Shopper Shuttle	Arnot Mall, The Shops at Chambers, Consumer Square (Tops, Hobby Lobby), Big Flats Commons (Target, Best Buy), Southern Tier Crossing (Aldi, Kohl's, Dick's, Walmart)	Half Hourly Departures from Arnot Mall
8	Grand Central	Economic Opportunity Program, Diven Elementary School, Eldridge Park Walking Path, Villa Serene, Elmira Heights Business District, Chemung County Fairgrounds, Grand Central Plaza, Arnot Mall	Hourly (Departures on the :30)
9	Mall Express	Elmira Business District, St. Patrick's Apartments, Elmira College, Hathorn Court, Thomas A. Edison High School, Elmira Heights Business District, GST BOCES, Elcor, Arnot Mall, Guthrie - 31 Arnot Road	Hourly (Departures on the :00)



URBAN BUS ROUTES			
ROUTE #	ROUTE NAME	SERVICE AREA/POINTS OF INTEREST	SERVICE FREQUENCY
12	Southside Loop	Flannery Apartments, Chemung County Human Resources, Cherrywood Manor, Woodbrook, Southtown Plaza, Southport Plaza, Park Terrace Apartments,	Evenings, Sunday, and Holidays, connected to Mall Express

The four remaining routes operate from Elmira to the municipalities of Ithaca, Corning, Wellsburg, Waverly, and Sayre, Pennsylvania, at varying reduced number of trips per day. Routes 10, 20, and 30 provide access to public transportation via other agencies, including: the Endless Mountain Transit Authority in Sayre, Pennsylvania; Corning Erwin Area Transit and Steuben County Transit in Corning; and Tompkins Consolidated Area Transit in Ithaca. Table 18 details each of C TRAN’s three rural/regional routes (one with a specialized employment run) and associated points of interest. Route deviation is not available on C TRAN’s regional bus routes.

TABLE 18: RURAL/REGIONAL BUS ROUTES SERVICE AREAS, FREQUENCIES & CONNECTING TRANSIT

ROUTE #	ROUTE NAME	SERVICE FREQUENCY
10	Wellsburg-Waverly	2 Runs, one morning and one late afternoon
20	Elmira-Corning	Varying frequencies between 1 hour and 2 hours 15 minutes
20E	Elmira/DeMet's	2 or 3 Daily Runs based on DeMet's work shifts
30	Elmira-Ithaca	1 Daily Inbound & Outbound Run

Fares

Transit fares vary by route type. Urban routes have a general trip fare of \$1.75, while rural/regional routes have a fare of \$2.25. Individuals with disabilities, senior citizens, and youth under the age of 18 pay \$.85. There are monthly passes, and a special semester pass for students at Corning Community College.

The proposed changes referenced above include a fare increase to \$1.75 for the general trip fare, \$.85 for reduced fares, and equivalent increases to monthly and semester passes.

Transit Performance Measures

The most important measures of a transit system’s utilization are ridership, vehicle miles, and vehicle hours. The vehicle metrics are limited to revenue service, and do not include time and distance traveled between the garage on Clemens Center Parkway and the beginning or end of the route.

C TRAN ridership shows year-to-year variation with a general increase over the past four years. Some of the variation in all of the performance metrics may be attributable to inconsistent data collection rather than underlying changes.

TABLE 19: C TRAN PERFORMANCE MEASURES

YEAR	FIXED ROUTE	DEMAND RESPONSIVE	SYSTEM TOTALS
REVENUE PASSENGERS			
2010	635,836	45,094	680,930
2011	645,724	48,454	694,178
2012	655,777	45,201	700,978
2013	648,662	40,465	689,127
% Change	2.0%	-10.3%	1.2%
VEHICLE MILES			
2010	705,493	212,323	917,816
2011	698,148	209,351	907,499
2012	703,526	232,876	936,402
2013	687,384	224,169	911,553
% Change	-2.6%	5.6%	-0.7%
VEHICLE HOURS			
2010	37,626	14,239	51,865
2011	38,345	15,620	53,965
2012	38,987	18,905	57,892
2013	37,965	17,623	55,588
% Change	0.9%	23.8%	7.2%
PASSENGERS PER VEHICLE MILE			
2010	0.90	0.21	0.74
2011	0.92	0.23	0.76
2012	0.93	0.19	0.75
2013	0.94	0.18	0.76
% Change	4.7%	-15%	1.9%
PASSENGERS PER VEHICLE HOUR			
2010	16.9	3.2	13.1
2011	16.8	3.1	12.9
2012	16.8	2.4	12.1



YEAR	FIXED ROUTE	DEMAND RESPONSIVE	SYSTEM TOTALS
2013	17.1	2.3	12.4
% Change	1.1%	-27.5%	-5.6%

Facilities & Fleet

The Elmira Downtown Transportation Center is a multipurpose passenger transportation terminal that connects the C TRAN system to other modes, including intercity buses, airport vans, taxis, and bicycles. Walkways connect the center to adjacent housing, commercial activities, the regional library and performing arts center, and governmental, health, and community services.



C TRAN maintains 30 buses used to operate service on its 14 routes. All of the buses are handicapped accessible with many having the low-floor ramp access for improved ease of use. C TRAN’s vehicle fleet is noted in Table 20. C TRAN has three buses on order to replace three older vehicles.

TABLE 20: C TRAN FLEET PROFILE

VEHICLE	PASSENGER CAPACITY	LENGTH OF BUS (FEET)	VEHICLE TYPE	QUANTITY
2014 Gillig	26	29	Heavy Duty 30'	7
2011 Gillig	346	40	Heavy Duty 40'	4
2005 El Dorado EZ Rider II	29	30	Heavy Duty 30'	5
2004 El Dorado Aero Elite	22	30	Light Duty < 30'	6
2012 Ford E450	18	27	Light Duty < 30'	6
2001 RTS	43	40	Heavy Duty 40'	2
TOTAL				30

Chemung County has 18 bus shelters located throughout the County. Shelters are typically placed in response to requests and the availability of right-of-way. There are also benches in several other locations along routes. Signs are located at stops along each bus route.

C TRAN currently serves four Park and Ride lots; locations include: Tates Equipment on Route 13; Alpine Junction on Route 13; the Lowman Crossover; and Water Street near the Lackawanna Trail.

Chemung County owns the transit garage on Clemens Center Parkway. It is used for vehicle storage, maintenance, and repair. The space is operated under contract to the transit operator.

Demand Response & Rider Assistance

As required by federal law, public transit operators must provide service that is accessible to individuals with disabilities as defined under the ADA. This is accomplished by making vehicles and stops accessible to those with mobility, visual, and hearing deficits. C TRAN maintains ADA compliance with accessible buses on each of its routes. C TRAN also provides opportunities for curb-to-curb service on a case-by-case basis through their Route Deviation Service Program. The programs are described as follows:

The Route Deviation Service Program allows for individuals within three-fourths of a mile from a bus route to request curbside service. Fares for demand response trips are twice the fixed-route fare and can be scheduled via the Customer Service Department. This service is not available on select commuter routes.

The C TRAN Riders Advisory Council was established in 2011 to provide transit riders with information and updates, and to establish a dialogue between local transit riders and officials. The Council meets on a quarterly basis and has also sponsored a well-attended Chemung County Transit Summit held in November of 2010.

Chemung County Coordinated Transportation Committee

The previous federal transportation law, SAFETEA-LU, required that all MPOs develop a Coordinated Public Transit – Human Services Transportation Plan (Coordinated Plan). The intent is to gain increased service efficiency by documenting the transportation resources and needs of human service agencies. The plan then identifies both gaps and redundancies in service, and opportunities for efficiencies.

The Chemung County Coordinated Transportation Committee (CTC) was established during the development of the 2008 ECTC Coordinated Plan. Following the adoption of the plan in December 2008, the CTC continues to meet quarterly to identify and discuss regional transportation needs, services, and solutions. The CTC has been paramount in facilitating coordination opportunities throughout the region and leading projects of regional significance.

The CTC assisted three private nonprofit agencies in obtaining FTA §5310 funding for replacement vehicles needed to continue to provide transportation services to their clients. The CTC hopes to continue applying for these funds for future system improvement measures.

The CTC also provided assistance to two nonprofit agencies in obtaining FTA New Freedom funding for mobility management projects that help to serve seniors and people with disabilities. One of these efforts resulted in the implementation of a program that uses the Institute for Human Services/2-1-1 Helpline to provide transit service information. The second effort involved the Chemung Volunteer Action Corps undertaking the management of a local travel training group that assists potential transit riders with the information and assistance they require to adequately use the system. The training group will be renamed “Getting There” once under Chemung Volunteer Action Corps management.



Other Fixed-Route Services

C TRAN provides connections to additional areas outside of the region through access to adjacent local transit services, including the Corning Erwin Area Transit System, Steuben County Transit System, Endless Mountain Transit Authority, and Tompkins Consolidated Area Transit. Critical service connections to areas outside of Chemung County include:

- Ten C TRAN trips per day on Route 20 (Elmira/Corning), connecting Corning Erwin Area Transit System (CEATS) and Steuben County riders to Chemung County. These counties are currently collaborating to expand intercounty services.
- Endless Mountains Transportation Authority operates a shopping service to and from the Arnot Mall from Wellsboro and Mansfield, Pennsylvania, on every Saturday and every other Tuesday.
- Adjacent counties of New York (e.g., Schuyler, Steuben, and Tioga Counties) and Endless Mountains Transportation Authority provide medical trips into Chemung County to access healthcare facilities.
- Three private intercity bus lines serve the Elmira Downtown Transportation Center: New York Trailways, Susquehanna Trailways, and Coach USA/Shortline.

Birnie Transportation Services, Inc. and Terp's Enterprises, Inc. are the two major private, fixed-route service providers that assist individuals in reaching destinations within Chemung County and that are out of the scope of C TRAN services. These operators provide services under contract to individuals, businesses, and private groups.

Other Curb-to-Curb Services

In addition to all fixed-route services, various organizations and partnerships provide direct services to individuals in Chemung County. These curb-to-curb services include:

- Chemung County's Office for Aging and Long-Term Care provides transportation services to its clients for travel to medical appointments through a contract with a local taxi company. Transportation is restricted to individuals who do not own a car and are not on Medicaid.
- Various organizations provide transportation to clients who meet specific criteria specified by their organization. These providers include: Able-2; Chemung County ARC; Chemung County Office for Aging and Long-Term Care; Pathways; Bethany Village; Woodbrook Assisted Living; Elcor; and the Chemung County Nursing Facility.
- Organizations—such as the Elmira Housing Authority, which manages apartments to serve the elderly and disabled, and Arnot Health, located at both Arnot Ogden Medical Center and at St. Joseph's Hospital—own vehicles or contract charter bus service to offer transportation services.
- Other nonprofits, including the Salvation Army and the Disabled American Veterans (DAV), offer transportation specific to their programs. For example, the DAV

provides medical transportation five days per week from Chemung County to the Bath VA Medical Center in Steuben County.

- Seniors Helping Seniors Southern Tier NY, a 2012 startup, matched seniors to other seniors to help with living concerns, which includes a transportation element.
- Finger Lakes Medical Transportation/Lundy Services, based in Schuyler County, expended service in 2013 to provide medical trips within Chemung County.
- Traditional ambulance services, such as Erway Ambulance Service, Erway Wheelchair Express, Greater Valley EMS/W/C, and Rural Metro mat also provide ambulance rides to Chemung County Medicaid clients.
- Five taxi companies that provide service in Chemung County. The major taxi service provider to Chemung County residents is Totem Taxi, with a fleet of 24 cars and vans (one wheelchair accessible). Totem Taxi provides services both locally and regionally, spanning into Steuben and Schuyler Counties.
- 511NY Southern Tier Rideshare was launched in July 2014. It is an Internet-based carpooling and ridesharing program for Chemung County in partnership with Steuben County. The program is intended to increase the use of carpooling to work within and into the County. Future plans include expanding the marketing of the program and incorporating other forms of multipassenger travel.

BICYCLE FACILITIES

Chemung County contains several trails that provide bicycle access, including: the Big Flats Trail in the western portion of the County between Hibbard Road and County Road 63; the Lackawanna Rail Trail, running from Eldridge Park south to Water Street in downtown Elmira; the Horseheads Park trail; the Elmira River Park Trail; and the Elmira Promenade. These facilities are illustrated in Figure 10.

While these existing trails provide through access in specific urbanized areas, they are limited in their ability to provide connections around the urbanized areas. There is a lack of continuity between the trails. The Lackawanna Trail facilitates North-South mobility in the City of Elmira, but a distinct East-West connection through the city via trail is missing.

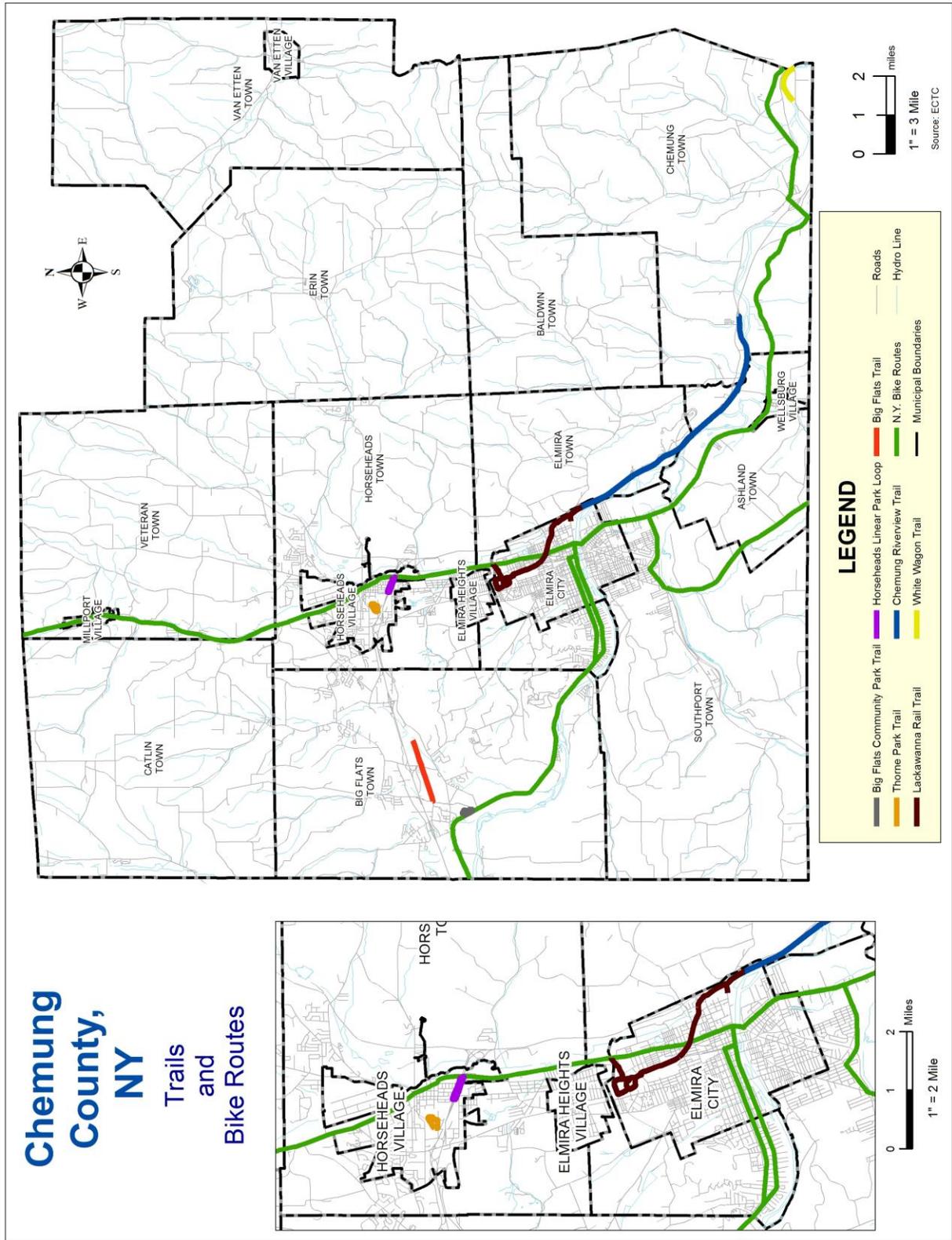
The Lackawanna Rail Trail Riverview Section—Phase I (City of Elmira) is currently programmed for construction as a result of a 2013 FHWA Transportation Enhancement Program award to Chemung County for \$202,214 and local share of \$50,553, for total project cost of \$252,768. The project will include installing a trailhead parking lot at the Lowman Crossover, trail safety improvements, landscaping, and erosion control measures.

Two New York State bike routes run through Chemung County: State Bike Routes 14 and 17. State Bike Route 14 runs North-South in Chemung County from Millport through Elmira to Southport. State Bike Route 17 runs along the Chemung River from Bottcher's Landing through Elmira to Wellsburg. These two state facilities are shown in Figure 10.

There are 15 official bicycle racks located throughout the City of Elmira that provide bicycle storage near transit facilities and other points of interest in the municipality.

The Council coordinates the tricounty Bicycle Advisory Committee and Pedestrian Advisory Committee (BACPAC). BACPAC guides planning and implementation of bicycle and pedestrian improvements in Chemung, Schuyler, and Steuben counties. However, the Council has recently assisted Schuyler and Steuben Counties in forming their own groups, in order to focus entirely on Chemung County issues. The Council works to improve safety for bicyclists and pedestrians by working with the Chemung County Traffic Safety Board and the Southern Tier Bicycle League (STBL) to educate the public about rules of road for all users.

FIGURE 10: CHEMUNG COUNTY, NY TRAILS AND BIKE ROUTES



PEDESTRIAN FACILITIES

While there is no detailed sidewalk inventory prepared by the municipalities in Chemung County, the following observations provide context for pedestrian facilities. As is common in New York's metropolitan areas, there are sidewalks throughout the City of Elmira; that is often not the case in suburban areas. To serve the needs of pedestrians, sidewalks must:

- Provide access to desired locations, including businesses, schools, parks, and cultural facilities;
- Be of adequate width, and in an acceptable state of repair; and
- Meet the requirements of the ADA for accessible public facilities.

The ADA requires that there be ramps at intersections to accommodate individuals with mobility impairments. The ramps must also be designed to provide directional guidance to visually impaired people by being oriented at 90° to the street being crossed, and to have a tactile service so these individuals can detect them.

The City of Elmira has done a good job of constructing ADA ramps throughout the downtown and along major arterial streets like College Avenue. Unfortunately, many of these ramps are not oriented correctly, with a single ramp oriented at 45° to both streets; ADA design standards have continually evolved over the years; owners must work toward the current standard..

While there are some sidewalks in suburban communities, including in the Village of Horseheads and to a lesser extent in the hamlet of Big Flats, it is often the case that subdivisions were constructed without them. This discourages walking, since people must choose to walk in the street.

FREIGHT: TRUCK

Most freight moving in and out of Chemung County moves by truck. Whether manufactured goods or retail deliveries, trucks offer point-to-point service that rail cannot. Truck volumes on major roadways are measured by classification counts, where the traffic count devices are able to distinguish vehicle types by axle count and load. The result is an Average Annual Daily Truck Count (AADTT), which is calculated in the same manner described earlier for AADT.

Table 21 displays AADTT for state highways in Chemung County where classification counts are available. As would be expected, the highest truck volumes are on I-86, because of its role in facilitating interstate travel for East-West movements; and NY Routes 13 and 14, which provide interregional connections primarily for North-South movements. These truck volumes do not rise to a level where they cause significant interference with the general flow of traffic.

TABLE 21: TRUCK COUNTS, STATE HIGHWAYS IN CHEMUNG COUNTY

ROUTE	# OF CLASSIFICATION COUNTS	AADTT
I-86	70	3,771
NY13	44	815
NY14	140	487
NY223	56	34
NY225	19	16
NY328	22	79
NY352	64	31
NY367	8	37

Source: HPMS data

Data are not available for truck volumes on local roads and streets within the urbanized area. It is often the case that trucks serving unique locations may cause bottlenecks, especially when they have difficulty maneuvering for turning movements on city streets.

I-86 is designed to accommodate all truck movement, including special-permit oversize or overweight vehicles. State highways are generally also capable of handling truck movements. There is only one R-posted bridge on a State highway in Chemung County—NY Route 427 over the Chemung River. This means that it cannot accommodate overweight loads that require a special permit from NYSDOT.

The Center at Horseheads/Horseheads Sand and Transload (HOST) has become a significant generator of truck traffic, as materials for natural gas drilling/hydrofracking, including sand and pipe, are shipped in by rail and transloaded to truck for shipment to well development sites in northern Pennsylvania.

Table 22 and Table 23 show the top 10 outbound and inbound commodities being shipped by truck, by weight and value.

TABLE 22: FREIGHT BY TRUCK, OUTBOUND FROM CHEMUNG COUNTY, 2011

COMMODITY	BY WEIGHT		COMMODITY	BY VALUE	
	TONS	PERCENT		VALUE (MILLIONS)	PERCENT
Broken Stone or Riprap	367,773.19	41%	Warehouse & Distribution Center	\$150.64	13%
Warehouse & Distribution Center	134,558.30	15%	Aircraft Propellers or Parts*	\$70.69	6%



COMMODITY	BY WEIGHT		COMMODITY	BY VALUE	
	TONS	PERCENT		VALUE (MILLIONS)	PERCENT
Petroleum Refining Products	48,117.94	5%	Aircraft or Missile Engines*	\$66.97	6%
Concrete Products	23,575.35	3%	Miscellaneous Electrical Industrial Equipment	\$50.28	4%
Ready-mix Concrete, Wet	21,582.43	2%	Miscellaneous Aircraft Parts	\$48.22	4%
Lumber or Dimension Stock	15,747.18	2%	Petroleum Refining Products	\$43.97	4%
Asphalt Paving Blocks or Mix	14,350.21	2%	Motor Vehicles	\$42.45	4%
Paper	13,749.28	2%	Miscellaneous Metal Work	\$28.13	2%
Asphalt Coatings or Felt	12,588.12	1%	Paper	\$26.18	2%
Fiber, Paper or Pulpboard	11,448.88	1%	Miscellaneous Prim Nonferr Smelter Products	\$20.50	2%
All Other Commodities	244,114.44	27%	All Other Commodities	\$627.60	53%
TOTAL	907,605.30	100%	TOTAL	\$1,175.62	100%

*From Schweizer Aircraft which is no longer in business

TABLE 23: FREIGHT BY TRUCK, INBOUND TO CHEMUNG COUNTY, 2011

COMMODITY	BY WEIGHT		COMMODITY	BY VALUE	
	TONS	PERCENT		VALUE (MILLIONS)	PERCENT
Containers or Boxes, paper	52,491.25	9%	Mechanical Power Transmission Equipment	\$171.70	16%
Glass Containers	45,661.22	8%	Containers or	\$93.11	8%

COMMODITY	BY WEIGHT		COMMODITY	BY VALUE	
	TONS	PERCENT		VALUE (MILLIONS)	PERCENT
			Boxes, paper		
Paper Waste or Scrap	45,262.61	7%	Orthopedic or Prosthetic Supplies	\$90.08	8%
Sheet Metal Products	41,383.34	7%	Sheet Metal Products	\$82.59	7%
Miscellaneous Waste or Scrap	39,831.66	7%	Miscellaneous Electronic Components	\$74.41	7%
Textile Scrap or Sweepings	35,134.17	6%	Miscellaneous Electrical Industrial Equipment	\$70.08	6%
Metal Scrap or Tailings	30,293.00	5%	Valves or Pipe Fittings	\$58.00	5%
Miscellaneous Field Crops	27,509.02	5%	Machine Tools, Metal Cutting	\$38.34	3%
Grain	24,537.83	4%	Newspapers	\$35.98	3%
Electrometallurgical Products	23,486.19	4%	Miscellaneous Special Industry Mach	\$33.22	3%
All Other Commodities	240,077.34	40%	All Other Commodities	\$358.06	32%
TOTAL	605,667.63	100%	TOTAL	\$1,105.58	100%

In sum, truck freight is important to the regional economy across several manufacturers and distributors.

FREIGHT: RAILROADS

The only rail service in Chemung County is freight service provided by Norfolk Southern Railroad, a Class 1 railroad that provides service throughout the eastern United States. The County is served by the Southern Tier mainline that connects Buffalo to northern New Jersey.

While most of the rail traffic on the Southern Tier is through traffic, there is some freight destined for and originating in Chemung County. Table 24 summarizes the observed and estimated annual commodity tons and values shipped into and out of Chemung County by



rail. Chemung County exports significantly less by both tonnage and value than it imports. Additionally, imported commodities equate to a substantially higher value per ton.

TABLE 24: OBSERVED & ESTIMATED TONNAGE & VALUES OF RAIL TRANSPORTED COMMODITIES (2011)

RAIL	FROM CHEMUNG COUNTY			TO CHEMUNG COUNTY		
	TONS	VALUE	VALUE/TON	TONS	VALUE	VALUE/TON
2011	13,004	\$232,135	\$18	680,614	\$139,628,516	\$205

Table 25 breaks down Chemung’s origin and destination rail commodities by tonnage and value to illustrate exactly which goods have the greatest effect on rail travel patterns. Gravel and sand, primarily used in the construction industry, exhibit both the highest import and export tonnage. There is specialty sand that is imported for use in natural gas hydrofracking in neighboring Pennsylvania.

While gravel and sand is Chemung County’s highest-valued export, its value percentage is less than half of its tonnage percentage, which demonstrates that gravel and sand has a low value per ton. Motor vehicles, while representing less than 1% of annual commodity tonnage, account for 16% of incoming commodity value. The highest-valued import is primarily iron or steel products, accounting for 81% of incoming commodity value.

TABLE 25: 2011 COMMODITIES TRANSPORTED VIA RAIL

COMMODITIES SHIPPED FROM CHEMUNG COUNTY					
COMMODITY	TONS	PERCENT	COMMODITY	VALUE (MILLIONS)	PERCENT
Gravel or Sand	12,948.00	100%	Gravel or Sand	\$0.10	42%
Metal Scrap or Tailings	21.31	<1%	Motor Vehicles	\$0.04	16%
Miscellaneous Glassware, Blown or Pressed	6.67	<1%	Mechanical Power Transmission Equipment	\$0.03	13%
Railroad Cars	5.62	<1%	Railroad Cars	\$0.02	9%
Motor Vehicles	4.24	<1%	Metal Scrap or Tailings	\$0.01	3%
Containers or Boxes, Paper	3.95	<1%	Newspapers	\$0.01	3%
Mechanical Power Transmission Equipment	2.29	<1%	Containers or Boxes, Paper	\$0.01	3%
Glass Containers	2.03	<1%	Miscellaneous Glassware,	\$0.01	3%

			Blown or Pressed		
TOTAL	13,003.53	100%	TOTAL	\$0.23	100%
COMMODITIES SHIPPED TO CHEMUNG COUNTY					
COMMODITY	TONS	PERCENT	COMMODITY	VALUE (MILLIONS)	PERCENT
Gravel or Sand	553,485.00	81%	Primary Iron or Steel Products	\$113.04	81%
Primary Iron or Steel Products	73,280.00	11%	Petroleum Refining Products	\$9.36	7%
Chemical or Fertilizer Mineral Crude	20,120.00	3%	Railroad Cars	\$5.60	4%
Potassium or Sodium Compound	15,800.00	2%	Potassium or Sodium Compound	\$5.07	4%
Petroleum Refining Products	7,729.27	1%	Gravel or Sand	\$4.15	3%
Railroad Cars	5,880.00	1%	Chemical or Fertilizer Mineral Crude	\$1.77	1%
Miscellaneous Glassware, Blown or Pressed	3,177.55	<1%	Miscellaneous Glassware, Blown or Pressed	\$0.22	<1%
Nut or Veg Oils or By-products	765.6	<1%	Nut or Veg Oils or By-products	\$0.14	<1%
Frozen Fruit, Veg or Juice	163.13	<1%	Frozen Fruit, Veg or Juice	\$0.14	<1%
Lumber or Dimension Stock	52.64	<1%	Miscellaneous Industrial Inorganic Chemicals	\$0.02	<1%
TOTAL	680,613.75	100%	TOTAL	\$139.63	100%



AVIATION

The Elmira-Corning Regional Airport is owned and operated by Chemung County. The ECTC is responsible for funding surface transportation improvements through programs of the FHWA and FTA. Airport improvement projects are funded through programs of the Federal Aviation Administration (FAA) and NYSDOT aviation programs. As such, airport improvement projects are not considered or prioritized in this LRP. In fact, an Airport Master Plan is currently in development. The ECTC recognizes that having a quality airport is an important part of the region’s economy and quality of life. Providing good access to the airport is an important goal, and related to the work of the ECTC.

The Elmira-Corning Regional Airport is conveniently located in the Town of Big Flats with immediate access from I-86. The proximity of this airport to I-86 for access from the East and West, and I-99 with access from the South is one factor that has contributed to the growth of the airport service area with the region. The airport is currently served by four carriers. Three fly to a hub destination: Delta Airlines (Detroit and Atlanta), United Airlines(Chicago), and US Airways (Philadelphia). Allegiant, which caters specifically to the vacation market, flies to Sanford and St. Petersburg, Florida, on a less than daily basis.

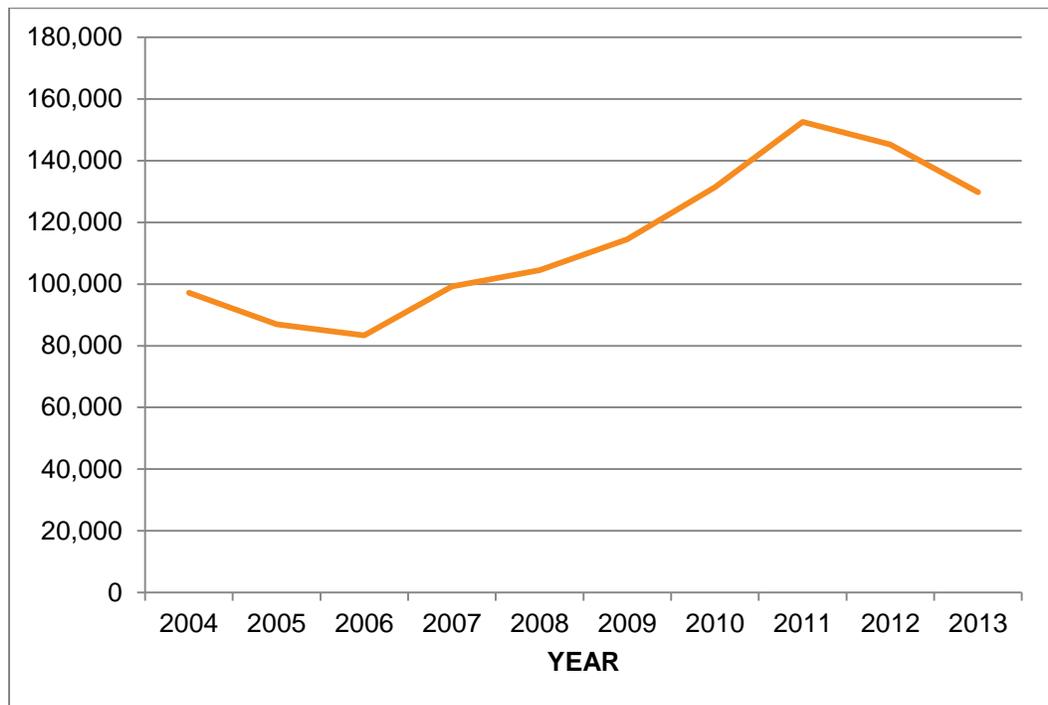
There are two other airports in the Southern Tier: Greater Binghamton Regional Airport and Ithaca-Tompkins Regional Airport. There is some competition among them. Binghamton and Ithaca are also served by Delta Airlines, United Airlines, and USA Airways, but with United flying to Newark rather than Chicago. Elmira-Corning currently has the highest number of passengers. Enplanement numbers (provided by the FAA) for the past 10 years are in Table 26 and Figure 15.

While Binghamton was the busiest of the Southern Tier airports for many years, Elmira-Corning surpassed it by 2009 and remains the most utilized. Passenger enplanements have increased significantly from 2006 to 2011. Despite declines in 2012 and 2013, 2014 is on pace to set a record for enplanements. Some of the airport’s business is related to the natural gas industry in northern Pennsylvania, which has decreased. Allegiant Air, an ultra-low-cost carrier, has also driven growth. People who use that service also are exposed to the other airlines serving Elmira-Corning. In the case of small regional airports like those in the Southern Tier, some proportion of travelers choose to drive to large airports like Syracuse and Rochester, where they may have access to different airlines, including low-cost carriers like Jet Blue, and more robust schedules.

TABLE 26: ELMIRA-CORNING REGIONAL AIRPORT ENPLANEMENT

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
97,122	86,925	83,328	99,191	104,508	114,519	131,353	152,582	145,243	129,749
11.7%	-10.5%	-4.1%	19.0%	5.4%	9.6%	14.7%	16.2%	-4.8%	-10.7%

FIGURE 11: ELMIRA-CORNING REGIONAL AIRPORT ENPLANEMENTS



As with many other regional airports, convenience is important to customers. Parking is provided in surface lots for short-term and long-term parkers. There is an economy lot with lower rates that is somewhat farther from the terminal. Air carriers make market-based decisions on routes, schedules, and fares. While they may accept input from Chemung County, those decisions are internal.

DEMOGRAPHICS

Because travel demand stems from where people live, work, and fulfill their other needs, understanding the population and employment profile of Chemung County provides a foundation for the LRP.

POPULATION

Like most of the communities in Upstate New York, the Elmira metropolitan area has seen its population decline over the past four decades. This is generally attributed to a decrease in economic activity. Fewer jobs makes the region less attractive for those entering the workforce; also, young people tend to leave, resulting in an aging population. Since the 1970s, Chemung County’s population has declined each decade, with the 2010 population only slightly greater than that in 1950. At the same time, the City of Elmira has also followed a trend that has been well documented among “Rust Belt” metropolitan areas: the central city declines even when the County is growing (1950–1970), and then continues on that trend. The result (see Table 27) is that the city houses less and less of the region’s population. In one study of Upstate New York, the Brookings Institution labelled this

phenomenon “sprawl without growth”¹. Table 27 provides a summary of these changes as recorded by the United States Census from 1940 to 2010.

TABLE 27: HISTORIC POPULATION TRENDS

SOURCE	YEAR	CHEMUNG COUNTY POPULATION	PERCENT CHANGE	CITY OF ELMIRA POPULATION	CITY AS PERCENT OF COUNTY
	1950	86,827		49,716	57.3%
	1960	98,706	13.7%	46,517	47.1%
	1970	101,449	2.8%	39,945	39.4%
	1980	97,656	-3.7%	35,327	36.2%
	1990	95,195	-2.5%	33,724	35.4%
	2000	91,070	-4.3%	30,940	34.0%
	2010	88,830	-2.5%	29,200	32.9%

Source: US Census Bureau

Table 28 summarizes the changes in population experienced in Chemung County, by municipality, in order to illustrate how the population is shifting based on location within the County. The western part of the County, especially the Town of Big Flats, has become the center of commercial and retail development. This has led to a population shift to this suburban area from the city.

TABLE 28: POPULATION CHANGE BY CITY AND TOWNS BETWEEN 2000 AND 2010²

LOCATION	TOTAL POPULATION		DIFFERENCE	
	2000	2010	COUNT	PERCENT
New York	18,976,821	19,378,102	401,281	2.1%
Chemung County	91,070	88,830	-2,240	-2.5%
CITIES				
Elmira	30,940	29,200	-1,740	-5.6%
TOWNS				
Ashland	1,951	1,695	-256	-13.1%
Baldwin	853	832	-21	-2.5%
Big Flats	7,224	7,731	507	7.0%
Catlin	2,649	2,618	-31	-1.2%
Chemung County	2,665	2,563	-102	-3.8%

¹ Pendall, Rolf, “Sprawl without Growth: The Update Paradox,” The Brooking Institution, Washington DC, 2003

² Cornell Profile, Page 9

LOCATION	TOTAL POPULATION		DIFFERENCE	
	2000	2010	COUNT	PERCENT
Elmira	7,199	6,934	-265	-3.7%
Erin	2,054	1,962	-92	-4.5%
Horseheads	19,561	19,485	-76	-0.4%
Southport	11,185	10,940	-245	-2.2%
Van Etten	1,518	1,557	39	2.6%
Veteran	3,271	3,313	42	1.3%

HOUSING

The absolute number of housing units in Chemung County has remained stable since the 1990 Census, with growth rates around 1% for each following decade. This housing trend reflects a national trend of smaller household sizes, offsetting to some extent the declining population. Since travel is based more on household trip-making than personal trip-making, this suggests less of a decline in travel. The growth in the number of vacant units is a reflection of the regional economy and housing market. Table 29 summarizes housing in Chemung County over the past 40 years by houses and relative occupancy.

TABLE 29: HOUSING UNIT TRENDS FROM THE 1970 TO 2010 CENSUS³

YEAR	NUMBER OF HOUSING UNITS	CHANGE FROM PREVIOUS CENSUS	NUMBER OF VACANT UNITS
1970	33,051		1,821
1980	36,706	11.10%	2,185
1990	37,290	1.60%	2,015
2000	37,745	1.20%	2,696
2010	38,369	1.70%	2,907

EMPLOYMENT

Employment is an important factor in determining travel patterns and demand. While the commute trip has become a smaller percentage of peak-period travel, it is still an important determinant because of its regular nature. Table 30 presents current data on private-sector employment by employers with 50 or more employees in Chemung County. It is acknowledged that small businesses, including retail, restaurant, entertainment, and others, are also significant in the County's economy. The largest single employer is Arnot Health, with hospital and clinic facilities dispersed throughout the County. As shown in Figure 12, where the data is sorted by economic sector, manufacturing is the largest sector among major employers.

³ Cornell Profile, Page 17

TABLE 30: CHEMUNG COUNTY MAJOR PRIVATE-SECTOR EMPLOYERS, BY FTE

EMPLOYER	BUSINESS	APPROXIMATE # OF EMPLOYEES (FTE)
Arnot Health	Healthcare Services	1,700-2200
CAF USA	Manufacturing: Trains	650-750
Hilliard Corporation	Manufacturing: Machinery Filter Systems	600-650
Hardinge Inc.	Manufacturing: Machinery	400
CVS/Caremark	Distribution Center	400-450
General Revenue Corporation	Call Center	400-450
DePuy Synthes	Manufacturing: Bio-Medical	400
Anchor Glass Container Corp.	Manufacturing: Glass Containers	350-400
Kennedy Valve	Manufacturing: Water Valves, Hydrants	275-300
F. M. Howell & Company	Manufacturing: Packaging	200-225
Vulcraft of New York	Manufacturing: Metal Products	325-350
Schlumberger	Natural Gas Exploration Services	200-300
Elmira College	Education	300 -350
Chemung Canal Trust Company	Financial Services	300-350
Eaton Electrical	Manufacturing: Electronics	225-250
DeMet's Candy Company	Manufacturing: Food	200-250
Elcor Health Services	Healthcare Services	200-250
Travelers Insurance	Call Center	200-250
Cameron Mfg. & Design	Manufacturing: Metal Products	225-250
Walmart	Retail	225-250
Dalrymple Contracting	Mining	200-300
Tops Supermarkets	Retail	150-200
NYS Electric & Gas	Utility	150-175
Verizon	Utility	150-175
SouthernTier Custom Fabricators	Manufacturing: Metal Products	225-250
Wegmans Supermarkets	Retail	150-175
Guthrie Healthcare	Healthcare Services	100-125
Elmira Savings Bank	Financial Services	125

EMPLOYER	BUSINESS	APPROXIMATE # OF EMPLOYEES (FTE)
Trayer Products	Manufacturing: Metal Products	120
Emhart Glass	Manufacturing: Machinery	115-125
Access Midstream	Natural Gas Support Services	100-125
Corning Inc.	Manufacturing: Ceramics	100-150
Swift Glass Company	Manufacturing: Ceramics	100
Hunt EAS	Engineering Service	100
Elmira Coca-Cola Bottling	Wholesale Distribution	85
Pepsi Bottling Group	Wholesale Distribution	85
Talisman Energy	Natural Gas Support Services	75
Mirion Technologies	Manufacturing: Electronics	75-100
Seneca Beverage Corporation	Wholesale Distribution	85
Streeter Associates	Construction	70
Eastern Metal/USA-SIGN	Manufacturing: Metal Products	70
Salient Corporation	Management Software	75-100
Motor Components	Manufacturing: Auto Components	50-75
Fennell Spring Company	Manufacturing: Auto Components	50
Gas Field Specialists	Natural Gas Services	50-75

FIGURE 12: CHEMUNG COUNTY MAJOR PRIVATE-SECTOR EMPLOYERS, BY SECTOR

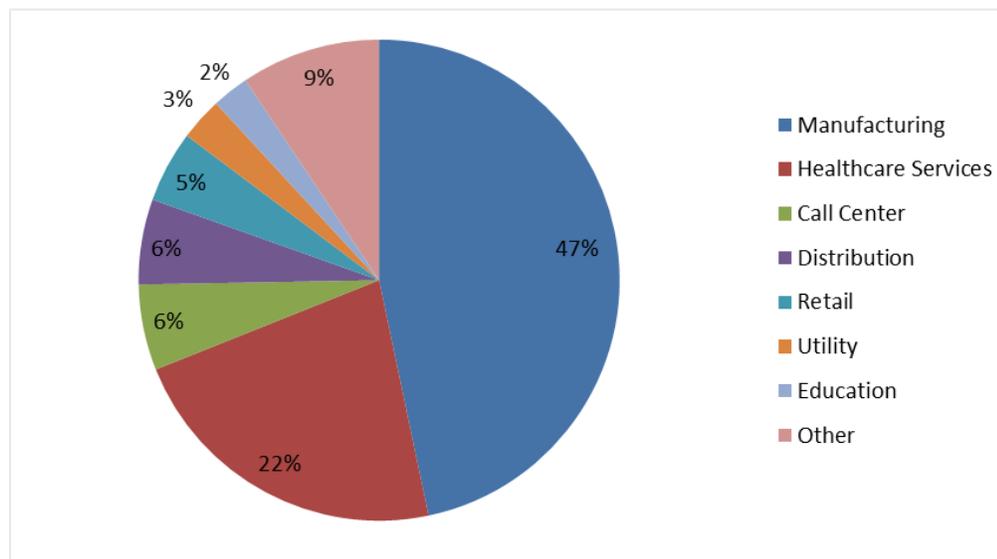


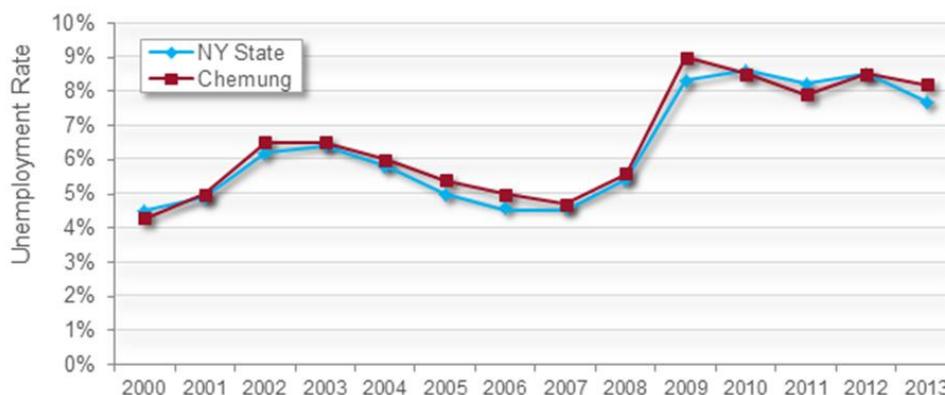
Table 31 provides a summary of employment in Chemung County by age and labor force participation. This is another measure of the regional economy’s robustness. It is typical that the 16–19 year old cohort exhibits a high unemployment rate, as most of those individuals are still in school; at most, these individuals may have a part-time or summer job.

TABLE 31: EMPLOYMENT, BY AGE

AGE GROUP	TOTAL POPULATION	POPULATION IN LABOR FORCE	POPULATION EMPLOYED	UNEMPLOYMENT RATE
16 to 19 years	4,837	41.4%	31.4%	23.5%
20 to 24 years	5,789	69.7%	61.8%	11.0%
25 to 44 years	21,514	75.0%	69.2%	7.7%
45 to 54 years	13,817	78.3%	75.8%	3.2%
55 to 64 years	11,436	61.4%	58.7%	4.4%
65 to 74 years	6,667	20.9%	20.1%	4.1%
75 years and over	7,142	4.7%	4.6%	2.1%
Total (16 years and over)	71,202	58.6%	54.5%	6.9%

Figure 13 overlays the New York State and Chemung County unemployment rate per year from 2000 to 2011 as reported by the Bureau of Labor Statistics. Chemung County generally reflects the employment capacity of the State as a whole.

FIGURE 13: CHEMUNG COUNTY AND NEW YORK STATE UNEMPLOYMENT RATES⁴



The US Census Public Use Quarterly Workforce Indicators (QWI) are reported using the North American Industry Classification System (NAICS), which serves to provide an understanding of the regional strengths by industry. Table 32 summarizes employment by

⁴ Cornell Profile, Page 21

industry sector using NAICS classifications. Chemung County demonstrates that the healthcare sector provides the highest percentage of employment, following national trends. However, manufacturing and retail trade, with each of the regional percentages of employment higher than the statewide percentage. Education Services, while on par with statewide percentages, also present strong opportunities for employment in the Chemung County region.

TABLE 32: CHEMUNG COUNTY EMPLOYMENT, BY INDUSTRY

	NAICS CODE	2001	2006	2011	% OF '11 TOTAL	'06- '11 CHANGE	'01-'11 CHANGE
11	Agriculture, Forestry, Fishing and Hunting	99	62	37	0.1%	-40.3%	-62.6%
21	Mining, Quarrying, and Oil and Gas Extraction	N/A	280	460	1.1%	64.3%	N/A
22	Utilities	N/A	246	N/A	N/A	N/A	N/A
23	Construction	2,795	1,907	1,874	4.3%	-1.7%	-33.0%
31-33	Manufacturing	8,012	5,903	5,581	12.8%	-5.5%	-30.3%
42	Wholesale Trade	1,844	1,747	1,776	4.1%	1.7%	-3.7%
44-45	Retail Trade	6,840	5,880	6,148	14.2%	4.6%	-10.1%
48-49	Transportation and Warehousing	1,027	915	1,501	3.5%	64.0%	46.2%
51	Information	410	570	453	1.0%	-20.5%	10.5%

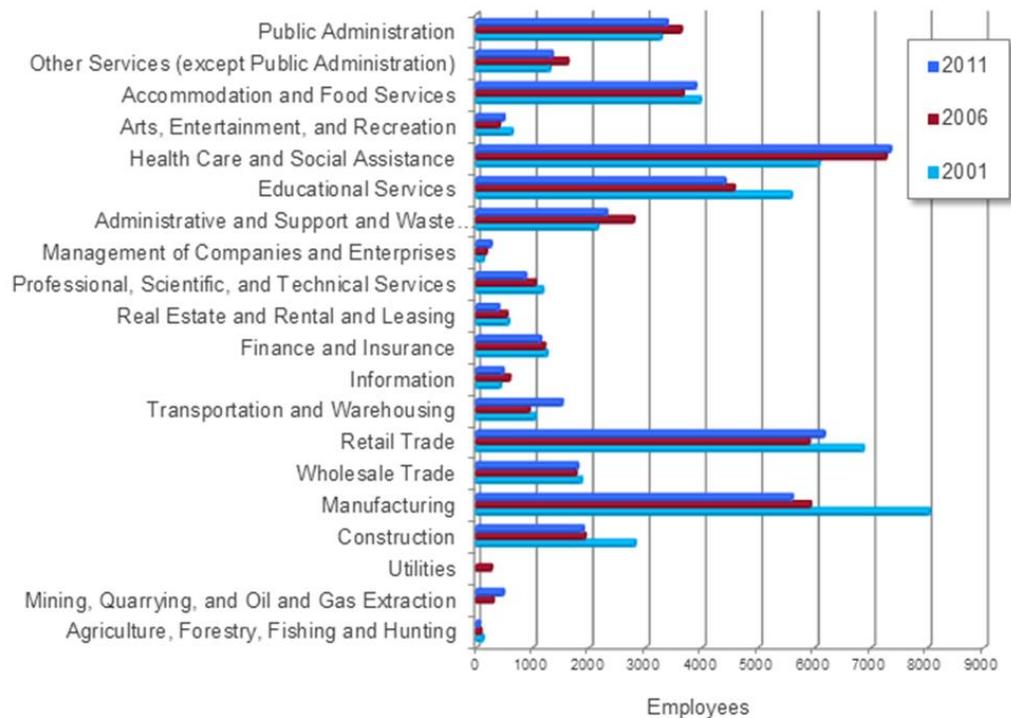
	NAICS CODE	2001	2006	2011	% OF '11 TOTAL	'06- '11 CHANGE	'01-'11 CHANGE
52	Finance and Insurance	1,233	1,189	1,118	2.6%	-6.0%	-9.3%
53	Real Estate and Rental and Leasing	552	522	376	0.9%	-28.0%	-31.9%
54	Professional, Scientific, and Technical Services	1,159	1,023	854	2.0%	-16.5%	-26.3%
55	Management of Companies and Enterprises	107	156	240	0.6%	53.8%	124.3%
56	Administrative, Support, Waste Mgmt., Remediation	2,130	2,770	2,288	5.3%	-17.4%	7.4%
61	Educational Services	5,564	4,550	4,389	10.1%	-3.5%	-21.1%
62	Health Care and Social Assistance	6,056	7,244	7,322	16.9%	1.1%	20.9%
71	Arts, Entertainment, and Recreation	615	387	470	1.1%	21.4%	-23.6%
72	Accommodation and Food Services	3,952	3,647	3,867	8.9%	6.0%	-2.2%
81	Other Services (except Public Administration)	1,283	1,602	1,325	3.1%	-17.3%	3.3%
92	Public Administration	3,259	3,613	3,363	7.7%	-6.9%	3.2%

When compared to regional employment from 2006, Chemung County shows a significant amount of fluctuation between sectors, which will yield significant impacts on the type of transportation needed to facilitate the movement of goods and services into, out of, and

around the region. Figure 14 illustrates these changes by sector of the five-year period. Manufacturing, one of the County’s strongest industries, decreased in the number of jobs (4.8%). However, Mining, Quarrying, and Oil and Gas Extraction (91.6%); Management of Companies and Enterprises (70.8%); and Transportation and Warehousing (53.5%) rose by significant percentages.

While these sectors are relatively small compared to the overall County employment total, these shifts in employment opportunities are reflective of changes in the regional and national economies. These increases may be attributed to natural gas fracking in adjacent areas in Pennsylvania. The availability to produce and distribute natural resources has increased the relevance of certain industries to the overall economy and may continue to rise in coming decades, which will ultimately foster the need for transportation infrastructure to support additional goods movement.

FIGURE 14: 2001, 2006, 2011 PERCENT CHANGES IN INDUSTRY BY NAICS SECTOR



EDUCATION ENROLLMENT

Table 33 presents a summary of enrollment by level of school, indicating that the highest concentration of enrolled students are in high school, with those enrolled in middle school, grades 5 through 8, not far behind. This is important to understand because students have specific transportation needs in terms of school transportation and walking; also, this indicates families residing in the region. The Elmira City School District has consolidated its 2 high schools into the Elmira High School, located at the former Southside High School. Students driving themselves to school can make high schools a significant traffic generator, particularly in the AM Peak Period.

TABLE 33: ENROLLMENT BY LEVEL OF SCHOOL⁵

LEVEL OF SCHOOL	ESTIMATE	PERCENT OF ENROLLED
Nursery school, preschool	1,234	5.7%
Kindergarten	859	4.0%
Elementary: grade 1 to grade 4	3,532	16.4%
Elementary: grade 5 to grade 8	4,868	22.6%
High school: grade 9 to grade 12	5,695	26.5%
College, undergraduate	4,596	21.4%
Graduate, professional school	726	3.4%
TOTAL	21,510	100.0%

The areas in Chemung County that exhibit the highest youth concentrations also exhibit the highest poverty rates, which allows for C TRAN to effectively serve the youth population of Chemung County while also providing transportation services to areas most in need of mobility. C TRAN’s urban routes run between 5:30 a.m. and 6:30 a.m. until either 6:00 p.m. or 6:30 p.m., while Routes 8, 9, and 12 operate on additional runs at reduced frequencies until after 10:00 p.m. Given these extensive transit service times, C TRAN serves as a viable option for students to travel to school and after-school activities.

HOUSEHOLD INCOME

Household income is important to transportation planning. It is a key determinant of travel modes and patterns. Current federal poverty guidelines establish a poverty level ranging from \$11,670 for a single person household to \$23,760 for a family of four. Low-income households are less likely to own cars and more likely to own fewer cars than workers. These workers are therefore more likely to be transit dependent, and also to use bicycling and walking out of necessity rather than choice. Table 34 provides a summary of Chemung County’s current household income.

⁵ Cornell Profile, Page 18

TABLE 34: HOUSEHOLD INCOME

INCOME	ESTIMATE OF UNITS	PERCENT OF TOTAL
Less than \$10,000	2,826	8.0%
\$10,000 to \$14,999	2,171	6.1%
\$15,000 to \$19,999	2,603	7.3%
\$20,000 to \$24,999	2,346	6.6%
\$25,000 to \$29,999	2,355	6.6%
\$30,000 to \$34,999	1,877	5.3%
\$35,000 to \$39,999	1,740	4.9%
\$40,000 to \$44,999	1,375	3.9%
\$45,000 to \$49,999	1,705	4.8%
\$50,000 to \$59,999	3,312	9.3%
\$60,000 to \$74,999	3,694	10.4%
\$75,000 to \$99,999	3,983	11.2%
\$100,000 to \$124,999	2,351	6.6%
\$125,000 to \$149,999	1,386	3.9%
\$150,000 to \$199,999	952	2.7%
\$200,000 or more	852	2.4%
TOTAL	35,528	100%

SUMMARY

This description of the current conditions of the Elmira-Chemung County region from a demographic and transportation perspective sets the stage for matching needs to objectives. It makes clear that a regional transportation system is a complex network of multiple modes serving multiple trip purposes for people and businesses in a variety of situations. In that context, it will be important to envision the synergies that come from transportation investments, where improving a road may also enhance safety and set the stage for economic development.

CHAPTER 5: TRANSPORTATION NEEDS

The next step in the planning process, after establishing goals and objectives and benchmarking the current conditions of the transportation system, is to develop a menu of needs that can be addressed through LRP investments. These needs are categorized in a similar fashion to the goal statements:

- Safety of all users.
- Transportation assets.
- Efficient management and operations.
- Connectivity to enhance mobility and accessibility.
- Efficient freight movement to support the regional economy.
- Promote regional economic development, sustainability, and quality of life.
- Protect and enhance the natural environment.

These are cross referenced to modes of travel, including:

- Automobile and truck;
- Public transit;
- Bicycle; and
- Pedestrian.

For example, in this way it is clear that pedestrian safety will be addressed differently than automobile safety, or accessibility for transit users and cyclists will be based on different criteria.

The needs are based on an analysis of the gaps between current conditions as described in Chapter 4, and the ECTC's adopted goals and objectives for each aspect of the transportation system. These needs are not initially constrained by financial resources; that will occur when proposed projects, actions, and strategies are devised to meet the needs. Since there will not be enough money to meet all needs over the next 20 years, the objectives help establish priorities that identify the most pressing needs.

POPULATION FORECAST

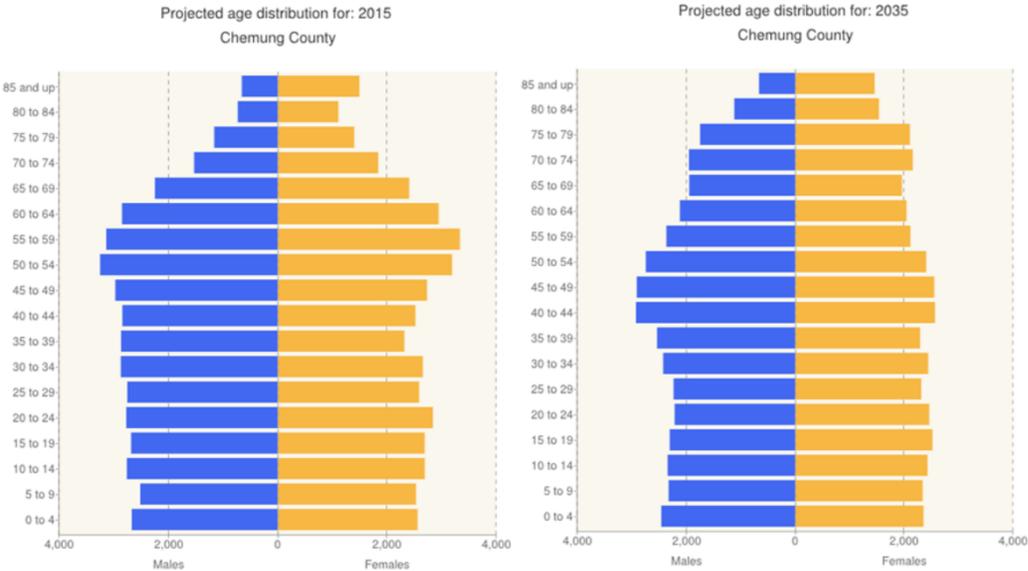
As noted, the demand for transportation is a result of the location of households and desired destinations. In Chapter 4, it was observed that the populations of Chemung County and the City of Elmira have been declining for two decades. Local planners agree that there is a somewhat more optimistic future for the region, as depicted in Table 35. Population is forecast to level off, and then show modest growth in the latter half of the LRP horizon.

TABLE 35: CHEMUNG COUNTY POPULATION FORECAST

	1990	2000	2010	2015	2020	2025	2030	2035
TOTAL	95,195	91,070	88,830	87,110	87,000	88,250	90,000	91,500
% CHANGE		-4.33%	-2.46%	-1.94%	-0.13%	1.44%	1.98%	1.67%

Even as population has been declining, there have been shifts within Chemung County. As noted in Table 28, the Town of Big Flats has seen population growth of more than 7% in the past decade. This mirrors the growth of commercial and retail development in the Town, which creates a demand for nearby housing. The forecast is that there will be a continued slow growth in the western part of the County. This forecast will focus some of the transportation needs in light of potential travel demand.

FIGURE 15: AGE COHORTS, 2015 AND 2035



An important aspect of population is age distribution. As noted in these figures provided by Cornell University’s Program on Applied Demographics, Chemung County’s population is expected to age, with more people older than 70, as is happening throughout the northeastern United States. This creates different transportation needs, as older people who are no longer in the workforce have different travel patterns, and may need or utilize alternatives (e.g., transit) to a greater degree than those who are younger. By way of comparison, in 2015, those older than 65 accounted for 14.1% of the national population, and 19.1% of the population in Chemung County.

In fact, as depicted in Figure 16, based on data from IHS/Global Insight, those 65 years of age and older may account for as much as 25% of the County population by the LRP horizon of 2035.



FIGURE 16: CHEMUNG COUNTY POPULATION > 65

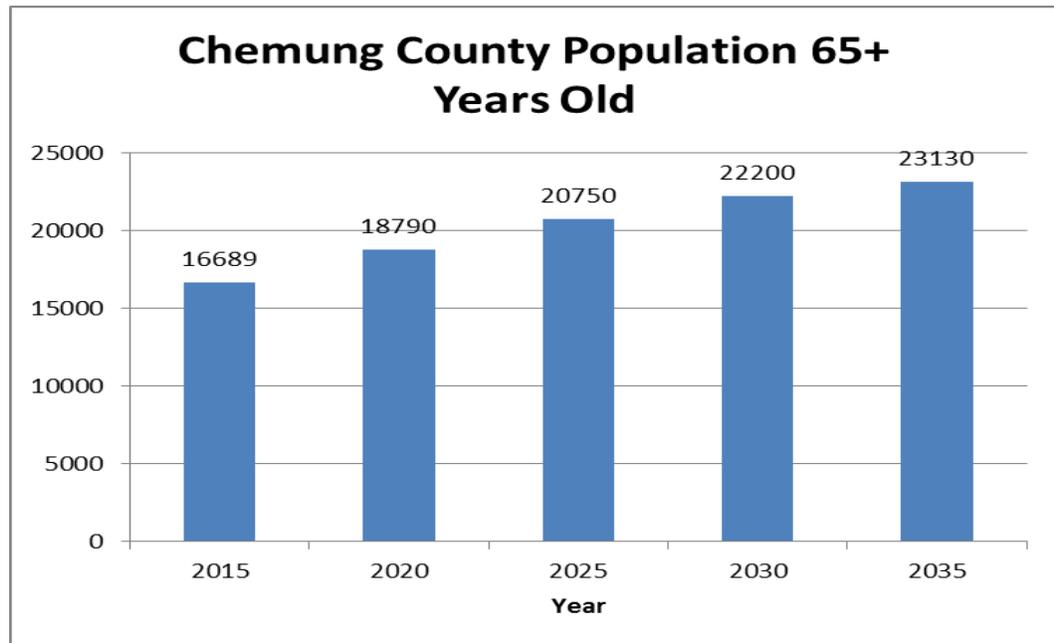
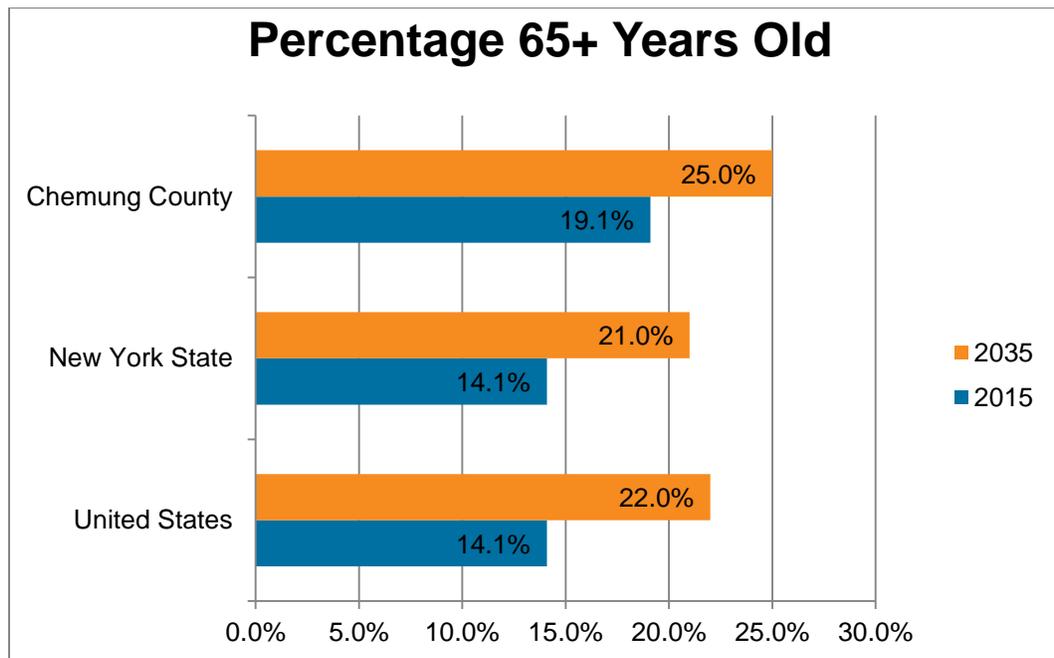


FIGURE 17: CHEMUNG COUNTY COMPARED TO US AND NEW YORK STATE



As shown in Figure 17, Chemung County currently has a higher percentage of seniors than New York States or the rest of the United States, and the forecasts indicate that that will remain the case going forward.

Another component of the population forecast is the potential for the inclusion of all, or a part of, Steuben County in the Elmira urbanized area. MPO planning boundaries are established initially by US Census designated Urbanized Areas (UZA). It is too early to

forecast whether the 2020 Census will create an Elmira-Corning UZA. However, there is equivalent growth in eastern Steuben County, as witnessed by the construction of a new Guthrie Corning Hospital and Cancer Center immediately off I-86 in East Corning.

ECONOMIC FORECAST

Forecasting changes in the regional economy is a task accompanied by significant uncertainty. As with any prediction, the longer the horizon, the less certain the forecast. With that caveat, NYSDOT has provided forecast data from IHS/Global Insight, which is recognized as a credible source. These data were summarized in Table 36. These data suggest some interesting changes in Chemung County’s economy. While job growth remains flat, as does population, manufacturing employment is forecast to shrink, especially in the 10-out years; healthcare, which is already a growing sector, and is combined with education for this analysis, is expected to increase by over 8%. Perhaps the most meaningful change to the future of the region is the projected increase in personal wealth and economic output. Per capita income, adjusted for inflation, is forecast to rise nearly 40% over the next two decades. Combined with the forecast of an aging population, this suggests that there will be more senior citizens with greater disposable income; and that average wages for those in the workforce may increase more than the inflation rate. Another measure of wealth is the gross county product, a measure of total production in the County. This is forecast to grow by 34% over 20 years. This suggests a more productive workforce, with about the same number of workers creating more output.

TABLE 36: CHEMUNG COUNTY ECONOMIC FACTORS

FACTOR	2015	2020	2025	2030	2035	% CHANGE 2015-2035
Total Nonfarm Employment	39,778	40,463	40,300	40,515	40,545	+1.9%
Manufacturing Employment	6,255	6,276	6,136	5,852	5,686	-9.1%
Health care & Education Employment	7,586	7,874	7,890	8,088	8,209	+8.2%
Per Capita Income (adjusted to 2005 \$)	32,690	35,995	39,066	42,519	45,679	+39.7%
Gross County Product (adjusted to 2005\$, \$million)	2,588	2,839	3,056	3,266	3,474	+34.2%

Source: NYSDOT – IHS/Global insight



TRANSPORTATION SYSTEM NEEDS

TRANSPORTATION SAFETY FOR ALL USERS

Everyone who uses the regional transportation system deserves a safe and secure experience. This applies equally to pedestrians, cyclists, motorists, and transit riders.

The Safety Objectives of this LRP include the following:

- **Objective 1.1:** Reduce the number of fatalities and serious injuries resulting from motor vehicle crashes in each five-year period from 2020 to 2035, using 2015 to 2019 as the base five years.
- **Objective 1.2:** Maintain the low number of pedestrian crashes that result in death or personal injury in each five-year period from 2015 to 2035, using 2010 to 2014 as the base five years.
- **Objective 1.3:** Maintain the low number of bicycle crashes that result in death or personal injury in each five-year period from 2015 to 2035, using 2010 to 2014 as the base five years.
- **Objective 1.4:** Maintain C TRAN buses such that the NYSDOT safety inspection pass rate is 90% or higher per year, every year.
- **Objective 1.5:** Reduce the number of reported security incidents involving C TRAN passengers on buses and at bus stops, and C TRAN drivers over the life of the LRP.
- **Objective 1.6:** Improve work zone safety by reducing the number of work zone motor vehicle crashes in each five-year period from 2020 to 2035, after establishing a base in the period 2015-2019 and providing work zone safety training for all workforce employees that operate the system.

The NYSDOT Strategic Highway Safety Plan (SHSP), adopted in 2010, establishes some priority safety actions that will influence the definition of safety needs.

- Highways:
 - Improve the design and operations of intersections by implementing targeted countermeasures.
 - Address lane-departure crashes through installation of centerline and edge-line rumble strips on eligible roadways, maintenance of safety appurtenances, and delineation.
 - Improve work zone safety through systematic improvements to work zone design, performance, and enforcement.
- Driver behavior:
 - Reduce impaired driving through education, enforcement, training, and research.

- Reduce fatalities caused by speeding and aggressive driving through targeted enforcement.
- Increase the use of occupant protection (e.g., seat belts and child restraints) through high-visibility enforcement campaigns and public education.
- Pedestrians:
 - Reduce the number of pedestrians killed in traffic crashes; focus on public awareness and education; develop and implement engineering solutions to documented pedestrian safety problems; and increase enforcement in high-crash pedestrian locations.
- Large Trucks:
 - Reduce the number of fatalities in crashes involving large trucks; focus on inspection and enforcement; improve outreach to motor carrier industry; and support the deployment of ITS and Commercial Vehicle Infrastructure Integration.

As noted in Chapter 4, Chemung County had eight fatalities in 2012, (the most recent data available) and an average of 8.6 fatalities per year over a five-year period beginning in 2008. This is less than 1% of the total number of fatalities in New York State. The data in Table 37 show fatalities in a multidimensional way that reflects the SHSP emphasis areas; as a result, a single fatality may appear in more than one cell. There is value in matching safety needs to the SHSP in that there may be a partnership opportunities with NYSDOT to develop actions and strategies.

TABLE 37: MOTOR VEHICLE FATALITIES, 2012, BY SHSP EMPHASIS AREA

FACTOR NUMBER	DRIVER BEHAVIOR		CRASH TYPE		VEHICLE TYPE		
	Speed	Alcohol	Intersection	Lane Departure	Motorcycle	Large Truck	Pedestrian & Cyclist
	2	4	3	3	3	1	0

The data suggest that roadway safety needs should focus on the following:

- Driver behavior, a causal factor in at least 75% of the 2012 fatalities.
- Motorcycles, including education of car and truck drivers on motorcycle awareness, and education of motorcyclists on safe driving behavior.
- Ongoing evaluation of potentially dangerous intersections.
- Nonmotorized travel. While there were no pedestrian or cyclist fatalities in 2012, there have been five pedestrians and three bicyclists killed over the five-year period from 2008–2012; in 2011 there were two cyclists and one pedestrian killed. It is important to continue to protect pedestrians and cyclists by providing both proper infrastructure, like pedestrian countdown signals and crosswalks, and through continued public education and awareness.



With respect to the safety and security of C TRAN riders and drivers, Chemung County, through its contract transit operator, has an excellent safety record. There were no fatalities or serious injuries involving C TRAN on the period from 2008–2012. There is a need to maintain current practices for safety training and awareness.

Work zone safety is a continuing focus. Work zones can be dangerous to highway workers, but are more dangerous to motorists. Motorists are the victim in more than 85% of work zone crashes. Changes in travel patterns can be confusing to drivers, even when there is no work occurring. This may be especially true at night, when there is a combination of low visibility outside the zone and highly reflective devices to mark lane changes. Work zones must be well designed, following the requirements of the Manual on Uniform Traffic Control Devices (MUTCD). This is generally the case with long-term highway construction. Maintenance and utility work zones, which may be in place only for a few hours, may be of greater concern. They are often set up with minimal signage and few channelization devices. This may be especially true of utility work zones established by private companies. While they may be on local streets, poorly designed work zones still present a hazard to drivers, workers, and others.



TRANSPORTATION ASSETS: ROADWAYS

- **Objective 2.1(a):** Reduce or maintain the number of structurally deficient bridges on the State highway system to less than 10% by 2025.
- **Objective 2.1(b):** Reduce or maintain the number of structurally deficient bridges on the local federal aid system to less than 10% by 2025.
- **Objective 2.2:** Reduce the lane-miles of State and local federal aid system pavements rated poor or fair in the base period of 2015–2019, and continue that trend for the remainder of the LRP.
- **Objective 2.5:** Upgrade NYSDOT and locally owned traffic signals to best practicable technology on a five-year cycle for the life of the LRP.

This category includes pavement, bridges, and associated structures, including culverts. While MAP-21 focuses the newly required Transportation Asset Management Program on the National Highway System, the ECTC is responsible for the entire mileage of federal aid-eligible roads. These include arterial streets and collector roads owned by New York State, Chemung County, the City of Elmira, and all of the Towns and Villages in the metropolitan planning area. Keeping the roadway system in an acceptable state of repair is a continuous challenge due to continuous deterioration and limited funding.

As noted in the Chapter 4 and summarized in Table 38, there is a clear need for pavement preservation.

TABLE 38: POOR AND FAIR PAVEMENTS IN CHEMUNG COUNTY

JURISDICTION	POOR		FAIR	
	%	MILES	%	MILES
State Urban	10.5%	18.8	26.2%	47.0
State Rural	10.9%	16.5	26.6%	40.1
State Total	10.7%	35.3	26.4%	87.1
Local Total	5.0%	7.1	20.0%	28.2

With more than 42 miles of pavement in poor condition, and 115 miles in fair condition, repair and preservation is a priority. Asset management in a period of constrained fiscal resources must be addressed strategically. Service life of both pavements can be extended through preventive maintenance. This includes activities like crack-sealing and patching on roads, and bridge washing and painting. Beyond preventive maintenance, there is a range of pavement treatments that can be implemented. These include chip seal, microsurfacing, overlays of various depth, milling and resurfacing, and full-depth reconstruction.



Bridges are also of concern. As noted in Table 15, there are 29 Structurally Deficient bridges in Chemung County, four of which are on the National Highway System. When measured by deck area, these bridges represent a significant need.

There are fewer variables in bridge work, as repairs to deficient elements are prioritized based on need and funding availability. Sometimes this involves only the deck, or the superstructure. In other cases, there are deficient structural members. This leads to a rehabilitate versus replace decision.

Asset management systems help agencies consider how to best match resources with needs. One approach is “worst first,” where the most deficient pavements or bridges are repaired or replaced, while those in fair condition are allowed to deteriorate. Another approach, one that is now being used by NYSDOT, is a preservation-first strategy. Under this strategy, NYSDOT strives to sustain critical pavement currently in a state of good repair by performing the appropriate preventive maintenance activities before the distress exceeds the

window of opportunity for preventive maintenance. With consideration of available funding, NYS DOT then looks to improve pavements that are deteriorated beyond the preventive maintenance window with the appropriate treatments that are prioritized according to cost of the treatment, vehicle travel served, and overall impacts to the system, both economic and social. Once a lower-volume pavement deteriorates to a very poor condition, the final decision for addressing these pavements must be determined by local managers given the uniqueness of the conditions at each location. This strategy is thought to offer the best return on investment. The ECTC must work with its member agencies to strike a balance that is based on a system-wide perspective, while also recognizing the needs of specific facilities. Project selection for asset management may work to achieve improvement to the overall rating, but may also consider a set of factors, including:

- Functional class;
- Traffic volume; and
- Economic impact (does the road or bridge provide nonredundant access to an economic generator?).

NYS DOT operates predictive models that consider a range of investment strategies and forecast the resulting pavement or bridge condition with varying amounts of investment. These models do not consider economic impact; however, economic impacts and other factors are taken into account when programming projects.

Divestment in Roads and Bridges

As noted in Objective 2.1, there is a concern that local governments over the next 20 years may need to consider closing some of their road or bridge facilities. This can be an unintended consequence of the preservation-first methodology of asset management. In doing so, some roads and bridges that are in poor condition may be allowed to deteriorate, rather than undergo a full reconstruction at a higher cost. Disinvestment can and should be approached as a rational plan that considers overall system needs, rather than on a facility basis.

The choice to permanently close a road or bridge, removing it from the highway inventory, has immediate impacts on mobility. A Disinvestment Plan will examine the regional network to identify redundant facilities and potential detour routes. It may establish thresholds for parameters like traffic volume, detour length and functional classification, and economic impact. For example, a road would not be considered for closure if the traffic volume exceeds the threshold. Similarly, a detour would not be considered adequate if it utilized roads of a lower functional class, or road that were not designed to handle the expected traffic composition.

While disinvestment decisions may be handled on a case-by-case basis, the Disinvestment Plan will provide guidance for the decision-making.

Traffic Control Devices

Traffic signals are a separate asset category. As a primary traffic control device, they must be kept in a state of good repair, and also in a state of good practice. Signal control technology has evolved over the years from a basic pretimed plan, to actuation by vehicle detectors, to traffic adaptive control. Each advance has facilitated greater efficiency in signal operation, resulting in less vehicle delay and reduced emissions. Reducing unnecessary delay has also been demonstrated to improve driver compliance. A pretimed signal may cause a driver to wait for a green indication when there is no opposing traffic, while an actuated signal will change more quickly within predetermined parameters.



There have been similar advances in pedestrian signals, progressing from a simple “Walk – Don’t Walk” display to the use of countdown timers to accessible signals designed to facilitate crossing by visually impaired individuals. The latter have evolved from a “cuckoo – chirp” protocol assigned by street direction, to a pedestrian button equipped with a locator tone and a voice message that tells the person when they can cross the named street.

Traffic signal indications have been changed from incandescent lamps to LED displays. This reduces energy usage and lengthens service life. However, there are some issues with LEDs, including the fact that they tend to emit less light with age, rather than burn out like an incandescent bulb. Growing experience suggests that a replacement cycle of six to 10 years is reasonable.⁶ Regular replacement of signal displays, whether they are incandescent bulbs or LED arrays, is important, since a dark display creates an immediate safety hazard.

As noted in Table 12, traffic signals in Chemung County are owned by NYSDOT, the City of Elmira, Chemung County, and the Villages of Elmira Heights and Horseheads. In addition to a well-defined maintenance and replacement policy, they may consider the value of investing in technology upgrades, as warranted by the location. Intersections with modest traffic volume and few pedestrians may operate acceptably in pretimed mode, while more complex intersections may benefit from both pedestrian and vehicular actuation or advanced signal control technology.

TRANSPORTATION ASSETS: PEDESTRIAN FACILITIES

- **Objective 2.3:** [This will be extracted from the Pedestrian element of the Ped/Bike/Trail Plan] Improve sidewalk condition and ADA compliance for publically owned and maintained facilities as streets and roads are reconstructed.

Sidewalks are an important part of the transportation system infrastructure that is often overlooked. Sidewalks provide a safe place for people to walk; when they are not present, pedestrians must walk in the street. The ADA imposes requirements on public rights-of-way

⁶ Urbanik, Thomas, “LED Traffic Signal Monitoring, Maintenance, and Replacement Issues,” NCHRP Synthesis 387, Transportation Research Board, Washington DC. 2008.

to facilitate the safe travel of individuals with mobility or visual impairments. These requirements include adequate sidewalk width for wheelchairs, and ramps at intersections. The ramps must have a tactile surface to alert visually impaired individuals to the location of the street intersection.

Sidewalk maintenance is typically the responsibility of the property owner. Lack of snow and ice removal can create a walking hazard, as can a poor surface. As pointed out in the Pedestrian/Bicycle/Trail Plan, there are some critical locations for sidewalks. They should be present in a predefined radius around all schools, within one-quarter mile of bus routes, and in the vicinity of other major pedestrian generators.

As noted in Chapter 4, the City of Elmira has addressed ADA compliance at intersections in the Elmira Central Business District. There may remain needs in the vicinity of schools, health care facilities, transit routes (including pads at bus stops to accommodate deployment of wheelchair ramps or lifts), and other major pedestrian generators.

ROADWAY ASSETS AND RESILIENCY

Planning for a resilient roadway network is gaining more attention as state DOTs and MPOs have had to address the impacts of severe weather events. New York has seen Hurricane Irene and Tropical Storm Lee in 2011 and Superstorm Sandy in 2012, all of which caused major damage to transportation infrastructure. Climate scientists are in general agreement that one of the consequences of global climate change will be an increase in the number of severe weather events. The Chemung River's last significant flood was in 1972, but that should not be a reason to avoid planning for future events. There was a significant storm event on July 26, 2014. In addition, as counties in the Catskills and Vermont learned after Irene, small tributaries can cause significant damage when they flood. Resiliency relies on a system perspective rather than a facility perspective.



A resilient transportation system must be able to provide an acceptable level of service through these phases of a severe storm event:

- Pre-event evacuation.
- Evacuation during the event.
- Emergency response.
- Short-term recovery.
- Long-term recovery.

A reasonable way to address resiliency is to look at redundancy in the transportation system. For example, a vulnerable bridge may be deemed acceptable if there is an alternative route

with an acceptable detour length that utilizes a non-vulnerable bridge. This is referred to as a Network-Robustness Index analysis.

Adaptation is a term used to describe work on a bridge or roadway facility that will make it less likely to suffer from flood damage. For example, Chemung County has an area that frequently floods; closure of the Lowman Crossover bridge results in loss of access to Wellsburg. A bridge may be raised or widened to accommodate greater stream flow, including debris. The Vermont Agency of Transportation (VTTrans) found after Irene that a good deal of bridge damage was caused by the debris load in the water, not the actual water flow. This can make widening the bridge (lengthening the span) as important as raising it. Note that widening a bridge opening can create circumstances where scour and sediment loading are more apt to occur. Any proposed lengthening of a bridge opening must be studied for hydraulic interactions. Vulnerable roadway segments, often those that run alongside a waterway, may also be adapted by moving the alignment.

Flood recovery often includes replacing damaged infrastructure as it existed prior to the event, or replacing it with an adaptive design. A resiliency plan may identify some bridges that do not require additional investment because they do not play a critical role in a robust network.

Chemung County would benefit from completion of a highway resiliency plan that includes a network-robustness analysis. NYSDOT recently completed a Flooding Vulnerability Assessment of the state’s highway system. The methodology forms a good basis for extending this work to the full federal aid system.

TRANSPORTATION ASSETS: TRANSIT

- **Objective 2.4:** Replace buses in the C TRAN fleet on a schedule that complies with FTA guidelines on transit vehicle life for the life of the LRP.

This category includes buses operated in the C TRAN system. Table 39 displays the minimum service life as defined by the FTA for all sizes of transit vehicles. C TRAN operates heavy-duty large buses, heavy-duty medium buses, and light-duty midsize buses, each of which has a different service life.

TABLE 39: FTA MINIMUM SERVICE LIFE FOR BUSES AND VANS

CATEGORY	CHARACTERISTICS			MINIMUM LIFE	
	LENGTH	GVW	SEATS	YEARS	MILES
Heavy-Duty Large Bus	38’–48’	33,000–40,000	27–40	12	500,000
Heavy-Duty Small Bus	30’	26,000–33,000	26–35	10	350,000
Medium-Duty Bus	30’	16,000–26,000	22–30	7	200,000



CATEGORY	CHARACTERISTICS			MINIMUM LIFE	
	LENGTH	GVW	SEATS	YEARS	MILES
Light-Duty Midsize Bus	25'–35'	10,000– 16,000	16–25	5	150,000
Light-Duty Small Bus, Modified Van	16'–28'	6,000– 14,000	10–22	4	100,000

Source: Federal Transit Administration “Useful Life of Transit Buses and Vans” Report No. FTA VA-26-7229-07.1

TABLE 40: CTRAN FLEET NEEDS

BUS TYPE	NUMBER OF BUSES	YEAR PURCHASED	YEAR DUE FOR REPLACEMENT
Heavy Duty	4	2011	2023
Large	2	2001	2013
Heavy Duty	7	2014	2026
Medium*	5	2005	2017
Light Duty	6	2012	2017
Midsize	6	2004	2009

* FTA Region considers these buses to have a 12-year service life.

Note that two heavy-duty large buses and six light-duty buses are overdue for replacement. The majority of the active heavy-duty bus fleet will not need to be replaced until 2023 and 2026. This can be a significant capital funding challenge, but often happens in small transit system fleets. Half of the light-duty buses are due for replacement in 2017.

The only caveat on the transit fleet needs assessment is if the required fleet-size changes are due to either increases or decreases in service, and adjustment of the spare factor. The pending reductions in service noted earlier will reduce the required peak fleet need, but the 2017 bus replacement need will not be eliminated.

EFFICIENT MANAGEMENT AND OPERATIONS

- **Objective 3.1:** Update the ITS Regional Architecture and Implementation Plan on a five-year cycle for the life of the LRP, starting with an update in 2015, and implement high-priority actions as called for in the LRP.
- **Objective 3.2:** Implement active management and operation of the regional transportation system by 2025.
- **Objective 3.3:** Create an ECTC Resiliency Plan that addresses operability of the regional transportation plan in unanticipated severe weather or facility failure by 2018.

- **Objective 3.4:** Update the C TRAN communication, fare collection, and public information system (including real-time customer information) in the period 2015–2019.

Regional transportation system management and operations (TSMO) has become recognized by transportation planners as an important means of improving the efficiency of travel, which in turn improves safety and can help avoid the need for capacity expansion. TSMO relies primarily on modern communication technology called ITS. ITS can provide real-time information to motorists and transit users about system conditions. While the Elmira region has little recurring congestion, all areas are susceptible to nonrecurring congestion, which is not predictable. Primary causes on roadways are:

- Incidents, which include crashes, disabled vehicles, and debris in the roadway;
- Work zones, including those established for short-term maintenance work;
- Weather events; and
- Planned special events, like concerts or games that draw a large crowd.

Many surveys have shown that travelers place a higher value on the predictability of travel time than on the absolute time. They plan trips to work, day care, or the airport based on what they know about the expected travel time; they do not want to be late, but also view being too early as lost time. Travel-time reliability can be addressed by TSMO. For example, highway incidents can cause unexpected delay. That delay can be reduced through prompt detection, dispatch of appropriate resources, and quick clearance. Queues and the potential for secondary crashes can be reduced through communication with motorists. This can be accomplished through roadside devices like VMS, highway advisory radio, and smartphone applications. 511NY is a statewide traveler information system that can be accessed by phone or Internet. It provides up-to-date information on travel conditions, including incidents and work zones that result in lane closure.

MPOs have been required since 2005 to have in place an ITS Regional Architecture. This is a means of documenting the communication flows among centers like the NYSDOT Region 6 Traffic Management Center and field devices and user systems. The Architecture is a forward-looking document, in that it addresses the completed system. It may be accompanied by an ITS Implementation Plan that enumerates priorities for deployment. It is important that the Architecture be updated on a regular cycle, typically every five years, to reflect changes in local conditions, partner agencies, and in the state of the practice.

Because so much of TSMO is technology based, there is always the need to keep hardware and software updated. So-called legacy systems may not be able to communicate properly with newer systems. Since TSMO is critically important during and after severe weather events, redundancy in communications and back-up power supplies are required. As such, the ECTC must have a schedule to regularly reevaluate its ITS systems in order to program funds for equipment replacement and upgrade.

The NYSDOT TMC controls several VMS in Chemung County. In addition, Chemung County and the City of Elmira have VMS that can be deployed for incident management. The closed-circuit television cameras located on I-86 in Horseheads are currently inoperable; when functioning, they provide the TMC operators visual confirmation of crashes and other incidents. Part of the TSMO update strategy should address these needs.

SYSTEM CONNECTIVITY TO ENHANCE MOBILITY AND ACCESSIBILITY

- **Objective 4.1:** Identify roadway access discontinuities that interfere with regional mobility; program highest-priority projects by 2025; program additional projects by 2035.
- **Objective 4.2:** Identify deficiencies in public transit service in terms of geographic coverage and time-of-day coverage; modify transit operations to address highest-priority needs by 2020, and every five years thereafter.
- **Objective 4.3:** Implement and market ridesharing, and other TDM approaches, to help meet the mobility needs of those without access to a vehicle. Enlist a minimum of 1,000 registered ride-match requests by 2019.
- **Objective 4.4:** Identify discontinuities in sidewalks, bicycle facilities, and trails.
[High-priority actions to be determined in Ped/Bike/Trail Plan]

One definition of a transportation system is that it provides access to and from places where people live and where they work, go to school, and meet a variety of needs, from shopping to healthcare. A system that has discontinuities will not meet the needs of residents or businesses. This evaluation examines all modes and the connections between them. A transit system whose service area covers only part of a metropolitan area cannot provide adequate access for those who do not drive. A business whose freight delivery trucks must take a circuitous route to access the interstate may be less competitive. A discontinuous sidewalk system results in poor accessibility for pedestrians, which can result in them choosing other modes of travel. This is an important need when there is a goal to increase walking by both the ECTC and its partners in the Creating Healthy Places organization.

Mobility is different than access and reflects the efficiency of travel. Congestion on highways or arterial streets reduces mobility of personal travel and freight delivery. Bus service that schedules a long headway (the time gap between buses arriving at a specific point of a route) and causes delay for riders is a mobility issue. A busy intersection that is difficult for pedestrians to cross is also a mobility issue.

ROADWAY ACCESSIBILITY

The regional roadway system in Chemung County provides good access to all destinations. The primary connectivity concern is the access into downtown Elmira from I-86. There is now a single access point, the Church Street/Water Street interchange. Because of the geography of the area, I-86 transitions from a north/south direction to east/west at Route 13. NY Route 14 connects downtown to/from I-86 to the north, but it is a somewhat circuitous route north of the Clemens Center Parkway. Extending the existing Parkway as

the Northern Arterial connecting it to I-86 to create a second high quality access into the City of Elmira and to Pennsylvania could provide for economic development, capacity, and a good link to Pennsylvania. There is a potential benefit to extending the Parkway as the Northern Arterial to I-86 to create a second high-quality access into the City from the north. An industrial access issue is the provision of a direct connection from NY Route 13 to the Horseheads Sand and Transloading Terminal (HOST), whose tenants include those who serve the natural gas drilling industry in Pennsylvania by bringing in materials by rail and shipping them out by truck.

Note that there are no current identified funds to progress these two projects; each has a considerable cost. The Northern Arterial alignment options and costs need to be updated in a concise ECTC study. That will allow the project to progress if discretionary funding becomes available.

TRANSIT ACCESSIBILITY AND OPERATIONS

Transit accessibility and connectivity poses a different question. The C TRAN fixed-route system has good geographic coverage throughout the urban area, with a central transfer point at the Chemung County Transportation Center at Church Street/Railroad Avenue in downtown Elmira. The fixed-route service operates on a “flag stop” basis, which means that riders can request the bus to stop anywhere along its route. This actually increases accessibility, as riders do not necessarily have to walk to a designated bus stop. There is also a demand responsive/route deviation service for persons with disabilities.

For a small urban transit service, Chemung County’s C TRAN service can be considered acceptable. Eight routes operate on a 30 minute headway, while the remaining three only operate once an hour. While this can make it difficult for people who rely on linked transit trips to conveniently meet their travel needs, it generally provides an adequate level of service. Also, like many small urban transit systems, most C TRAN routes cease operation between 6:30 p.m. and 7:30 p.m., except for the Mall Express Route that operates until 10:00 p.m. This creates an accessibility obstacle for transit-dependent individuals. They may not be able to get home from a job shift that ends or begins in the later evening, which is typical for healthcare, retail, and other service industries, limiting their employment opportunities. This level of service is the most that can be offered within available fiscal resources.

PEDESTRIAN, BICYCLE, AND TRAIL MOBILITY AND ACCESSIBILITY

Pedestrian mobility and accessibility are currently assumed to be limited outside of the central business district of Elmira. There is a lack of data on location, condition, and walkability in corridors. Before a specific need level and locations can be determined, these data need to be collected and analyzed.

New York State Bike Routes 14 and 17 run through the community and provide some accessibility for long-distance recreational travelers. There is a need for local bike routes to become more accessible to residents who want use their bicycles to travel to work and for other trip purposes than recreation. There currently is no plan to develop local bike routes.



There several well-used trails in Chemung County with the Catharine Valley Trail; the Lackawanna Rail Trail is the most well known. While there have been several focused studies on the Catharine Valley and Lackawanna Rail Trails, there has not been a study to describe a network of interconnecting trails that would describe the total system the community desires.

TRAVEL DEMAND MANAGEMENT OPTIONS

Ridesharing is another means to meet the mobility and access needs for households without cars. It is generally oriented toward the work-commute trip, matching employees at a workplace, but sometimes extending to nearby destinations. The ECTC has launched a pilot marketing program under the name 511NY Southern Tier Rideshare, which meets the needs of this objective. The service is supported by Chemung and Steuben Counties, NYSDOT, and the FTA.

EFFICIENT FREIGHT MOVEMENT TO SUPPORT THE REGIONAL ECONOMY

- **Objective 5.1:** Identify and address bottlenecks on the highway network that interfere with the reliability of truck travel.
 - **Performance measure:** Truck travel-time reliability.
- **Objective 5.2:** Monitor and modify the local truck route system in response to changing goods movement needs.
 - **Performance measure:** Meeting freight movement needs of local businesses without unnecessary truck travel on local streets.
- **Objective 5.3:** Provide adequate overnight parking for trucks at public or private facilities within Chemung County.
 - **Performance measure:** Survey of truck drivers on parking availability.
- **Objective 5.4:** Assist NYSDOT in addressing the needs of the Norfolk Southern Railway’s Southern Tier line, especially the Portageville Viaduct.

MAP-21 and New York State policy explicitly link the ability to move freight to, from, and through a region with the vitality of the regional economy. Chemung County benefits from the presence of multimodal freight facilities: I-86, which provides uncongested East to West travel, and Norfolk Southern Railroad, which is a Class 1 railroad operating throughout the eastern half of the country. The vast majority of the nation’s and the region’s freight moves by truck since it is the only mode to offer point-to-point connectivity.

TABLE 41: 2040 COMMODITIES ESTIMATED TO TRANSPORT VIA RAIL & PERCENT CHANGE FROM 2011

COMMODITY	TONS	PERCENT	% CHANGE FROM 2011	COMMODITY	VALUE (MILLIONS)	PERCENT	% CHANGE FROM 2011
COMMODITIES SHIPPED FROM CHEMUNG COUNTY							
Gravel or	24,050.17	99%	86%	Gravel or Sand	\$0.18	30%	80%

COMMODITY	TONS	PERCENT	% CHANGE FROM 2011	COMMODITY	VALUE (MILLIONS)	PERCENT	% CHANGE FROM 2011
Sand							
Metal Scrap or Tailings	59.78	0%	181%	Mechanical Power Transmission Equipment	\$0.12	20%	300%
Miscellaneous Glassware, Blown or Pressed	22.5	0%	237%	Motor Vehicles	\$0.07	12%	75%
Railroad Cars	18.73	0%	233%	Railroad Cars	\$0.07	11%	250%
Containers or Boxes, Paper	13.04	0%	230%	Containers or Boxes, Paper	\$0.02	4%	100%
Mechanical Power Transmission Equipment	9.33	0%	307%	Metal Scrap or Tailings	\$0.02	4%	100%
Motor Vehicles	8.48	0%	100%	Miscellaneous Glassware, Blown or Pressed	\$0.02	3%	100%
Glass Containers	6.86	0%	238%	Newspapers	\$0.02	3%	100%
Soap or Other Detergents	5.83	0%	N/A	Machine Tools, Metal Cutting	\$0.01	2%	100%
Grain	5.34	0%	166%	Glass Containers	\$0.01	2%	100%
All Other Commodities	19.83	0%	N/A	All Other Commodities	\$0.05	9%	N/A
TOTAL	24,219.89	100%	-	TOTAL	\$0.60	100%	-

COMMODITIES SHIPPED TO CHEMUNG COUNTY

Gravel or Sand	1,028,066.31	87%	86%	Primary Iron or Steel Products	\$134.45	80%	19%
Primary Iron or Steel Products	87,159.20	7%	19%	Railroad Cars	\$11.74	7%	110%
Potassium or Sodium	19,317.20	2%	22%	Gravel or Sand	\$7.71	5%	86%



COMMODITY	TONS	PERCENT	% CHANGE FROM 2011	COMMODITY	VALUE (MILLIONS)	PERCENT	% CHANGE FROM 2011
Compound							
Chemical or Fertilizer Mineral Crude	19,050.91	2%	-6%	Potassium or Sodium Compound	\$6.20	4%	22%
Railroad Cars	12,316.65	1%	109%	Petroleum Refining Products	\$6.07	4%	-35%
Miscellaneous Glassware, Blown or Pressed	6,059.08	1%	91%	Chemical or Fertilizer Mineral Crude	\$1.68	1%	-5%
Petroleum Refining Products	5,013.84	0%	-35%	Miscellaneous Glassware, Blown or Pressed	\$0.43	0%	95%
Nut or Veg Oils or By-products	860.36	0%	12%	Frozen Fruit, Veg or Juice	\$0.28	0%	100%
Frozen Fruit, Veg or Juice	314.43	0%	93%	Nut or Veg Oils or By-products	\$0.16	0%	14%
Lumber or Dimension Stock	101.87	0%	94%	Miscellaneous Shipments N.E.C. excluding Freight Forwarders/Shippers	\$0.08	0%	N/A
All Other Commodities	328.03	0%	N/A	All Other Commodities	\$0.18	0%	N/A
TOTAL	1,178,587.88	100%	-	TOTAL	\$168.97	100%	-

The needs of the Chemung County transportation system, with regard to freight movement, are centered on the efficiency of truck movement and truck-rail intermodal connections. Local commerce is dependent on freight movement that can range from shipping industrial output to wholesale distribution to parcel delivery to small retailers. Since most freight moves on trucks, this can be accomplished with these elements:

- **National Highway System.** Used both for through movements and locally generated freight, these important roads, including I-86, must function efficiently. Since there is little recurring congestion, the focus may be on management and operations to address nonrecurring congestion stemming from incidents and work

zones. Also, economic development may lead to bottlenecks at spot locations like ramps, which must be addressed as they occur.

- **Access to the NHS.** Freight movement on local roads requires a balance of supporting the economy and addressing local quality of life. People do not want heavy trucks on local streets, but that depends entirely on the location of businesses. One means of addressing the balance is to evaluate the local truck route system on a periodic basis to make sure it serves the needs of businesses. Enforcement can assist in keeping trucks on those streets. There may be new needs as new businesses develop and provide new links to the NHS; this will be evaluated as part of the economic development package.

Area trucking carriers and shippers have also noted that there are no overnight truck parking facilities in Chemung County, either public rest areas or private truck stops. This can create problems for drivers, who must meet strict Hours of Service rules imposed by USDOT. Drivers must find a safe place to park for their mandatory rest periods; they are often not permitted to park overnight at the delivery or pickup locations. There are rest areas on I-86 in Tioga County, and a truck stop there as well. However, it can create scheduling difficulties for a driver to travel an extra distance simply for safe parking accommodations.

With respect to rail, because railroads are privately owned businesses, the evaluation of need rests with the company. Norfolk Southern RR will evaluate the efficiency of the Southern Tier line and the need for terminals like HOST in its own business plans. It is incumbent on regional economic development and planning agencies to bring opportunities to their attention.

A specific rail issue is the Portageville Viaduct, which carries the Southern Tier line over the Genesee River at Letchworth Gorge. This bridge was constructed in 1875, and is currently in need of replacement. In its current condition, it cannot carry trains loaded at weight standards that are now in place, and requires low train speed. NYSDOT has completed an Environmental Impact Statement (EIS) for a bridge replacement project. The Record of Decision is expected in 2015. The replacement project has a current cost estimate of \$67.5 million. Since the Southern Tier line provides an important connection from Buffalo to the Port of New York and New Jersey, with service to Elmira and Binghamton, failure of the bridge would be a significant loss. The impact on Elmira would be great, as rail traffic could only reach the area by circuitous route.

PROMOTE REGIONAL ECONOMIC DEVELOPMENT, SUSTAINABILITY AND QUALITY OF LIFE

- **Objective 6.1:** Identify transportation facilities and services that are required for specific economic development opportunities, and prioritize them for timely implementation.
- **Objective 6.2:** Identify transportation improvements that will improve neighborhood quality of life. For federal aid-eligible highways and bridges, Complete Streets treatments will be considered based on the New York State Complete Streets



law, using the NYSDOT policy and review criteria starting with the projects next TIP in 2016.

- **Objective 6.3:** Identify transportation actions that will support adopted land-use and development goals. Implement highest-priority actions by 2025; remaining actions by 2035.
- **Objective 6.4:** Encourage land-use development that has good accessibility to transit routes, including transit-friendly improvements such as bus turnouts, bus shelters, and bus route signs.

PROTECT AND ENHANCE THE NATURAL ENVIRONMENT

- **Objective 7.1:** Based on consultation with state and federal environmental resource agencies, ensure that implementation of projects in the LRP avoid or minimize environmental impacts.
- **Objective 7.2:** Promote travel choices, including transit, shared-ride, and nonmotorized modes that will reduce energy consumption and greenhouse gas production for the life of the LRP.
- **Objective 7.3:** Complete an ECTC Sustainable Communities/Sustainable Transportation Plan by 2020.

In reviewing community needs, these goals and objectives have been consolidated because they work together.

Land-use planning and transportation planning go hand in hand. Transportation demand is generated by the location of land uses—residential, commercial, institutional, and industrial. Conversely, land is made attractive for development by improving its quality of access.

Whether creating a zoning map or selecting a site for a major business development, it is incumbent on land-use and transportation planners to work together to achieve the most positive outcome. Poorly located developments can place unnecessary demands on the transportation network, while poor decisions on transportation investments can result in inappropriate decisions by developers.



Planning for and creating more sustainable communities has become an important value. Sustainable community design rests on the three principles of sustainability: 1) minimizing environmental impacts and resource consumption; 2) providing a high level of social equity; and 3) supporting the economy. Transportation is an important facet of sustainable communities. Energy consumption is tied to urban design in that compact mixed-use development and thoughtful location of important community facilities can reduce the number and length of automobile trips, and make bicycle and pedestrian trips more feasible. The location of Arnot Ogden Medical Center and St. Joseph's Hospital in the city center is a good example. Smart urban form must be complemented by appropriate

transportation investments in transportation infrastructure and service in terms of robust public transit service and pedestrian and bicycle facilities.

The City of Elmira is the center of the region. As a sustainable location, it is important that its downtown is a place where residents come to meet a variety of needs. One way to ensure that is by making sure the area is inviting. Attractive streetscapes and positive pedestrian environments are important as the City seeks to retain small businesses and attract new ones. Creation of a conference center is another potential attraction in the city that will bring visitors. This is a different retail environment than the shopping malls and “big box” stores in Big Flats. Cities that are successful do not try to compete to win that kind of development back to their downtowns, but seek to create an entirely different experience that is more human scaled.

Similarly, neighborhoods can be enhanced through appropriately scaled retail centers. One example is the Southside shopping district on South Main Street. With a supermarket and service businesses, residents can meet many of their needs with a walking or short driving trip. Attractive streetscapes can enhance the feel of a neighborhood just as they can for downtown.

Improving the quality of life for residents of the Elmira region in their existing neighborhoods also has a transportation component. Traffic calming measures can make neighborhood streets safer and quieter by slowing down cars and diverting through traffic to arterial streets. A companion concept is called Complete Streets. A Complete Street is a roadway planned and designed to consider the safe, convenient access and mobility of all roadway users of all ages and abilities. This includes pedestrians, bicyclists, public transportation riders, and motorists; it includes children, the elderly, and persons with disabilities. Supported by the New York Complete Streets Law passed in 2011, all state transportation projects, and local projects that utilize federal or state funding, with the exception of maintenance work, must be evaluated for the inclusion of Complete Streets elements. This becomes another component of a sustainable and attractive community. Not every street is a candidate for this treatment, but those in neighborhood-scale business districts and in the vicinity of Elmira’s many parks would be exceptional locations.

Schools can become community centers, but are rarely designed to prioritize traffic and parking needs. The consolidation of Elmira’s high school at Southside is an economic positive, but this may create traffic problems that will require transportation investment to retain a safe travel environment.

The ECTC recognizes that in a “home rule” state, all land-use decisions are made by local governments. Some of those decisions are influenced or constrained by state policies. For example, New York State has in place the Smart Growth Public Infrastructure Policy Act. Passed in 2010, this law requires that state agencies, including NYSDOT, evaluate all projects on the basis of 10 smart-growth criteria. The intent is to limit sprawl growth by making the provision of public infrastructure more realistic.

Chemung County, like many similar small metropolitan areas, has seen the center of retail/commercial development move away from the central city. In this case, the nexus of activity is along I-86 in Big Flats and Horseheads. Retail developers prefer suburban locations where large parcels of land can be acquired, and where there is excellent roadway access. This pattern can work against an ideal of community

sustainability, as residents of city neighborhoods must make longer trips to access shopping. There has also been development along I-86 in eastern Chemung County, with the location of the CVS warehouse-distribution center at the Wilawana interchange and Nucor at the Chemung interchange. Such “greenfield” development is made attractive by low land cost and easy highway access. The negative consequence is seen in consumption of open space, and the creation of longer commute trips for employees, accompanied by lack of transit service. Economic development planners should consider the land-use and transportation impacts of location decisions.

The idea of jobs-housing balance means that employment opportunities are sited where more people can access work through shorter trips. For example, there may be opportunities in the City of Elmira for additional commercial and light-industrial development along Clemens Center Parkway.

The Elmira metropolitan area can become a sustainable community that recognizes the equal importance of a strong regional economy, social equity through enhanced quality of life for all residents, and the wise use of environmental resources. Not allowing transportation planning to occur in a vacuum is one key to achieving that goal. Planning for transportation facilities and services must be done in collaboration with decisions about land use, economic development, and environmental protection.

The next chapter includes the projects, actions, and strategies that are included in the LRP to meet the defined needs as determined by the goals and objectives.



CHAPTER 6: OPPORTUNITIES AND CHALLENGES

THE PLAN ~ PROJECT, ACTIONS, AND STRATEGIES

The ultimate purpose of the LRP is specifying a list of projects, actions, and strategies to be carried out by the ECTC over the next 20 years that:

- Are based on the adopted goals and objectives;
- Address the defined needs;
- Meet the constraints of the Financial Plan;
- Are responsive to public expectations; and
- Reflect the priorities of the ECTC.

The LRP creates opportunities to achieve the community's vision that creates a place that is attractive to current residents, those that want to relocate, and visitors; that is accessible by all modes of travel to desirable locations; and is a community of neighborhoods and places where people of all ages can experience a great quality of life. The ECTC also acknowledges the challenges in its planning environment: uncertain and highly constrained transportation funding from both federal and state government, uncertainty in the creation and implementation of federal transportation policy, and uncertainty about the future drivers of the regional economy. There are also certainties among the challenges, including an aging infrastructure where simply maintaining a state of good repair is difficult, and an aging population that places unique demands on transportation facilities and services as drivers, transit users, and pedestrians.

Some definitions can provide additional guidance:

- A project nearly always involves the expenditure of capital funds, whether to replace a bridge, purchase a bus, or construct a trail.
- An action may be programmatic, as in an increase in fixed-route transit service hours, or training of first responders to improve management of highway incidents.
- A strategy may be a set of actions, like working to improve pedestrian safety through a program of public education and awareness coordinated with outreach of public health partner agencies.

The content of this chapter is organized by goal areas that track back through needs and current conditions:

- Safety for all users.
- Infrastructure state of good repair: pavement, bridges, and transit.
- Management and operations of the regional transportation system.
- Accessibility and mobility.

- Freight and economic development.
- Promoting economic development, sustainability, and livability; and programming for environmental protection and energy conservation.

For each section, the starting point is the current TIP covering fiscal years 2014 through 2018. The TIP includes all projects to be funded by FHWA and FTA, as well as New York State Dedicated Fund projects. This document represents projects to which the ECTC has already committed. Beyond the current TIP period, several significant specific projects will be noted. The rest of the LRP focuses on strategies that will lead to identifying specific projects and programmatic approaches that will address goals and objectives on a more areawide basis.

SAFETY FOR ALL USERS

Safety may be considered the highest priority of the ECTC because of the human cost that results from crashes and related incidents. Safety extends across all modes of travel. Roadway safety is of concern because of the consequences of crashes in terms of fatalities and serious injuries to motorists, cyclists, and pedestrians. As documented in Chapter 5, many of the roadway safety needs in Chemung County align with the NYSDOT SHSP. A primary fund source for safety projects is the FHWA Highway Safety Improvement Program (HSIP). This is a data-driven program; selected projects must meet clear criteria in order to be funded. NYSDOT identifies Priority Investigation Locations (PILs) and High-Accident Locations (HALs) using statistical analysis of crash data. Hazardous locations on local roads may be identified using the Accident Location Information System. NYSDOT has adopted a policy of using HSIP funds in two ways—for specific projects and for systemic improvements. For example, these funds were used to construct roundabouts on NY Route 13 to improve safety.

In addition, many infrastructure renewal projects also result in safety improvements. A paving project may include replacement of deficient safety appurtenances like guiderail or signs. A bridge replacement project may provide sidewalks or greater lane width that improves both pedestrian and vehicular safety. The County and City of Elmira plan to consider in their planning and design process the need for such safety improvements with each reconstruction or major rehabilitation highway or bridge project.

The current TIP includes an HSIP location-specific project at NY Route 328 at the Pine City interchange to improve intersection safety. NYSDOT Region 6 is also performing several systemic safety improvements:

- Converting pedestrian traffic signals to include countdown timers at all qualifying locations; to be completed by the end of 2014.
- Installing Centerline Audible Roadway Delineators (CARD) or rumble strips as a countermeasure to address lane-departure/head-on crashes. These are often installed as part of paving projects, and must be done when existing pavement is in good condition. Most eligible roads will be completed by 2015.

- Installing Secondary Highway Audible Roadway Delineators (SHARD) on the shoulders of qualifying highways as a countermeasure to address lane-departure/run-off-the road crashes. These can only be installed where there is adequate pavement width. The NYSDOT policy also recognizes proper design to accommodate bicyclists.
- Continual renewal of pavement markings.

Roadway safety recommendations must address the adopted objectives. These include:

- Reducing fatalities and serious injuries that result from motor vehicle crashes;
- Maintaining the low numbers of pedestrian and bicycle fatalities and serious injuries;
- Reducing work zone crashes; and
- Maintaining C TRAN rider safety and security, and positive bus safety inspections.

In order to accomplish these objectives, the ECTC will include the following in the LRP:

- **Roadway crashes.** Address PILs and HALs for which project or systemic countermeasures are identified by the safety study as soon as funding is available. Include appropriate safety elements in all infrastructure renewal projects, including replacement of safety appurtenances.
- **Roadway lane-departure crashes. (Systemic)** Support NYSDOT installation of CARD and SHARD devices on eligible state highways as a proven countermeasure to reduce lane-departure crashes. Evaluate their applicability for local roads.
- **Pedestrian and crashes. (Systemic)** Continue the installation of pedestrian traffic signal countdown timers; install Accessible Pedestrian Signals for the visually impaired at warranted locations. Upgrade these devices to the most current tested technology over the life of the LRP.
- **Pedestrian and bicycle crashes. (Programmatic)** Develop and implement enhanced pedestrian safety public education and information campaigns that includes motorist safety tips for interacting with walkers and bikers. Implement, in partnership with the Chemung County Traffic Safety Board and health provider community, using National Highway Traffic Safety Administration (NHTSA) funding and materials.

Transit safety and security is the responsibility of Chemung County through its transit operator. As noted in Chapter 4, there have been no fatalities or serious injuries on the C TRAN system for the past five years. This includes security incidents on the buses or at stops.

Transit safety recommendations:

- **Programmatic.** Initiate collection of transit safety performance data in terms of fatalities, serious injuries, and security incidents in a managed database.

- Achieve an objective of zero transit-related fatalities for the 20 years of the LRP through continuing best practices regarding safety training for all C TRAN employees, including both drivers and maintenance staff.
- **Programmatic.** Ensure that C TRAN buses always pass NYSDOT safety inspection through proper maintenance training and procedures.
- **Programmatic.** Provide a high level of rider security at the Chemung County Transportation Center, utilizing the recently installed security camera system and other techniques as needed.

SYSTEM PRESERVATION—INFRASTRUCTURE STATE OF GOOD REPAIR

“Preservation first” is a high priority of the ECTC and its members. Reliable transportation infrastructure provides the foundation for meeting the travel needs of Chemung County’s residents and businesses. When roadways are permitted to deteriorate or bridges to become deficient, travel becomes more difficult and there is a negative impact on the regional economy. Objective 2.1 addresses disinvestment by requiring the development of a list of local highway segments, bridges, and traffic signals that would not be considered for rehabilitation or replacement funding and closed (removed) when no longer viable, starting in 2016 TIP and updated with each new TIP. The associated performance measure involves performing an analysis of the vehicle usage, alternative routes, and economic value of the highway segments, bridges, and traffic signals in order to provide a ranking of facilities that would be considered for abandonment.

The current TIP reflects that priority with numerous pavement and bridge projects. Table 42 lists pavement projects.

TABLE 42: 2014–2018 TIP PAVEMENT PROJECTS

PROJECT SPONSOR	PROJECT DESCRIPTION	FUND SOURCE	AMOUNT (\$ MILLION) CONSTRUCTION	FEDERAL FISCAL YEAR
NYSDOT	MAINTENANCE PAVING ON RT 427 FROM MAPLE AVENUE TO RT 14	STP FLEX	0.320	2014
NYSDOT	MAINTENANCE BY CONTRACT (MBC) PAVING - ROUTE 13 TOWN VETERAN	STP FLEX	2.681	2015
NYSDOT	INTERSTATE 86 MBC PAVING, STEUBEN/CHEMUNG COUNTY LINE TO EXIT 52A	NHPP	1.541	2016
NYSDOT	MBC PAVING OF RT 14 FROM WATER ST TO WOODLAWN	NHPP	1.073	2015

PROJECT SPONSOR	PROJECT DESCRIPTION	FUND SOURCE	AMOUNT (\$ MILLION) CONSTRUCTION	FEDERAL FISCAL YEAR
	AVE IN THE CITY OF ELMIRA			
NYSDOT	MBC PAVING OF RT 14 FROM RT328 TO KINYON ST	NHPP	1.229	2015
CITY OF ELMIRA	CHURCH STREET HIGHWAY REHABILITATION FROM MADISON AVE TO CLEMENS PKWY	STP FLEX	1.474	2014
CITY OF ELMIRA	WEST WATER STREET PAVEMENT REHABILITATION	NHPP	1.055	2018
NYSDOT	MAINTENANCE PAVING ON RT 427 FROM MAPLE AVENUE TO RT 14	STP FLEX	0.320	2014
NYSDOT	RT I-86 MBC EXIT 54 TO 56	NHPP	5.217	2015
NYSDOT	PAVEMENT PREVENTIVE MAINTENANCE	NHPP/ STP FLEX	8.804	2017
NYSDOT	PAVEMENT PREVENTIVE MAINTENANCE	STP FLEX	0.670	2018
NYSDOT	VENDOR PLACED PAVING (VPP) ROUTE 14 VETERAN TOWN LINE TO SCHUYLER TOWN LINE	NHPP	1.056	2015

Specific pavement projects cannot be identified many years in advance. Transportation system owners monitor pavement conditions through pavement scoring performed by NYSDOT and the ECTC. Having an asset management system in place provides the foundation for annual decisions on capital investment in pavement projects. NYSDOT and the ECTC local federal aid-eligible projects are often programmed as blocks of funding, with specific NYSDOT projects selected on an annual basis, and the local pavement projects on a biannual basis through a competitive process. The specific city and county pavement projects listed in Table 43 are identified needs, but the projects ultimately selected for funding will be selected as part of the ECTC programming process. Those specific projects are provided here as examples of future projects that will require funding.

The pavement preservation objective is to reduce the number of lane-miles of poor pavements in each five-year segment of the LRP.

- **Pavement Asset Management.** It is recommended that the ECTC continue to make pavement asset management a high priority by dedicating sufficient funds from all federal (NHPP, STP) and state (SDF) fund sources to move toward the objective of achieving a state of good repair.
 - **Selecting pavement projects for TIP programming.** NYSDOT’s approach of addressing fair pavements with treatments that will significantly extend their service life is appropriate when programming specific pavement projects. The ECTC must also consider the economic impact of addressing specific segments of roadway that have deteriorated to poor condition. While the cost of rehabilitation is higher, connectivity and access to economically significant locations must also be weighed.
 - **Preventive maintenance.** All road owners are encouraged to employ preventive maintenance as a regular practice, including such techniques as crack-sealing and patching, to extend the service life of pavements.
- Pavement projects:
 - **Chemung County Road 61—Coleman Avenue.** Reconstruction and drainage replacement, based on findings of completed drainage study.
 - **North Main Street Gateway project (City of Elmira).** Construct a multimodal gateway to the City of Elmira’s downtown, including street reconstruction, roundabout, and Complete Streets elements.
- Local Pavement projects, years 10-15
 - **County Roads 17, 35, and 74.** These roads serve higher traffic volumes in the urban commercialized areas of Big Flats and Horseheads. While maintenance paving measures have been utilized, these roads will need a higher level of rehabilitation in this time frame.
- Local Pavement projects, years 15-20
 - **Steeple Hill Road, Town of Big Flats.** Functions as a collector, carrying traffic between County Road 10 and State Route 225. Requires safety widening and addressing sharp curves.

Bridges are critical features of the transportation infrastructure. Bridge failures can result in loss of life and serious injury to motorists involved. Bridge deficiencies may require load posting with consequences for routing of commercial vehicles, snow plows, and emergency response. Because bridges are inspected at least biennially, bridge owners are well informed of needs. The ECTC must continue its practice of investing to keep its bridges in a state of good repair and reduce the number of structurally deficient bridges on an ongoing basis throughout the planning horizon. Table 43 shows all of the bridge projects that are currently programmed.

TABLE 43: 2014–2018 TIP BRIDGE PROJECTS

PROJECT SPONSOR	PROJECT DESCRIPTION	FUND SOURCE	AMOUNT (\$ MILLION) CONSTRUCTION	FEDERAL FISCAL YEAR
NYSDOT	NY 223 Over Newtown Creek, Bridge Rehabilitation	STP FLEX	0.828	2014
NYSDOT	NY 224 Over Langford Creek, Bridge Replacement	STP FLEX	2.218	2016
NYSDOT	NY 224 Over Johnson Creek, Bridge Replacement	STP Flex	1.093	2017
NYSDOT	Rte. 328 Over Seeley Creek, Bridge Replacement	NHPP	6.526	2016
NYSDOT	East Avenue Over I-86, Bin 1010790 Bridge Replacement	NHPP	2.738	2018
NYSDOT	Bridge Preventive Maintenance Of Rte. 17	NHPP	3.956	2014
NYSDOT	Bridge Preventive Maintenance On Rte. 17 Bridges	NHPP	1.919	2014
NYSDOT	CR 56 /SR 17 Bridge Rehab, Bin 1061290	NHPP	0.849	2017
NYSDOT	Rte. 14 Over Sleepers Creek Bridge Replacement	NHPP	1.074	2016
CHEMUNG COUNTY	CR 10/Chemung River Bridge Rehabilitation	STP FLEX	0.743	2014
CITY OF ELMIRA	East Water Street Bridge Rehabilitation	NHPP	1.104	2016
NYSDOT	Rte. 14 / Norfolk Southern RR, Superstructure	NHPP	4.893	2018

In addition, the TIP includes regular funding for bridge inspection, and for the preventive maintenance activities, including washing and painting.

MAP-21 includes a national objective that each state must maintain NHS bridges so that there are less than 10% that are structurally deficient when measured by deck area.

NYSDOT is responsible for the NHS bridges, and will on an ongoing basis request specific bridge projects for the TIP to meet this objective. Similar to pavement projects, NYSDOT and the ECTC local federal aid-eligible bridge projects are often programmed as blocks of funding, with specific NYSDOT projects selected on a biannual basis, and the local bridge projects on a biannual basis through a competitive basis. The specific bridge projects listed



below are identified needs, but the projects ultimately selected for funding will be selected as part of the ECTC programming process. Those specific projects are provided here as examples of future projects requiring funding.

All of the state bridges are being monitored and will be recommended for work at the appropriate time. The following state bridges receive additional consideration for future work based on their importance or structure type:

- **I-86 over the Chemung River.** [Bridge Identification Numbers (BIN)1061361, 1061362, 1061301, 1061302, 1061351, 1061352, 1061341, 1061342, 1061281, 1061282] These existing 10 bridges are long river crossing structures on I-86 between Exit 58 and Exit 60 that we will continue to invest in to maintain in order to maximize the longevity of the structures.
- **State Route 367 Truss Bridge over Bentley Creek** [BIN 1046800]
- **State Route 223 Truss Bridge over Cayuta Creek** [BIN 1041880]

Local bridge projects identified as needs in this LRP:

- **Chemung County Road 08** [BIN 3330970]. Replace superstructure.
- **Olcott Road, Town of Horseheads** [BIN 2266760]. Replace superstructure.
- **Chemung County Road 51** [BIN 3331360]. Bridge replacement.
- **Chemung County Road 69-Pennsylvania Avenue** [BIN 3331470]. Bridge replacement.
- **Lake Street Bridge, City of Elmira.** As noted earlier, this bridge is closed due to deterioration. The City will make a decision to either replace or demolish the bridge.

Local bridge projects in years 5-10

- **Church Street over Newtown Creek, Breesport** [BIN 3330850]. Bridge replacement.
- **Chemung County Timber Bridges.** Rehabilitate or replace abutment, seal bridge timbers. Address 5-6 bridges in a single contract.

Local bridge projects in years 15-20

- **Pennsylvania Avenue over Seeley Creek** [BIN 3331480] Bridge rehabilitation of a non-redundant truss bridge. Preventive maintenance (cleaning and painting) was performed in 2006.

Additional bridge investments:

- Local municipalities will collect and submit bridge preservation projects that are not federally funded so that the actions and impact on bridges can be documented in the asset management system.
- Add specific bridges to the program from the structurally deficient bridge list, as updated, to meet the objective of reducing the number of deficient bridges in the

County. Bridge owners will select the proper treatment, ranging from replacement to rehabilitation that repairs or replaces specific deficient elements. The project selection for local bridges will be done with a project solicitation process that considers condition, vehicle use, and importance to the transportation system.

- Add specific bridges to the program from the functionally obsolete bridge list, as updated, when it is determined that factors causing that classification have a significant safety consequence that should be remedied, or a negative economic impact in terms of commercial vehicle routings.
- Continue to fund bridge preventive maintenance treatments, including washing and painting throughout the LRP horizon, to extend the service life of bridges.

Transit investments must be made to meet the objective that the C TRAN fleet be maintained within FTA service life guidelines:

- Purchase buses, as required, to meet the FTA guidelines, with the caveat that the fleet size may be adjusted to reflect changes in service, either reductions or additions.
 - 2017: 5 medium heavy-duty buses.
 - 2017: 6 light-duty buses.

(There is insufficient funding presently identified to support the 2017 bus purchase needs. They are shown here as required to meet the stated objective, but unless the FTA funding program changes, these buses will be required to remain in the fleet beyond the optimal service life. The FTA average fleet age guideline will still be met.)

- 2023: 4 heavy-duty large buses.
- 2026: 7 heavy-duty medium buses.

(These bus purchases will also be contingent on available funding at that time.)

SYSTEM PRESERVATION—RESILIENCY

As noted in Chapter 5, pavement and bridge projects should be addressed through the lens of developing a resilient transportation system throughout Chemung County. A resilient system will ensure the ability to function at an acceptable level before, during, and after severe storm events. A Chemung County Resiliency Plan may identify those facilities that should be designed for adaptation, increasing their ability to survive a flood without significant damage; it may also identify those facilities whose design may not change because there is available redundancy in the network. Adaptation for bridges includes lengthening the span and raising the bridge over the waterway. Adaptation for roadways may mean relocating the road out of the flood plain. Any actions will take into consideration when funds are available when a rehabilitation or replacement project is being programmed.

- It is recommended that the ECTC complete a Chemung County Transportation Resiliency Plan by 2018. The LRP should include a Network-Robustness Analysis.

MANAGEMENT AND OPERATION OF THE REGIONAL TRANSPORTATION SYSTEM

As discussed in previous chapters, actively managing and operating the transportation system can improve mobility, enhance safety, and reduce the need for capacity expansion projects. This concept applies to both highway and transit modes.

Traffic signals are the most commonplace device among those used to manage traffic and pedestrian flow. With improvement in traffic signal technology, traffic flow on arterial streets can be enhanced, while the safety of pedestrians can also be improved by changing the signal timing when a pedestrian activates a request button. It has become more common to rely on vehicle detection, through either in-pavement loops or overhead detectors, to adjust signal timing in response to the presence of a left-turning vehicle or a car on a low-volume side street.

ITS techniques are the backbone of improved highway operations to address consequences of nonrecurring congestion, which is caused by incidents, work zones, weather, and planned special events. ITS includes detection devices that measure speed and notify the Transportation Management Center of problems; communications devices that notify motorists of unexpected and potentially hazardous conditions, and notify responders of an incident. In common use are in-pavement or above-pavement detectors, VMS, highway advisory radio (HAR), Internet sites like 511NY, and smartphone applications, including 511NY, Waze, and others.

There are also transit applications for active management and operations that improve performance and notify riders of bus arrival times. Automated vehicle locators (AVL) on buses lets the transit dispatcher know where the vehicles are with respect to their schedule. These can be used in an automated fashion to feed information to kiosks or signs at key transit stop locations that notify riders of the arrival time of the next bus. There are Internet and smartphone applications that provide the same function. This is especially useful to transit users when there is an unexpected event like a breakdown that requires a replacement bus to be brought from the garage, with attendant delays.

There are special applications for commercial vehicles, including proprietary route guidance, and weigh-in-motion systems that allow NYSDOT to weigh trucks without causing them delays. This is typically reserved for trucking companies with excellent safety records that can periodically skip inspections.

Within the LRP horizon, more automobile and ITS applications will come online. USDOT has programs that are developing vehicle-to-infrastructure integration (VII) and vehicle-to-vehicle communication (V2V). These tools link the vehicle, the roadside, drivers, TMC operators, and Internet applications. The resulting information flows and automated responses from vehicles can have a profound impact on safety. Automobile telematics are already in use by many vehicle manufacturers, with such applications as lane-departure

warnings and rear-end collision avoidance. In the near future, cars may be automatically notified of a pedestrian in an intersection, or an approaching emergency vehicle. While there are no specific investments that the ECTC will make to accommodate this technology, planners and system owners need to be aware of the opportunities.

The current TIP includes projects for traffic signal upgrades in the City of Elmira.

Recommendations for management and operations improvements include:

- Traffic Signal Upgrade project for Chemung County and Village signals;
- Replacement of the closed-circuit television system on I-86 at Horseheads to restore visual communications to the NYSDOT TMC;
- Replacement, as needed, of existing NYSDOT pad-mounted portable VMS;
- Replacement of the Chemung County and City of Elmira VMS within 10 years;
- Consideration of placement of additional VMS on key corridors;
- Consideration of transit notification systems through AVL and traveler notification systems; and
- Connection of the Chemung County Transportation Center security cameras to Chemung County and transit operations management.
- **Programmatic.** Updating of the ECTC ITS Regional Architecture on a five-year basis.
- **Programmatic.** Regular training of highway incident first responders using the NYSDOT/SHRP2 Traffic Incident Management training regime.
- **Programmatic.** Upgrading of traffic signal systems to state-of-the-practice technology based on regular evaluation of the safety and mobility benefits.

IMPROVING MOBILITY AND ACCESSIBILITY

An important priority of the ECTC is to ensure a high level of mobility throughout the urban area, and accessibility by all modes to important destinations. Because there are few locations in Chemung County that experience recurring congestion, even during peak travel periods, there is little need to construct new capacity for that purpose. There are some locations where intersection improvements can provide needed mobility and safety enhancements.

While there is an objective to improve personal mobility for people who are transit dependent, that cannot be accomplished when the County is reducing C TRAN service in response to external funding reductions. When households do not own cars, the ability to gain and retain employment can be difficult.

Mobility and access can also be improved for people who choose to travel on foot or by bicycle by improving sidewalk and trail infrastructure and completing connections where they are absent. Note the objective to improve sidewalk condition and ADA compliance as

streets and roads are reconstructed. The ECTC should collect and record the number of projects where the sidewalks and ADA access were improved, starting with the next TIP.

The regional roadway system in Chemung County provides good access to all destinations. There are two accessibility areas that merit special attention: additional access into the City of Elmira from I-86 and the access to the HOST industrial park from NY State Route 13.

As noted in Chapter 4, there is now a single I-86 access point in to the City of Elmira, Exit 56 the Church Street/Water Street interchange. As a result of the geography of the area, I-86 transitions from a North/South direction to East/West near Route 13. NY Route 14 connects downtown to/from I-86 to the north, but it is a somewhat circuitous route north of the Clemens Center Parkway. In the 1990s, a final draft Alternative Route Evaluation for Elmira Arterial Northern Section was completed. This study evaluated a number of possible alignments. Each has its own consequences for right-of-way acquisition and other impacts. A project of this scale is outside of the fiscal constraint of this LRP. However, as a result of the age of the document, the ECTC proposes to update the effort with a low-cost, concise study so as to be prepared should discretionary funding for construction become available.

Similarly, there is a truck traffic access concern with the current “fracking” (natural gas hydraulic fracturing drilling) truck traffic into and out of the HOST (formerly known as the Center at Horseheads) industrial park site. The industrial park is the location of rail transfer of sand and other materials needed for fracking and use of trucks to transport materials to various locations in northern Pennsylvania. The truck transport is using local roads and indirect routing to NY State Route 13. The issue could be more significant if the truck traffic volume dramatically increases to and from the industrial park because fracking is approved in New York State. Construction of a direct link that will remove trucks from local roads has been studied and evaluated. However, this project is outside the fiscal constraint of the LRP and could only be accomplished if discretionary funding becomes available.

With respect to transit mobility, there are a set of recommendations related to mobility management. The mobility management efforts now face the challenge of decreasing federal funds to support the program, employment transportation services, and changes to the federal and state funding programs. However, they also face opportunities for funding to improve services for seniors and individuals with disabilities. Under the prior federal transportation multiyear funding program (SAFTEA-LU), Chemung County received allocations of FTA New Freedom and Job Access Reverse Commute program funds. MAP-21 ended those programs. Under the new FTA §5310 Enhanced Mobility of Seniors and Individuals with Disabilities program, NYSDOT will serve as the designated recipient. Chemung County will have access to this funding that can be targeted for projects. The ECTC has sought to accept applications for the following types of projects: mobility management, operating assistance, capital projects, and vehicles. The NYSDOT rural program will only fund vehicles.

Completing the connectivity of the multiuse trail system is also an important mobility issue for those who choose to travel by bicycle. As has been documented, the Elmira urbanized area has important pieces of a trail system that are well used, including the Lackawanna Rail

Trail and the Catherine Valley Trail. Achieving a connected system will increase usage and offer greater connectivity to important destinations. When the proposed trail system is complete, links will serve important urban destinations, including downtown Elmira. This makes clear that the trails do not simply provide a recreational opportunity, but also offer a safe and convenient way for commuters and shoppers to access their destinations. Therefore, completing the trail system will have a documented economic benefit.

The Lackawanna Rail Trail Riverview Section has an initial phase that has been funded by a 2013 Transportation Enhancement Program grant to Chemung County for \$202,214 and local share of \$50,553 for total project cost of \$252,768. The project will include installing trailhead parking lot at the Lowman Crossover and provide trail safety improvements, landscaping, erosion control measures. A subsequent phase, noted below, is intended to pave that trail segment.

HIGHWAY MOBILITY RECOMMENDATIONS

- Address congested locations, specifically intersection and ramp bottlenecks, with spot improvements.
- **Chemung County Road 17.** Sing Sing Road relocation at Elmira-Corning Regional Airport as detailed in Airport Master Plan.
- **Action.** Update the Northern Arterial alternatives, options, and costs in a concise ECTC study. When completed, the project can be progressed if discretionary funding becomes available.
- **Illustrative.** Consider construction of the HOST–NY Route 13 connector if discretionary or innovative financing becomes available, including private-sector participation by HOST tenants.
- **Programmatic.** Give priority to the access needs of the Elmira Central Business District for multimodal improvements.
- **Programmatic.** ECTC staff support for the development of corridors more accessible to pedestrians and bicyclists in corridors such as Pennsylvania Avenue in Elmira and Southport and North and South Main Street in Elmira. In the first five years, the ECTC working with its members identify local bicycle friendly routes for designation.

BICYCLE AND PEDESTRIAN MOBILITY RECOMMENDATIONS

Trails

ECTC has identified as a LRP priority the completion of a regional trail system by 2035. This will include extensions of the Catharine Valley Trail for North-South connectivity, and the Lackawanna Rail Trail for East-West connectivity. ECTC understands that fiscal limitation means this will be accomplished through a series of segments being added to the trail system over time. This list details those segments, and the timing priority.



2015–2020

- **Lackawanna Rail Trail Riverview Section.** Phase II This project will follow the Phase I project noted earlier to complete this connection by paving.

Potential Funding: Chemung County has submitted an application for FHWA Transportation Alternatives Program to complete the trail section.

- Grove Street Boat Launch (City of Elmira) connection to the Lackawanna Rail Trail (City of Elmira)

Fund Source: FHWA Transportation Alternatives Program.

2015–2035 [Funding has not yet been identified for any of these projects]

These segments to extend the Catharine Valley Trail will utilize on-road NYS Bike Route 14

- Catharine Valley Trail @ Huck Finn Road (Town of Veteran) connection to Wygant Road (Village of Horseheads).
- Wygant Road (Village of Horseheads) connection to Westinghouse Road (Village of Horseheads).
- Westinghouse Road on State Rt. 14 (Village of Horseheads) connection to Hanover Square (Village of Horseheads).

The following alternative uses off-road trails, and will need to be evaluated for consideration of right-of-way acquisition and constructability:

- Wygant Road (Village of Horseheads) connection to Hanover Square (Village of Horseheads). This section originally proposed to begin south of Wygant Road and continue south in the vicinity of the wetlands between Watkins Road and the Horseheads Industrial Park.
- Hanover Square (Village of Horseheads) connection to Linear Park (Village of Horseheads).
- Linear Park (Village of Horseheads) connection to Eldridge Park (City of Elmira).
- Fitch's Bridge Boat Launch (Town of Elmira) connection to Pirozzolo Park (Town of Elmira).
- Pirozzolo Park (Town of Elmira) connection to Grove Street Boat Launch (City of Elmira).
- Grove Street Boat Launch (City of Elmira) connection to Mark Twain Riverfront Park (City of Elmira).
- Mark Twain Riverfront Park (City of Elmira) connection to Lackawanna Rail Trail (City of Elmira).
- North side of Seeley Creek from the bridge near the intersection of Pennsylvania Avenue and NYS Route 328 (Town of Southport) connection to the intersection of NYS Route 328 and NYS Route 14 (Town of Southport).

- North side of Seeley Creek from the bridge near the intersection of NYS Route 14 to the Southtown Plaza on Cedar Street (Town of Southport).
- North side of Seeley Creek from Southtown Plaza on Cedar Street (Town of Southport) to Dunn Field (City of Elmira).

Pedestrian Action Priorities

The ECTC recognizes that prior to making decisions on improving pedestrian facilities and access, they need more basic data than are currently in hand. The intent is to spend the immediate years developing sidewalk inventories in important subareas of the region. Once that information is in hand, they can make more informed decisions on improvements. They recognize, in relation to the community vision on attractiveness and accessibility, that schools and parks are among the most important destinations to assure safe and connected pedestrian access.

2015–2020

- Conduct Sidewalk Inventories in City of Elmira downtown and neighborhood commercial districts to support bicycle/pedestrian projects.

Funding: ECTC Planning Funds (UPWP).

- Conduct sidewalk inventories and Safe Routes to School (SRTS) inventories in the vicinity of all Elmira City parks and schools

Funding: ECTC Planning Funds (UPWP).

2020–2035

- Conduct sidewalk inventory in the Villages of Big Flats, Horseheads, and Town of Southport

Funding: ECTC Planning Funds (UPWP).

- Identify and implement improvements to pedestrian facilities in high-priority corridors.

Funding: None identified.

Bicycle Action Priorities

The ECTC intends to build upon both the regional trail system and the presence of NYS Bike Routes 14 and 17 by developing a Local Bike Route system. This requires study to determine what are the most appropriate on-street treatments for these routes; they may include striped bicycle lanes, wide curb lanes without pavement markings, shared lane markings and signage, and even bicycle boulevards in some locations.

2015–2020

- Conduct a study to determine the most appropriate bicycle accommodation treatments from the intersection of Pennsylvania Avenue County Route 69 and NYS

Route 328 near the Pine City Post Office to the intersection of Pennsylvania Avenue and the intersection at Broadway known as Bulkhead (Town of Southport).

Funding: ECTC Planning Funds (UPWP).

- Extend the study from the intersection of Pennsylvania Avenue County Route 69 and NYS Route 14 to the City of Elmira and continue to Sly Street and Madison Street Bridge.

Funding: None identified.

- Develop a Local Bicycle Routes Plan. Identify and map corridors based on a broad study of bicycle transportation needs.

Funding: ECTC Planning Funds (UPWP).

2020–2025

- Implement the Local Bicycle Route Plan with appropriate signage, maps, and public education.

Funding: ECTC Planning Funds and/or FHWA STP Flex.

Programmatic Education

2015–2020 (Existing Conditions)

Establish a Bicycle/Pedestrian Education Program in cooperation with:

- Chemung County Health Department;
- Local health care organizations; and
- Chemung County Traffic Safety Board.

The ECTC has an ongoing partnership with Creating Healthy Places (CHP) to Live, Work and Play. CHP grant funds have funded many bicycle and pedestrian improvements and accessibility to several neighborhood parks and trails in the City of Elmira. Safety signs, ADA ramps, trail exercise stations, and bicycle-share sheds are amenities that CHP has funded to improve transportation safety, quality of life, and healthier living in Chemung County.

The ECTC will continue to work and partner with CHP to develop plans and projects in its final year, and continue relationships with the local health community in Chemung County.

Transit Mobility Recommendations

- As noted previously, Chemung County has instituted fare increases and service reductions in response to revenue decline. The decline is linked to a recent New York State policy on nonemergency Medicaid transportation that has significantly reduced the number of people using transit for such purposes. Without a change in the revenue picture, Chemung County will do its best to retain service levels.

- Because access for transit riders requires proper ADA-compliant sidewalks, include the previously stated objective to improve sidewalk condition and ADA compliance, especially in the service area of C TRAN routes.
- **Programmatic.** Continue to develop relationships and seek coordination opportunities through the Chemung County CTC, including regional projects.
- Continue with the second and third years of the 511NY Southern Tier Ridesharing marketing project in 2015 and 2016. Seek ways to make the marketing program sustainable and to expand the program into other needed forms of multipassenger transportation using the Internet-matching programs available through NYSDOT.
- **Programmatic.** Continue the mobility management function using FTA Section 5310 funds. This will allow the continuation of coordination of existing public transit, other government agencies, and private nonprofit transportation provider services to achieve the most transportation trips for the community using existing program funds.
- Continue to use FTA Section 5310 program funds to replace vans and buses needed by private nonprofit agencies serving seniors and individuals with disabilities.
- **Programmatic.** Continue the C TRAN Riders Advisory Council to provide for two-way communication and understanding among transit riders, the County, and the private bus operator.
- In the next five years, develop a project to better meet the medical and employment transportation needs of seniors, persons on dialysis, and individuals with disabilities. The project would seek FTA §5310 operating assistance and New York State operating assistance to help subsidize the expense of providing such a service.

Trail Mobility Recommendations

In order to develop a complete multiuse trail system throughout Chemung County, the following links are recommended:

- **North-South Corridor.** Catharine Valley Trail completed from Seneca Harbor to Huck Finn Road in Pine Valley, incomplete sections next Huck Finn Road to Wygant Road, Wygant Road to Hanover Square in Village of Horseheads, if get there can do State Bike Route 14 and existing sidewalks to get to I-86, then incomplete from I-86 to Eldridge Park, there we pick up completed Lackawanna Rail Trail to Water Street,
- Becomes an East-West part of network to use I-86 and now trail to get to Chemung County border and Waverly: bridge project over Newtown Creek to be completed this fall will take it to I-86 new trail (as utility corridor) to Lowman, use County Route 8 to get County Route 60 and head east to east of Chemung (Dry Brook Road and take River Road to Waverly (which may then connect to an existing trail).

- **Town of Big Flats.** Connecting existing trails in locations such as Sperr Park, Recreation Park trail, and west to Fitch's Bridge.
- **Town of Elmira (Fitch's Bridge) to City of Elmira (Lackawanna Rail Trail).** See Chemung River Master Plan.
- **Town of Southport.** This is not yet defined by the Town, but there is interest based upon their Comprehensive Plan. This may consider trails using Seeley Creek walk along.

ECONOMIC DEVELOPMENT AND SUSTAINABILITY

High-quality transportation services are a hallmark of a successful community. Problems like deteriorating infrastructure, congestion, and barriers to destination access can make a place unattractive and lead to a continued decline in population and economic activity. The ECTC has embraced the concept of using transportation investment to achieve a level of sustainability, with focused improvements to infrastructure and services. Transportation investment can facilitate economic development in a number of ways. Sometimes a business requires enhanced access to a proposed site for freight, employees, or customers. The ability to provide such access can be a key to retaining an existing business or attracting a new one. There are also existing areas like downtown Elmira and neighborhood commercial districts that benefit from targeted investment. In this case, the projects may be as much about creating a safe and attractive environment for pedestrians, cyclists, and motorists as they are about addressing mobility.

While industrial site access is a well-defined concept, Complete Streets is relatively new to the transportation lexicon. A Complete Street is designed to meet the needs of all users, providing sidewalks, bicycle lanes, accessible pedestrian signals, attractive transit stops, and adequate travel lanes for vehicles. New York State law now requires consideration of Complete Streets treatments in all federal and state funded transportation projects. It is important to recognize that even in a sustainable community, streets as public spaces must be seen in the context of their surroundings and functions. A high-traffic commercial area, like that around the Arnot Mall in Big Flats, is not a good candidate for traffic calming and Complete Streets design. However, streets in the downtown or near Elmira College or serving small neighborhood commercial districts can provide a positive improvement to the transportation environment and overall quality of life. Context requires that street improvements fit their surroundings; Complete Streets elements can often be constructed within the existing public right-of-way.

Sustainability also relates to mitigating impacts of transportation investment on the natural environment, and reducing energy consumption and greenhouse gas emissions. The Draft 2014 New York State Energy Plan includes two initiatives that address transportation:

- **Initiative 12.** Increase transportation alternatives and vehicle diversity to harness the benefits of decreased dependence on oil; and a cleaner, more connected, and more flexible transportation system.
- **Initiative 13.** Bring innovative information technology to transportation system users to support more efficient and safe travel.

These initiatives are clearly addressed in this LRP. Completing the regional trail system and improving the environment for bicycling and walking will be a factor in encouraging people to shift from automobile for some of their trip-making needs. As more electric vehicles enter the fleet, the ECTC may investigate participating in projects to create a network of publicly accessible charging stations. Initiative 13 is explicitly addressed in the Management and Operations recommendations section.

The ECTC is committed to programmatic environmental mitigation; given that most of the construction work in this LRP is system preservation, there is not a large issue of impact. The most positive work that the ECTC can have on environmental conservation is through investing in travel that reduces reliance on single-occupant vehicle trips. The ECTC already has a good track record by piloting the 511NY Southern Tier Ridesharing program, using FTA funds to support the effort; supporting public transit; connecting trails; and improving pedestrian access.

Another opportunity to reduce transportation energy consumption and emissions is promoting electric vehicle usage as automakers extend their lineups. The New York State Association of MPOs has recently partnered with the New York State Energy Research and Development in creating a fact sheet on how MPOs can become involved in deployment of publicly available electric vehicle (EV) charging stations. For Elmira, this is likely a longer-term issue, but should be monitored over the LRP horizon.

Economic Development and Sustainability Recommendations:

- Improve highway access, as necessary, for specific economic development proposals based on planning and engineering studies. Support improved rail access as required.
- **Programmatic.** Improve the economic climate through focused investments in downtown Elmira and neighborhoods throughout the region; these may range from spot mobility improvements to streetscapes.
- **Programmatic.** Implement Complete Streets design treatments based on studies of context and economic development potential.

SUMMARY

The ECTC's LRP, "Elmira-Chemung Transportation Plan 2035: Challenges and Opportunities," positions the region to proceed with the best transportation investments to meet its stated goals and objectives. The ECTC fully supports the performance-based planning and programming paradigm that is established in MAP-21, and looks forward to fully implementing performance management and outcome-oriented performance targets at

such time as final rules are promulgated by USDOT. This LRP supports the community's vision of a vibrant accessible place where residents experience a high quality of life supported by the ability to choose travel modes suited to their needs; and businesses are attracted to and stay in the area because their transportation needs are met in an efficient manner. This LRP supports the policies of NYSDOT as embodied in the Forward Four principles; the policies of USDOT as stated in MAP-21 and related rulemakings; and, importantly, the goals of all of the local governments that are members of the ECTC.

APPENDIX 1: PUBLIC INPUT

The ECTC has made public participation an ongoing part of the Long Range Plan development. Efforts included the Community Visioning workshops held at various locations and times around the area; a series of public meetings once the Draft LRP was approved by the ECTC Policy Committee for review; and opportunity for input through the ECTC website.

This is a summary of the comments received, and ECTC's responses.

Public meetings, October 16, 2014

At Chemung County Department of Aging and Long Term Care	
Mike Steele	C TRAN
Ron Rehner	AARP Chapter 276
Connie Scudder	Creating Healthy Places
Rosemary Anthony	Arnot Health
Tillie Baker	Hunt Engineers
Nicolette Barber	Hunt Engineers
Amber Simmons	Chemung Schuyler Mobility Management
Tina Hager	Chemung County, ECTC, C TRAN
Pam Brown	Chemung County Dept. of Aging and Long Term Care
Zsuzsi Kadar	City of Elmira Dept of Community Development
Jim Arey	ECTC

At Steele Memorial Library	
Cheryl Locke	
Eileen Berlew	Chemung ARC
Mary-Lynn Rourke	Chemung Volunteer Action Corps
Jim Pfiffer	Chemung River Friends
Ted Bennett	Chemung County Legislature
Michael Perry	ECTC
Jim Arey	ECTC

Comments received

Focus on improvements to transit, bicycle, and pedestrian access

More clearly link the Community Vision to proposed actions for pedestrian improvements.
Include Complete Streets, road diets

Link to DASH-NY (Designing a Strong and Healthy New York)

<http://www.nyam.org/dash-ny-program/> It is a program of NYS Dept of Health focused on obesity prevention through active living.

Neighborhood walkability is an important issue for AARP. Both presence of sidewalks and sidewalk maintenance to repair/prevent trip hazards. Walking in a person's neighborhood can improve physical health and reduce social isolation.

City of Elmira Community Development Department is preparing a 5 year plan. Focus on neighborhood improvements in low income areas, use of HUD funding. ECTC and Community Development Dept should form a stronger planning partnership.

The recently adopted Town of Southport Comprehensive Plan includes recommended bicycle and pedestrian improvements that should be considered in the ECTC LRP

There is an Age Friendly Communities program that aims to replace driving trips with walking and cycling.

Genesee Transportation Council has initiated a regional walkability study that may be of interest to ECTC

Pedestrian green time is not adequate at some intersections (South Main St at TOPS supermarket identified) for senior citizens to feel safe crossing. City of Elmira DPW should be asked to adjust signal timing.

The wide straight streets in Elmira encouraging speeding; consider narrowing with road diet techniques.

The one-way pair on West Water St and West Church Street should be converted to two-way.

Accessibility to transit is in the plan, and is important.

ECTC should communicate with local Planning Boards about requiring developers to provide adequate sidewalks and related pedestrian and bicycle accommodations. Consider instituting a development impact fee to pay for improvements.

There is sometimes a blurred definition of "pedestrian or bicycle facilities" across sidewalks, roads, trails. The use of electric powered scooters on the roadways is a safety concern.

Addressing Public Comments

The majority of the comments received involve improving transit, bicycle, and pedestrian infrastructure and service. In general the Plan addresses the need to improve in the areas commented upon, within funding constraints. The Plan's stand alone trail, bicycle, and pedestrian plan will provide more detail on these issues. Since the solutions most often involve action by the municipality that owns the infrastructure, ECTC's role is limited to one of encouragement. The specific concern of adequate pedestrian green time at a signal has been referred to the City of Elmira DPW for their review.

Some comments involved new opportunities for partnering to improve these facilities, access to them, or their safe use. ECTC is fully committed to developing and maintaining partnerships with a variety of programs and agencies that support non-motorized transportation. ECTC staff will, or already are, following up on those opportunities mentioned. The communication with the local Planning Boards is part of the ECTC annual work plan and will continue to be part of it.

The issue of one-way versus two-way traffic patterns on Church and Water Streets is one that has been previously addressed. It will likely be reconsidered only when a change in traffic flow and volumes occurs.