SYRACUSE METROPOLITAN TRANSPORTATION COUNCIL

2050

LONG RANGE TRANSPORTATION PLAN

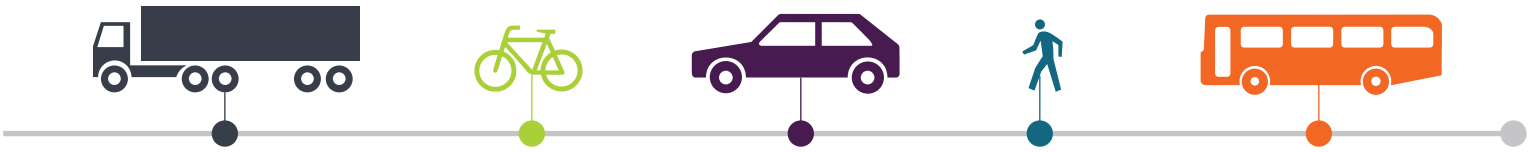
Moving Towards a Greater Syracuse

SMTC

SYRACUSE METROPOLITAN TRANSPORTATION COUNCIL

2050 LONG RANGE TRANSPORTATION PLAN

September 2015



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SYRACUSE METROPOLITAN TRANSPORTATION COUNCIL POLICY COMMITTEE

September 29, 2015

WHEREAS, The Syracuse Metropolitan Planning Area (MPA) contains a complex, multimodal transportation system, which must be maintained in a relative state of good repair to preserve the infrastructure, increase safety, increase security, enhance integration and system connectivity, promote efficient system management and operations, increase access and mobility, support economic vitality, and protect/enhance the environment; and

WHEREAS, The Syracuse Metropolitan Transportation Council (SMTC) has been designated by the Governor of the State of New York as the Metropolitan Planning Organization (MPO) responsible, together with the New York State Department of Transportation, for the comprehensive, continuing, and cooperative transportation planning process for the Syracuse MPA, including the preparation of the Long Range Transportation Plan; and

WHEREAS, Current Federal Metropolitan Planning Regulations (23 CFR Part 450) mandate that MPOs review and update their Long Range Transportation Plans at least every five years in attainment areas, such as Onondaga County, to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon; and

WHEREAS, The 2050 Long Range Transportation Plan contains a variety of new goals, objectives and for the first time, performance measures, and targets that will be utilized moving forward to advance the concepts contained within the plan, guide transportation planning, and capital investments; and

WHEREAS, The 2050 Long Range Transportation Plan, the first entirely new plan since 1995, was developed collectively by the SMTC Central Staff and the SMTC Planning Committee, including coordination and consultation with Federal, State, and Tribal land management, natural resources, environmental protection, conservation and historic preservation agencies as appropriate; and been made available for public comment; and

WHEREAS, All public comments received have been evaluated, addressed as appropriate and documented as an appendix to the report; and

WHEREAS, The SMTC Policy Committee is the policy making body of the MPO having the authority to adopt the 2050 Long Range Transportation Plan.

Adoption of the
2050 Long Range Transportation Plan

SMTC Policy Resolution No. 2015-13

NOW THEREFORE BE IT RESOLVED, that the SMTC Policy Committee hereby adopts the 2050 Long Range Transportation Plan.

Hon. Kathleen Rapp
Chairperson
SMTC Policy Committee

Date: September 29, 2015

for New York State Department of Transportation
Secretary
SMTC Policy Committee

Date: September 29, 2015

Executive Summary

The Syracuse Metropolitan Transportation Council is the state-designated Metropolitan Planning Organization (MPO) for the Syracuse area, responsible for administering comprehensive, continuous, and cooperative transportation planning. Creation of a Long Range Transportation Plan (LRTP) is one of the core functions of every MPO. The LRTP spells out a vision and goals that guide annual transportation planning activities and capital funding within the MPO's jurisdiction.

The 2050 Long Range Transportation Plan – *Moving Towards a Greater Syracuse* - is the first entirely new long range plan prepared by the SMTC since 1995. To develop this plan, the SMTC drew upon other plans and planning processes that have recently been prepared for Central New York. The SMTC used these plans, input from key stakeholders, and the results of a public outreach program that included a survey and multiple public meetings to define a new set of goals and objectives for the regional transportation system. As the SMTC programs federal transportation dollars toward the reconstruction of the region's transportation infrastructure over the next 35 years, the goals and objectives in this plan will serve as its guiding principles.

This LRTP was prepared in keeping with the requirements of the Moving Ahead for Progress in the 21st Century Act (MAP-21), signed into law in 2012. MAP-21 created a requirement that states and MPOs track and periodically measure specific aspects of their transportation facilities and how they perform, like pavement conditions, accident rates, and traffic congestion, and make progress in improving them. The SMTC has developed a set of quantitative performance measures that meets the requirements of MAP-21 and includes additional measures tailored to local planning goals. The 2050 LRTP includes a baseline System Performance Report that summarizes the current status of the

region's streets, bus service, sidewalks, and bike lanes, and how safely and efficiently they are moving people. The SMTC will provide updates to this report every five years. Measuring performance provides valuable insight into where to direct limited resources to achieve targets and advance national goals.

This plan does not specify an outcome for the I-81 viaduct. The New York State Department of Transportation (NYSDOT) is currently progressing The I-81 Viaduct Project through an environmental review. Once a decision is made, the SMTC will update this LRTP to reflect the chosen option for the future of I-81. This plan identifies three other regionally significant projects that will be the subject of other planning processes: an enhanced transit system (currently being examined in the ongoing Syracuse Metropolitan Area Regional Transit [SMART] Study), a regional trail system, and an inland port. This LRTP acknowledges that specific proposals and funding sources for I-81 construction and for major additions to the transit system have not been identified.

Funding sources, generally, will play a major role in whether or not the region is able to make significant progress in improving its performance measures. A total of $2.3 billion in federal aid funding (through the Federal Highway Administration and the Federal Transit Administration) is expected to be available for capital projects through the year 2050. The SMTC anticipates needing a total of $3.1 billion to both maintain and improve the existing highway and transit systems, with the bulk of this funding (more than 80 percent) going to maintenance. (This $3.1 billion estimate does not include funding for either the I-81 Viaduct or an enhanced transit system.) Given the maintenance needs of the existing system, limited financial resources, and the fact that our existing road system generally operates very well, we do not anticipate spending significant funds to substantially expand the existing transportation system beyond the efforts noted above.

Our projections indicate that, for the most part, the existing transportation system will continue to serve the region's population well. Over the next 35 years demographic and economic growth is expected to largely continue along lines established in previous decades, although more population growth is expected in the City of

Syracuse than in the recent past. Existing commuting trends based on single-occupant vehicles are likely to continue. But the 2050 LRTP also envisions a region of robust villages and town centers anchored by a revitalized and growing City of Syracuse, connected by roads, trails, bike lanes, and an enhanced transit system. By pursuing the goals and objectives in this plan, and utilizing them to prioritize which transportation projects are funded, we will move toward a greater Syracuse region.

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Chapter 1: Introduction

1.1 ABOUT THE SMTC

1.1.1 Overview

The Syracuse Metropolitan Transportation Council is a state-designated Metropolitan Planning Organization, responsible for administering comprehensive, continuous, and cooperative transportation planning. The Council's planning jurisdiction, called the Metropolitan Planning Area (Figure 1.1), covers Onondaga County and portions of Madison and Oswego counties. As the Metropolitan Planning Organization for the Greater Syracuse Metropolitan Area, the SMTC, as directed through federal metropolitan transportation planning policy, acts as a clearinghouse where long-term and immediate transportation planning decisions are made for the region. These decisions are made through a committee structure that uses models of consensus building and cooperative decision making. The committees are made up of "member agencies" from the local, county, state, and federal level that have a vested interest in the planning and function of the transportation system. The SMTC also provides an opportunity for citizens to participate in the discussion of specific transportation issues.

The SMTC is a Metropolitan Planning Organization, or MPO, and is responsible for transportation planning in Onondaga County and portions of Oswego and Madison counties.

1.1.2 History of MPOs

Current federal surface transportation legislation requires that an MPO exist for every urban area within the U.S. with a population of at least 50,000 people. This basic definition of an MPO was first established in the Federal Highway Act of 1962. (The SMTC was established in 1966.) Although MPOs had existed since the 1960s, the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 substantially increased the role of the MPOs in the transportation planning process. Along with the Clean Air Act Amendments of 1990

Every urban area in the U.S. with a population of at least 50,000 has an MPO.

and the Americans with Disabilities Act (ADA) of 1990, ISTEA ushered in a new era of transportation planning that emphasized alternative modes of travel, intermodal connectivity, environmental sustainability, preservation of existing infrastructure (since the Interstate Highway System had, essentially, been completed by that time) and the interactions between land use and transportation. ISTEA also called for increased public involvement in the transportation planning process.

Since the passage of ISTEA in 1991, there have been three additional federal surface transportation laws passed: the Transportation Equity Act for the 21st Century (TEA-21) in 1998; the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005; and Moving Ahead for Progress in the 21st Century (MAP-21) in 2012. Each new law has modified the requirements placed on MPOs, while maintaining the essential elements and philosophy introduced in ISTEA. The most recent transportation legislation, MAP-21, maintained the same basic planning factors of the previous legislation, but brought new requirements for performance-based planning reflecting a general move towards increased accountability for publicly-funded programs. The performance-based approach requires the establishment of measureable objectives, associated performance measures and targets, and monitoring of progress over time.

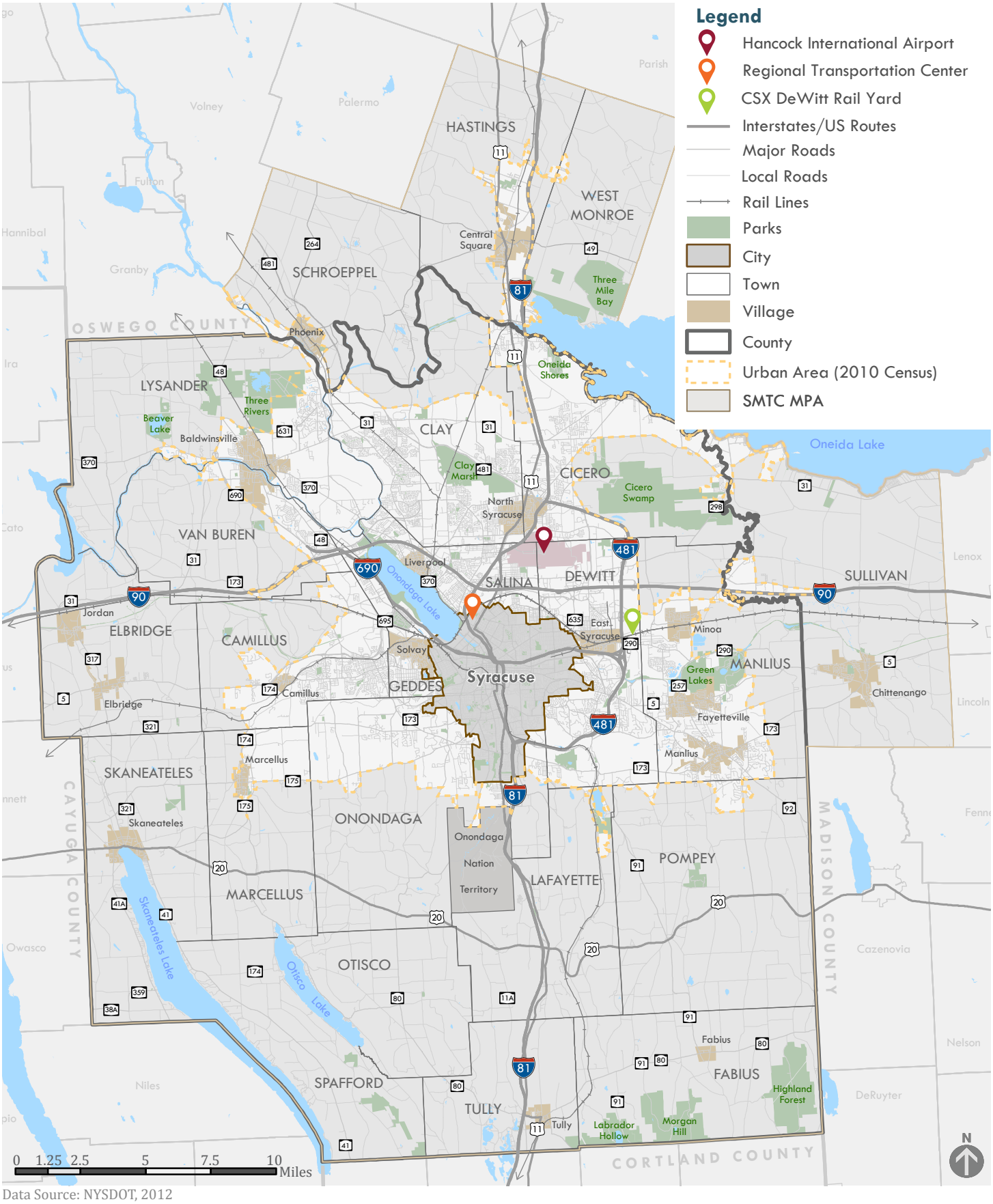
The current federal surface transportation law, MAP-21, has brought new requirements for performance-based planning for MPOs and their member agencies.

1.1.3 Core functions of the MPO

All metropolitan planning organizations fulfill three core functions, embodied in three guiding documents: long range planning through the Long Range Transportation Plan; an annual program of transportation planning activities through the Unified Planning Work Program; and administration of federal surface transportation funding through the Transportation Improvement Program.

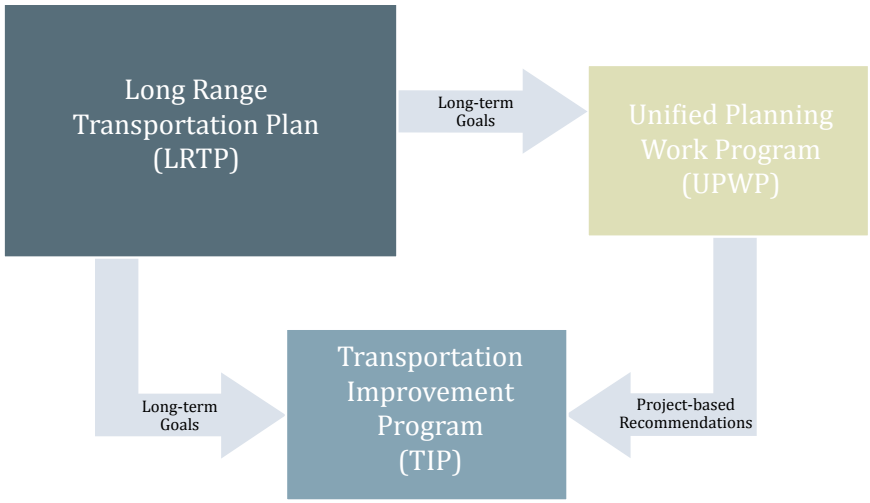
Long Range Transportation Plan. The Long Range Transportation Plan (LRTP) guides transportation planning and investment over a period of at least 20 years. The LRTP describes the existing land use patterns, economic conditions, demographics, and transportation system conditions in the planning area; identifies future transportation system needs; and sets goals and objectives for future transportation planning and investment. A financial plan must be included in the LRTP,

FIGURE 1.1: THE SMTC METROPOLITAN PLANNING AREA (MPA)



Data Source: NYSDOT, 2012

The SMTC has three core functions, embodied in three guiding documents: long-range planning through the LRTP, an annual program of transportation planning activities through the UPWP, and administration of federal surface transportation money through the TIP.



illustrating how the MPO intends to carry out the policies or projects identified in the LRTP with the resources that are reasonably expected to be available over the life of the plan. The SMTC's LRTP is created by staff and an advisory committee of member agencies, along with input from the public, and is approved by the Policy Committee. The LRTP must be updated every five years.

Unified Planning Work Program. The Unified Planning Work Program (UPWP) lists annual transportation planning activities that are to be undertaken in the Syracuse Metropolitan Planning Area in support of the goals established in the LRTP. In short, it is an outline of the transportation planning activities that will be conducted by the SMTC and its professional staff over the course of one year. The UPWP includes both on-going activities, such as traffic data collection and Geographic Information Systems (GIS) work, as well as short-term (usually 12-24 months) individual planning studies for a sub-area of the MPA, such as corridor studies, parking studies, and bicycle and/or pedestrian studies. Maintenance of the LRTP and the Transportation Improvement Program (see below) are required elements of the UPWP; additional projects are selected from proposals made by member agencies and municipalities. The UPWP is updated annually.

Transportation Improvement Program. The Transportation Improvement Program is the five-year list of specific capital projects for which federal funds are anticipated. Required by federal law, the

TIP represents the transportation improvement priorities of the Greater Syracuse Metropolitan Area. The list of projects is multi-modal and includes highway and public transit projects, as well as bicycle, pedestrian, and freight-related projects. The TIP represents the translation of recommendations from the LRTP and the UPWP. The projects are evaluated to assure consistency with the goals and objectives established in the LRTP.

1.1.4 MPO FUNDING

The federal funding that the SMTC administers (through the TIP) for transportation-related capital projects in our planning area comes primarily from the federal Highway Trust Fund (HTF). The majority of the money in the HTF comes from the federal gas tax, which has been set at 18.4 cents per gallon (24.4 cents per gallon for diesel fuel) since 1993. Annual revenue from gas taxes is on the order of $33 billion.

Before money from the HTF can be used to reimburse states for project costs, Congress must pass, and the President must approve, legislation authorizing the use of funds. These authorization bills govern how transportation funds are used for several years at a time and include rules pertaining to what programs will be funded and how transportation planning and environmental review activities will be conducted. MAP-21 is the current funding authorization law. It set funding levels at $40.4 billion for 2013 and $41 billion for 2014 when it was signed into law on July 6, 2012. MAP-21 was set to expire on September 30, 2014, but was extended through October 2015.

The SMTC, as with all MPOs, does not own or maintain any infrastructure. The SMTC facilitates the development of the TIP, which lists the capital projects that will be undertaken by the facility owners that are members of the SMTC. The SMTC's 2014-2018 TIP included projects totaling nearly $332 million over 5 years.

The SMTC's annual planning budget (for activities to be completed by staff or consultants, as listed in the UPWP) is approximately $1.2 million. These planning funds have historically been provided through a small set-aside from the total capital funding authorized in the current surface transportation legislation (typically around 1 percent of the total funding).

The future of the Highway Trust Fund

Currently, the HTF's revenues are well below the funding levels authorized by MAP-21; transfers from the nation's general fund to the HTF have been needed in recent years.

How best to remedy chronic funding shortfalls is a subject of ongoing discussion at the federal level. For more information on transportation funding shortfalls and the HTF's prospects for solvency, see the Congressional Budget Office's April 2013 document, Status of the Highway Trust Fund. http://www.cbo.gov/sites/default/files/cbofiles/attachments/44093-HighwayTrustFund.pdf

1.1.5 Other functions of the SMTC

In addition to the core functions previously discussed, the SMTC completes a number of other activities and documents for our region:

Congestion Management Process (CMP). A CMP is required by federal legislation in each metropolitan area with an urbanized-area population greater than 200,000 people (also known as Transportation Management Areas or TMAs). The urbanized area within the SMTC's planning area includes 412,317 people (2010 Census) and therefore qualifies as a TMA. The FHWA defines a CMP as a "systematic approach to addressing congestion through effective management and operation." This process aids in identifying locations that may need improvements to relieve congestion. The SMTC completed the most recent CMP report in 2015. This document is updated on an as-needed basis, as determined by SMTC staff and/or member agencies.

Functional Classification system review. Functional classification is the process by which roadways are grouped into various categories according to characteristics such as design, connectivity, relation to surrounding land uses, and anticipated traffic volumes. Functional classification is an integral component to determining eligibility for receipt of federal transportation funding assistance. MPOs have the responsibility to examine the transportation network within their planning area to ensure roadways are appropriately classified. This review process typically occurs subsequent to the release of a decennial Census urbanized area; however, revisions can occur to the system at any time. The State Department of Transportation is responsible for establishing the procedures by which modifications to the transportation system classifications should be submitted. The SMTC Policy Committee approves any change to the functional classification system before transmittal to the State Department of Transportation and then to US Department of Transportation for final approval.

Coordinated Public Transit-Human Services Transportation Plan. Transportation legislation mandates that projects selected to receive Federal Transit Administration Section 5310 funds (Elderly Individuals and Persons with Disabilities) must be included in a locally developed, Coordinated Public Transit-Human Services Transportation

For more information...

SMTC has many resources available on our web site at www.smtmcmpo.org including:

- Latest versions of our TIP, UPWP, and LRTP
- Traffic counts for intersections and road segments throughout our planning area
- Final reports from past studies
- Maps, including our Bicycle Suitability Map and Waterway Destinations and Services Map
- Announcements about public meetings or other public involvement opportunities.

Plan, or Coordinated Plan. A Coordinated Plan identifies the transportation needs of individuals with disabilities, seniors, and people with low incomes, provides strategies for meeting the local needs, and prioritizes transportation services for funding and implementation. The Coordinated Plan is developed with direct participation and involvement from seniors, individuals with disabilities, representatives of public, private and nonprofit transportation and human services providers, and other members of the public. Coordinated Plans follow the update cycle of the LRTP (every five years).

Title VI reporting and Environmental Justice analysis. Title VI of the Civil Rights Act of 1964 prevents discrimination by government agencies that receive federal funds. As recipients of federal funds from the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA), the SMTC and its member agencies are subject to Title VI requirements. The current Title VI circular, FTA C 4702.1A, includes guidance on conducting metropolitan transportation planning and states "…MPOs should have an analytic basis in place for certifying their compliance with Title VI." To fulfill this regulation, the SMTC completes a demographic profile of various socioeconomic groups, including low-income, minority, seniors, Limited-English Proficient, and persons with disabilities relying on decennial Census and American Community Survey data. The SMTC also completes a Title VI self-certification provided by the New York State Department of Transportation.

Environmental Justice (EJ) requirements stemmed from Title VI of the Civil Rights Act. In 1994, President Clinton issued Executive Order 12898 stressing the provisions of Title VI and stating in short that each federal agency shall make EJ a part of their mission. In 2002, the FHWA requested that the SMTC produce an EJ analysis report. Since that time, three reports, including the most recent one in 2012, have been completed. The EJ report evaluates whether capital and planning activities have been disproportionally distributed amongst the EJ target populations, which include the minority and low income populations as well other identified underserved populations. The most recent analysis found that UPWP projects and activities going back as far as

No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. **–Title VI of the 1964 Civil Rights Act**

Each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States. **–Executive Order 12898**

2005 and projects from the 2011-2015 TIP are not known to have been disproportionally distributed amongst the EJ target populations.

Data collection and analysis. The SMTC collects, stores, and analyzes a variety of data for our region. The SMTC provides a variety of services to the member agencies to assist with their own planning. Some notable current and past activities include:

- Collection and compilation of an extensive assortment of traffic count data.
- Mapping capabilities using Geographic Information Systems (GIS).
- Maintenance of Bridge and Pavement Condition Management Systems and publication of an accompanying report on an annual basis.
- Publication of a Bicycle Suitability Map and Waterway Destinations and Services Map, used by residents throughout our region. The latest versions of both maps were published in 2011 and are updated on an as-needed basis.
- Maintenance of a regional travel demand model. This is a computer model that is used to determine the expected future travel conditions on major roads in our region based on projected population and employment changes. SMTC staff and member agencies employ this model for a variety of studies.

1.1.6 Member Agencies and Committee Structure

The SMTC consists of federal, state, regional, county, and city offices and organizations, collectively referred to as the SMTC's "member agencies." Representatives from these member agencies participate in various SMTC committees. There are three standing committees that are responsible for decision making: the Policy Committee, the Planning Committee, and the Executive Committee. Each committee has a defined membership and purpose. The Policy Committee is the final decision-making body for the council.

Just about every study that the SMTC conducts (save for some minor technical analysis tasks) includes the formation of a Study Advisory Committee specifically for that project. The Study Advisory Committees generally consist of interested Planning Committee members and may, on occasion, include representatives of other community organizations whose input is deemed integral to the completion of the study.

SMTC Policy Committee Members

U.S. Department of Transportation
- Federal Aviation Administration*
- Federal Highway Administration*
- Federal Transit Administration*

New York State
- Department of Environmental Conservation
- Department of Transportation
- Thruway Authority
- Empire State Development

Onondaga County
- Office of the Executive
- Legislature
- Planning Board

Madison County
- Board of Supervisors*

Oswego County
- Legislature*

City of Syracuse
- Office of the Mayor
- Common Council
- Planning Commission

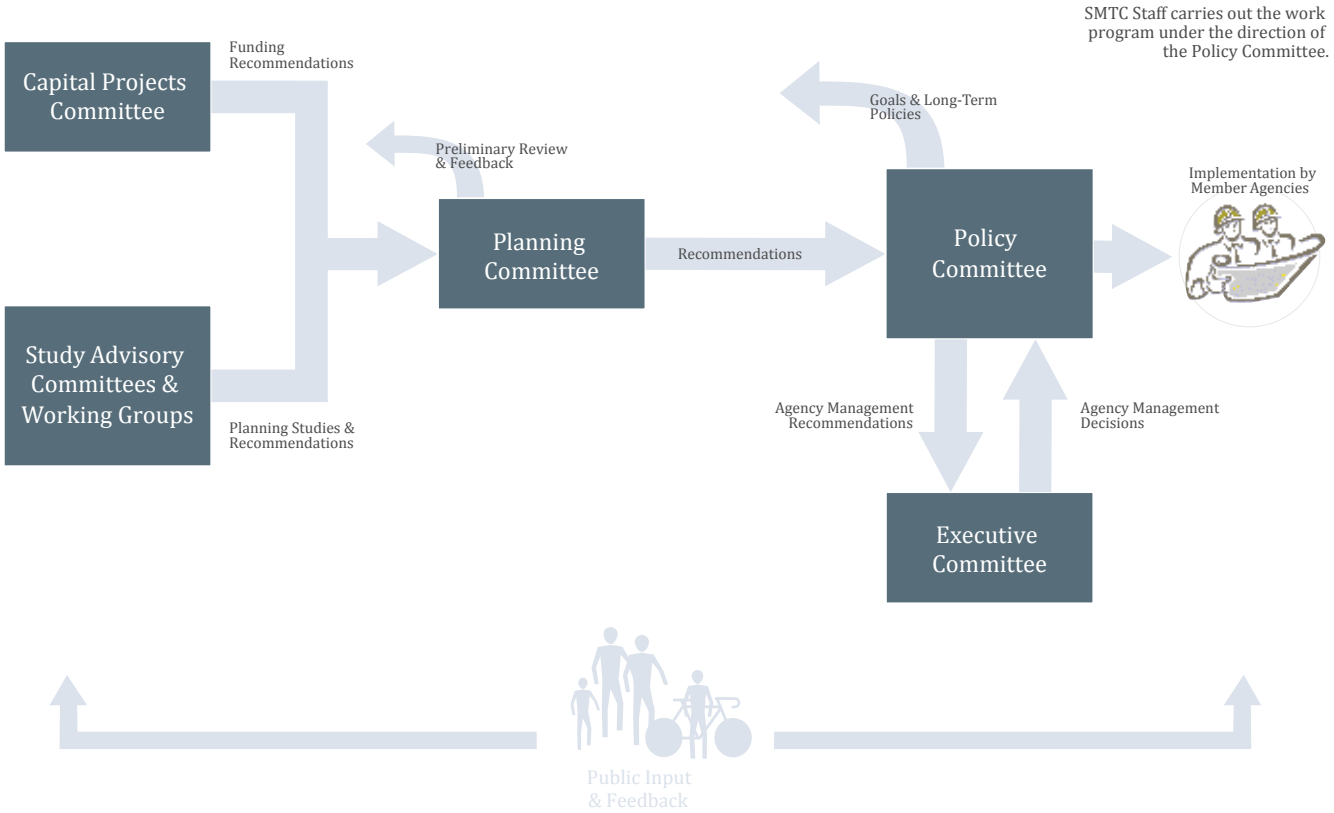
CNY Regional Transportation Authority

CNY Regional Planning and Development Board

CenterState Corporation for Economic Opportunity

Onondaga Nation*

* = Non-voting advisory agency



The SMTC operates with three primary standing committees (Policy, Planning, and Executive), plus a Capital Projects Committee and various study-specific committees and working groups. Representatives of the SMTC member agencies comprise the committees.

Roles of the SMTC Committees

Policy Committee

- Establishes goals and long-term policies.
- Approves and adopts the UPWP, TIP, and LRTP.
- Reviews and acknowledges completion of planning studies.

Planning Committee

- Monitors progress of planning studies.
- Approves scope of work for planning studies.
- Established by the Policy Committee and composed of professional/technical representatives.

Executive Committee

- Manages administration within the SMTC.
- Coordinates with the SMTC Director, who manages SMTC staff.
- Consists of Planning Committee members.

Capital Projects Committee

- Managed by SMTC staff.
- Reviews, prioritizes, and recommends projects to be funded with federal transportation dollars to the Planning Committee.

Study Advisory Committees and Working Groups

- Managed by SMTC staff.
- Provides guidance throughout planning studies.

1.1.7 Public participation and communications

Public participation is a key component to the success of any planning process. As required by federal legislation, the SMTC maintains an agency-wide "umbrella" Public Participation Plan and also creates individual Public Involvement Plans for specific projects. The SMTC provides an opportunity for citizens to participate in the discussion of specific transportation issues and encourages public participation via a variety of avenues such as public meetings, surveys, questionnaires, workshops, and open houses. The SMTC also conducts studies to gauge citizen desires, completes technical corridor reviews, and utilizes multimedia educational tools.

Public participation is vital to the transportation planning process. SMTC uses a variety of methods to engage the public in transportation planning for our region.

The public can access SMTC's study reports and other publications from the agency's web site at www.smtcmpo.org. Public meeting notices are posted to the web site as well. Staff contact information is available on the web site, and the agency maintains a general email address (contactus@smtcmpo.org). The SMTC also maintains a Facebook page to provide project updates and other information to the public.

Participants at the May 2013 public meeting for The I-81 Challenge *were able to view numerous display boards, speak with staff, and provide written comments.*

The SMTC publishes a newsletter, *Directions*, typically two to four times each year. The newsletter includes a letter from the director about a relevant topic, summaries of recently completed studies or recently approved scopes of work, and announcements about upcoming public involvement opportunities. The newsletter is distributed in hard-copy to approximately 4,300 physical addresses and electronically to approximately 360 e-mail addresses.

1.2 ABOUT THE LRTP

Creation of the LRTP is one of the core functions of every MPO. It is based on projections of growth and travel demand, coupled with financial assumptions and public input. The LRTP enunciates a vision and goals that guide annual transportation planning activities and capital funding in the Metropolitan Planning Area.

1.2.1 The evolution of SMTC's Long Range Transportation Plan

This 2050 Long Range Transportation Plan – *Moving Towards a Greater Syracuse* – is the first entirely new plan generated by the

Contact us anytime!

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Syracuse, NY 13202

Phone: 315-422-5716

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E-mail: contactus@smtcmpo.org

Online at www.smtcmpo.org

We are also on Facebook!

SMTC since 1995, when the 2020 Long Range Transportation Plan was created in response to the planning requirements of the Intermodal Transportation Efficiency Act (ISTEA) of 1991. The original 2020 LRTP goals and objectives were created through brainstorming sessions with a Visioning Committee and were framed around ISTEA's 15 "planning factors," which addressed enhancing mobility for all users, safety, environmental sustainability, economic development, land use, and facility preservation.

The 2020 LRTP was updated in 1998, 2001, 2004, 2007, and 2011. These updates were not designed as independent documents, but as supplements to be used in conjunction with the original 2020 LRTP. The updated documents reviewed emerging transportation and demographic trends and responded to incremental changes in the federal legislation, but did not substantially alter the goals and objectives developed for the original plan in the early 1990s. The 2050 LRTP includes new goals and objectives in response to recent changes in federal legislation and other recent planning efforts in our region. It is also encompasses a slightly larger area than our previous plans, as the SMTC's Metropolitan Planning Area expanded farther into Oswego and Madison counties based on the 2010 Census.

1.2.2 Planning process and public participation

Development of the 2050 LRTP began in 2012 with the establishment of the Study Advisory Committee (SAC). All member agencies received an invitation to participate on the SAC. The SAC met 9 times during the development of the 2050 LRTP.

As in all SMTC activities, public participation is critical to the successful development of the LRTP. Major public outreach activities for the 2050 LRTP included the following:

- An online survey focused on the proposed goals and objectives for the new 2050 LRTP, which was conducted in December 2014/January 2015 and garnered 380 responses. (See Appendix B)
- A series of four open-house style public meetings in April 2015 to present existing demographic and infrastructure conditions, review the survey results, present financial analysis, and elicit feedback from the public on additional transportation issues and opportunities. (See Appendix C)

The 2050 LRTP is the first entirely new long-range transportation plan created by the SMTC since 1995.

2050 LRTP Study Advisory Committee members

- Centerstate CEO
- Central New York Regional Planning and Development Board
- Centro
- City of Syracuse Department of Engineering
- City of Syracuse Department of Public Works
- City of Syracuse Planning Commission
- Empire State Development
- Federal Highway Administration
- Federal Transit Administration
- Madison County Highway Department
- Madison County Planning
- New York State Department of Transportation
- Onondaga County Department of Transportation
- Onondaga Nation
- Oswego County Community Development
- Oswego County Highway Department
- Syracuse-Onondaga County Planning Agency

- A final public meeting in August 2015 to review the draft plan with the public (see Appendix E) and a 30-day public comment period from August 4 through September 3, 2015 (see Appendix F).

Public input is incorporated throughout this document where it is most applicable.

MAP-21 also requires that MPOs consult with agencies responsible for land use management, naural resources, environmental protection, conservation, and historic preservation during the development of the LRTP. To this end, the SMTC contacted the appropriate agencies by mail in late July 2015 to provide notice of the August 2015 public meeting and the availability of the draft LRTP document for their review. The contact list is included in Appendix G. No agency comments were received.

1.2.3 What's in the 2050 LRTP

The remainder of the 2050 LRTP is organized into the following chapters:

Chapter 2 describes the development of the plan's goals and objectives, taking into account other recent planning efforts and the public feedback received through our online survey.

Chapter 3 presents existing demographic and economic data for our region and **Chapter 4** discusses existing infrastructure conditions. Both of these chapters frequently reference the SMTC's Transportation Atlas (published separately), which includes a wealth of transportation-related information for our planning area.

Chapter 5 describes the development of the 'anticipated future' scenario and the technical travel demand modeling work that was completed as part of this planning effort.

The financial analysis is detailed in **Chapter 6**.

Finally, **Chapter 7** summarizes the vision for our region and the actions necessary to achieve that vision.

The SMTC Transportation Atlas

In conjunction with the development of the 2050 LRTP, the SMTC also published a Transportation Atlas. The Atlas includes a wealth of existing conditions information for our planning area, including demographics, infrastructure conditions, mobility patterns, and safety.

The Atlas is a companion to the LRTP, and is referenced often in the text of this document.

The Atlas is available on the SMTC's website, or you may request a print copy by calling or emailing the SMTC.

Look for this icon throughout the LRTP - it will tell you where to find more information in the Transportation Atlas!

Chapter 2:
Goals and Objectives

2.1 FEDERAL REQUIREMENTS

MAP-21 identifies eight planning factors to be used by metropolitan planning organizations like the SMTC to structure their policies and programs. The eight planning factors require MPOs to provide projects and strategies that will:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase the accessibility and mobility of people and for freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation; and
8. Emphasize the preservation of the existing transportation system.

MAP-21 places a new emphasis on measuring and managing the surface transportation system's performance. MAP-21 describes performance management as a way to achieve "the most efficient investment of Federal transportation funds by refocusing on national transportation goals."

Federal legislation requires that the LRTP address eight 'planning factors' and seven National Goals for the transportation system.

The national transportation goals created by MAP-21 are:

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.

Progress towards achieving our goals and objectives will be tracked over time using performance measures and targets.

MAP-21 requires that states and MPOs demonstrate that they are making progress toward achieving these goals. Progress is to be tracked by using a set of performance measures. MAP-21 defines several performance measures but it does not specify what a state or MPO's targets should be; states and MPOs are to identify their own targets. For example, pavement condition on the Interstate System is a performance measure included in the legislation, but MAP-21 does not tell states or MPOs what the condition of their pavement should be. The performance measures mandated by federal legislation are:

- Fatalities and serious injuries – both number and rate – on all public roads
- Pavement condition on the Interstate System and on the remainder of the National Highway System (NHS)
- Performance of the Interstate System and the remainder of the NHS
- Bridge condition on the NHS

Goals, Objectives, Performance Measures & Targets Demystified

This plan is structured around four basic building blocks: goals, objectives, performance measures, and targets. They all sound somewhat similar, but each has a different role in the federal transportation planning process.

Goals are broad statements that describe the way things should be. For example, if you were to say "I want to get more exercise from walking," this would be a general description of how you want to get more exercise in the future. You have not said how much more walking you want to do or when and where you would do it. The LRTP is built around seven goals that, similarly, provide a general overall direction for the region's transportation system.

Objectives are specific, measurable steps to be taken to reach a goal. An example would be saying "I will walk during my lunch break." This objective makes the abstract goal of "walking more" into something specific. Each of the LRTP's seven goals has distinct, measurable objectives associated with it.

Performance Measures are the means by which progress will be gauged. Performance measures are quantifiable. In the case of walking during lunch, the performance measure could be the number of minutes you walk during a lunch break and/or the number of times a week you take a walk. Each objective in the LRTP has a performance measure associated with it.

Targets indicate where each performance measure should be. A target is the number that the performance measure needs to reach to achieve a given objective. Continuing the example above, you might determine that your target for walking during lunch will be taking a 15-minute walk three times a week. By consistently hitting this target, you will have achieved your goal of getting more exercise from walking. In the case of the transportation system, the SMTC will be tracking the targets identified in the LRTP for each performance measure. The outcomes will be documented in periodic System Performance Reports.

- Traffic congestion
- On-road mobile source emissions
- Freight movement on the Interstate System

Specific performance measures are to be defined in the final rulemaking from the US Department of Transportation (USDOT). To date, Notices of Proposed Rulemaking (NPRMs) have been published for the infrastructure condition (pavement and bridges) and safety (fatalities and serious injuries) performance measures.

MAP-21 requires that states and MPOs prepare regular system performance reports evaluating their progress toward achieving their goals. The consequences of failing to achieve goals are, or will be,

defined at the federal level. One example of how system performance monitoring may work in the future for elements of the transportation system can be seen in how MAP-21 handles bridge condition ratings. MAP-21 states that if more than ten percent of the total deck area of bridges on the National Highway System (NHS) in a given state is located on bridges classified as structurally deficient for three consecutive years, a portion of that state's funding must be set aside to address bridge conditions on the NHS.

2.2 LOCAL PLANNING EFFORTS

The LRTP must address the federal Planning Factors and National Goals described above. But input from local stakeholders should also be incorporated into the LRTP to achieve a plan that supports the unique goals of each region.

The future of the aging I-81 viaduct in downtown Syracuse continues to be the subject of extensive local planning efforts.

Development of the 2050 LRTP began shortly after the completion of several other large-scale planning and visioning efforts centered in the Syracuse area, undertaken by local and regional planning bodies. Each of these plans discussed ongoing transportation issues and included goals and objectives for improving the surface transportation system, and included significant public outreach efforts. Rather than initiate a new planning and visioning process for this LRTP, the SMTC utilized key ideas from these recently-developed plans as the foundation for a new set of goals and objectives. The plans and documents used were:

- Syracuse-Onondaga County Planning Agency - Sustainable Development Plan
- Central New York Regional Planning and Development Board - Vision CNY
- Central New York Regional Economic Development Council - Five-Year Strategic Plan
- New York State Department of Transportation (NYSDOT) with Syracuse Metropolitan Transportation Council - The I-81 Corridor Study.

Appendix A summarizes how each of these documents was used to develop the 2050 LRTP goals.

2.2.1 Syracuse-Onondaga County Planning Agency - Sustainable Development Plan

The Syracuse-Onondaga County Planning Agency (SOCPA) completed the Onondaga County Sustainable Development Plan in 2012. This plan presents a set of policies and practices for Onondaga County and its 35 municipalities that will foster development without compromising the region's social and ecological assets.

The SMTC's review of this plan focused on the list of Projects and Practices found in the Action portion of the implementation plan. The Sustainable Development Plan emphasizes the importance of infill development and re-use of existing building sites, rather than continuing to expand development into agricultural areas and other undeveloped parts of the county. This Plan supports the construction of new homes and commercial space in existing villages and hamlets – places currently served by water, sewer, and transportation infrastructure. It also recommends that the County adopt a "Sustainable Streets" policy, which would combine the principles of Complete Streets with the use of green infrastructure to address stormwater issues. Under this Plan, projects to build new or widened county roads would only occur when compatible with the policies and principles of the Plan itself.

SOCPA's Sustainable Development Plan emphasizes infill development in existing villages and hamlets, which are already served by water, sewer, and transportation infrastructure.

Sustainable Development Plan policy areas

- Grow Smarter: encourage and support sustainable and fiscally responsible development patterns.
- Sustainability Pays: sustainable development today pays dividends well into the future.
- Protect the Environment: support and enforce practices to protect our natural environment for future generations.
- Strengthen the Center: strengthen and support the City of Syracuse as the region's center of commerce, culture and innovation.
- Fix It First: maximize the use of existing infrastructure as a way to provide fiscally responsible public services.
- Keep Rural Communities Rural: strengthen and protect the region's strong agricultural tradition and conserve invaluable rural landscapes.
- Lighten Our Footprint: lower our 'carbon footprint' by reducing energy demand, embracing cleaner energy options and using resources wisely.
- Plan for People: recognize people as our greatest asset by creating quality places and opportunities for all.

2.2.2 Central New York Regional Planning and Development Board - Vision CNY

The Central New York Regional Planning and Development Board (CNYRPDB) produced its Vision CNY: Central New York Regional Sustainability Plan in 2013. Like the SMTC, the CNYRPDB is a regional planning body. The CNYRPDB's planning area extends across Cayuga, Cortland, Madison, Onondaga, and Oswego Counties. Vision CNY examines existing energy use, infrastructure, land use, environmental conditions, economic development, and waste management practices across the five-county region. The plan proposes sustainability goals, targets, and strategies for the region, and describes the benefits that can accrue to residents and municipalities by implementing these strategies.

In the area of transportation, Vision CNY emphasizes the importance of bus rapid transit and transit-oriented development and building complete streets.

Vision CNY goals

- Improve the region's energy management by increasing the efficiency of residential and commercial buildings, curtailing energy demand, increasing the use of local clean energy sources in place of fossil fuels, and accelerating the development of advanced energy technologies.
- Provide infrastructure that reduces greenhouse gas emissions, revitalizes existing communities, improves the quality of life, strengthens targeted industry concentrations, and improves the region's competitiveness.
- Manage the region's economic and physical development through the efficient and equitable use of land to conserve its natural and cultural resources and revitalize its urban cores, main streets and existing neighborhoods.
- Conserve and protect the quality of the region's water, air, land and wildlife resources without compromising the ability to meet current and future resource dependent needs.
- Support the growth of a diverse economic base that will provide employment opportunities for a broad cross section of citizens across the five-county region.
- Improve the environmental performance and the economic development and job creation potential of the region's material management systems by reducing the production of waste and increasing materials reuse, recycling and energy recovery.
- Adapt successfully to a changing climate and improve the resilience of the region's communities, infrastructure and natural systems.

2.2.3 Central New York Regional Economic Development Council - Five-Year Strategic Plan

CenterState CEO is the largest economic development organization in Central New York. It coordinates public and private economic development activities in a 12-county area and counts more than 2,000 businesses in its membership. Its Five-Year Strategic Plan, developed through New York State's Regional Economic Development Council (REDC) program, provides a set of strategies intended to guide economic development policy from 2012 to 2016.

The tactics and performance metrics in this plan include an emphasis on ensuring that transit service connects workers to jobs that match their skill set.

CNYREDC strategic plan goals

1. Strengthen targeted industry concentrations that leverage unique economic assets.
2. Improve competitiveness in, and connections to, the regional, national and global economies.
3. Revitalize our region's urban cores, main streets and neighborhoods.

2.2.4 The I-81 Corridor Study goals and objectives

Between 2009 and 2013, the NYSDOT conducted the I-81 Corridor Study. This study initiated a community-wide planning process to address the needs of approximately 12 miles of I-81 through Syracuse. The SMTC undertook a public participation effort, known as *The I-81 Challenge,* in support of this corridor study. The public participation effort included three large public meetings and more than 20 focus group meetings. Total attendance at the three large public meetings (held in 2011, 2012, and 2013) was on the order of 1,880 people, with an additional 784 people reviewing meeting materials by way of "virtual" public meetings. This process provided an unprecedented opportunity for SMTC staff to discuss the region's transportation issues with a wide variety of stakeholders, from citizens' groups to emergency service providers to some of the region's largest employers.

This public interaction included asking people to identify their goals and objectives for I-81; in many cases, these ideas are as applicable to the region's transportation system as a whole as they are to the I-81 corridor. Participants emphasized the importance of the highway system's safety and reliability, as well as the importance of ensuring that highway investments complement other community assets, such as environmental quality and overall quality of life.

Goals from The I-81 Corridor Study

- Improve public safety
- Enhance the transportation network
- Enhance region-wide mobility
- Maintain or improve economic opportunities
- Preserve or enhance environmental health
- Support community quality of life
- Exercise fiscal responsibility
- Share burdens and benefits

2.2.5 Municipal plans

In preparing this LRTP, the SMTC also reviewed town and village plans, as well as the City of Syracuse's Land Use and Development Plan, Bicycle Plan, and Sustainability Plan.

Local plans tend to focus on a specific set of issues and goals for the municipality. Major themes identified in these plans include:

- Economic development and the need for jobs and investment
- Safety for all transportation system users, including bicyclists and pedestrians
- The need / opportunity for waterfront redevelopment
- Community character, especially supporting pedestrian-friendly environments
- Farmland, habitat, and watershed protection
- The need to both prevent and prepare for global climate change
- The need to increase suburban transit service.

Several suburban towns anticipate that they will see continued residential and commercial development in coming decades.

2.3 PUBLIC INPUT ON GOALS AND OBJECTIVES

In December 2014, SMTC conducted an online survey to get feedback from the general public on the LRTP's proposed planning themes, goals, and objectives.

The survey was available online between December 15, 2014 and January 26, 2015. The public was notified of the survey by way of e-mails sent to the SMTC's electronic distribution lists. This included about 360 recipients of the electronic version of the SMTC's Directions newsletter and the members of the SMTC's Bicycle/Pedestrian Community Interest Group. Information on the survey was also forwarded to e-mail lists maintained by community groups and was posted on the SMTC's Facebook page.

380 people provided input on the LRTP goals and objectives through an online survey in December 2014/ January 2015.

A total of 380 responses were received. The results of the survey are incorporated into the remaining sections of this chapter, and a full summary report can be found in Appendix B. Based on a review of the

survey results and feedback from the LRTP SAC, the final list of goals and objectives remained nearly identical to the list proposed in the survey, with some minor rewording of objectives for clarity. The goals and objectives were also reviewed at the April 2015 public meetings, which are summarized in Appendix C.

2.4 GOALS FOR THE 2050 LRTP

Taking into consideration the federal requirements outlined in MAP-21, the local planning efforts described above, and feedback from the LRTP SAC and the public, the SMTC identified three sets of goals for transportation investments in the Syracuse region over the next 35 years. These goals are can be summarized in the statement of purpose for the 2050 LRTP.

The purpose of the 2050 LRTP is to guide the SMTC's member agencies in making transportation investment decisions over the next 35 years that achieve the following:

- **Support the planning goals of the region and local communities.**
- **Contribute to the achievement of system performance goals, including both the National Goals and locally-defined goals.**
- **Advance regionally significant public infrastructure projects that have already been the subject of substantial community discussion.**

2.4.1 Community Planning Goals

After reviewing the local planning efforts, a list of specific community planning goals emerged. Although not measurable over time, the intent is that transportation projects should be considered at least qualitatively in light of these goals.

- Contribute positively to the local community character and support locally adopted plans.
- **Support Smart Growth development patterns, particularly the strengthening of existing mixed-use centers.**
- Retain rural land and preserve open space.

The community planning goals indicated in bold were identified by 60 percent or more of the survey respondents as "most important."

Suggestions for additional objectives

Many survey respondents provided comments and ideas for additional objectives. A few themes emerged from these comments.

- Transit improvements are needed, including: better connections between the City of Syracuse and suburban communities, additon of light rail or street car service, more comfortable vehicles, and more dependable and efficient transit.
- Ensure we continue to have a "20-minute city", with a smooth flow of traffic along main travel routes and minimal congestion in areas of signalized intersections.
- Separate freight and passenger vehicles as much as possible, particularly freight rail and passenger rail.
- Safety improvements are needed for cyclists and pedestrians.
- Solve the problem of snow-covered sidewalks.

- **Support economic development, particularly in:**
  - o **Downtown Syracuse;**
  - o **Syracuse Lakefront;**
  - o **Existing or planned commercial and industrial nodes throughout the MPA.**
- Incorporate Complete Streets principles and limit capacity increases for single-occupancy vehicles.
- Incorporate green infrastructure and use greener materials wherever feasible.
- Incorporate responsive technology wherever feasible.
- Minimize impacts to sensitive environmental areas.
- **Respect historic resources and local community landmarks.**
- Improve public access to appropriate waterfront areas.
- **Provide convenient connections to intercity transportation facilities, including the Syracuse Hancock International Airport and the William F. Walsh Regional Transportation Center.**
- Improve road access to intermodal freight facilities and major freight generators.
- Increase resiliency to natural and man-made hazards.

Additionally, projects should result from a decision making process that is open and transparent, includes robust public involvement opportunities, and promotes multi-jurisdictional planning.

2.4.2 Transportation System Performance Goals and Objectives

The transportation system performance goals and objectives were developed to encompass both the federal requirements (see Section 2.1) and the relevant transportation-related goals from the local planning efforts discussed in Section 2.2 These goals also address the eight planning factors for MPOs originally identified in SAFETEA-LU, and perpetuated in MAP-21. Over the next 35 years, the SMTC will ensure that the region's transportation system makes progress toward achieving the goals and objectives listed in Table 2.1. More information about existing conditions relating to each goal can be found in Chapter 4 of this document (specific sections are noted in Table 2.1).

Table 2.1: Transportation System Performance Goals and Objectives

Goal	Objective	Document section
Support efficient freight movement within our region.	**Maintain adequate infrastructure conditions on primary freight corridors.**	4.2
	Maintain a high degree of reliability on primary freight corridors.	
	Reduce congestion on primary freight corridors.	
Increase the safety, security, and resiliency of the transportation system.	**Reduce serious injuries and fatalities from vehicle crashes.**	4.3
	Reduce pedestrian and bicycle crashes.	
	Reduce the number of height- and weight-restricted bridges, especially along primary freight and commuter corridors.	
Provide a high degree of multi-modal accessibility and mobility for individuals. This should include better integration and connectivity between modes of travel.	Reduce congestion in priority commuter corridors as appropriate based on the character of the adjacent development.	4.4
	Provide essential transit service to urban and suburban areas.	
	Provide higher-quality transit service to transit oriented development (TOD) nodes throughout the community.	
	Provide more on-road bicycle facilities throughout the community.	
	Provide more trails to connect destinations throughout the community, including the completion of existing regional and local trail systems.	
	Provide more pedestrian facilities to connect destinations throughout the community.	
Protect and enhance the natural environment and support energy conservation and management.	Reduce vehicle miles traveled (VMT) in the region.	4.5
	Reduce on-road mobile source emissions.	
	Increase the percentage of commute trips made by bicycling or walking.	
	Increase the percentage of commute trips made by transit.	
	Increase availability of alternative fueling and electric charging stations.	
Improve the reliability of the transportation system and promote efficient system management and operations.	**Maintain a high degree of reliability on primary commuter routes.**	4.6
	Improve transit on-time performance.	
	Improve utilization of transit vehicles.	
	Increase the use of park-and-ride lots.	
	Implement transportation demand management (TDM) strategies, with a focus on strategies for downtown and University Hill that have been recommended through previous SMTC studies.	
Strategically preserve our existing infrastructure and focus future investment in areas that are already served by significant public infrastructure investments.	**Preserve and maintain pavement.**	4.7
	Preserve and maintain bridges.	
	Preserve and maintain ancillary transportation structures (culverts, etc.)	
	Preserve and maintain rail infrastructure.	
	Preserve and maintain pedestrian facilities.	
	Assist communities in our planning area in creating, maintaining, and utilizing asset management systems.	
Ensure that transportation system performance improvements are distributed equitably.	Improve transit service between employment centers and priority target areas (as identified in SMTC's Environmental Justice Analysis).	4.8
	Ensure that pavement conditions within priority target areas are at or above regional averages.	
	Provide accessible sidewalks and curb ramps, in accordance with ADA requirements.	

Note: Objectives shown in **bold** were identified by at least 70 percent of the LRTP Goals and Objectives survey respondents as "most important."

The I-81 Viaduct Project

The NYSDOT is currently progressing the environmental review process for the I-81 Viaduct Project. The I-81 Viaduct Project is intended to address the structural and highway design needs of the elevated portion of I-81 in downtown Syracuse, which is nearing the end of its useful life. The Scoping Report was released in April 2015. More information on the project can be found at: https://www.dot.ny.gov/i81opportunities.

Public feedback strongly supported the objectives addressing infrastructure condition, with over 80 percent of respondents indicating that "preserve and maintain bridges" was "most important." Other objectives that were identified by at least 70 percent of survey respondents as "most important" are shown in bold in Table 2.1.

2.4.3 Regionally Significant Projects

During the development of this LRTP, four transportation projects were recognized as being major, regionally significant projects:

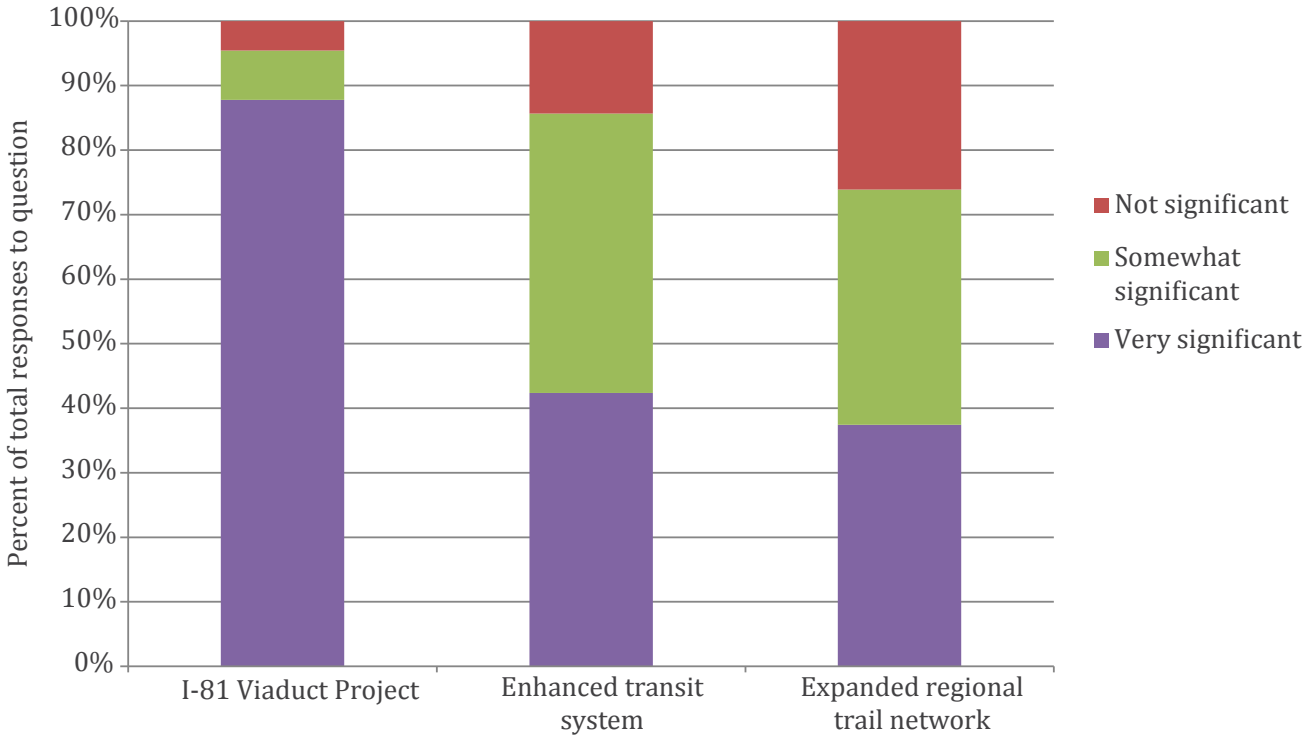
- **The I-81 Viaduct Project:** advance a solution that addresses the transportation needs within the priority area identified in the I-81 Corridor Study (July 2013) and that supports the goals of the LRTP outlined above.
- **Enhanced transit system:** progress the Syracuse Metropolitan Area Regional Transit Study (included in the SMTC's current UPWP) to identify a preferred alternative that supports the LRTP goals.
- **Expanded regional trail network:** progress projects identified in existing plans, such as the Onondaga Lake Trail, Onondaga Creekwalk, and Erie Canalway Trail.
- **Inland port facility**: examine options for creating an inland port in the Syracuse area and the opportunities to link to other regional freight facilities, with public discussion of potential benefits and impacts (environmental, traffic, etc.).

There has been substantial public debate and discussion around the first three of these regionally-significant projects and this LRTP recognizes that there is broad public support for advancement of these

Syracuse Metropolitan Area Regional Transit (SMART) Study

In January 2014, the NYSDOT, in coordination with the SMTC and Centro, completed the Syracuse Transit System Analysis (STSA) as part of The I-81 Corridor Study effort. The STSA reviewed the entire Centro system and outlined strategies for enhancing transit in the region. One of the recommendations from the STSA was to pursue higher-intensity transit services along the DestinyUSA/Regional Transportation Center to Syracuse University and James Street/South Avenue corridors. Phase 1 of the Syracuse Metropolitan Area Regional Transit (SMART) study, which was launched in June 2015, is advancing this recommendation. The current study will evaluate modes, alignments, station locations, ridership, service plans, capital/maintenance/operational costs, economic development, land use, zoning, engineering feasibility, and environmental factors associated with these two corridors and identify a single corridor preferred alternative.

FIGURE 2.1: SIGNIFICANCE OF MAJOR PROJECTS BASED ON SURVEY RESULTS



Note: The LRTP Goals and Objectives Survey asked "How significant do you feel each project is to the Syracuse Region?" Respondents could indicate whether they felt each project listed above was "very signficant," "somewhat significant," or "not significant."

projects. The first three projects were included in the LRTP Goals and Objectives survey. Based on the survey results, the I-81 Viaduct Project is not only the most significant project of the three, it was identified as "very significant" by more than twice the number of people who identified either of the other two projects as "very significant," as shown in Figure 2.1. Fifty-eight survey respondents (out of 380 total respondents) provided additional thoughts on "regionally significant projects," with many making general comments about transit, bicycle/pedestrian infrastructure, general highway improvements, and comments on which option the NYSDOT should consider for the I-81 Viaduct Project.

The creation of an inland port was recognized by the LRTP Study Advisory Committee as an additional project of regional significance. At the time this LRTP was written, several inland port concepts were being discussed for the Syracuse area. Additional planning is necessary to advance any concept, and the planning process should include a public discourse around the potential benefits and impacts for the region. The potential for an inland port is also discussed in Chapter 3.

What is an inland port?

An inland port relocates the point at which ocean cargo containers are loaded onto tractor trailers away from the dockside, to sites that may be far from any major body of water. An inland port has the same functions as a maritime port, including a customs check point, on-site logistics services, and container storage. Inland ports can spur the development of warehousing and distribution facilities nearby.

Suggestions for additional projects

A few respondents to the LRTP Goals and Objectives survey, as well as some of the people who provided comments on the draft LRTP, noted some specific projects they believed to be worth considering within this plan, including:

- Rapid transit between Buffalo and Albany and continuing to New York City and/or Boston.
- Making the Erie Canalway Trail a continuous, dedicated multi-use trail across the state.
- Including the Oswego Canal Trail as part of expansion of a Regional Trail Network Project.
- Adding bike lanes to Erie Boulevard and other roads.
- A dedicated transit route between Armory Square and University Hill.
- Organized transportation to/from and around DestinyUSA.
- Safe bicycle routes to allow access between Downtown Syracuse and neighborhoods / communities to the north, south, east and west (for example, Liverpool/Northside, Fayetteville, DeWitt, and the Southside).
- A shuttle system between Downtown Syracuse and the Regional Transportation Center and the airport.
- Increase the capacity of I-90 (adding a third lane through the Syracuse area).
- Urge Downtown employers to "time shift" work days to minimize commuter congestion.
- Daily bus service during very late night/early morning hours from employment centers such as DestinyUSA and the Erie Boulevard East area to city residential areas.
- A public beta-testing program for bicycle and pedestrian infrastructure.
- Reduction of surface parking in downtown.
- Bus rapid transit providing direct service from designated suburban "stations" (with parking) to primary employment locations such as University Hill, downtown, and DestinyUSA as well as the Regional Transportation Center.
- Extend I-690 farther east, beyond I-481.
- Increase the capacity of Route 5 east of Syracuse.
- Create a new Thruway interchange near Chittenango.
- Revive OnTrack service.

As noted in Section 2.4.3, an enhanced transit system and expanded regional trail network have been identified as regional priorities. Specific details about an enhanced transit system will be considered in the SMTC's SMART study (see page 24). Some public suggestions for projects that would expand the capacity of the road network have already been considered in previous planning efforts and, at this point, have not been identified to move forward (see page 98).

Chapter 3:
People, Development Patterns, and the Economy

Look for this icon in the margins throughout this chapter.

It will tell you where to find more information on specific topics in the SMTC's Transportation Atlas.

The Atlas includes a wealth of existing conditions information for our planning area, and is a companion to the LRTP.

The Atlas is available on the SMTC's website, or you may request a print copy by calling or emailing the SMTC.

3.1 OUR POPULATION

3.1.1 Regional growth

In the twenty-five years following the end of World War II, the Syracuse area, and the nation, changed dramatically. The creation of the interstate highway system, the rapid construction of single-family homes, increases in personal income and the steep rise in birth rates all combined to fuse cities to larger regions like never before. Locally, this meant building I-81 and I-690 in Downtown Syracuse, locating I-690 along the west shore of Onondaga Lake, and an unprecedented wave of suburban home construction.

The City of Syracuse's population peaked in 1950, with over 220,000 residents. Over the next 60 years, the city's population fell steadily, dropping by about a third, to 145,700 people in 2010. Meanwhile, Onondaga County as a whole saw net growth, adding 131,000 total residents between 1950 and 1970 alone, then remaining fairly stable through the next few decades. The 2010 population of the county was just over 467,000 people. Since virtually all of the County's population growth was in the towns rather than the city, it meant that every town in the county grew and total population in the towns more than doubled in 20 years, from 120,000 in 1950 to 274,700 in 1970 (Syracuse-Onondaga Planning Agency, 2007).

Between 1950 and 1970, Onondaga County's total suburban population more than doubled, from 120,000 to 274,700.

Between 1970 and 2000, the population in Onondaga County's towns continued to grow, but at a much slower pace, adding another 35,000 residents. As Figure 3.1 shows, the net result over the past 40 years has been population re-distribution, not population growth. While population has decentralized, the City of Syracuse remains the region's economic core, with 37 percent of the region's total

employment located in the city (and 15 percent of the region's total employment in the Downtown and University Hill areas). This has translated into longer commutes, more vehicle miles traveled and the need to spread the same amount of transportation funding over a much larger geographic area.

3.1.2 Population Density

As population has expanded away from the urban core of the region, new development has also generally been more spread-out than earlier development patterns. The places that saw the most growth between 2000 and 2010 tended to be parts of the region with very low population densities (eastern Cicero, western Camillus, southern Lysander, the eastern part of the Town of Onondaga).

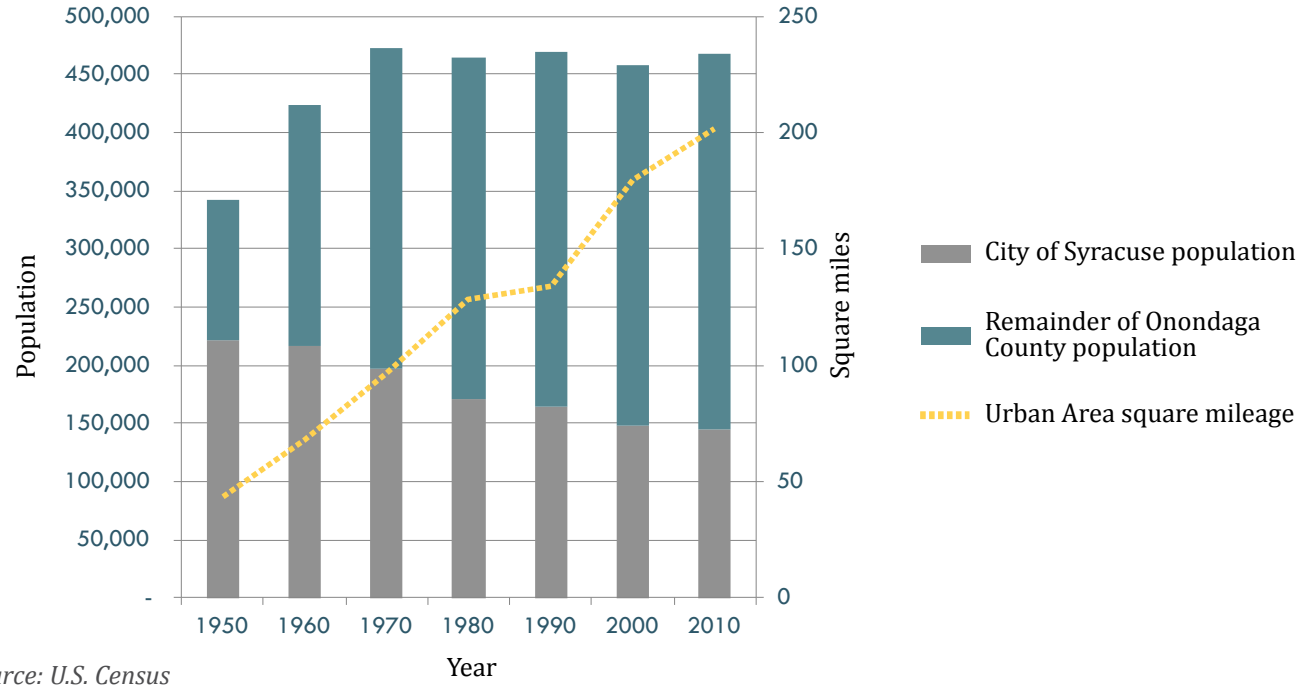
Atlas

Population Density
Employment
Change in Number of Households

While the more rural parts of the region (for example, the Towns of Elbridge, Fabius, and Schroeppel) lost population, some of these towns saw an overall increase in households. The Census defines a "household" as "all the persons who occupy a housing unit as their usual place of residence." When the total number of households increases without population increasing, it means that households are getting smaller on average. The implication is that the region is creating more homes in rural areas to house fewer people.

The Syracuse region is producing more homes in rural areas to house fewer people.

FIGURE 3.1: POPULATION OF CITY OF SYRACUSE AND ONONDAGA COUNTY, WITH SQUARE MILEAGE OF URBAN AREA, 1950 TO 2010



Source: U.S. Census

As people spread farther from one another, they also tend to get farther away from places that they may visit on a regular basis like schools, grocery stores, and pharmacies. With this comes greater dependence on the use of motor vehicles to reach these destinations. Using mass transit becomes particularly difficult in low-density areas. The transit numbers bear this out. Bus ridership is highest in the City of Syracuse. Only about one percent of commuters based in the suburbs use transit, versus 8 percent in the City of Syracuse.

Atlas
Transit

What this means for the LRTP. Transportation improvements often perpetuate low-density, sprawling development. This tendency is captured in the Land Use – Transportation Cycle, which summarizes the relationship between accessibility and development.

Breaking this cycle can be difficult. It can mean diverting resources from areas that are growing to areas that have been declining. In our region, it may mean doing more to improve streets and transit in the city and in the inner-ring suburbs, rather than in areas that are seeing more overall housing development. The benefits, however, are much greater than the costs in the long term. By shifting the focus of transportation investment from improving capacity and accessibility at the region's periphery toward the region's urbanized core, the region can make progress toward several of the goals identified in local plans, including farmland preservation, minimizing impacts to sensitive environmental areas, conserving energy, improving fiscal responsibility, reducing vehicle miles traveled, and increasing the availability of multiple transportation modes.

Placing the focus of transportation investment on the region's urbanized core will provide environmental and fiscal benefits as well as improvements in how people get around.

Population density and transit

The Syracuse-Onondaga County Planning Agency's *Sustainable Development Plan* describes the relationship between population density and efficient transit service as follows: Settlement patterns must be compact to permit cost-effective and convenient transit service. Scattered development typically cannot be serviced by transit at a reasonable cost. Walking distance to bus stops is also a major component of serviceability. Almost all City homes and jobs were located within ¼ mile of a bus route in 2007. In the surrounding towns and villages, only 34 percent of homes and 60 percent of jobs occurred within ¼ mile of a bus stop. Today's suburban and rural places do not have the population density required to support traditional transit service. (Syracuse-Onondaga County Planning Agency, 2012)

Transportation-Land Use Cycle

A relatively small amount of development in a rural area can trigger requests for roadway improvements: for example, a narrow country road might be paved and widened to accommodate a few new houses. As this road becomes more accessible, it can attract more development. Over time, these incremental steps can lead to a much wider road and much more development. Without population and tax base growth at the regional level, this pattern is undesirable and fiscally problematic.

3.1.3 Generations and Transportation Choices

Seniors and Baby Boomers. The Syracuse region is not as young as it used to be. Between 1980 and 2010, the median age in Onondaga County rose from 30 to 39 years old. In our region, 14 percent of the population (71,000 residents) is currently age 65 and above. Over the next 20 years, another 141,000 residents will be reaching retirement age and making decisions about where to spend their retirement years.

Atlas

Age of the Population

In a recent AARP survey, 63% of Onondaga County voters age 50 and over said they would be more likely to stay in New York if improvements were made to public transportation and alternative transportation services for older or ill residents.

The AARP (2010) notes that "while surveys have shown that most people prefer to remain in their homes and their communities as they age, they also like to remain mobile and independent and to be near grocery stores, libraries and doctor's offices." The meaning of "mobility" changes with age. A 2002 study in the *American Journal of Public Health* reported that every year 600,000 people age 70 and over stop driving (Foley, Heimovitz, Guralnik, & Brock, 2002). In our region, we are fortunate to have many transportation providers to assist senior citizens in getting to needed services. But in many cases, older residents effectively lose their mobility for recreation and social visits.

National sources have noted that for some Baby Boomers, a much more appealing alternative has been to migrate to cities that offer a variety of transportation options (Bahrampour, 2013; Nasser, 2012). City neighborhoods with a mix of homes and businesses, supported by low-cost transit options, provide much greater mobility to seniors whose physical or cognitive limitations prevent them from driving.

What seniors say about transportation

As part of its Shaping an Age-Friendly CNY study, Forging our Community's United Strength (F.O.C.U.S.) Greater Syracuse conducted a study of nearly 2,000 Central New York residents. Nearly half of respondents said that they were planning on moving from their current home and, of these, 43 percent said they were planning on moving out of state. Fifty-four percent of respondents identified transportation as "essential" or "very important" to their decision on where to move as they get older. Walkability was identified as a key factor by even more people.

FOCUS Greater Syracuse's survey also asked respondents to include "any other information" they wanted to in the survey. Of the 300 responses to this question, 16 percent were related to transportation, transit, or walkability. The study summarizes these comments as follows:

"Comments on public services focused mainly on snow removal or community improvements. Responses included: 'Community … that is walkable with transportation access,' 'in the suburbs … there is no reliable, affordable, accessible transportation,' 'very limited bus transportation in our area,' 'more bicycle lanes,' 'need sidewalks repaired,' and 'sidewalks are seldom kept snow and ice free which makes it dangerous for aging people.'"

Similarly, in a recent AARP (2014) report entitled State of the 50+ in Onondaga County, New York, about a quarter of workers over the age of 50 surveyed said that they are at least somewhat likely to leave New York after retiring. Sixty-three percent of Onondaga County voters surveyed said that they would be more likely to stay in New York if improvements were made to public transportation and alternative transportation services for older or ill residents. Sixty-one percent said that sidewalk conditions in their community were a problem. Problematic sidewalk conditions included walkways that were too narrow, poorly lit, in need of repair or non-existent.

Millennials. A wealth of research indicates that the number of Millennials (the generation born between 1980 and 2005) living in cities is growing, particularly among those with college degrees.[1] In the City of Syracuse, total population fell between 2000 and 2012 and the number of residents in the 25 to 34-year-old group increased only slightly (0.5 percent). But the number of residents in this age group with college degrees grew by 16 percent.[2]

Millennials are driving less and gravitating toward urban centers.

[1]A robust literature has sprung up to document this generation's interest in urban living. For example, see the April 2014 *Time* article "The New American Dream is Living in a City, Not Owning a House in the Suburbs". See also Millienials in Motion, a study prepared by the US PIRG Education Fund, Milliennials: A Portrait of Generation Next, prepared by the Pew Research Center, and The Young and the Restless and the Nation's Cities by Joe Cortright, prepared for City Observatory.

[2]Comparison of 2000 Census, SF3, Educational Attainment by Sex and 2008 -2012 American Community Survey, Educational Attainment.

Millenials and location choice

In a survey of Millennials living in major urban areas conducted in 2013, top reasons identified for the respondents' choice of location were:

- Ease of mobility
- Proximity to work
- Culture
- Public transit options
- Living near friends and family
- Pedestrian friendliness

(American Public Transportation Association, 2013)

When it comes to retaining current residents and attracting more, our region has several enviable assets to build upon, including private universities, the Connective Corridor, a relatively low cost of living and a variety of neighborhoods and densely-developed villages from which to choose.

Between 1996 and 2010, the percentage of high school seniors with driver's licenses fell from 85 percent to 73 percent (U.S. PIRG & Frontier Group, 2014). The average number of miles driven by 16 to 34 year-olds fell by 23 percent between 2001 and 2009 (U.S. PIRG & Frontier Group, 2014). In a recent survey, Millennials were the only age group that said that giving up their mobile phone would be worse than giving up their car (Zipcar, 2014).

What this means for the LRTP. Suburban expansion continues to be the dominant demographic pattern, but locally and nationally demand is growing for neighborhoods that are walkable, streets that are bikeable, and regions that are connected by modern mass transit systems. Locally, the City of Syracuse is seeing a renewed interest in downtown living, which is reflective of the larger national trends in the housing choices of many Baby Boomers and Millenials. Investments in our transportation system can complement these trends by incorporating Complete Street principles, expanding off-road trails, and supporting development in or near already developed population centers, rather than in rural areas.

Orienting future development around transit service is a key element in making our region more sustainable. In the long-term, enhanced transit options, such as bus rapid transit (BRT), can be combined with a plan for regional transit oriented development (TOD) to make transit an option that more people will choose to use. Chapter 4 discusses BRT and TOD in more detail.

What is Transit Oriented Development?

Transit oriented development (TOD) is an approach to commercial and residential construction that promotes transit ridership, creates a pedestrian-friendly environment, and enhances a neighborhood's character. A typical TOD is centered around a transit station (which may be a bus stop) and is characterized by a concentration of commercial and residential uses within a 10-minute walk. Developers of TODs sometimes benefit by being allowed to develop at higher densities than would otherwise be permitted and from reduced parking lot requirements.

3.1.4 Income and poverty

The data on incomes and poverty levels in our region show a stark contrast between the City of Syracuse and the suburban towns. Onondaga County's median household income is $20,000 higher than the City of Syracuse's. While most of the suburban communities have poverty rates at or below the statewide average of 14.9 percent, the poverty rate city-wide is 31 percent, and the poverty rate for children in the city is 44 percent. The City of Syracuse also has the greatest concentration of vacant housing and the lowest median home values in the region. While Downtown Syracuse has seen an infusion of redevelopment capital in recent years, concentrated poverty persists in other city neighborhoods.

Atlas

Poverty
Household Income

The Onondaga County *Sustainable Development Plan* describes the effects of concentrated urban poverty as resulting in neighborhoods "where basic needs such as jobs, education and health care become less plentiful and where residents have diminishing opportunities to participate in the regional economy (i.e., urban poverty). These trends also result in an imbalanced racial profile, with communities characterized by a concentration of poverty also home to a disproportionate share of the County's minority populations." (Syracuse-Onondaga County Planning Agency, 2012)

From the perspective of transportation, the key question related to income disparities is: does the system work equally well in providing access for all users, regardless of their income level? This question may be explored in terms of availability of transportation facilities or transit service, average commute times from different areas of the region, or the ability to reach places such medical facilities or educational opportunities from various locations or by different modes of travel.

Twenty-six percent of households in the City of Syracuse do not own a vehicle, compared with 5.6 percent of households in the towns. The proportion of city residents using mass transit to get to work is higher in the city than in the suburbs. Among workers living below poverty in the city, 31 percent use transit to get to work.

Atlas

Households and Vehicle Availability
How We Get to Work
Commuting Times

Seventeen percent of transit riders have commutes of an hour or more, compared to fewer than two percent of commuters who drive.

Commute times for transit riders are higher, on average, than commute times for drivers or carpool users. The average commute time for all City of Syracuse residents is around 17 minutes but for those who ride a bus it is more than 30 minutes.

What this means for the LRTP. Transportation can play a role in the ability of many of our region's poorest residents to take advantage of employment or educational opportunities. Transportation connects workers to jobs and connects adult students to education centers, where they can get the skills to pursue new career opportunities. For those without access to a vehicle, the Centro bus system is the primary means of transportation in our region. The SMTC's Coordinated Public Transit-Human Services Transportation Plan includes an inventory of transportation services available to low-income individuals (as well as people with disabilities and the elderly community) and includes recommendations for improving access, such as extending existing service routes to targeted employment centers, feeder bus routes, and grouping other agency trips to reduce duplication of service.

Areas of the region with concentrations of low-income and minority residents, senior citizens, and people with limited English proficiency are identified in the SMTC's Environmental Justice Analysis as "priority target areas." (See 1.1.5 for a description of Title VI and Environmental Justice requirements for MPOs.) Part of the SMTC's obligation to comply with federal civil rights policy is ensuring equitable access to transportation facilities in these priority target areas. Given the importance of transit to low-income populations, it is critical that transit facilities in priority target areas be equivalent to those in the rest of the region.

Expanding and upgrading transit service in our region will benefit all residents, but particularly those who cannot afford the cost of owning and maintaining a car. There may also be opportunities to connect low-income residents to jobs through means other than regular fixed-route bus service; this is a topic that will be explored in SMTC's upcoming Ladders of Opportunity study.

Ladders of Opportunity

In addition to demonstrating its compliance with Title VI, the SMTC is working proactively to ensure the availability of transportation options that increase access to jobs, health and social services, educational opportunities, and other activities of daily life for groups for whom finding and maintaining stable, uplifting employment has long been a problem. The SMTC's Ladders of Opportunity report (currently in progress) will focus on "connectivity," measuring the cost in both time and money to people who rely on a means of transportation other than a private vehicle. This report will be based on coordination with the SMTC's member agencies, as well as community groups, and will develop recommendations for providing transportation services to all.

3.2 OUR ECONOMY

3.2.1 Regional economic overview

Total Economic Output. The first decade of the 21st century was a period of sustained economic growth for the Syracuse Metropolitan Statistical Area (MSA), which includes Onondaga, Oswego, and Madison counties. Gross domestic product (GDP) increased steadily by a total of 36 percent between 2001 and 2013, from $21 billion to $28.8 billion. In 2009, while the U.S. economy saw a decline in total annual GDP, the Syracuse area was enjoying continued growth. In 2010, the national economy rebounded but the Syracuse region grew at a slightly greater rate.

In general, though, these years were the exception, not the norm. The Syracuse region tends to lag behind the national economy both in earnings and in long-term growth. Local GDP has been rising but long-term regional growth rates are well below national rates. For the past ten years, per capita GDP locally has been between eight and ten-thousand dollars below national levels.

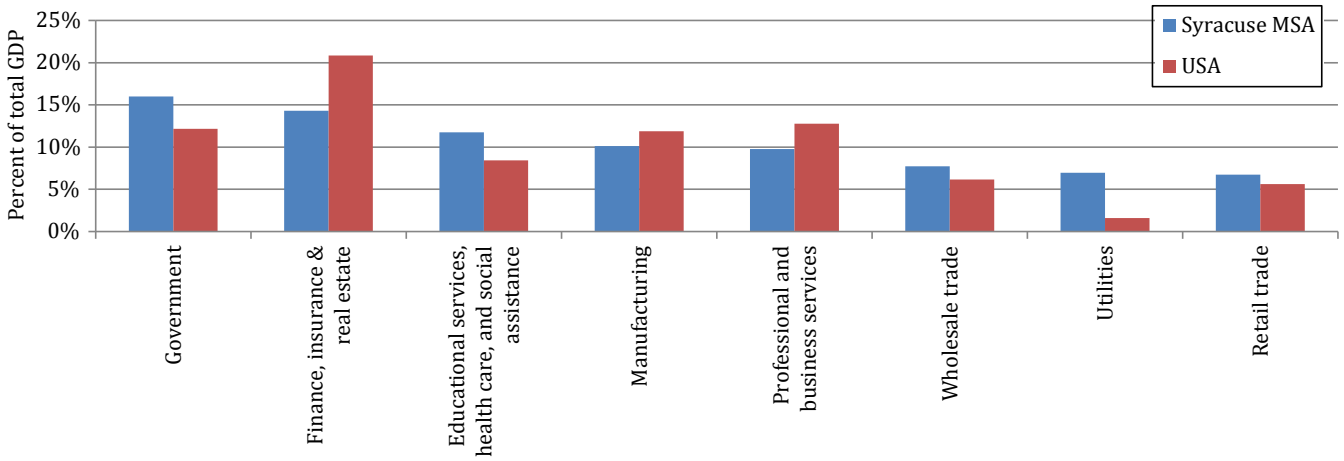
As shown in Figure 3.2, government expenditures make up 16 percent of total GDP in the Syracuse MSA - more than any of the other industrial sectors. In terms of GDP, "government" refers to public spending, including spending on defense, education, and public services. Finance, insurance and real estate services make up a large proportion of the local GDP, but a much smaller percentage than in the rest of the nation. The Syracuse region's specialization in providing education and healthcare services (often referred to as the "Eds and Meds" sector) is reflected in

Sources and Geography for Economic Data

In general, this LRTP provides data at either the Metropolitan Planning Area (MPA) level, which includes all of Onondaga County and four towns in adjacent counties, or for Onondaga County alone. In the case of the overview of economic activity in Section 3.2, information is provided for the Syracuse Metropolitan Statistical Area (MSA), which includes all of Onondaga, Oswego, and Madison counties. The MSA's total geographic area is more than twice that of the MPA, but because Oswego and Madison counties are relatively rural, the MSA's total population is only a third greater than that of the MPA.

It should also be noted that different agencies take different approaches to come up with the total number of jobs and total number of employees in an area. Employment numbers used elsewhere in this plan are from the U.S. Census (decennial Census or American Community Survey). These numbers are generated using surveys of individuals and payroll data. Data from the U.S. Bureau of Labor Statics (BLS) and the federal Bureau of Economic Analysis (BEA) are based on a variety of sources and may show a slightly different picture of the region's economy.

FIGURE 3.2: MAJOR INDUSTRIAL SECTORS AS A PROPORTION OF TOTAL GDP, SYRACUSE MSA AND USA, 2013



Source: Bureau of Economic Analysis; the industrial sectors not shown each make up less than five percent of the GDP in both the Syracuse MSA and the U.S.

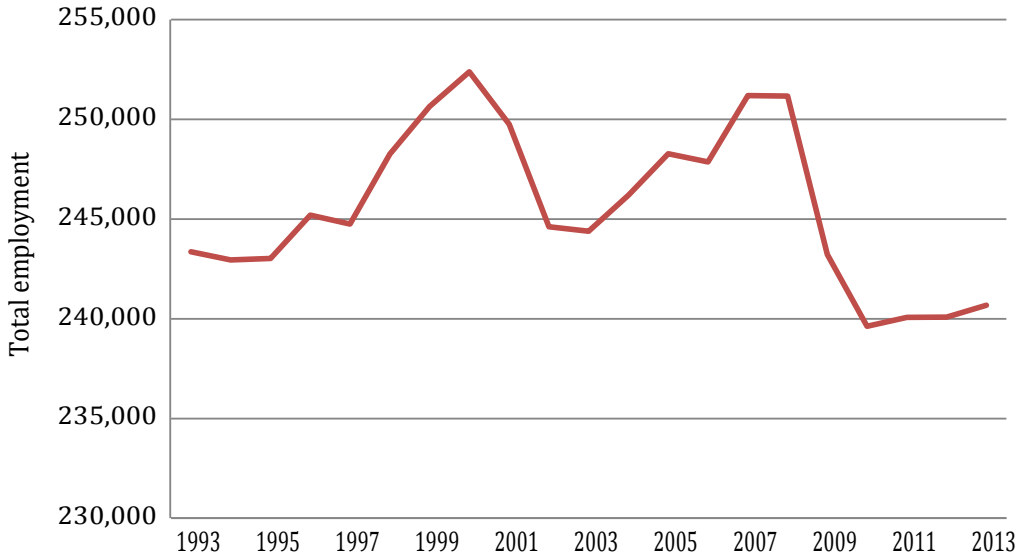
this sector's 12 percent share of total regional GDP, compared to eight percent in the rest of the nation. Manufacturing continues to play a major role in our regional economy, as does the professional services sector. The region also has some unique specialties – such as precision metalworking and pharmaceutical and medical device production – that are not captured in the industrial sector data.

County Employment Trends. Data for Onondaga County is provided by the Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) . As Figure 3.3 shows, over the 20-year period from 1993 to 2013, total employment in Onondaga County saw peaks and valleys, but the net result was no significant change: employment remained between 240,000 and 245,000 jobs.

Total employment in Onondaga County has neither grown nor declined substantially in the past 20 years. The trend has been toward losing goods-producing jobs and adding lower-wage, service-providing jobs.

The past 20 years have seen the county's economy continue to transition away from goods-producing jobs and toward service-providing jobs. As shown in Table 3.1, service-providing jobs make up the bulk of the employment in Onondaga County, and the number of jobs in this sector is on the rise. Onondaga County lost more than 16,000 jobs in goods-producing sectors (manufacturing and construction), while gaining nearly 11,000 jobs in the service-providing sector and gaining nearly 3,000 jobs in the government sector between 1993 and 2013. Annual average wages are highest in the goods-producing sector.

FIGURE 3.3: ONONDAGA COUNTY EMPLOYMENT, 1993 - 2013



Source: United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages, NAICs-Based Data Files, 1993 - 2013

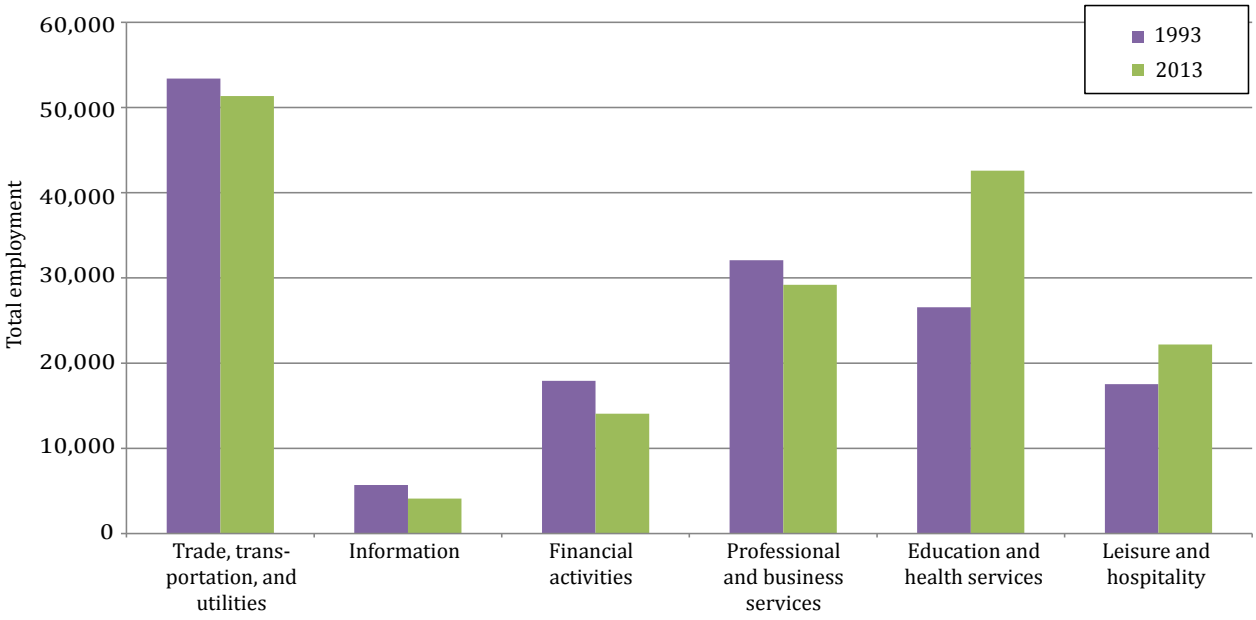
Table 3.1: Jobs and wages by major economic sector in Onondaga County, 1993 and 2013

Sector	1993			2013		
	Number of jobs	Percent of total jobs	Annual average wage	Number of jobs	Percent of total jobs	Annual average wage
Government	36,752	15%	$32,943	39,692	17%	$53,850
Goods-producing	45,327	19%	$35,105	29,024	12%	$59,131
Service-providing	161,283	66%	$22,994	171,960	71%	$42,118

Source: United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages, NAICs-Based Data Files, 1993 and 2013

Figure 3.4 provides more detail on the rise in service-providing employment. The only two segments of the services sector to see a net increase in employment over the past 20 years were Leisure and Hospitality and Education and Health Services (again, the "Eds and Meds"), which saw extremely strong growth. Trade, Transportation and Utilities is a "super sector" in the BLS data that includes retail, wholesale, transportation, and warehousing jobs, as well as utilities. In our region, this super sector saw a net loss in employment, although National Grid, UPS, and DestinyUSA remain major employers in this category.

FIGURE 3.4: CHANGE IN SERVICE-PROVIDING EMPLOYMENT, 1993 TO 2013, ONONDAGA COUNTY



Source: United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages, NAICs-Based Data Files, 1993 and 2013

3.2.2 Existing employment centers

The City of Syracuse is the region's economic center, with over 90,000 jobs located in the city limits: more than in the Towns of DeWitt, Salina, Cicero and Clay combined.

City of Syracuse. The City of Syracuse is the region's economic core, with over 90,000 jobs in the city. The Downtown and University Hill areas have the highest employment density in the region although these areas of concentrated employment make up a relatively small proportion of the total jobs in the city; part of the attraction of doing business in a city is that there are plenty of places to do business. Destiny USA is the region's largest single retail center and second largest employment center, but other retail centers in the city include Armory Square as well as neighborhood retail centers such as James Street and Westcott Street. While large-scale manufacturing has all but disappeared from the city, many small manufacturers continue to do business on the Erie Boulevard corridor and on the city's north side. Erie Boulevard is also a major retail corridor. And while the 'Eds and Meds' sector is dominated by University Hill, St. Joseph's Hospital (just north of Downtown) and Loretto (southern end of the city) are the region's fourth and ninth largest employers, respectively.

Atlas
Employment

Downtown Syracuse. Approximately 20,000 people work in Downtown Syracuse, making it the single greatest concentration of economic activity in the region. As the seat of City and County

government, as well as the location for local offices of state and federal agencies, government jobs make up much of Downtown's employment. In the private sector, only two downtown firms rank among the top 25 employers in the region: AXA Equitable Life Insurance, with just under 1,000 employees, and National Grid, with around 2,000. Financial, legal, engineering, marketing, real estate, and insurance firms with fewer than 1,000 employees make up the remainder of Downtown's employers. The departure of Excellus Blue Cross Blue Shield's 825 employees from Downtown in 2008 dealt a temporary blow to the district's vitality, but it has been more than made up for by the in-migration of firms like O'Brien and Gere and WCNY, which relocated to Downtown from suburban locations.

On the whole, the past 10 years have seen a wave of revitalization in Downtown that runs counter to the long-term trend of population decline in the city.

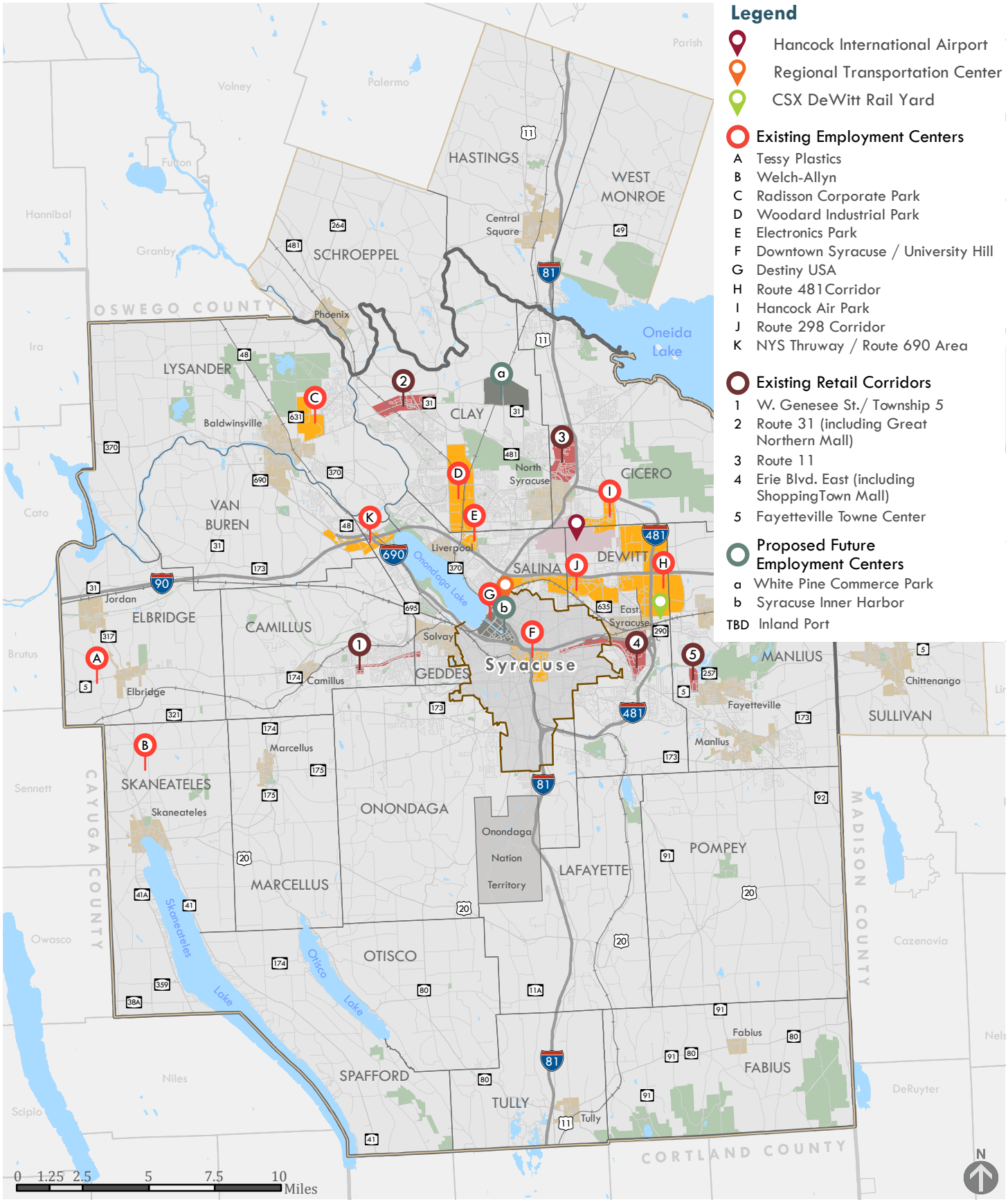
The popularity of newly redeveloped market-rate condominiums and apartments has attracted the attention of retailers, restaurateurs, and firms interested in capturing the talent and the purchasing power of young people. Infrastructure improvements, including the extension of the Onondaga Creekwalk to Armory Square, have supported this resurgence of economic activity. As the region's gathering place, the center of government activity, and its cultural core, investments in transportation improvements in Downtown yield benefits to thousands of workers and residents.

University Hill. Three of the region's ten largest employers are located on University Hill, and during the school year it is either home to or a destination for Syracuse University's (SU) more than 20,000 enrolled students and SUNY College of Environmental Science and Forestry's (SUNY ESF) 2,200 students. SU's Carrier Dome is a venue for football and basketball games that regularly draw 20,000 to 35,000 spectators.

Recent additions to University Hill and its area include a new building for SU's School of Law, Upstate Golisano Children's Hospital, Upstate Cancer Center, the Center of Excellence, and the Central New York Biotech Accelerator.

Traffic congestion is a recurring issue in the University Hill neighborhood, with 18,000 workers and thousands of students converging on a square mile packed with academic buildings, medical facilities, and a variety of related destinations. Rather than build sprawling satellite locations elsewhere in the city or region, however, the district's largest employers continue to build and reconstruct facilities in and around University Hill.

FIGURE 3.5: EXISTING AND PROPOSED EMPLOYMENT CENTERS AND RETAIL CORRIDORS



Data Sources: NYSDOT, 2013; Onondaga County, 2013.

State-funded facility improvements established this trend, with more than $211 million invested in SUNY Upstate alone and millions more in improvements and additions to Hutchings Psychiatric Center and SUNY ESF (Downtown Committee). State and federal support also helped build the $41 million Syracuse Center of Excellence, located on what has become the northern edge of the University area: Water Street, east of Almond Street (Russell, 2011). The Central New York Biotech Accelerator, opened in 2013, sits just east of the Center of Excellence on Fayette Street.

Private investment, including more than $140 million in new buildings on the SU campus, $50 million in new facilities at Crouse Hospital, and $15 million in hotel renovations, have furthered a construction boom on University Hill. The combined value of public and private spending is on the order of three-quarters of a billion dollars, signaling without doubt that the Hill's largest institutions are committed to enhancing - not dispersing - their presence on the Hill.

Suburbs. While jobs, like neighborhoods, have spread out from Syracuse over the past 60 years, our region has maintained a relatively high level of overall employment density. A 2009 Brookings Institution study identified the Syracuse MSA as being among the nation's most centralized small employment centers. According to this study, only 22 percent of the jobs in the Syracuse MSA are more than 10 miles from downtown, compared to 36 percent in Albany, 42 percent in Scranton-Wilkes-Barre, and 67 percent in Poughkeepsie.

Most of the region's largest employment centers are located at the junction of major transportation facilities. Just as the Erie Canal helped Syracuse emerge as a center of trade and commerce, similarly the combination of proximity to the DeWitt Rail Yard, Hancock International Airport, the New York State Thruway, I-81, I-690, and I-481 have helped make the Towns of DeWitt and Salina attractive places to do business over the past several decades. The northern part of the Town of DeWitt (north of I-690) is the second largest job center in the region, after the City of Syracuse.

Atlas

Employment

Although Electronics Park, built by General Electric in the Town of Salina in 1946, preceded construction of the Thruway and I-81, the site clearly benefits today from proximity to the Interstate system. Lockheed Martin is currently the primary occupant of this site and the tenth-largest employer in the region with over 2,000 jobs.

Other parts of the region with significant employment centers include the Town of Geddes, where a number of distribution-related businesses are located in and around the I-90/I-690 interchange, and Woodard Industrial Park in the Town of Clay, home to Raymour & Flanigan Furniture and Eagle Comtronics.

Radisson Corporate Park in the Town of Lysander is home to one of only 12 Anheuser-Busch breweries in the United State. The brewery employs approximately 480 people and generates 180 truck trips per day. Radisson Corporate Park is also home to several large distribution and warehousing businesses.

There are also large employment centers in remote parts of the county, such as Tessy Plastics' manufacturing plant on Route 5 in Elbridge, Welch-Allyn's plant in Skaneateles, and smaller industrial and commercial parks that are found in rural areas, like the Oswego County Industrial Park just north of Phoenix.

Aside from Destiny USA, most of the region's major retail corridors and nodes are located outside of the city. These include:

- Erie Boulevard East (which begins in the city and continues to the east), the Bridge Street corridor, and ShoppingTown Mall (which is slated for a major redevelopment) in DeWitt
- Fayetteville Town Center in Manlius
- Route 11 between Route 481 and Route 31 in Cicero
- Route 31 near Route 481, including Great Northern Mall, in Clay
- Route 5 (West Genesee Street) and the newly-developed Township 5 in Camillus.

3.2.3 Proposed future employment centers

Inner Harbor. In 2014, construction crews broke ground on a new development in Syracuse's Inner Harbor. The long-term plan for development adjacent to the Inner Harbor includes adding two new hotels, with a total of more than 250 rooms, as well as retail and office space, apartments, and condominiums (Weaver, 2014). SUNY's College of Environmental Science and Forestry and Onondaga Community College have proposed constructing classroom and lab space as part of this development (Tobin, 2014).

Inland port. A construction project currently underway more than 2,000 miles south of Syracuse may mean changes in the number of trucks using the freeways in our area in the near future. The locks on the Panama Canal are being widened and by 2016 will be able to accommodate freighters that can move three times more cargo than the largest ships on the canal today. Some analysts have said that this will mean a dramatic rise in the amount of cargo coming from manufacturing centers in China and other Asian countries bound for the already busy Port of New York and New Jersey (PONYNJ). This has led to the development of several "inland port" concepts for the Syracuse area.

In the case of the Syracuse area, the proposed inland port projects would use rail lines to move shipping containers out of the relatively congested New York City metropolitan area to our region, where shipping companies would be able to take advantage of a relatively uncongested freeway system. One such project is proposed for the Town of Manlius, north of the existing CSX intermodal freight yard. More recently, an inland port for the Syracuse area has been proposed by the Port of Oswego. While the exact number of additional truck trips generated by either facility is not known, the addition of an inland port to the region would likely mean an increase in truck traffic on regional highways.

White Pine Commerce Park. The Onondaga County Industrial Development Agency (OCIDA) has been laying the groundwork for a new industrial park in the northern part of the Town of Clay. The White Pine

Atlas

Freight

High Speed Rail in New York State

The development of high speed rail across Upstate New York, linking Buffalo to New York City, could have a significant positive impact on the region's economy. As documented in the High Speed Rail Empire Corridor Tier 1 Draft Environmental Impact Statement (DEIS) prepared in 2014, the options under consideration would bring dramatic improvements in travel time, but would not be completed until 2035. If the fastest possible service were constructed, averaging 125 M.P.H., the travel time between New York City and Syracuse would fall from six and a half hours to just under four hours. As the DEIS states, improvements to service at the Syracuse station may represent a "benefit to businesses, employment, and business activity" as a result of shorter travel times and more frequent trips between New York's metropolitan areas.

Economic Outlook

In 2013, CenterState CEO* surveyed 236 of its members on their expectations for growth and employment levels over the next four years. The resulting 2014 Economic Forecast provides the best available snapshot of near-term economic conditions in our region.

CenterState CEO's 2014 Economic Forecast projects that total employment in the region will rise by approximately three percent over the next four years. If realized, this growth would go a long way toward filling the trough in total employment levels left by the Great Recession.

Surveyed businesses anticipated greatest growth in Eds and Meds, with 9,000 new jobs expected in this sector across CenterState CEO's region. Firms in the construction, leisure and hospitality, and professional and business services sectors all projected growth at or greater than five percent in this period.

Firms in agricultural production, financial services, information technology and manufacturing anticipate reducing their workforces over the next four years, with the manufacturing sector predicting losses on the order of 3,000 to 4,000 employees.

The public sector is expected to continue to be a major regional employer. While a stable source of employment, it is not expected to see growth.

One of the long-term trends that CenterState CEO is focusing on is the rise in wealth among consumers overseas. Some of the industries in the Syracuse area that have identified an international customer base include: Energy and environmental systems; health care (in the form of "medical tourism"); higher education; manufacturing; and business services.

*CenterState CEO is the largest economic development organization in Central New York, and is one of the SMTC's member agencies. It coordinates public and private economic development activities in a 12-county area and counts more than 2,000 businesses in its membership.

Commerce Park, located on the northeast corner of the NYS Route 31 intersection with Caughdenoy Road, is expected to accommodate up to two million square feet of industrial development. When development comes to this (currently vacant) facility, it may become a major regional employment center (OCIDA, 2013).

3.2.4 Summary of Economic Activity

Over the next 35 years, business activity is likely to continue to be drawn to the existing commercial centers that have the best combination of available space and access to transportation facilities. Radisson Corporate Park, Collamer Crossing Business Park and other commercial parks in northern DeWitt are likely to continue to see growth and expansion. White Pine Commerce Park is expected to come on-line in the next five to ten years, adding a significant employment center to the northern part of the MPA.

Within the City of Syracuse, Downtown and University Hill will continue to be major employment centers; the former Excellus building in Downtown Syracuse has the potential to lure another large employer from a suburban location elsewhere in the region. But the Inner Harbor is poised to be the city's fastest-growing employment center over the next 10 to 20 years, as new commercial space is added and the currently vacant land between Franklin Square and the Inner Harbor is developed.

None of the economic development plans of the SMTC's member agencies have identified specific transportation issues that are placing limits on regional economic competitiveness. Instead, these plans emphasize that the infrastructure that we have should be in the best condition possible. An inland port is the only major transportation project that is currently being planned for near-term construction that holds promise for new job creation.

Transportation investments that promote safety, ensure that our infrastructure is in a state of good repair, and that maintain our or improve our minimal level of congestion make good economic sense by providing a reliable system for both freight and commuter travel. Beyond sound maintenance practices, transportation improvements should capitalize on businesses' general interest in the City of Syracuse by supplying higher quality transit service, such as bus rapid transit, along some routes in the city. Our region has plenty of low-density, suburban office space with good freeway access. Investments in walkable commercial districts served both by transit and local roads will create a more attractive business environment.

Maintaining high-quality transportation infrastructure will support economic development throughout our region.

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Chapter 4:
Our Transportation System

4.1 OVERVIEW

Our region's transportation system works extremely well for the majority of users. Nearly 90 percent of commuters in our planning area drive alone to work, and the average commute time regionally is an enviable 19 minutes, which is well below state and national averages. Two major interstate highways, I-81 and I-90, pass through Onondaga County and intersect just north of the City of Syracuse. These facilities, along with additional interstates (I-690 and I-481) and a dense network of State, County, and local roads, make it possible for commuters in private vehicles to get from one part of the region to the other efficiently. Freight transportation also benefits from our relatively uncongested Interstate facilities and other major roadways.

The region is also served by a number of multimodal transportation hubs: passenger and freight air service are provided at Hancock International Airport, intermodal freight containers are handled at the CSX DeWitt Rail Yard, and Amtrak passenger rail and intercity bus service, as well as local Centro bus service, are provided at the Regional Transportation Center. Just outside of the SMTC's MPA, in the City of Oswego, is the deepwater Port of Oswego that handles freight from around the globe.

Centro is the only fixed-route public transit service in the Syracuse area and is operated by the Central New York Regional Transit Authority (CNYRTA). Centro carries nearly 10 million passengers annually, including passengers on fixed-route services, as well as paratransit and special services for local schools and special events. All Centro bus routes operate out of the Transit Hub in Downtown Syracuse.

Bicycle and pedestrian facilities are primarily located within the City of Syracuse and the adjacent towns, as well as some villages

Look for this icon in the margins throughout this chapter.

Atlas

It will tell you where to find more information on specific topics in the SMTC's Transportation Atlas.

The Atlas includes a wealth of existing conditions information for our planning area, and is a companion to the LRTP.

The Atlas is available on the SMTC's website, or you may request a print copy by calling or emailing the SMTC.

Average commute time in our region is 19 minutes, well below state and national averages.

Atlas

Commuting Times

Amtrak passenger rail service, intercity bus serivce, and local Centro bus service are provided at the William F. Walsh Regional Transportation Center.

Green bike lanes, green medians, street furniture, and new sidewalks along East Genesee Street were installed as part of Phase I of the Connective Corridor in late fall 2012.

Our transportation system works very well for most people in our region, but we know there are still improvements we can make, especially in bicycle and pedestrian facilities and transit.

in the region. The City of Syracuse and most of the region's villages have developed extensive sidewalk networks, but few sidewalks exist outside of these areas. The City has been expanding its on-road bicycle facilities over the past few years. Outside of the City, the only on-road bicycle facilities that currently exist are the route markings for New York State Bicycle Routes 5 and 11 (which are for wayfinding only and do not include dedicated bicycle infrastructure). Trail networks have been expanding over the past few years and there are currently three prominent trails in the MPA: the Onondaga Lake Trail ('Loop the Lake'), the Onondaga Creekwalk, and the Erie Canalway Trail.

Increasingly, the general public and the SMTC's member agencies have expressed an interest in getting more out of the transportation system. This includes more roads designed to accommodate bicyclists and pedestrians, upgraded and expanded transit, and a more extensive system of off-road trails. Our transportation system is very good, but it could be better. For people who are unable to drive, cannot afford to own a vehicle, or who live outside of Centro's service area, mobility can be an obstacle to getting medical care, holding a job, attending school, buying groceries, or visiting friends. There are more than 100 service provides in our region, both for-profit and non-profit, that operate to fill this gap.

The remainder of this chapter identifies the elements of our existing transportation system and the current function of that system in the context of the goals and objectives described in Chapter 2. Section 4.9 includes the current System Performance Report, which lists the performance measures that will be used to track progress in meeting our system performance objectives and the current status of each performance measures.

4.2 FREIGHT

4.2.1 Volumes and Value

Freight shipments represent the economy in motion and thus play an integral economic role at both the national and regional levels. The FHWA's Office of Freight Management and Operations forecasts an increase in total tonnage shipped in the U.S. from 19 billion tons in

2007, with a value of $23 trillion, to 28.5 billion tons in 2040, worth an estimated $39.6 trillion.[1]

The SMTC maintains a *Freight Profile*[2] for the MPA that assists staff and member agencies in the development of plans and programs. The *Freight Profile* provides an overview of the freight transportation system in our region, identifies tons and value of commodities traveling through the system, and tracks the primary shipping modes (i.e., air, rail and truck).

The *Freight Profile* also summarizes data from the FHWA's Freight Analysis Framework (FAF), the Brookings Institute's Metro-to-Metro report, and IHS/Global Insight TRANSEARCH data.[3] According to the TRANSEARCH data, inbound freight shipments within Onondaga County consisted of nearly 32 million tons of freight, valued at $99 billion in 2004. Fifty-six percent of this freight originated within the state (i.e., over 18,000,000 tons). Outbound freight included 16 million tons ($62 billion), with 67 percent being shipped elsewhere within the state (10,717,786 tons). Nearly 3.6 million tons of freight ($5 billion) was generated and shipped locally by truck within the county. As noted in Chapter 3, expansion of the Panama Canal may lead to more freight being shipped to and from the Port of New York and New Jersey, and possibly through an inland port in the Syracuse region.

In 2004, 32 million tons of freight were shipped into Onondaga County and 16 million tons of freight were shipped out of the county.

A total of 162,500 tons of air cargo landed at Syracuse's Hancock International Airport in 2013, which was a 2.76 percent increase from 2012. Of the 129 cargo service airports in the U.S., Hancock ranked 68 based on weight of air cargo landings in 2013.[4]

Atlas

Freight Air Travel

[1] Freight Facts and Figures 2012, Office of Freight Management and Operations, pg. 9

[2] Currently in draft form.

[3] FAF is an FHWA data source based in part on the 2007 Commodity Flow Survey; Metro-to-Metro is a freight data collection compiled in 2013 as part of the Brookings Institute's Global Cities Initiative; TRANSEARCH is a proprietary freight planning tool based on a national database of commodity flows.

[4] Air Carrier Activity Information System, 2013.

4.2.2 Facilities

Within the MPA, freight primarily moves via railways and the interstate highways. Air cargo arrives at and departs from Syracuse's Hancock International Airport. Freight travels through and within our region on interstates, arterials, collectors, and local roadways. To help prioritize investments for planning and capital programming, the SMTC has identified a set of "primary freight corridors," which are shown on Figure 4.1. These corridors were identified through discussions with various SMTC member agencies. Primary freight corridors were selected based on their functional class, their average traffic volumes, and their proximity to major freight generating businesses.

Ensuring that trucks can access our region efficiently means monitoring pavement and bridge condition ratings along primary freight corridors and strategically investing in these routes. Capital improvements to this roadway network will also increase reliability and maintain low levels of congestion on these corridors.

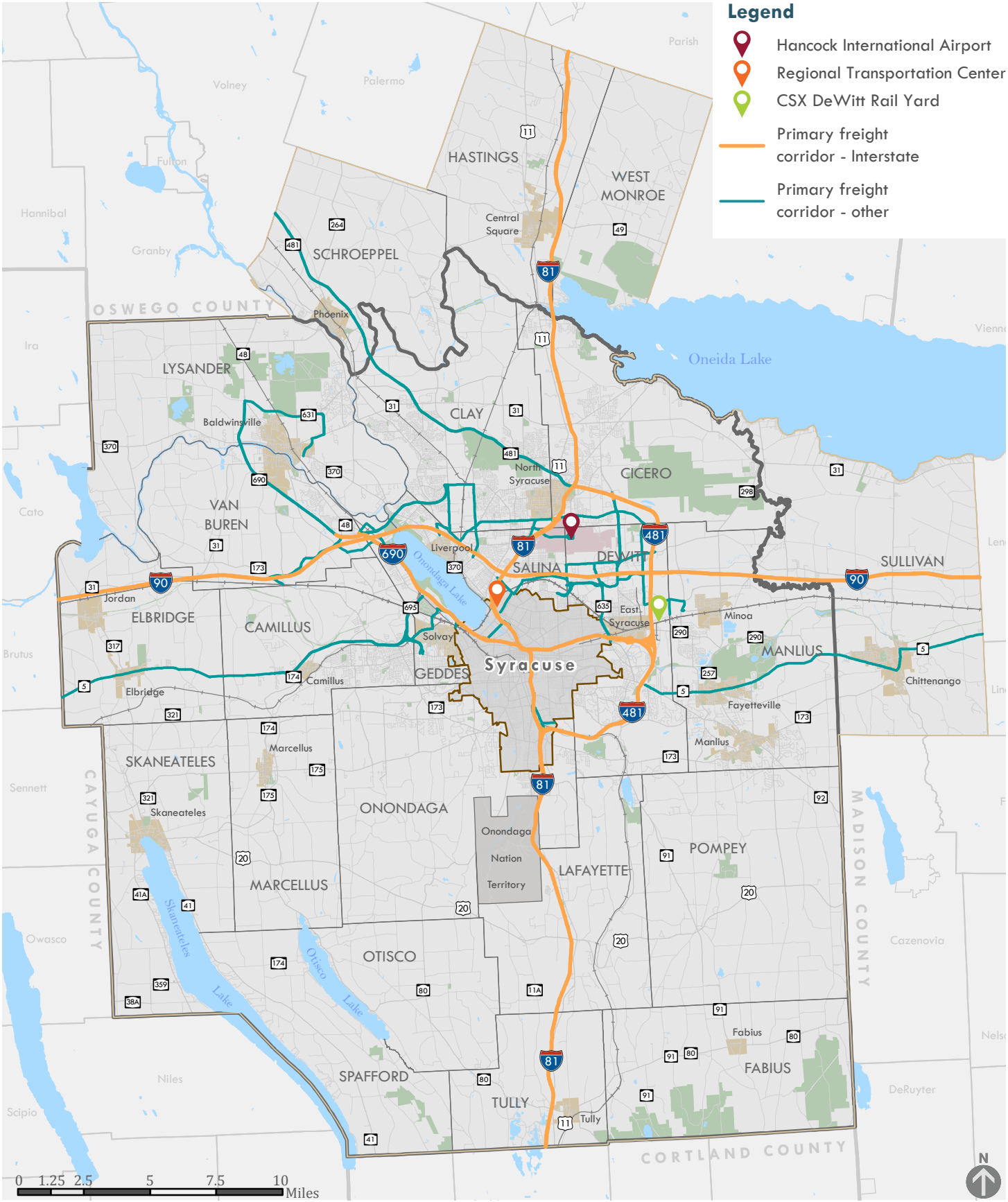
Cargo containers stacked on rail cars at CSX's DeWitt Rail Yard.

4.2.3 Freight movement – issues and opportunities

Efficient freight movement faces few obstacles in the region, none of which have been identified as seriously impeding economic development. One recurring issue is the number of roads and bridges with height and/or weight restrictions. An example is the elimination (since 2011) of all commercial traffic on the portion of NYS Route 370 known as the Onondaga Lake Parkway, due to a low-clearance railroad bridge. In this case, alternative routing is relatively convenient. However, such detours can mean delays and also may mean damage to vehicles and infrastructure in the event that an oversized truck attempts to use a restricted facility. Future investments should work to reduce the number of height- and weight-restricted facilities in the MPA to eliminate this recurring issue. Investments that lead to reduced congestion per the Congestion Management Process (see Section 4.4) along freight routes should also be encouraged.

The MPA's opportunities for expanding freight movement derive from its location. As mentioned in Section 3.2.3, an inland port is a possibility in this region because of its proximity to both the New

FIGURE 4.1: PRIMARY FREIGHT CORRIDORS IN THE SMTC MPA



Data Source: SMTC, 2015

York City area and interstate freight facilities, such as I-90 and I-81. Intermodal freight can also take advantage of the nearby Port of Oswego, as well as CSX's intermodal freight facility in DeWitt. An expansion of the Port of Oswego's intermodal facilities is currently being planned.

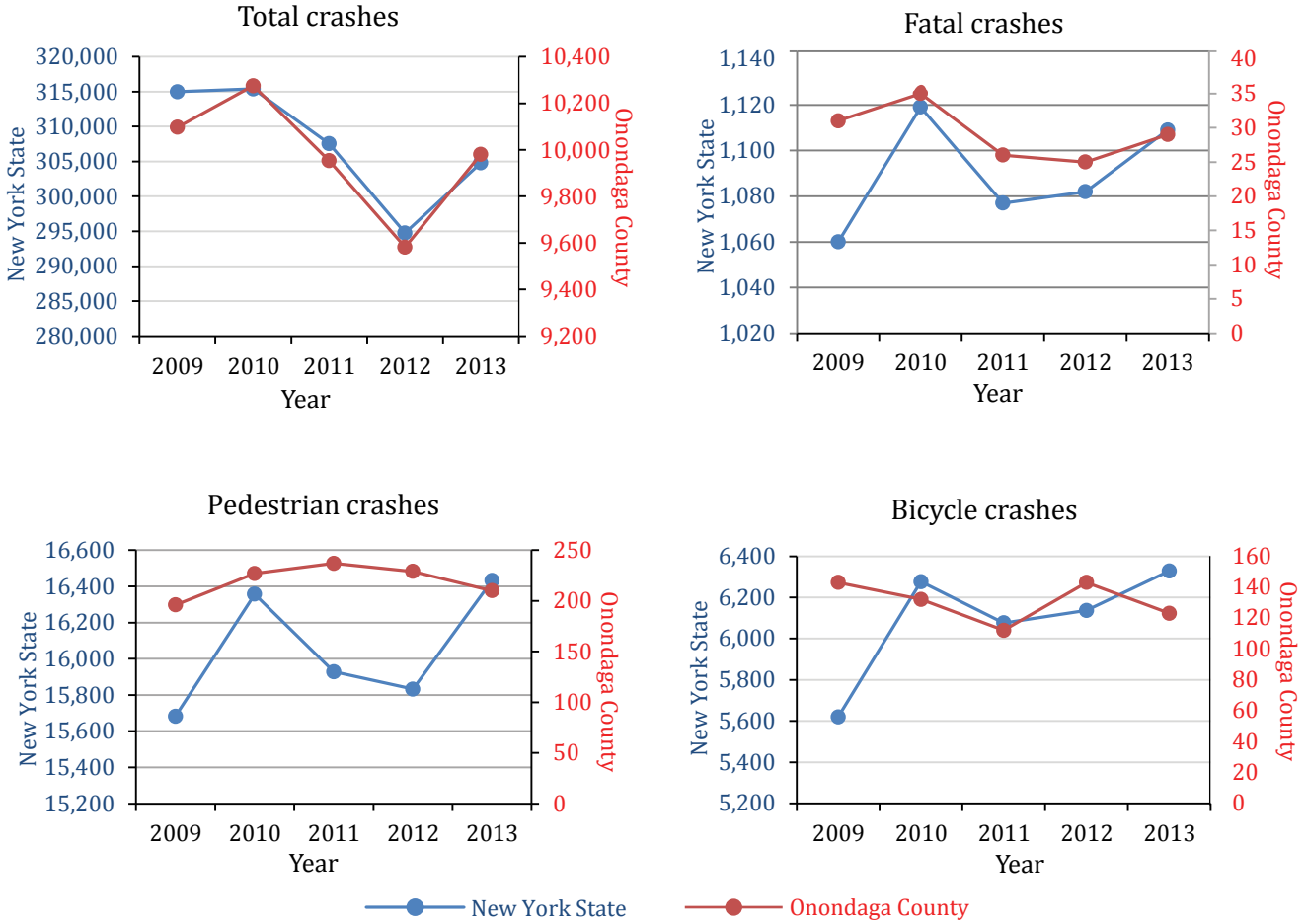
4.3 SAFETY

Improving roadway safety for drivers, transit riders, pedestrians, and bicyclists requires cooperation among facility owners. Various professions such as planning, engineering, and law enforcement play important roles in reducing the frequency and severity of accidents through the "Four E's": engineering, education, enforcement, and emergency response.

Atlas

Accidents
Bicycle and Pedestrian Accidents

FIGURE 4.2: NUMBER OF ANNUAL CRASHES IN NEW YORK STATE AND ONONDAGA COUNTY, 2009 TO 2013



Source: Institute for Traffic Safety Management and Research, Traffic Safety Data Reports - Onondaga County, 2013, 2014, 2015.

4.3.1 Recent trends

Each year, the Institute for Traffic Safety Management and Research (ITSMR) develops a Traffic Safety Data Report for each county in New York on behalf of the Governor's Traffic Safety Committee (GTSC). The four charts in Figure 4.2 summarize data from 2009 to 2013 (the most recent available) for all crashes, fatal crashes, pedestrian crashes, and bicycle crashes.

Total crashes dropped by about 3 percent in New York State overall and by about 1 percent in Onondaga County from 2009 to 2013, although both the state and the county saw fluctuations in the interveninig years. Onondaga County also saw slight decreases in fatal crashes and collisions with bicyclists over this timeframe, but an overall uptick in collisions with pedestrians. In the state overall, fatal crashes, collisions with pedestrians, and collisions with bicyclists were all greater in 2013 than in 2009, even though total crashes in the state decreased.

4.3.2 Safety improvement

The NYSDOT is responsible for developing the Highway Safety Improvement Program (HSIP), which identifies high-accident sites, conducts engineering studies to identify cost-effective solutions, and develops implementation measures and a process to evaluate implemented solutions. Engineering improvements undertaken under the HSIP contribute to state and national goals to reduce fatalities and serious injury crashes and their severity.

Improving safety is a major objective of MAP-21 and is a goal that is actively being pursued by the SMTC's member agencies. The SMTC conducts facility inventories to support member agencies' safety improvement projects. Capital investments should strive to improve safety and reduce accident severity. Reducing fatalities and severe injuries will remain a priority objective. Reducing the number of height and weight restricted bridges within our community, especially along primary freight and commuter corridors, would contribute to safety improvement as well.

Statewide safety targets

In New York State, the Governor's Traffic Safety Committee (GTSC) publishes an annual Highway Safety Strategic Plan (HSSP). The HSSP is a data-driven approach to identifying problems and setting priorities for the state's highway safety program. The HSSP is coordinated with the FHWA's 2010 Strategic Highway Safety Plan (SHSP), which requires states to reduce roadway fatalities and serious injuries and is published every five years. The State's HSSP sets the following performance targets:

- Decrease fatalities 5%
- Decrease serious injuries 4%
- Decrease fatalities/100M VMT 4%
- Decrease urban fatalities/100M VMT 3%
- Decrease rural fatalities/100M VMT 4%
- Reduce pedestrian fatalities 3%
- Reduce the number of pedestrians injured in traffic crashes 3%
- Reduce the number of bicyclist fatalities 5%
- Reduce the number of bicyclists injured in traffic crashes 5%

4.4 ACCESSIBILITY & MOBILITY

At the regional level, accessibility refers to the degree to which people can get to jobs, stores, schools, needed services, and other destinations. Mobility is a factor in gauging accessibility; mobility is measured by how quickly a person can get from one place to another.

Our system of roads, trails, bus routes, bike routes, and sidewalks has evolved over the past 200 years to ensure both interregional and regional accessibility. Improvements in the last 50 to 60 years have tended to favor passenger vehicle mobility. As a result, our transportation system provides efficient access for this mode throughout the region; although, in some cases, the unintended consequence of wider, faster roads has been to make it harder for people without cars to get from place to place.

4.4.2 Congestion

The SMTC recently completed a new Congestion Management Process (CMP) for the region. A CMP is an essential component of the regional transportation planning process. Per FHWA, "the development of objectives for the CMP responds to the goals and vision for the region established early in the transportation planning process." The 2015 CMP multimodal goals and objectives were derived from the goals and objectives developed for this LRTP. The CMP includes additional measures of congestion and presents a more detailed examination of congestion in the region than the LRTP.

As part of the 2015 CMP update process, "primary commuter corridors" were identified through discussions with various SMTC member agencies. The primary commuter corridors, which are shown on Figure 4.3, are roadway segments that meet one of these criteria: 1) part of the National Highway System, 2) minor arterials with an annual average daily traffic volume (AADT) of over 10,000 vehicles, or 3) facilities that are relevant to interregional connectivity. Primary freight corridors were identified through a similar process that also relied on the proximity of freight generating businesses (see Figure 4.1).

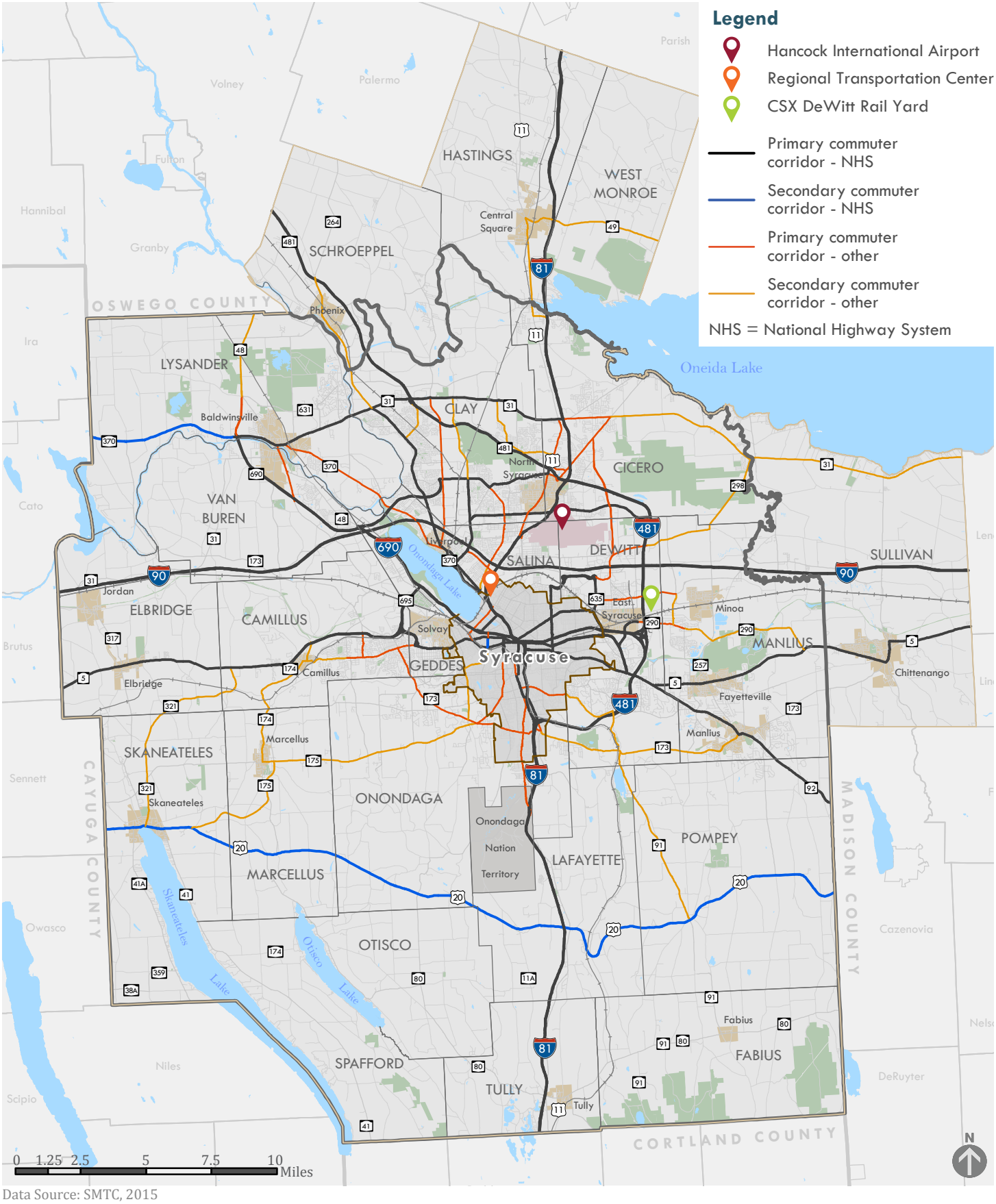
The SMTC's travel demand model was used to measure congestion on roads throughout the region, based on volume-to-capacity ratio

Congestion Management Process objectives

The SMTC's 2015 CMP identifies six objectives:

1. Reduce congestion in the urban area on the CMP network by 10% of centerline miles over the next 10 years.
2. Reduce the share of major intersections operating at Level of Service E or F by 10% over the next 10 years.
3. Increase the percentage of transit ridership by 5% in the next 10 years.
4. Improve the average on-time performance of transit buses by 5% over the next 10 years.
5. Increase the percentage of commuting trips made by bicycling or walking by 5% in the next 10 years.
6. Decrease the number of crashes along the CMP network over the next 10 years.

FIGURE 4.3: PRIMARY COMMUTER CORRIDORS IN THE SMTC MPA



Data Source: SMTC, 2015

Congestion measures defined

Volume to Capacity Ratio (V/C): Volume to capacity ratio is a measure of the average traffic volume compared to the service volume or capacity of a given facility. For example, an interstate is designed to carry more vehicles per hour, per lane, than a local street.

Travel Time Index (TTI): TTI is the ratio of travel time during the peak periods to the time necessary to make the same trip at free-flow speeds. The SMTC's travel demand model was used to calculate the TTI. A TTI value of 1.3 indicates that a 20-minute trip in free-flow conditions requires 26 minutes during the peak period. The TTI is a useful measurement because it provides an easily calculated and readily understandable congestion measure.

Congestion due to construction or other incidents can impact reliability and frustrate drivers. Overall, though, our region has very little recurring congestion.

(V/C) and travel time index (TTI) on the primary commuter and freight corridors. The 2015 CMP concludes that, overall, there is very little congestion in the Syracuse region. There are a few isolated locations that experience congestion, but most of our road network consistently operates very well for drivers. The 2015 CMP focused only on the primary commuter corridors within the urban area. The LRTP considers the entire network of primary commuter corridors in the MPA as well as the primary freight corridors, and the results are consistent with the CMP: a high degree of travel time reliability on primary commuter and freight corridors, and a very small proportion of these corridors with high volume-to-capacity ratios.

Two sides to congestion

No one likes to be stuck in traffic. Traffic congestion can hurt a region's economy. In a major metropolitan area, delays associated with recurring traffic congestion impose a cost on freight shipments and commuters and can limit the region's ability to effectively market products to other parts of the country and world. A National Cooperative Highway Research Program study from 2001 estimated that a 10 percent decrease in travel times across the Philadelphia region would reduce business costs by $240 million. While traffic jams have costs, they are also a sign that people and businesses want to be doing business in a place; some of the nation's most congested regions (the New York Metropolitan area, for example) are also the most economically productive. Recognizing that the goal of reducing congestion tends to result in larger facilities that in turn foster development, the State of California recently altered the way its state-level environmental review handles a proposed project's transportation impacts. Rather than strictly measuring delay and roadway capacity, projects can be evaluated based on the degree to which they will result in the "reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses."

Although our congestion is relatively minor, the CMP does suggest some strategies to reduce congestion even further, such as: decreasing the time it takes for emergency services to respond to freeway accidents; implementing traffic signal coordination and signal optimization; promoting ride sharing options with the "safety net" of a guaranteed ride home; providing buses with traffic signal priority; and encouraging employers to allow flexible work schedules.

4.4.3 Transit riders

In order to be cost-effective, transit service needs to be aligned with its riders. The Syracuse Transit System Analysis (completed by the NYSDOT in 2014 as part of *The I-81 Challenge*) identifies a continuum of transit services, from "basic" bus service to bus rapid transit (BRT) and light rail. Most places in the region match well to basic bus service, based on population density and other factors.

Centro defines service standards such as vehicle headways (the time between bus arrivals) and route spacing based on population density. For this purpose, "urban" areas are defined as having 3,600 people per square mile and "suburban" areas as having 1,800 to 3,600 people per square mile. Figure 4.4 shows the parts of our region that fall into each of these categories. Note that there are large parts of the SMTC's official Urban Area (based on 2010 Census data) that do not meet the Centro definition of urban or suburban population density. The SMTC determined that 77 percent of the population in the "urban" areas are within a half-mile of a route with an average peak headway of up to 30 mintues, and 70 percent of the population in the "suburban" areas are within one mile of a route with average peak headway of up to 40 minutes.

The Syracuse Transit System Analysis indicates that major urban routes, specifically the James Street/East Syracuse, Syracuse University, and South Avenue/OCC routes, "experience the highest sustained ridership, even during traditional off-peak periods." Bus routes in the city serve the region's largest pool of transit-dependent residents. The suburban bus routes, on the other hand, tend to have fewer riders and to have very low ridership during off-peak periods (non-commuting hours). The report states that "Overall the suburban/commuter routes

What is Bus Rapid Transit (BRT)?

Bus rapid transit (BRT) gives bus transportation some of the advantages of a rail system, with features such as dedicated bus lanes over part or all of the route, high-quality stops at limited intervals, traffic signal pre-emption, "queue jumpers" at intersections, corridor branding, modern vehicles, and frequent service to make travel times for bus riders comparable to those of drivers. BRT is more flexible, easier to implement, and less expensive than fixed-rail transit.

The Capital District Transportation Authority operates the "BusPlus" BRT system along Route 5 between Albany and Schenectady.

Atlas

Trails and Bicycle Facilities

had lower average passenger loads and were more heavily influenced by the effect of commuters."

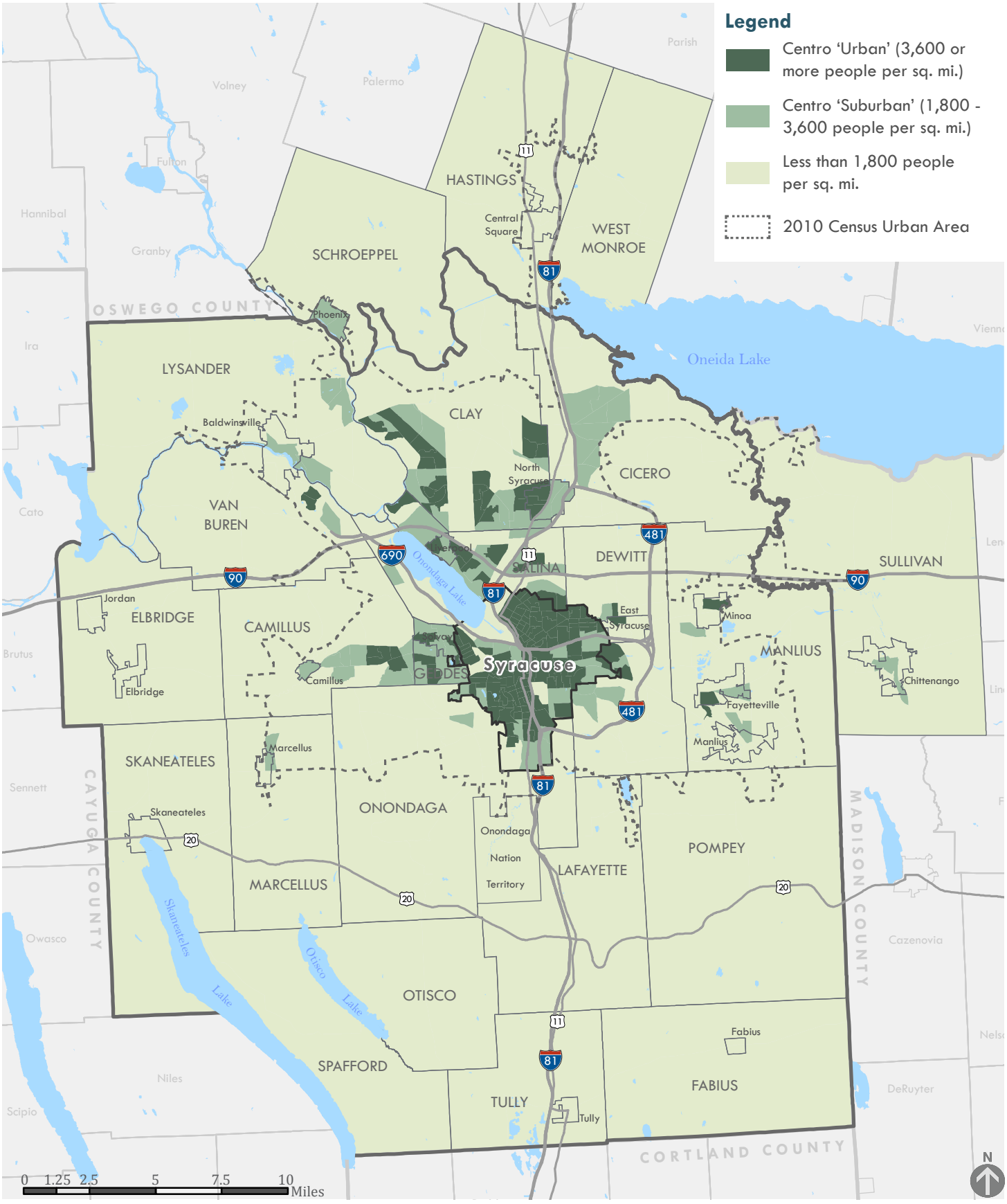
The Syracuse Transit System Analysis contains several recommendations for the region's transit system, including consolidating bus routes around a few larger "trunk" lines, upgrading park and ride services, and reconfiguring routes to provide more service to the University Hill area. This report also recommends further investigation of enhanced transit service (either as bus rapid transit or light rail transit) on select routes. The corridors identified as having the highest potential to support enhanced transit service are: (1) Syracuse University to DestinyUSA through downtown, and (2) James Street to South Avenue through downtown, with a possible extension to Onondaga Community College. The SMTC is currently advancing this recommendation through the Syracuse Metropolitan Area Regional Transit Study Phase 1 (see Section 2.4.3).

Transit currently works well in these corridors because of the mix of relatively high population density and popular destinations. The development potential that BRT can bring is well documented (for a thorough discussion of the factors involved, see the Bus Rapid Transit Practitioner's Guide, Transit Cooperative Research Program Report 118). Getting the most out of enhancements to these corridors will mean encouraging even more intense residential and commercial development, particularly near proposed BRT stations. Transit oriented development (TOD) zoning can reduce parking requirements and allow higher densities than would otherwise be permitted. As of this writing there are no TOD districts in the MPA. However the City of Syracuse is in the process of rewriting its zoning ordinance and this overhaul will include TOD zoning where appropriate.

4.4.4 Pedestrians and Cyclists

There are 15.6 miles of on-road bike facilities in the MPA, all of which are found in the City of Syracuse. This includes the Phase 1 Connective Corridor, a project sponsored by Syracuse University that includes a grade-separated two-way bicycle lane. There are also 33 miles of signed bike route on New York State Bike Route 5 (along NYS

FIGURE 4.4: URBAN AND SUBURBAN POPULATION DENSITY IN THE MPA, BASED ON CENTRO SERVICE STANDARDS



Data Source: NYSDOT, 2012

Shared lane use markings (sharrows) and updated pedestrian amenities on Water Street in downtown Syracuse, installed in 2012.

New York's Complete Streets legislation

In August 2011, Governor Andrew Cuomo signed New York State's "Complete Streets" law (S5411A-2011). This law requires transportation projects undertaken, overseen, or funded by the NYSDOT to consider the needs of various users, including motorists, pedestrians, cyclists, transit riders, and citizens of all ages and abilities (including children, the elderly, and the disabled). Although the law requires projects funded with state or federal funds to comply, it does not provide any additional funding for designing or incorporating complete street design features into a project. Currently, there is no national Complete Streets policy and locally funded projects are exempt from this law in New York State.

Route 31) and 43 miles on New York State Bike Route 11 (primarily on NYS Route 11).

The City of Syracuse has been upgrading its streets to accommodate cyclists. Its long-term strategy for improvements is outlined in the Syracuse Bicycle Plan, which describes a variety of improvements designed to create bikeable corridors throughout the city.

In general, on-road facilities for cyclists are lacking on the major commuting corridors in our region's suburban communities. For this reason, the SMTC and NYSDOT prepared a Bicycle Commuter Corridor Study in 2013. This study identifies preferred corridors for investments in bicycle lanes and other infrastructure for cyclists. Improvements are intended to be implemented as facility owners maintain and improve their roadways.

There are 812 miles of sidewalk in the MPA.[5] The majority of the region's sidewalks (72 percent) are found in the City of Syracuse. A well-maintained sidewalk network can contribute to increased property values, decreased reliance on the automobile and health benefits through increased physical activity. At the same time, sidewalks can be expensive to construct and to maintain and may not be appropriate for every thoroughfare in the planning area. The SMTC's Sustainable Streets Project identifies "priority zones" in which efforts to provide pedestrian infrastructure are expected to yield the greatest benefits. The SMTC will work with its member agencies to ensure that, as improvements are made to the traveled way in these priority zones, improvements are also being made to pedestrian access.

4.4.5 Air travel

The Syracuse Hancock International Airport provides passenger and air cargo service to destinations across the northeast (see Section 4.2.1 for air cargo information). The airport is located approximately 7 miles north of downtown Syracuse, and the main entryway - Colonel

[5] Not including privately-maintained walkways adjacent to the public right-of-way (such as in parking lots or internal to school campuses) or the Radisson Walkway system in the Town of Lysander.

Eileen Collins Boulevard - connects directly to I-81 approximately three miles north of the interchange with the New York State Thruway (I-90).

With nearly one million passenger enplanements in 2013, the Federal Aviation Administation classifies Hancock as a medium hub. The top three single airport destinations from Syracuse, by total passengers (including those reaching their final destination and those making a connection), are Chicago O'Hare, Atlanta, and John F. Kennedy International airport in New York. However, New York City is the most common destination from Syracuse when the other two airports in the region (Newark Liberty International and LaGuardia) are considered; nearly 230,00 passengers flew from Syracuse to one of the three New York City airports in 2013.[6]

Atlas

Air Travel

4.5 ENVIRONMENTAL IMPACTS OF TRANSPORTATION

As discussed in Chapter 3, the general trend over the past 50 to 60 years has been for development to spread into rural areas. Development can work with the natural environment to enhance it, but historically development has meant the loss and fragmentation of habitat, the degradation of landscapes, and the loss of farmland, and open space. Transportation facilities affect the natural environment both directly, in how they interact with resources like wetlands and riparian areas, and indirectly, by facilitating access to previously undeveloped areas.

Atlas

Land Use
Water Resources

At the regional level, the transportation system's greatest environmental impact has been to support a pattern of low density, car-dependent suburban development. As a result of this land use pattern, the vast majority of the region's commuters find it most efficient to drive themselves to work daily and to drive to complete daily tasks. The net result has been a 38 percent increase in total vehicle miles traveled (VMT) per capita in our urbanized area between 1990 and 2010.[7]

What is VMT?

Vehicle miles traveled, or VMT, is often used to summarize how much driving people are doing. Unlike other measures, like commute times or how people get to work, VMT encapsulates all kinds of trips by everyone in a given geographic area. Per capita VMT is an even better measure, since it provides a rough idea of the total number of miles an average person drives in a year.

[6]Bureau of Transportation Statistics T-100 Market Data, Air Carrier Activity Information System, 2013.

[7]Based on Highway Performance Monitoring System estimates provided by the NYSDOT and decennial Census data for urbanized area population, 1990 and 2010.

Nationally, per capita vehicle miles traveled (VMT) has started to fall.

Nationally, per capita VMT has fallen in recent years, after decades of steady growth. In 1985, annual per capita VMT was 7,500 miles. By 2005, it had reached more than 10,000 miles. Currently it is estimated at just below 9,500 miles.[8] But in the Syracuse MPA, annual per capita VMT in 2014 was approximately 10,900 miles, about 1,400 miles per capita above the national average VMT (based on the SMTC's travel demand model; see section 5.3.1 for a detailed discussion of VMT). Looking to 2050, the SMTC's travel demand model predicts that per capita VMT for the Syracuse MPA will increase to about 11,370 miles.

As long as people are driving fossil fuel-powered vehicles, VMT will translate into vehicle emissions, including carbon monoxide and greenhouse gases. At the same time it is important to note that while total VMT has increased over time, improvements in vehicle exhaust systems and automobile fuels, and the increased use of alternative fuels, have all meant that air quality in the Syracuse region has actually been improving.

The SMTC utilized the Motor Vehicle Emission Simulator (MOVES 2014) model, developed by the U.S. EPA's Office of Transportation and Air Quality, to estimate existing on-road mobile source emissions using the VMT outputs from the SMTC's regional travel demand model.

[8]State Smart Transportation Initiative. http://www.ssti.us/2014/02/vmt-drops-ninth-year-dots-taking-notice/

Air quality conformity

In 1990, changes to the federal Clean Air Act meant that Onondaga County was placed on the New York State Department of Environmental Conservation's list of regions that did not meet standards for carbon monoxide (CO) emissions. Two years later, the County was found to meet the national ambient air quality standards (NAAQS) for carbon monoxide, which meant that it was placed on a ten-year monitoring plan to ensure that it continued to meet those standards. This was followed by a second ten-year monitoring plan. As part of this monitoring, the County's CO levels were measured against a "budget" for CO emissions. For example, the budget for 2013 was 357 tons of CO per day. The SMTC's estimates showed that for 2013, CO emissions would be 174.43 tons per day – well below budgeted levels. In 2013, the Syracuse region achieved a major milestone: the region was removed from the FHWA/FTA list of communities not meeting federal standards for carbon monoxide emissions. This means that air quality transportation conformity is no longer required by law for the SMTC MPA.

(More detail on the emissions analysis can be found in Appendix D.) This analysis indicates that about 23,300 tons of carbon monoxide (CO) are emitted annually in the SMTC MPA (or about 64 tons per day).

Reducing VMT will reduce on-road mobile source emissions. Both objectives can be accomplished by increasing the percentage of commute trips made by bicycling, walking, and transit.

As more electric and alternatively fueled vehicles come into use, on-road mobile source emissions will continue to decrease. Increasing the number of available stations for alternative fueling and electric charging in the MPA will support this trend. There are currently 26 electric charging locations with 98-charging hook-ups available in the MPA. The Central New York Regional Planning and Development Board, an SMTC member agency, is currently working with the New York State Energy Research and Development Authority to develop a network of electric vehicle charging stations along the length of the New York State Thruway.

Improvements to vehicle technology have resulted in decreased emissions even as our regional VMT has increased.

4.6 RELIABILITY

4.6.1 Travel time reliability for drivers

From the point of view of the individual using the transportation system, predictability and reliability are critical. Regardless of how long a trip takes, whether it's a five minute walk to a nearby convenience store or a 40-minute commute by bus, it is important that people be able to rely on the trip taking this amount of time.

Whatever the length of the trip, users of the transportation system want to be able to rely on a consistent travel time.

Because it is related to traffic volumes and delays, system reliability is addressed in the SMTC's Congestion Management Process. Reliability is typically measured using the Travel Time Index (TTI), with a TTI at or above 1.5 indicating congestion, which can lead to unreliability. Currently, over 99 percent of the primary commuter corridors (by centerline mileage) operate with a TTI less than 1.5.

Obstacles to achieving reliability are usually temporary conditions, such as construction, accidents, or special events. Efficient management and operation of the existing system can maintain or improve reliability and limit the need for capacity expansion such as road widening. For example, a transportation system that uses elements like intelligent

SMTC's Downtown TDM Study

The SMTC's Downtown Syracuse Transportation Demand Management Study (2011) sought to address growing concerns regarding commuter and visitor access to downtown Syracuse. The study process included a review of existing conditions, meetings and interviews with area stakeholders, surveys of downtown employees and employers, development and evaluation of potential TDM strategies, and the creation of final program recommendations. Numerous TDM strategies were identified for the downtown and University Hill area, ranging from the creation of a guaranteed ride home program to development of a bike parking system. As of May 2015, no new TDM programs have been developed as a result of this study. Implementing some of these strategies could help to improve the reliability of the transportation system in the Syracuse MPA.

transportation systems can improve reliability for its users, even when unexpected and unpredictable events arise. An electronic message sign that warns of an accident or construction ahead can encourage drivers who would otherwise sit in traffic to use alternative routes.

Transportation demand management, or TDM, can also hlep decrease congestion and improve reliability. As the name suggests, TDM focuses on reducing the demand for roadway capacity rather than increasing its supply. TDM strategies include carpooling/ridesharing, off-peak commuting, increased transit use, and more dense land uses. Currently, the largest employer in the region to encourage carpooling is Syracuse University which offers a reduction in parking costs to all students and employees who carpool. Currently, about 150 workers who would otherwise drive their own cars get a ride with a co-worker.

Park-and-ride lots offer drivers another convenient means of leaving their vehicles behind and using transit. Utilization at the 14 park-and-ride lots in the MPA is at 23 percent of capacity. The Syracuse Transit System Analysis includes ideas for improving the design of selected park-and-ride lots to make them more efficient and visually appealing. Implementing improvements of this kind can increase utilization of these facilities.

4.6.2 Transit Reliability

Centro's Service Standards and Guidelines indicate that Centro's on-time performance target (a measure of trips completed as scheduled) is 90 percent or greater. A review of the 2014 arrival time data at the Centro Hub indicates a system-wide on-time performance rate of 95 percent.

Centro also seeks to improve the utilization of transit vehicles by reaching their vehicle load guidelines. Vehicle load is a metric expressed as the ratio of passengers on-board to the number of seats available on a vehicle, at the vehicle's maximum load point. The vehicle fleet used is matched to the ridership patterns and volumes served by each garage facility. Due to the variety of service area characteristics, vehicle types, amenities, and seating configurations, a "typical" vehicle load standard

is difficult to identify. The Service Standards and Guidelines indicate a target maximum load of 100 percent of seating capacity, on average, for off-peak trips and up to 130 percent of seating capacity for the peak hour.

4.7 SYSTEM PRESERVATION

Ensuring that our transportation system is in a state of good repair typically uses three-fourths of the region's more than $300 million dollar (over 5 years) federal transportation allocation. There are 4,224 centerline[9] miles of road and 554 roadway bridges in the MPA. There are also 305 miles of active railroad, 812 miles of sidewalk, and 66.5 miles of off-road trails in our region. Heat, sunlight, salt (in the case of roads and bridges), and repeated freeze-thaw cycles as well as wear and tear from vehicles and snowplows degrade the condition of these assets over time.

4.7.1 Bridges and pavement

The SMTC annually compiles pavement ratings and bridge conditions in a single document, the Bridge and Pavement Conditions Management System (BPCMS) report, which provides an overview of these conditions.

The City of Syracuse, Onondaga County, the NYSDOT, and the New York State Thruway Authority each complete pavement ratings on a yearly basis. Towns and villages do not rate their own roads; the NYSDOT rates all of the federal-aid eligible (FAE) roads under town and village ownership in the MPA. Pavement is rated on a scale of one to ten, with a score of one ("poor") indicating a road with a severely cracked surface and ten ("excellent") indicating pavement that is in perfect condition. In our region, the overall pavement rating is 6.5, or "fair." This rating has declined slightly since 2009, when the overall pavement rating was 7.0. For federal aid eligible roads, the overall rating was 6.6 in 2014, compared to 7.0 in 2009. Statewide, 62 percent of state-owned roads are rated a seven or above, compared to 42 percent in our MPA.

[9]A linear centerline mile of road is a continuous line of pavement along the center of the length of pavement, regardless of the number of traffic lanes.

Atlas

Pavement
Bridges
Functional Class

Pavement conditions on state-owned roads in our planning area are worse than the state overall, and pavement condition ratings in our planning area have been declining since 2009.

Distress, such as cracking, is frequent and severe on roads with "poor" pavement condition.

46% of bridges in the MPA are deficient, compared to 32% statewide.

Deterioration is visible on the underside of this bridge deck.

Bridges are inspected by the NYSDOT. The SMTC utilizes NYSDOT's bridge inspection ratings to categorize bridges as "non-deficient," "deficient," or "critically deficient." A bridge that is considered deficient may be a candidate for rehabilitation or replacement. If an individual critical element of a bridge (for example, the bridge deck) receives a rating below 3.0, the bridge is considered critically deficient and a candidate for priority funding. The majority of bridges in the MPA (54 percent) are non-deficient. However, the trend in recent years has been toward fewer bridges being rated as non-deficient; there has been an 11 percent decrease in bridges rated as non-deficient in the SMTC's MPA since 2009.[10] Forty-six percent of bridges in the region are considered deficient. In comparison, 32 percent of bridges are considered deficient statewide.

Preservation and maintenance of our pavement and bridges are a high priority for transportation agencies within our region. Maintaining these facilities in good condition will continue to ensure the mobility and safety of the traveling public.

4.7.2 Pedestrian facilities and trails

The SMTC's inventory of sidewalks in the City of Syracuse includes a block-level rating of the sidewalk's compliance with City ordinances (i.e., sidewalks should be a continuous strip of concrete, running through driveways). [11] Based on this inventory, 57 percent of the City's sidewalks currently fall into the "very good compliance" or "perfect compliance" categories. At this time, no similar compliance rating data are available for sidewalks outside of the city.

The SMTC does not currently maintain an inventory of condition ratings or maintenance activities on off-road trail systems. Maintenance of trails is variable. For example, some sections are plowed in winter but many are not. Maintenance responsibility also varies, from municipalities (for example, the county maintains the Onondaga Lake Trail) to volunteer-based community groups.

[10]Note that, as a result of an increase in the MPA's geography, the total number of bridges in the MPA has increased from 492 to 554 over this time.
[11]For more information on sidewalk ratings, see Chapter 4 of the SMTC's *Sustainable Streets: Sidewalk Reference Manual*.

Sidewalk maintenance and snow removal

In the City of Syracuse and in most of the towns and villages in the MPA, sidewalk maintenance is the responsibility of the owner of the property adjacent to the sidewalk. This includes periodic (typically every 10 to 20 years) maintenance, like repairing and replacing sidewalk segments. It also includes seasonal snow removal. In many villages, while the adjacent property owner is responsible for snow removal, the village's Department of Public Works runs a small plow on some or all sidewalks to assist homeowners. In the City of Syracuse, 21 miles of sidewalk are included in Business Improvement Districts (BIDs). Property owners in these BIDs pay an annual fee for a variety of maintenance activities, including sidewalk snow removal. On the rest of the City's 565 miles of sidewalk, snow removal by property owners is frequently observed to be inconsistent. In recent years, the City of Syracuse has discussed ways of improving sidewalk snow removal, including enhancing enforcement efforts. Other snowy cities use a variety of approaches, including coordinating volunteers and providing snow removal as a municipal service. A short review of other municipalities' sidewalk snow removal models is provided in Section 7.5.5 of the SMTC's *Sustainable Streets: Sidewalk Reference Manual* (available on our website).

4.7.3 Asset management

The SMTC's data on sidewalks is stored in a geographic database that can be updated as needed. Similarly, the SMTC recently conducted an inventory of bike racks in Syracuse, which led to the creation of an online map of bike racks. Asset management systems like these make it possible to quickly condense a lot of information about the transportation system's condition into a few numbers or a single map. With system performance metrics becoming an ever-larger part of the transportation planning process, the SMTC is committed to developing, maintaining, and sharing asset management systems among agencies in order to coordinate infrastructure maintenance efforts.

4.8 EQUITY

The SMTC is committed to adhering to both the spirit and letter of Title VI of the Civil Rights Act of 1964 in its planning activities. (See Section 1.1.5 for a detailed description of Title VI.) In 2014, the SMTC prepared its Title VI and Limited English Proficiency Plan. This plan includes an evaluation of where in the region the SMTC has funded transportation projects through its current Transportation Improvement Program (TIP) and where in the region the greatest concentrations of minority residents live. As this analysis demonstrates, while minority residents make up only about a fifth of the region's total

Limited English Proficiency
Race
Age

population, 46 percent of all TIP funds have been allocated to portions of the region with above average proportions of minority residents.

The SMTC's 2012 Environmental Justice Analysis draws similar conclusions, based on its analysis of TIP spending in Priority Target Areas. This analysis defines Priority Target Areas based on geographic areas with higher than average[12] proportions of residents who are 65 or older, or who are identified (by the U.S. Census) as being non-White, Hispanic, or as having a limited proficiency in English (often identified as limited-English proficient, or LEP, populations). The Priority Target Areas are shown on Figure 4.5. The Environmental Justice Analysis concludes that the SMTC's planning activities have been distributed throughout the region, in both Priority Target Areas and non-target areas.

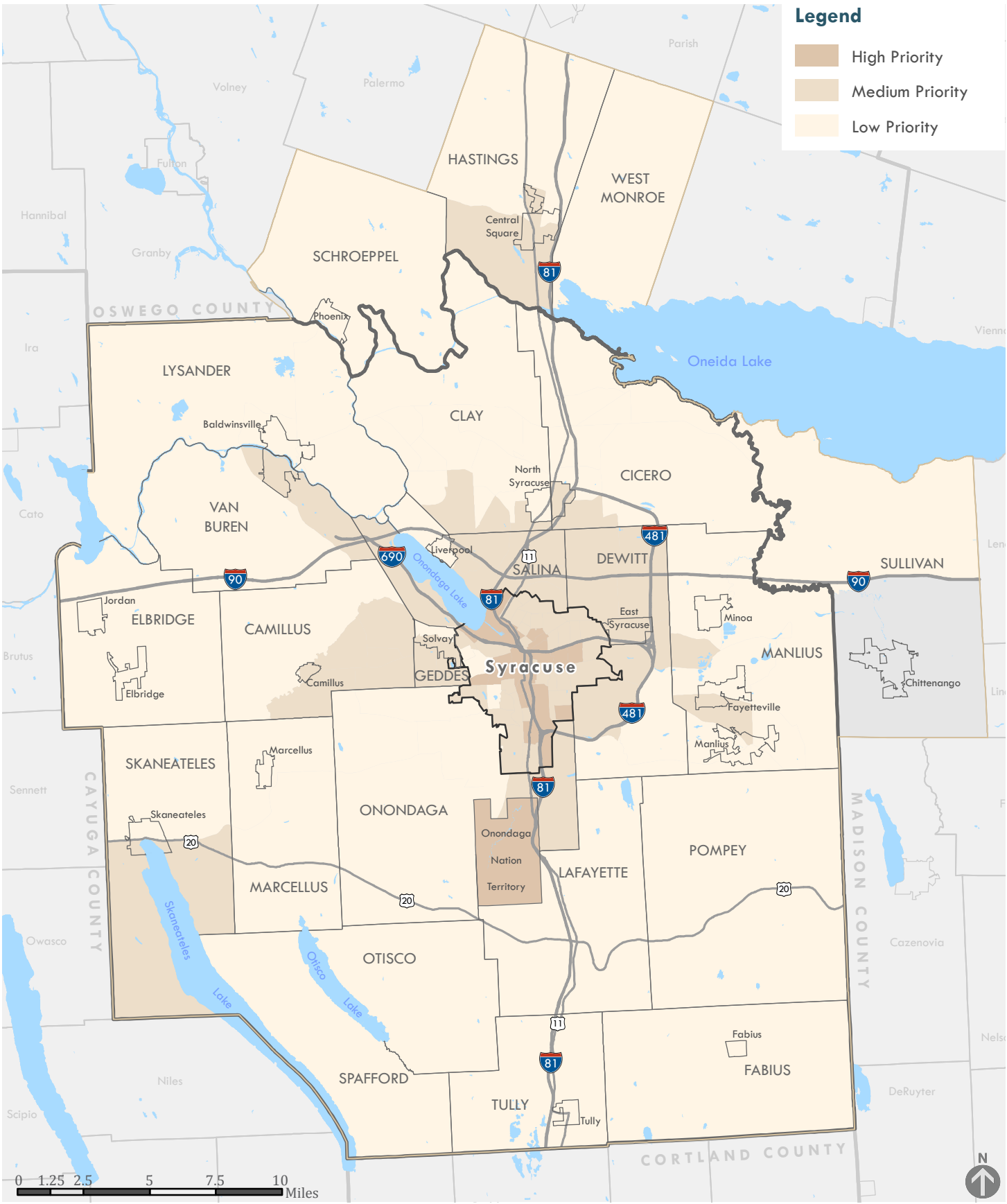
Another approach to measuring the degree to which transportation funds are being utilized in an equitable manner is to look at specific transportation outcomes for low-income, minority, elderly, or disabled residents. The SMTC's forthcoming Ladders of Opportunity report is one such analysis. Another metric is to compare the condition of existing facilities in the identified Priority Target Areas to the condition of facilities throughout the MPA. Key facilities to examine include pavement ratings, pedestrian infrastructure, and transit facilities.

Using existing asset management systems, pavement conditions in Priority Target Areas can be compared to pavement conditions throughout the SMTC's area. As of 2014, the overall pavement rating in the Priority Target Areas is 6.1 compared to the MPA-wide rating of 6.5 (both considered "fair" condition).

As described in Section 4.7.2, the SMTC has inventoried the extent to which sidewalks in the City of Syracuse comply with city ordinances. In developing this LRTP, the SMTC considered the average compliance

[12]The methodology used to define Priority Target Areas is based on a level of concentration of these populations, as explained in detail in Section IV of the Environmental Justice Analysis. As explained in this report, three levels of concentration were defined: High-, Medium- and Low-Priority Target Areas. Only the High-Priority and Medium-Priority Target Areas are considered "Priority Target Areas."

FIGURE 4.5: ENVIRONMENTAL JUSTICE PRIORITY TARGET AREAS



Data Source: NYSDOT, 2012

rating of sidewalks wtihin Priority Target Areas as compared to the rest of the city. Nintey-two percent of rated city sidewalks are within Priority Target Areas, and the percentage of sidewalks in those Priority Target Areas with very good or perfect compliance is 57.8 percent, just slightly higher than the 57 percent of sidewalks in very good or perfect compliance city-wide.

The SMTC also examined the accessibility of sidewalks using the 2014 NYSDOT ADA Transition Plan, which includes an inventory of "deficient" (i.e. not compliant with Americans with Disabilities Act [ADA] standards) sidewalks and curb ramps on State facilities. This plan also sets goals for ADA compliance for these facilities by 2023. Within Onondaga County, there were 5.3 miles of deficient sidewalks and 89 deficient curb ramps in 2014.

The SMTC also reviewed Centro's bus shelter locations and ratings data. The vast majority of Centro's bus shelters are located in Priority Target Areas (111 out of 123 total shelters in the MPA), and the average rating for these shelters is 3.23 on a scale of 1 ("poor") to 4 ("good"). There are only 25 shelters considered "poor" or "marginal" within Priority Target Areas. (No shelters outside of the Priority Target Areas are considered poor or marginal; however, there are only 12 shelters in total in these areas.)

4.9 CURRENT TRANSPORTATION SYSTEM PERFORMANCE REPORT

As described in Chapter 2, MAP-21 places a strong emphasis on performance measurement using specific objectives, performance measures, and targets. According to MAP-21, states must establish targets within one year of the effective date of the final rule and report them in the first biennial performance report due to FHWA, currently scheduled for October 1, 2016. After states establish targets, MPOs shall coordinate with their respective state within 180 days to establish 4-year targets. The MPO could either agree to support the State target or establish a quantifiable target specific to the MPO planning area.

Once targets are established, future project investments must show that progress is being made to achieve individual targets. To track

progress, the LRTP must include a "system performance report" (to be updated along with the LRTP every 5 years) that:

- Evaluates the condition and performance of the transportation system.
- Shows the progress achieved in meeting performance targets in comparison with the performance in previous reports.
- Evaluates how a preferred scenario has improved conditions and performance, where applicable.
- Evaluates how local policies and investments have impacted costs necessary to achieve performance targets, where applicable.

The system performance report will be used to track our progress over time in meeting our LRTP objectives.

Final rulemaking did not occur prior to the development of the SMTC's 2050 LRTP. Based on interpretation of proposed rules available at the time, the SMTC identified preliminary goals, objectives, and performance measures. Specific targets have not been set by New York State, but the LRTP objectives indicate generic targets for the performance measures.

The SMTC will reexamine and modify items as necessary following issuance of the final rule by the Secretary of Transportation and the establishment of performance targets by the NYSDOT.

Table 4.1 establishes baseline conditions to advance the intent of MAP-21. Identifying baseline conditions will allow the SMTC to establish targets and measure future performance towards achieving targets. Measuring performance provides valuable insight into where to direct limited resources to achieve targets and advance national goals. The table outlines goals, objectives, performance measures, and baseline conditions for the SMTC's LRTP.

Table 4.1: Current transportation system performance

Goal	Objective
Support efficient **freight movement**.	Maintain adequate infrastructure conditions on primary freight corridors
	Maintain a high degree of reliability on primary freight corridors
	Reduce congestion
Increase the **safety, security, and resiliency** of the transportation system.	Reduce serious injuries and fatalities
	Reduce pedestrian and bicycle crashes
	Reduce the number of height- and weight-restricted bridges (especially along primary freight and commuter corridors)
Provide a high degree of multi-modal **accessibility and mobility** for individuals to include better integration and connectivity between modes of travel.	Reduce congestion in priority commuter corridors
	Provide essential transit service to "urban" and "suburban" areas
	Provide higher-quality transit service to TOD nodes
	Provide more on-road bicycle facilities
	Provide more trails to connect destinations
	Provide more pedestrian facilities
Protect and enhance the **natural environment** and support energy conservation and management.	Reduce VMT in the region
	Reduce on-road mobile source emissions
	Increase the percentage of commute trips made by bicycling or walking
	Increase the percentage of commute trips made by transit
	Increase availability of alternative fueling and electric charging stations
Improve the **reliability** of the transportation system and promote efficient system management and operations.	Maintain a high degree of reliability on primary commuter corridors
	Improve transit on-time performance
	Improve utilization of transit vehicles
	Increase the use of park-and-ride lots
	Implement TDM strategies

Performance Measure	2015 Condition	Source
Percent of primary freight corridor mileage with pavement in "good" and "poor" condition*	Good 46.4% Poor 12.3%	BPCMS
Percent mileage with Travel Time Index (TTI) < 1.5	90.3% (AM); 87.5% (PM)	CMP
Percent of primary freight network with V/C ratio < 0.9	98.9% (AM); 99.0% (PM)	CMP
Number of fatalities	202 fatalities (Jan. 2009-Dec. 2013)	ALIS
Rate of fatalities	0.74 fatalities/100 million VMT	ALIS
Number of serious injuries	1,776 serious injuries (Jan. 2009-Dec. 2013)	ALIS
Rate of serious injuries	6.49 serious injuries/100 million VMT	ALIS
MPA bike/pedestrian crash rate	7.67 crashes/100 million VMT	ALIS
Number of height-restricted bridges	77 bridges	Winbolts
Number of weight-restricted bridges	24 bridges	Winbolts
Percent of commuter network with V/C ratio < 0.9	99.2% (AM); 99.6% (PM)	CMP
Percent of urban population within ½ mile of a route with up to a 30 minute weekday peak period headway	77%	GTFS
Percent of suburban population within 1 mile of a route with up to a 40 minute weekday peak period headway	70%	GTFS
Number of transit route miles that overlap commuter routes and meet minimum weekday peak headway standards	49.7 miles (at 30 min average headway) 64.1 miles (at 40 min average headway)	GTFS
Number of TOD nodes with access to high quality service	0	SMTC
Centerline miles of roads with bike infrastructure	15.6 miles	GIS
Miles of multi-use trails that connect destinations	66.5 miles	GIS
Total public sidewalk mileage	812.0 miles	GIS
Daily VMT per capita	29.9 miles	TDM
Annual on-road mobile source emissions	Total gaseous hydrocarbons: 1,430 tons Carbon monoxide: 23,302 tons	MOVES
Percent of commute trips made by walking	3.9%	CTPP
Percent of commute trips made by biking	0.4%	CTPP
Percent of commute trips made by transit	2.5%	CTPP
Number of alternative fueling (non-electric) locations	7 locations	DOE
Number of electric charging locations	26 locations	DOE
Percent of primary commuter corridors with Travel Time Index (TTI) < 1.5	74.9% (AM); 72.4% (PM)	CMP
Annual percent on-time arrival at Transit Hub	95%	GTFS
Centro vehicle load standards	TBD*	CAD/AVL
Overall utilization rate for all park-and-ride lots	23%	PnR Study
Number of TDM programs	0	SMTC

Table continues on next page.

See page 75 for data source definitions.

Table 4.1, continued: Current transportation system performance

Goal	Objective
Strategically **preserve** our existing infrastructure and focus future investment in areas that are already served by significant public infrastructure investments.	Preserve and maintain pavement
	Preserve and maintain bridges
	Preserve and maintain ancillary transportation structures
	Preserve and maintain pedestrian facilities
	Assist communities in creating, maintaining, and utilizing asset management systems
Ensure that transportation system performance improvements are distributed **equitably**.	Improve transit service between employment centers and priority target areas
	Ensure that pavement conditions within priority target areas are at or above regional averages
	Provide accessible sidewalks and curb ramps, in accordance with ADA requirements

* Data from Centro's computer-aided dispatch/automatic vehicle locator (CAD/AVL) system was not available when this plan was completed. The system performance report will be updated when this information is available.

** The SMTC intends to examine this question as part of the upcoming Ladders of Opportunity study.

*** The SMTC's Bridge and Pavement Condition Management System reports pavement conditions as Excellent, Good, Fair, and Poor based on current NYSDOT rating procedures. However, the Notice of Proposed Rulemaking (NPRM) for National Performance Management Measures for Assessing Pavement Condition only identifies 3 ratings: Good, Fair, and Poor. For presentation purposes here, the SMTC's Excellent and Good ratings were combined into one Good category. Note that the NPRM also suggests a different rating methodology from the one currently used by the SMTC's member agencies.

Performance Measure	2015 Condition	Source
Percent of Interstate, non-Interstate NHS, and Other (non-NHS) system mileage with pavement in "good" and "poor" condition*	**Interstate:** Good 54.9%, Poor 1.9% **Non-Interstate NHS**: Good 36.6%, Poor 22.5% **Other**: Good 46.6%, Poor 25.3%	BPCMS
Percent of NHS Bridges and Non-NHS bridges in "good" and "poor" condition	**NHS**: Non-deficient 44.7%, Deficient 55.3%, Critical Needs 0% **Non-NHS:** Non-deficient 64.3%, Deficient 35.4%, Critical 0.4%	BPCMS
Percent of large culverts with condition rating less than 5	34.0%	NYSDOT (Structures)
Percent city sidewalk code compliance	57% (334 miles in compliance, out of 586 total miles)	GIS
Number of systems implemented	0	SMTC
Number of jobs that are accessible within 25 minutes by transit from priority target areas	TBD**	TBD
Percent of Priority Target Area pavements in "good" and "poor" condition***	**Priority Target Area:** Good 39.5%; Poor 30.9% **Remainder of MPA:** Good 48.2%; Poor 19.5%	BPCMS
Miles of deficient sidewalk	5.3 miles	NYSDOT (ADA)
Number of deficient ramps	89 ramps	NYSDOT (ADA)

Data sources:

ALIS: New York State Department of Transportation (NYSDOT) Accident Location Information System (January 2009 to December 2013)

BPCMS: Bridge and Pavement Condition Management System 2014-2015 Report

CAD/AVL: Computer-Aided Dispatch/Automatic Vehicle Locator (data not yet available)

CMP: 2015 Congestion Management Process Report

CTPP: Census Transportation Planning Products 2006 to 2010 (5-year) American Community Survey (ACS) Data

DOE: Department of Energy Alternative Fueling Station Locator

GTFS: Central New York Regional Transportation Authority (Centro) General Transit Feed Specification

GIS: SMTC Geographical Information System files

MOVES: Environmental Protection Agency Office of Transportation and Air Quality Motor Vehicle Emission Simulator

NYSDOT (ADA): 2014 NYSDOT Region 3 Americans with Disabilities Act Transition Plan

NYSDOT (Structures): Structures Geodatabase

PnR Study: Transit Park-and-Ride Study, Centro, 2010

SMTC: Input from SMTC member agencies

TDM: SMTC Travel Demand Model

Winbolts: NYSDOT Winbolts Database

Chapter 5: Assessment of Future Conditions

5.1. ANTICIPATED FUTURE POPULATION AND EMPLOYMENT

In addition to documenting the current usage and performance of the transportation system, which was detailed in the previous chapter, the LRTP is required to examine the future usage and performance of the transportation system as well. This assessment makes use of the regional travel demand model, with future population and employment projections and the transportation projects that we anticipate completing during this plan.

The SMTC's travel demand model was recently updated to a horizon year of 2050 for the purposes of this LRTP and the planning efforts for I-81. The socioeconomic data (households and jobs) in the model were updated based on a variety of datasets, including 2010 Census data, as well as meetings with local planning agencies and municipal representatives. In meetings with local representatives, the previous horizon year (2035) household and population data were used as a starting point. The general consensus was to retain the 2035 conditions out to 2050 with a few exceptions. The local representatives identified site-specific locations of growth or decline in their geographic areas of expertise. This feedback was applied to some specific locations, although the overall total number of households did not change in the model update. The projections for the City of Syracuse were updated based on the 2010 Census data, which showed a lower level of decline than had been previously expected. Feedback from local representatives also supported using the previous 2035 employment numbers for the new 2050 horizon year as well. There was an overall consensus on this assumption since current economic conditions have slowed growth for several years and in some sectors have created a decline. In addition,

Socioeconomic data updates for the travel demand model

Part of the recent updates to the travel demand model involved moving the base year from 2007 to 2014 and the horizon year from 2035 to 2050. The SMTC met with a variety of stakeholders to update the socioeconomic data in the model. The Empire State Development Corporation and the New York State Department of Labor provided information on current conditions and trends at the state level. The Central New York Regional Planning and Development Board, Syracuse-Onondaga County Planning Agency, Onondaga County Office of Economic Development, CenterState Corporation for Economic Opportunity, City of Syracuse Department of Neighborhood and Business Development, City of Syracuse Industrial Development Agency, and the City of Syracuse Bureau of Planning & Sustainability provided feedback on socioeconomic data at the city, county and region level. Additionally, in 2009, the SMTC collected information from local representatives from the Towns of Camillus, Cicero, Clay, DeWitt, Lysander, Manlius, Onondaga, Salina, and Van Buren. These municipalities were determined to be the most dynamic in regards to household and employment change over the 36 year modeling period.

In addition to the database compiled during meetings with local representatives, other datasets were referenced to update the model data to 2014 and 2050, including:

- 2000 and 2010 U.S. Census data
- 2012 U.S. Census American Community Survey (ACS) 3-year data
- 2012 parcel data for Onondaga County (Syracuse-Onondaga County Planning Agency)
- 2009 Business Location Analysis Tool (BLAT) data on employment (NYSDOT)
- 2013 Infogroup data on employers with 10+ employees (NYSDOT)
- 2012 Onondaga County employment totals by sector (New York State Department of Labor)
- 2012-2013 aerial photography for household and employment location confirmation (NYSDOT)
- 2010 U.S. Bureau of Economic Analysis (BEA) Onondaga County full-time employment by industry sector (CA25N)
- 2012 Onondaga County Industrial Development Agency (OCIDA) employment report
- 2013 Downtown Committee of Syracuse employment data
- 2020 employment projections by sector for Central New York (New York State Department of Labor)
- 2035 employment projections by sector and population projections for Onondaga County (Woods and Poole Economics, Inc.)
- 2040 population projections for Onondaga County (Cornell University Program on Applied Demographics).

For full details on the data used in the model update, see the SMTC Travel Demand Model Documentation.

local representatives provided updated information on site-specific development plans as well as projected job gains/losses by sector.

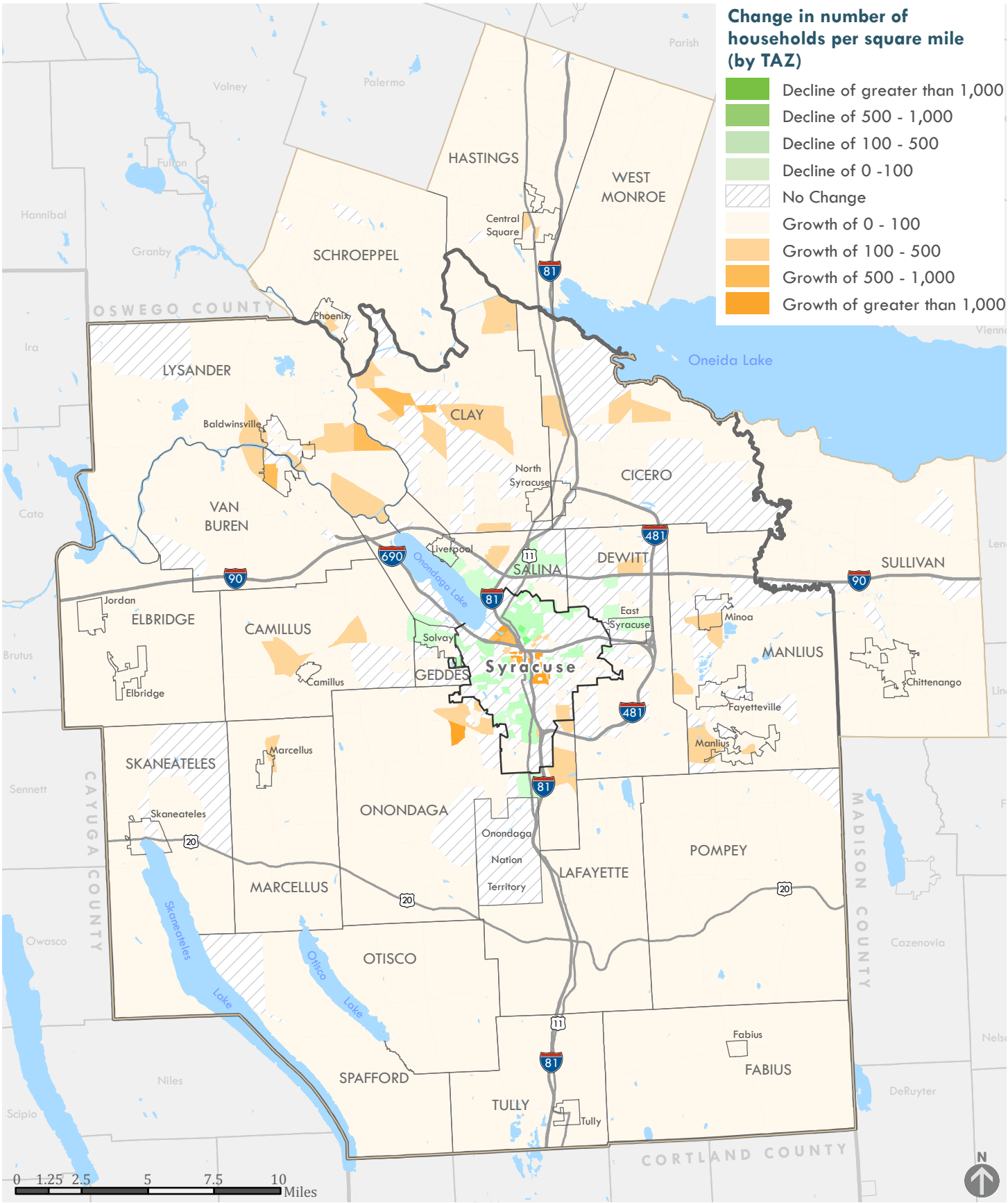
Table 5.1 summarizes the household and employment data by municipality for the SMTC's travel demand model. The total number of households in the region is projected to grow by 7 percent between 2014 and 2050, and the number of jobs in the region is projected to

Table 5.1: Households and jobs by municipality in the SMTC travel demand model

Town/ City	Households				Jobs			
	2014	2050	Change	Percent Change	2014	2050	Change	Percent Change
Camillus	9,918	10,988	1,070	10.8%	7,542	8,729	1,187	15.7%
Cicero	12,348	13,566	1,218	9.9%	12,671	14,149	1,478	11.7%
Clay	23,387	26,317	2,930	12.5%	23,494	26,584	3,090	13.2%
DeWitt	11,690	12,039	349	3.0%	43,085	48,326	5,241	12.2%
Elbridge	2,354	2,497	143	6.1%	2,704	3,594	890	32.9%
Fabius	728	778	50	6.9%	438	453	15	3.4%
Geddes	7,485	7,467	-18	-0.2%	7,238	8,110	872	12.0%
Granby	44	47	3	6.8%	9	10	1	11.1%
Hastings	3,883	4,253	370	9.5%	2,232	2,543	311	13.9%
LaFayette	2,000	2,240	240	12.0%	1,228	1,248	20	1.6%
Lysander	8,551	10,472	1,921	22.5%	5,918	8,198	2,280	38.5%
Manlius	13,442	14,642	1,200	8.9%	10,390	11,096	706	6.8%
Marcellus	2,474	2,835	361	14.6%	1,743	1,867	124	7.1%
Onondaga	9,230	10,527	1,297	14.1%	7,399	8,212	813	11.0%
Onondaga Nation	306	306	0	0.0%	129	129	0	0.0%
Otisco	963	1,013	50	5.2%	315	322	7	2.2%
Pompey	2,527	2,831	304	12.0%	703	733	30	4.3%
Salina	15,179	15,346	167	1.1%	21,105	22,385	1,280	6.1%
Schroeppel	3,351	3,570	219	6.5%	1,661	1,773	112	6.7%
Skaneateles	2,946	3,128	182	6.2%	3,982	4,481	499	12.5%
Spafford	669	738	69	10.3%	192	199	7	3.6%
Sullivan	6,160	6,713	553	9.0%	2,823	3,330	507	18.0%
Syracuse	**69,486**	**71,622**	**2,136**	**3.1%**	**100,807**	**114,802**	**13,995**	**13.9%**
Tully	1,073	1,173	100	9.3%	904	1,015	111	12.3%
Van Buren	5,812	6,498	686	11.8%	3,682	4,210	528	14.3%
West Monroe	1,425	1,516	91	6.4%	439	480	41	9.3%
MPA Total	**217,431**	**233,122**	**15,691**	**7.2%**	**262,833**	**296,978**	**34,145**	**13.0%**

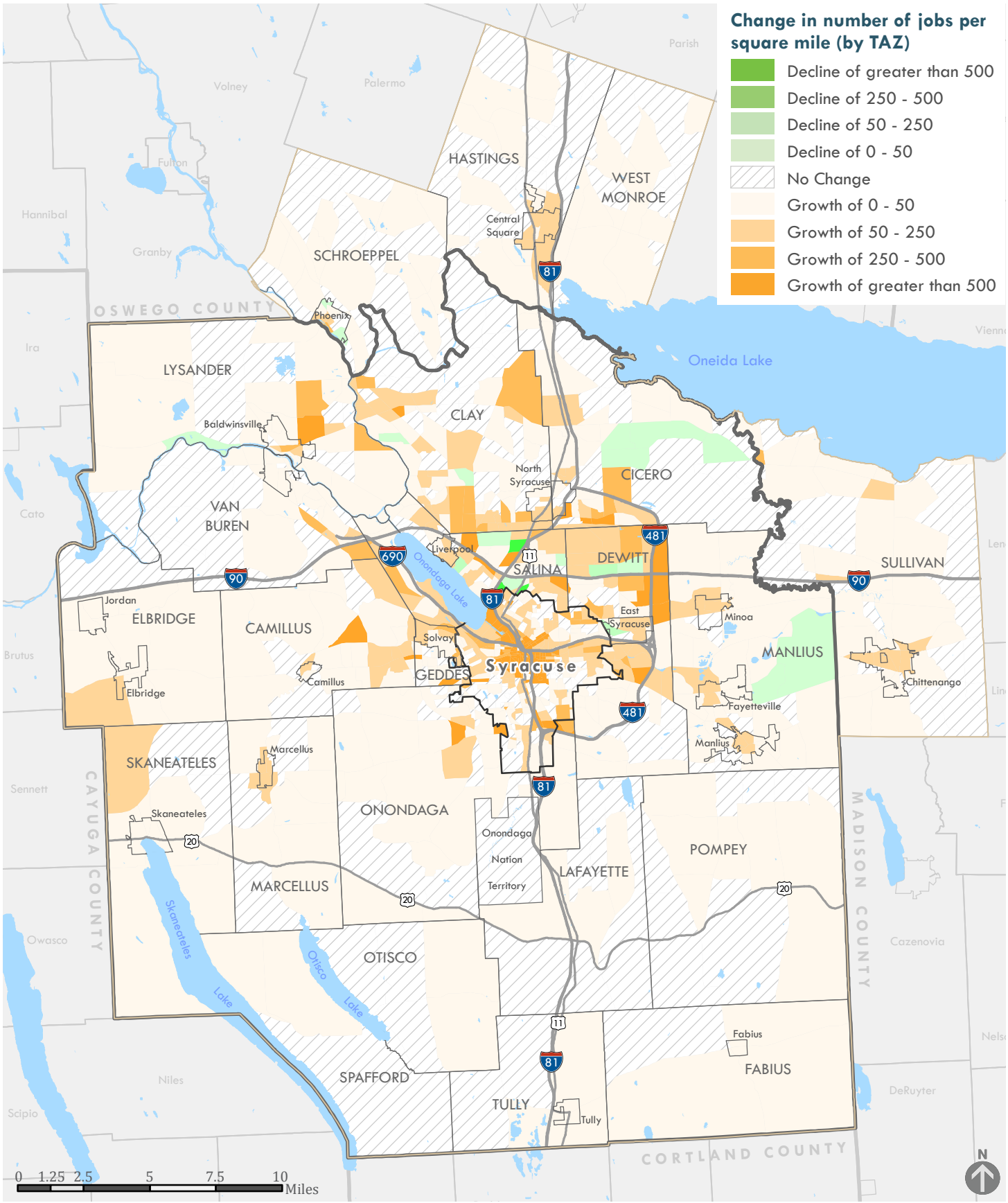
grow by 13 percent over the same timeframe. Figure 5.1 and Figure 5.2 show the change in household density and employment density, respectively, from 2014 to 2050. In absolute terms, the greatest increase in households is anticipated in the Town of Clay, with a gain of 2,930 households, or 12.5 percent growth from 2014. The second largest anticipated gain is in the City of Syracuse, with a net gain of over 2,100 additional households (although this is only a 3.1 percent increase over 2014 conditions). Growth in the number of households

FIGURE 5.1: CHANGE IN HOUSEHOLD DENSITY, 2014-2050



Data Source: NYSDOT, 2012

FIGURE 5.2: CHANGE IN EMPLOYMENT DENSITY, 2014-2050



Data Source: NYSDOT, 2012

within the City is concentrated within Downtown, Unviersity Hill, and the Lakefront area. In fact, a total of nearly 3,000 new households are expected within these three areas, but since declines in households are anticipated within other areas throughout city, the result is a net gain of 2,136 households in the city.

On the employment side, the city far outweighs any other municipality in the sheer number of new jobs anticipated (nearly 14,000). The towns with the most significant (in absolute terms) expected job growth include DeWitt, Clay, and Lysander, all with over 2,000 new jobs.

The future household and employment data were used to model a "Future No-Build" scenario. This scenario examines how the transportation system would operate in the future with the household and employment changes expected by 2050 but with no modifications to the existing transportation network. In other words, the transportation system would stay the same as it is today, but population and jobs would continue to grow/decline as noted in Table 5.1.

5.2 ANTICIPATED FUTURE TRANSPORTATION PROJECTS

In addition to a Future No-Build scenario, the SMTC also modeled a scenario that included anticipated future transportation projects in combination with the 2050 household and employment projections. This represents the Anticipated Future scenario, since it includes the projects that the member agencies anticipate completing over the life of this LRTP. The City of Syracuse, NYSDOT, Onondaga County Department of Transportation (OCDOT), and Centro developed lists of future projects that they would like to complete to address known capacity or accessibility concerns, in addition to the priority projects identified at the beginning of the LRTP process (completion of the I-81 Viaduct Project, enhanced transit system, and regional trail network). The following projects were included in the 2050 Anticipated Future scenario for travel demand modeling:

City of Syracuse (*projects completed as of October 2015)

- South Salina Street turn lane additions
- Erie Boulevard West 3-lane cross-section between Clinton Street and West Genesee Street

- Onondaga Creek Boulevard closure*
- Water Street closure between University Avenue and Walnut Avenue
- Waverly Avenue and Comstock Avenue lane reduction*
- West Street lane reduction*
- North-south-west-east interconnect expansion
- Geddes/Genesee and Lodi/Salina signal improvements*
- James Street 3-lane cross-section from State Street to Grant Boulevard/ Shotwell Park
- Conversion of downtown streets to two-way operation
- Roundabout at James Street/Shotwell Park/Grant Boulevard

New York State

- Soule Road separation from Route 481 southbound on-ramp
- Third lane of Frontage Road (along I-81)
- Onondaga Lake Parkway speed reduction
- Route 11/Route 20 improvements
- I-81 interchange at Route 31
- Route 5 widening
- Route 31 widening: Lakeshore Road to Thompson Road
- Route 31 widening: Morgan Road to Route 11
- Girden Road extension

Onondaga County

- Old Liverpool Road/Electronics Parkway improvement
- Electronics Parkway/Henry Clay Boulevard signal interconnect
- Soule Road widening
- 7th North Street/Buckley Road intersection upgrades
- Buckley Road shared turn lane and Buckley Road/Bear Road intersection upgrades
- White Pines development, improvements to Caughdenoy Road and Route 31/Caughdenoy Road intersection

Centro

- Reduction of off-peak headways
- Express I-81 route with Park-n-Ride facilities
- Bus rapid transit (BRT) on James Street/South Avenue and from University Hill area to Destiny USA.

Additional details about these projects and how they were incorporated into the travel demand model can be found in the SMTC Travel Demand Model Documentation.

5.3 FUTURE SYSTEM PERFORMANCE

5.3.1 VEHICLE MILES TRAVELED

Using the household and employment data as inputs, the travel demand model can provide estimates of daily vehicle miles traveled (DVMT) in the region. Table 5.2 provides DVMT estimates for the Syracuse MPA for the base year condition (2014), the 2050 Future No Build, and the 2050 Anticipated Future scenarios. As described in the previous sections, the 2050 Future No Build includes the household and employment projections developed by SMTC staff in coordination with various planning and economic development agencies and muncipalities. The No Build scenario does not include any modifications to the existing transportation system. The 2050 Anticipated Future includes the same household and employment forecasts, but also includes transportation projects that the SMTC member agencies anticipate completing over the life of this plan

The model outputs indicate an increase in per capita DVMT of about 4 percent and an increase in total DVMT of 11.5 percent from the 2014 existing conditions to the 2050 Anticipated Future conditions. The increase in VMT is a result of the household and job growth conditions used as inputs to the model. The population is anticipated to grow by about 7 percent from 2014 to 2050, with much of this growth expected in towns at the edges of Onondaga County (especially in the northern half of the county). Based on this scenario, the model predicts longer travel distances to the primary job centers in the city. Although a

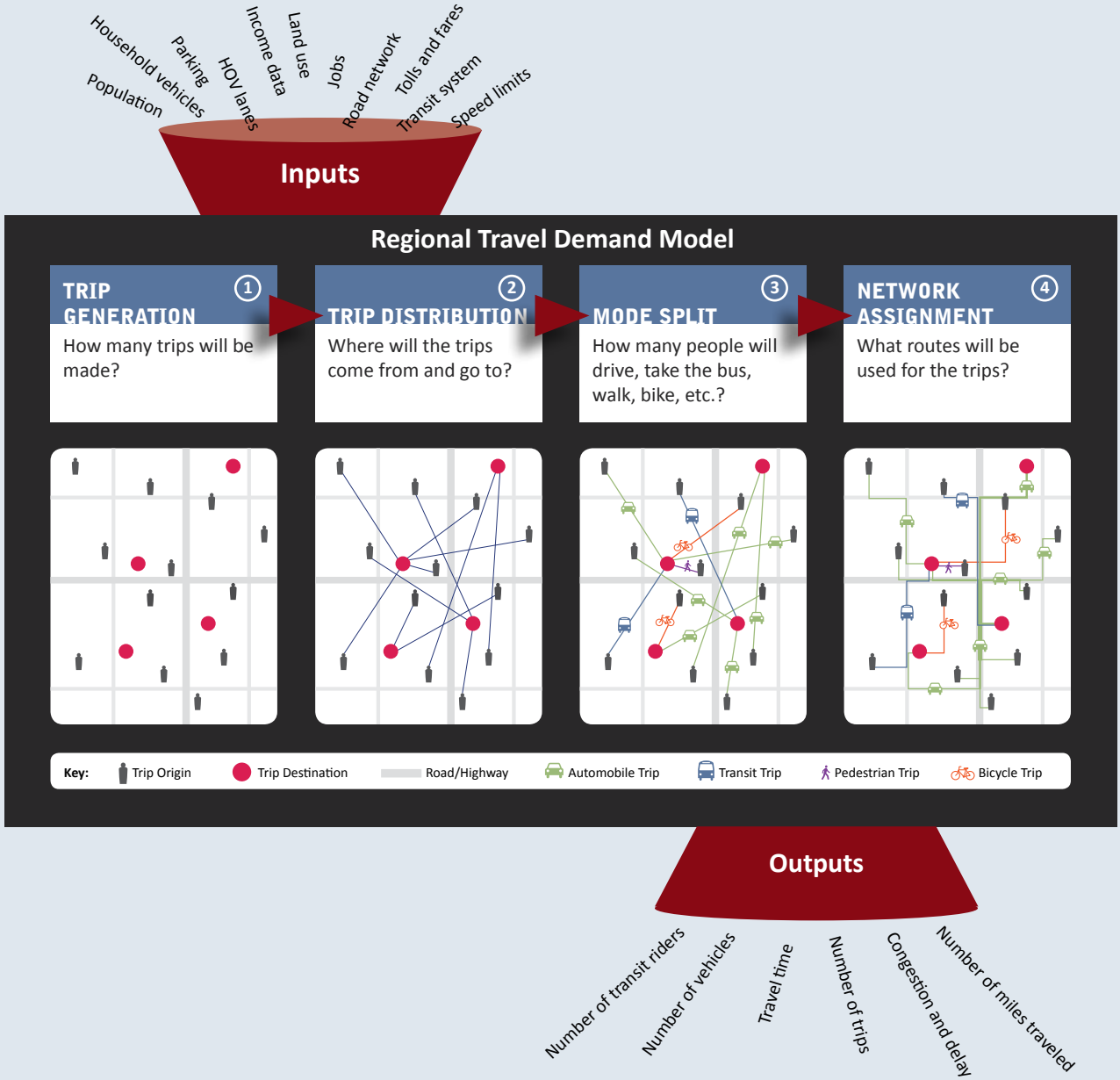
Total daily VMT in our region is anticipated to increase by 11.5% from 2014 to 2050, based on the projected household and employment growth pattern for our region.

Table 5.2: Daily vehicle miles traveled in the Syracuse MPA

Analysis year/scenario	Total DVMT (miles)	DVMT per capita (miles)
2014 Base (existing)	15,003,247	29.88
2050 Future No Build	16,736,037	31.15
2050 Anticipated Future	16,729,834	31.14
Percent change, 2014 to 2050 Anticipated Future	11.5%	4.2%

What is a travel demand model?

SMTC's travel demand model is a "four step model" that can be used to predict the amount, type, and location of travel that residents will undertake, now and in the future. The model uses inputs such as population and economic forecasts, the geographic dispersion of people and jobs throughout the region, and a description of the transportation system (roads and transit system). The model outputs can be used to evaluate the regional impact of changes to the transportation system, changes in land use, or changes in policy (such as pricing). The travel demand model cannot forecast future land use or evaluate traffic operations at specific intersections.



downward trend in VMT has been observed nationally in recent years, the VMT estimates for the SMTC MPA are the result of a model that is driven primarily by land use assumptions, not forecast based on VMT trend data. Note that the Anticipated Future transportation projects result in a very small decrease in overall regional DVMT and per capita DVMT as compared to the 2050 Future No Build condition.

Changing the projected VMT will require changes to the anticipated future pattern of development or shifts in mode choice. Achieving a significant VMT decrease would require a significant change in predicted development patterns and a reduction in suburban growth levels, as well as a significant number of drivers shifting to mass transit for a variety of trips.

Decreasing future VMT would require a significant change in predicted development patterns and a reduction in suburban growth levels, as well as a significant shift to transit.

5.3.2 Congestion measures on primary corridors

As discussed in Section 4.4.2, SMTC's 2015 Congestion Management Process (CMP) working group identified primary commuter and freight corridors and examined various measures of congestion on these corridors within the urban area. Road segments with a volume-to-capacity ratio (V/C) at or above 0.9, or a travel time index (TTI) of 1.5 or greater are considered "congested" in the SMTC's CMP. These measures were examined for the primary commuter and freight corridors throughout the entire MPA for the purpose of the LRTP, and the results for each modeled scenario are summarized in Table 5.3.

Table 5.3: Congestion on primary commuter and freight corridors

	Miles with V/C ≥0.9 (% of total mileage)		Miles with TTI ≥1.5 (% of total mileage)	
Analysis year/scenario	AM peak	PM peak	AM peak	PM peak
Primary commuter corridors (321 miles total)				
2014 Base (existing)	2.50 (0.8%)	1.42 (0.4%)	80.34 (25.0%)	88.60 (27.6%)
2050 Future No Build	4.30 (1.3%)	4.29 (1.3%)	84.66 (26.4%)	94.29 (29.4%)
2050 Anticipated Future	4.30 (1.3%)	4.29 (1.3%)	83.08 (25.9%)	92.04 (28.7%)
Primary freight corridors (233 miles total)				
2014 Base (existing)	2.50 (1.1%)	2.18 (0.9%)	22.52 (9.7%)	29.02 (12.5%)
2050 Future No Build	3.56 (1.5%)	4.30 (1.9%)	25.15 (10.8%)	31.25 (13.4%)
2050 Anticipated Future	3.56 (1.5%)	4.31 (1.9%)	24.72 (10.6%)	31.37 (13.5%)

In all scenarios – existing and future in both the AM and PM peak conditions – congestion on the primary corridors as measured by V/C ratio is very low, at fewer than 5 miles, or less than 2 percent of the mileage of the primary commuter corridors. More miles are considered congested when considering TTI, with 25 to 30 percent of the total primary commuter corridor mileage and 10 to 15 percent of the total primary freight corridor mileage operating with a TTI of 1.5 or higher.

The modeling indicates a slight increase in congestion between 2014 and 2050.

By both measures, congestion increases from the 2014 Base condition to the 2050 Future No Build scenario, but the increase is relatively small. The largest increase indicated by these results is an additional 5.7 miles of the primary commuter corridors in the PM peak with a TTI of 1.5 or higher.

The 2050 Future No Build and the 2050 Anticipated Future show nearly identical results for the congested mileage based on V/C ratios. Using the TTI measure, the number of "congested" miles on the primary commuter and freight networks is expected to decrease slightly from the 2050 Future No Build condition to the 2050 Anticipated Future condition (with the exception of an increase of less than one mile on the primary freight corridors in the PM peak).

5.3.3 Emissions and Energy Analysis

In addition to the existing emissions assessment discussed in Chapter 4, the SMTC also utilized the U.S. EPA's MOVES2014 model to estimate on-road mobile source emissions and energy usage associated with the 2050 Future No Build and 2050 Anticipated Future scenarios. The results of this analysis are shown in Tables 5.4 and 5.5, and a more detailed explanation of this analysis can be found in Appendix D.

Future emissions are expected to decline substantially, primarily due to anticipated increases in fuel efficiency for passenger vehicles.

This analysis indicates a significant drop in emissions from the 2014 Base scenario to the 2050 Future No Build scenario. This is primarily because the MOVES model assumes increases in vehicle efficiency in future years as defined by the federal Corporate Average Fuel Economy (CAFE) standards, which started increasing rapidly for model year 2012 and newer vehicles. For example, the standard in 2012 for small passenger vehicles was 36 mpg, and in 2025 the standard will be 60 mpg, which is an increase of nearly 70%. As older vehicles leave the

Table 5.4: Emissions summary
All figures in tons per year.

Analysis year/ scenario	Total Gaseous Hydro-carbons	Carbon Monoxide (CO)	Oxides of Nitrogen (NO_x)	Non-Methane Hydro-carbons	Volatile Organic Compounds	Atmospheric CO_2
2014 Base (existing)	1,430	23,302	4,415	1,336	1,386	2,701,555
2050 Future No Build	463	8,663	966	402	413	2,020,029
2050 Anticipated Future	457	8,750	966	397	408	1,978,251

Table 5.5: Energy usage summary
All figures in millions of BTUs per year.

Analysis scenario/year	Total Energy	Petroleum Energy	Fossil Fuel Energy
2014 Base (existing)	32,134,886	30,570,514	30,585,111
2050 Future No Build	23,992,284	22,900,020	22,900,020
2050 Anticipated Future	23,496,292	22,426,111	22,426,111

fleet and are replaced by newer vehicles with the higher standards, the average fleet efficiency will increase dramatically, especially beyond the year 2025, as the standard for new cars has reached a maximum and many pre-2012 cars have left the fleet. By the time the future year of 2050 is reached, almost the entire vehicle fleet will be comprised of vehicles that meet the 2025 standards.

Therefore, even though VMT is expected to increase in the Syracuse MPA from 2014 to 2050, the overall on-road mobile source emissions are expected to decrease substantially. The results of the MOVES analysis also show a small decrease in most emissions between the 2050 Future No Build and the 2050 Anticipated Future scenario due to the small decrease in regional VMT associated with the projects in the 2050 Anticipated Future scenario.

Similarly, the energy analysis shows a significant decrease in total energy use between the 2014 Base and 2050 Future No Build scenarios. An additional, though relatively small, decrease in energy use is associated with the 2050 Anticipated Future scenario.

5.4 FUTURE CONDITIONS SUMMARY

The SMTC's regional travel demand model and the MOVES emissions model were used to determine the expected future usage

and performance of the region's transportation system. In addition to the existing 2014 Base scenario, the modeling was completed for two future scenarios: 2050 No Build (with no changes to the current transportation system) and 2050 Anticipated Future (with transportation projects identified by the SMTC's member agencies as likely to be implemented before 2050). Based on various data sources and input from local planning and economic development agencies, the future model scenarios include an increase in total households and total jobs in the MPA of about 7 percent and 13 percent, respectively.

Total DVMT in the region is expected to increase by 11.5 percent from the current condition to the year 2050 with the Anticipated Future transportation projects. The Anticipated Future transportation projects result in a very small decrease in overall regional DVMT and per capita DVMT as compared to the 2050 Future No Build condition. The travel demand modeling for the Future No Build scenario indicates a increase in congestion from the existing conditions. The addition of anticipated future transportation projects results in a decrease in congestion as compared to the Future No Build, with the net result being a slight increase in congested miles on the primary commuter and freight corridors.

The emissions and energy analysis both showed substantial improvement (fewer emissions and less energy consumed) from the 2014 Existing scenario to the 2050 Future No Build scenario, largely related to the anticipated efficiency increases in the vehicle fleet. The addition of the transportation projects identified in the 2050 Anticipated Future scenario results in a small decrease in most pollutants and in energy consumed as compared to the 2050 Future No Build.

In summary, the modeling provides future estimates of congestion, emissions, and energy consumed. By nearly all measures, the projects included in the 2050 Anticipated Future scenario result in improvements, and, therefore, all of these projects were retained in the LRTP process and progressed to the financial analysis, as described in Chapter 6.

Chapter 6:
Financial Analysis

6.1 REQUIREMENT FOR A FINANCIAL PLAN

MAP-21 requires that the LRTP include a financial plan, including future revenue projections and future project costs. The legislation requires that the LRTP be "fiscally-constrained," meaning that projects may only be included if "full funding can reasonably be anticipated to be available for the project within the time period contemplated for completion of the project." (23 U.S.C., Sec. 134 (i)(4)(B)(iv)) In other words, the plan must show how the region will pay for any projects included in the anticipated future scenario, with revenues that are reasonably expected to be available. Thus, the LRTP is grounded in financial reality and is not simply a "wish list" of projects for the region.

Federal legislation dictates that the LRTP must show how the region will pay for any projects included in the anticipated future scenario, with revenues that are reasonably expected to be available.

The LRTP may include a list of "illustrative projects" representing additional investment priorities that would be considered if additional financial resources become available in the future.

6.2 FUTURE COSTS AND REVENUES

6.2.1 Cost projections for anticipated future projects

As described in Chapter 5, the SMTC member agencies provided lists of future projects that they would like to complete to address known capacity or accessibility concerns, in addition to the priority projects identified at the beginning of the LRTP process (completion of the I-81 Viaduct Project, enhanced transit system, and regional trail network). These projects were included in the 2050 Anticipated Future scenario model. The financial analysis considers whether the region can reasonably expect to fund these projects over the next 35 years. However, inclusion in this financial plan does not guarantee that a project will be funded; each project must still compete for federal funding through the SMTC's TIP process. Projects selected for inclusion

What is a capital project?

A 'capital project' is a major construction project or acquisition. It includes all transportation modes: facilities for pedestrians and cyclists, purchasing buses and maintaining, improving and constructing roads and bridges. 'Capital expenses' are the costs associated with capital projects.

How are capital projects selected and funded?

The SMTC prepares the Transportation Improvement Program (TIP), which is a multi-year listing of all capital projects within the MPA that have been selected for receipt of transportation dollars from the Federal Highway Administration and the Federal Transit Administration.

All SMTC member agencies are involved in some fashion in the selection process. In many cases, municipal planners and engineers generate lists of potential improvements based on studies, analysis, and public input. Projects are evaluated by the SMTC Capital Projects Committee, which consists of SMTC staff and representatives from city, county, and state agencies. After projects are evaluated, an initial listing of recommended projects is released for public comment and then moved forward to the SMTC Planning and Policy Committees for approval.

Typically, more than three-quarters of all federal transportation funding in our area goes to maintenance of existing infrastructure. In the current 2014-2018 TIP, which totals nearly $332 million over the 5 years, 80 percent of the total funds (highway and transit) are allocated for maintenance activities. This includes activities that preserve or maintain our existing infrastructure or replace infrastructure 'in-kind' (i.e. replace with the same structure, without an increase in the capacity of the system). Examples include paving roads, reconstructing roads (without adding lanes), painting bridges, replacing or rehabilitating bridges (without adding travel lanes), or replacing buses.

on the TIP will be evaluated based on the updated LRTP goals and objectives and weighed against the other projects proposed for that particular TIP update.

Costs were projected for all of the projects included in the 2050 Anticipated Future scenario model (that are anticipated to occur after 2017) based on data provided by the member agencies. Centro provided details of their capital plan through Federal Fiscal Year (FFY) 2050 and SMTC staff summarized the data into preventive maintenance, bus replacements, and other capital project needs (for example, bus shelters, farebox system replacements, and fueling facility maintenance), as shown in Table 6.1. The City of Syracuse, NYSDOT, and Onondaga County Department of Transportation provided estimated costs for their anticipated future projects, which are shown in Table 6.2. Agencies also identified a timeframe for completion of each project, either by 2020 or 2030. Since the year 2050 is beyond the capital planning horizon of the individual agencies, no specific highway projects were identified for the long-term timeframe. The project costs were inflated by 2 percent per year[1] from 2014 until the estimated time

[1]The NYSDOT indicated that a 2 percent per year rate of inflation should be used for cost projections, based on the best available estimates of overall price trends for the transport public works sector in New York State at the time this plan was written.

Table 6.1: Anticipated future transit projects and costs

All costs are in millions of year-of-expenditure (YOE) dollars

Project	Short-term FFY 2017-2022	Mid-term FFY 2023-2032	Long-term FFY 2033-2050	Total
Preventive Maintenance	40.62	82.63	211.35	334.60
Bus replacements	45.14	90.66	176.85	312.65
Other capital project needs	6.91	13.47	21.86	42.24
Total	**92.66**	**186.76**	**410.06**	**689.49**

Note: FFY 2017 runs from Oct. 1, 2016 through Sept. 30, 2017, etc.

of completion, so that all costs are shown in year-of-expenditure (YOE) dollars as required by MAP-21.

SMTC staff also estimated maintenance costs through 2022, 2032, and 2050. In this context "maintenance" includes capital projects that are "replacements in-kind," such as bus replacements, transit facilities maintenance, paving or reconstructing roads, or rehabilitating or replacing bridges with no increase in the capacity of the current system. The short- and mid-term maintenance cost projections were developed based on the total cost of maintenance projects in the current 2014-2018 TIP, inflated by 2 percent per five-year time block from 2018 to 2050. For the long-term timeframe, maintenance/replacement in-kind costs were developed to be consistent with the total annual spending estimated for the short-term timeframe. Although no specific projects were identified by the members for the long-term timeframe, we recognize that additional projects (primarily maintenance/replacement in-kind) will be identified as time progresses, and, therefore, the total annual cost of projects in the short-term timeframe was projected over the 18 years of the long-term timeframe.

Within this plan, "maintenance" includes capital projects that are "replacements in-kind," such as bus replacements, transit facilities maintenance, paving or reconstructing roads, or rehabilitating or replacing bridges with no increase in the capacity of the current system.

Based on this methodology, the maintenance/replacement in-kind costs identified here assume only that these activities will continue at their current rate, although the cost of completing those projects will rise over time. However, the SMTC acknowledges that the existing maintenance needs are not being met at the existing funding levels and that additional maintenance projects – and funds – would be necessary to address all the needs of the current system. This shortcoming is discussed further in Section 6.4.

Current levels of maintenance funding are inadequate to address all the needs of the existing system.

Table 6.2: Anticipated future highway projects and costs

Timeframe	Project	Category	Agency	Estimated cost (millions 2014 $)	Estimated cost (millions YOE $)
Short-term FFY 2017-2022	South Salina St turn lane additions	Signals/intersection capacity enhancements	City of Syracuse	0.200	0.225
	Erie Blvd West 3 lane cross section between Clinton St and W Genesee St	Road diets/lane reductions	City of Syracuse	2.000	2.252
	Onondaga Creek Blvd closure	Road diets/lane reductions	City of Syracuse	0.100	0.113
	Water St closure between University Ave and Walnut Ave	Road diets/lane reductions	City of Syracuse	0.250	0.282
	University Hill Bike Network Implementation *	Road diets/lane reductions	City of Syracuse	1.102	1.241
	West St lane reduction	Road diets/lane reductions	City of Syracuse	2.000	2.252
	N, S, E, W interconnect expansion *	Signals/intersection capacity enhancements	City of Syracuse	6.769	7.623
	Onondaga Creekwalk Phase II *	Bicycle/pedestrian enhancements	City of Syracuse	10.000	11.262
	Soule Rd separation from Route 481 SB on ramp	Interchange improvements	NYSDOT	2.700	3.041
	Third lane of Frontage Road (along I-81)	Roadway capacity enhancements	NYSDOT	1.000	1.126
	Onondaga Lake Parkway speed reduction	Other highway	NYSDOT	0.010	0.011
	Route 11/Route 20 Improvements	Signals/intersection capacity enhancements	NYSDOT	8.800	9.910
	Route 11 over Oneida River	Road and bridge maintenance/ replacement in-kind	NYSDOT	10.175	11.459
	Route 635 bridges over I-690 and CSX railroad	Road and bridge maintenance/ replacement in-kind	NYSDOT	13.993	15.758
	I-690 bridge over Beech St. and Teall Ave.	Interchange improvements	NYSDOT	26.400	29.731
	Electronics Pkwy/Henry Clay Blvd signal interconnect *	Signals/intersection capacity enhancements	OCDOT	1.149	1.294
	Completion of projects on current TIP	Signals/intersection capacity enhancements	all	1.407	1.585
	Completion of projects on current TIP	Bicycle/pedestrian enhancements	all	2.399	2.702
	Completion of projects on current TIP	Road and bridge maintenance/ replacement in-kind	all	104.619	117.818
	Maintenance/replacement in-kind	Road and bridge maintenance/ replacement in-kind	all		245.741
				Short-term total	465.425

* Included on the current 2014-2018 TIP.

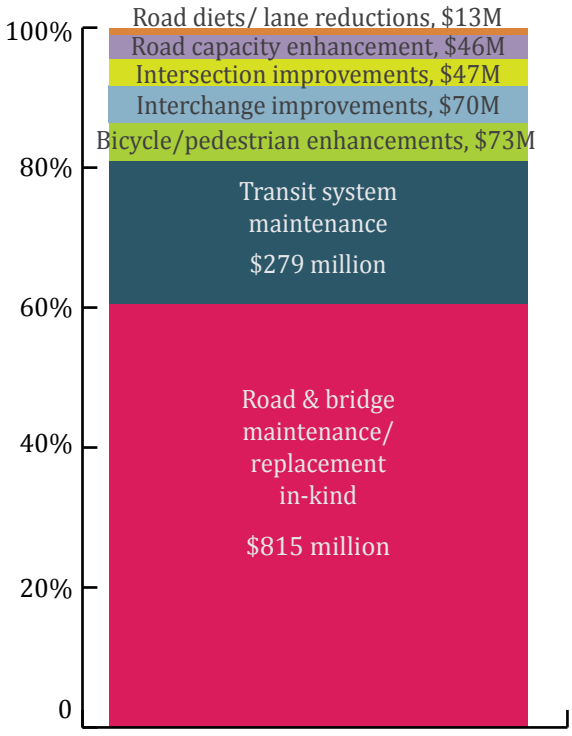
Table 6.2, continued: Anticipated future highway projects and costs

Timeframe	Project	Category	Agency	Estimated cost (millions 2014 $)	Estimated cost (millions YOE $)
Mid-term FFY 2023-2032	James St 3 lane cross section from State to Grant/Shotwell	Road diets/lane reductions	City of Syracuse	3.000	4.118
	Conversion of downtown streets to 2-way	Road diets/lane reductions	City of Syracuse	2.000	2.746
	Roundabout at James/Shotwell/Grant	Signals/intersection capacity enhancements	City of Syracuse	1.000	1.373
	Onondaga Creekwalk Phase III	Bicycle/pedestrian enhancements	City of Syracuse	10.000	13.728
	I-81 interchange at Route 31	Interchange improvements	NYSDOT	27.500	37.752
	Route 5 widening	Roadway capacity enhancements	NYSDOT	3.100	4.256
	Route 31 widening: Lakeshore Rd to Thompson Rd	Roadway capacity enhancements	NYSDOT	9.700	13.316
	Route 31 widening: Morgan Rd to Route 11	Roadway capacity enhancements	NYSDOT	8.100	11.120
	Girden Road extension	Roadway capacity enhancements	NYSDOT	2.800	3.844
	Soule Road widening	Roadway capacity enhancements	OCDOT	9.000	12.355
	7th North Street/Buckley Rd intersection upgrades	Signals/intersection capacity enhancements	OCDOT	4.500	6.178
	Buckley Rd shared turn lane and Buckley/Bear intersection upgrades	Signals/intersection capacity enhancements	OCDOT	9.500	13.041
	White Pines development, improvements to Caughdenoy Rd and Route 31/ Caughdenoy Rd intersection	Signals/intersection capacity enhancements	OCDOT	4.000	5.491
	Onondaga Lake Trail	Bicycle/pedestrian enhancements	OCDOT	13.300	18.258
	Erie Canalway Trail Syracuse Gap Connector	Bicycle/pedestrian enhancements	various	20.000	27.456
	Maintenance/replacement in-kind	Road and bridge maintenance/ replacement in-kind	all		424.265
				Mid-term total	599.295
Long-term FFY 2033-2050	Maintenance/replacement in-kind	Road and bridge maintenance/ replacement in-kind	all		1,396.275**
				Long-term total	1,396.275
				Highway projects grand total	**2,460.996**

Note: The City of Syracuse's Geddes/Genesee & Lodi/Salina signal improvement project and the OCDOT's Old Liverpool/ Electronics Parkway improvement project were included in the Anticipated Future model scenario (as discussed in Chapter 5), but are not reflected in the financial analysis because all funds for these projects are expected to be obligated within the current TIP prior to FFY 2017.

** Total annual short-term costs ($465.425 million/6 yrs. = $77.5 million per year), projected over 18 years.

FIGURE 6.1: SHORT- AND MID-TERM ANTICIPATED FUTURE PROJECT COSTS BY CATEGORY



Anticipated future projects in this plan - including a continuation of maintenance at current levels - will likely cost around $3.15 billion. A total of $2.3 billion in traditional federal aid funding is anticipated through 2050.

As shown in Tables 6.1 and 6.2, the total project costs, including maintenance existing levels, are approximately $3.15 billion through 2050, with 22 percent of that total for transit projects and 78 percent for highway projects. Since no specific projects were identified for the long-term timeframe, the project costs in the long-term consist solely of maintenance/replacement in-kind costs. Within the short- to mid-term timeframes (through approximately 2030), the total project costs – including member agencies' projects and maintenance at existing levels – are anticipated to be about $1.3 billion. As shown by Figure 6.1, over 80 percent of the anticipated project costs through year 2030 are for maintenance of the transit system, roads, and bridges. As previously noted, maintenance projects are considered to be any projects that do not increase the capacity of the existing transportation system.

6.2.2 Revenue Projection

Revenues were projected for the short-, mid-, and long-term timeframes for both transit and highway funding sources. As shown in Table 6.3, the SMTC anticipates a total of $2.3 billion in traditional federal aid funding plus local matching funds to be available for capital projects in our planning area through the year 2050, with about 76 percent of that total for highway projects and 24 percent for transit projects. These projections are based on the assumption of very modest increases in fund allocations over time (see the table notes for details). Given that MAP-21 expired on September 30, 2014, and only short-term extensions have been enacted since that time, the actual future funding programs and anticipated allocations are unknown.

Within the timeframe of the anticipated future projects (the short- and mid-term, through the year 2032), the SMTC anticipates a total of just over $1 billion in traditional federal aid and matching funds to be available to capital projects in the region.

6.3 FISCAL CONSTRAINT

Table 6.4 compares the anticipated future project costs to the anticipated available revenue from traditional FTA and FHWA fund sources (including matching funds) over the life of this plan. Considering just our anticipated federal aid, this financial analysis indicates a deficit of approximately $810 million in federal aid over the life of this plan, with the bulk of this deficit in highway funding.

Table 6.3: Anticipated revenues, FHWA and FTA fund sources

All revenues are in millions of dollars

Revenue Source		Short-term FFY 2017-2022	Mid-term FFY 2023-2032	Long-term FFY 2033-2050	Total
FTA funding (transit)					
Federal aid Sections 5307 + 5339		53.67	107.48	274.91	436.06
Local match to Federal aid		13.42	26.87	68.73	109.01
Surplus (5307 + 5339) + match		13.52	NA	NA	13.52
Total FTA (including match)		80.61	134.35	343.64	558.59
FHWA funding (highways)					
Current Federal aid programs	Highway Safety Improvement Program	7.81	*	*	NA
	National Highway Performance Program	168.29	*	*	NA
	Surface Transportation Program - Flex	27.80	*	*	NA
	Surface Transportation Program - Off-system bridge	13.06	*	*	NA
	Surface Transportation Program - Urban	22.39	*	*	NA
	Transportation Alternatives Program	1.66	*	*	NA
Total Federal aid		241.02	407.75	776.44	1,425.21
Local match to Federal aid		60.25	101.94	194.11	356.30
Total FHWA (including match)		301.27	509.69	970.56	1,781.52
Total available to all Federal aid projects (including match)		**381.88**	**644.04**	**1,314.19**	**2,340.11**

* Due to uncertainty in future funding programs, specific FHWA program amounts are not shown for the mid- and long-term; only a total for Federal aid is shown in these timeframes.

Notes:

- For FFY 2017, all revenues assumed to be unchanged from those included in the adopted 2014-2018 TIP fiscal constraint table.
- 80%/20% split between Federal aid and local match is assumed for both FTA and FHWA funding.
- FTA Section 5307 and 5339 expected revenues were provided by Centro. Centro assumed a 2.5% per year increase in funding.
- Centro indicated that they expect to have a surplus of 5307 and 5339 funds from FFY 2016 that will carry-over into FFY 2017.
- For STP Urban, FFY 2018 revenue held at $2.72M per the adopted 2014-2018 TIP. FFY 2019-2022 revenue increased to $4.237M per year, which represents the average of 2 years under MAP-21 sub-allocated to the Syracuse area per funding tables from FHWA before being reduced due to past "debt."
- For TAP, FFY 2017 revenue calculated as 2-year average of funds sub-allocated to the Syracuse area under MAP-21, then multiplied by 5 for the remaining years of the short-term timeframe.
- For years 2023-2027, FHWA Federal aid was held constant with previous levels. For years 2028-2050, FHWA Federal aid was increased by 2% per 5-year time block per guidance from NYSDOT Main Office staff.

Table 6.4: Comparison of anticipated federal aid and future capital project costs

All figures in millions of year-of-expenditure (YOE) dollars.

	Short-term FFY 2017-2022	Mid-term FFY 2023-2032	Long-term FFY 2033-2050	Total
Transit				
Federal aid + match	80.61	134.35	343.64	558.59
Total capital project costs	92.66	186.76	410.06	689.49
Balance	-12.06	-52.41	-66.43	-130.90
Highways				
Federal aid + match	301.27	509.69	970.56	1,781.52
Total capital project costs	465.43	599.29	1,396.28	2,461.00
Balance	-164.58	-89.60	-425.72	-679.48
All projects				
Total Federal aid + match	381.88	644.04	1,314.19	2,340.11
Total capital project costs	558.09	786.06	1,806.34	3,150.48
Overall balance	**-176.21**	**-142.02**	**-492.15**	**-810.37**

Based on discussions with Centro, additional fund sources can reasonably be expected to fill the transit funding gap left by existing federal aid, such as:

- State dedicated funds (SDF). Recent State budgets have included SDF for transit agencies, but the funds have not been allocated. Based on recent budgets, it is reasonable to anticipate up to $2 million every other year, or up to $30 million over the course of this plan.
- Transfer of some highway funds to transit. This is allowable under the rules of most of the existing FHWA fund sources.
- Federal discretionary funds
- State infrastructure bond act (the most recent bond act was in 2005)
- Other grants, such as those available through the New York State Energy Research and Development Authority
- Other financing strategies, such as bus leasing rather than purchasing.

For highway projects, in addition to the traditional federal aid funding and local match shown in Table 6.3, SMTC anticipates State dedicated funds at $2.5 million per year and Consolidated Local Street and Highway Improvement Program (CHIPS) funds of $12.3 million per year, based on current estimates from the NYSDOT. Through 2050, this would amount to additional revenue of $488 million, which still leaves a funding gap of nearly $200 million.

Closing this gap will require competing for fund sources such as TIGER and using local funds to complete some projects. Without additional funds, some projects will be deferred or eliminated and since the bulk of the costs are for maintenance projects, this will mean that the condition of the system will continue to decline, possibly to the point of disinvestment. As previously noted, the projects listed in this plan will still be subject to future TIP-selection processes and will need to compete against other projects proposed in each TIP cycle. The maintenance needs of the current system will continue to be a priority.

SMTC also examined the implications of possible future increases in federal funding. Draft legislation circulating at the time of this writing included an increase in federal transportation funding of approximately 2 percent per year (over a 6-year timeframe). If a 2 percent per year increase in highway funding were realized over the life of this plan, this would result in a total revenue increase of around 30 percent for a total of about $2.4 billion in federal aid and matching funds for highway projects. Under this scenario, funds would be available for all of the projects listed in Table 6.2.

6.4 ADDITIONAL PROJECTS

The SMTC acknowledges that non-traditional, competitive funding will be necessary to complete two significant projects: the I-81 Viaduct Project and an enhanced transit system. Both of these projects would require substantial additional funding. The NYSDOT's April 2015 Scoping Report for the I-81 Viaduct Project indicated rough order-of-magnitude costs for new viaduct alternatives and "community grid" (formerly known as Street Level) alternatives of at least $1 billion, with costs for tunnel alternatives ranging from $1.7 billion to $3.3 billion. Consider that the total cost of all highway projects included in this plan - the 2050 Anticipated Future projects plus maintenance at current levels - is estimated at $1.81 billion and that total revenue from FHWA sources is anticipated to be $1.78 billion through 2050. The I-81 Viaduct Project alone could consume our region's entire allocation of traditional federal highway funds. Clearly, an additional fund source or financing mechanism must be identified to complete the I-81 work.

Additional funding will need to be secured for the I-81 Viaduct Project and for the implementation of an enhanced transit system.

Projects that are not included in this plan

Some projects that are discussed in our community have been examined in the past. Previous planning studies recommended that these projects not move forward, generally because the costs substantially outweighed the benefits or the project did not support the objectives of the LRTP. These projects include the following.

Completion of I-481 west of Syracuse (the "Western Bypass"). The NYSDOT's I-81 Corridor Study (July 2013) indicated that the Western Bypass "would require extensive investment and have significant impacts to surrounding western communities without meeting the corridor needs. It would be generally located within built urban environments with significant impacts on property, community, economic and environmental resources and was therefore eliminated from further consideration as a stand-alone strategy." An extension of I-481 to NYS Route 695 was considered as a possible mitigation measure association with the boulevard strategy, but even this was found to have significant costs with minimal benefit and "the western bypass was ultimately eliminated from further consideration."

New I-81 interchange between Route 31 and Brewerton. The SMTC's Clay-Cicero Route 31 Transportation Study (2010) evaluated options for a new I-81 interchange north of Route 31 and concluded that "additional interchanges should only be considered if a regionally significant development occurs within the study area." Not only would this require substantial fiscal resources, but interchange spacing requirements (given proximity to existing interchanges) and environmental constraints would pose serious challenges. The study states that "more detailed analysis would be required to clearly demonstrate the need for a new interchange and show that less resource-intensive mitigation measures, such as upgrading existing roads and employing travel demand management techniques, are not adequate to provide safe and efficient access." At this time, additional analysis of this interchange is not warranted.

Extension of the Baldwinsville Bypass (Route 631) to Route 48. The construction of Route 631 was split into two phases due to the availability of funds when the project was initially approved in 1998. Phase 1 was constructed between Route 31 and Route 370 in 2000/2001 at a cost of around $3 million. The second phase would have included a new bridge over the Seneca River, making the cost signficantly higher than the first phase (on the order of $15 million in 1998). The project was also found to have relatively limited capacity benefits. Due to these factors, Phase 2 has not successfully competed for the limited capital funds available in our region over the past 15 years, and we do not expect this situation to change in the future as the maintenance needs throughout the transportation system continue to grow.

Extension or relocation of Route 290 in DeWitt and Manlius. This concept was discussed at length in the SMTC's original 2020 LRTP (published in 1995). According to the 2020 LRTP, the idea of relocating Route 5 from the vicinity of the I-481/I-690 interchange to the vicinity of Manlius Center was considered as far back as 1971, and the relocation of Route 290 was included in the 1994-99 TIP as an "unfunded project." The 2020 LRTP states that "the purpose of the proposed facility was to increase highway capacity between Syracuse and the eastern suburbs in the towns of DeWitt, Manlius, and Sullivan." The 2020 LRTP included an analysis of the Route 290 project in terms of its effectiveness at meeting the plan objectives, and found that the project would have only a minimal positive impact on the most congested areas in the eastern suburbs and the cost would be substantial. The 2020 LRTP concluded that "this project is ineffective at meeting 2020 Plan objectives."

An enhanced transit system will also require additional funds. Largely based on the Syracuse Transit Systems Analysis (STSA), Centro estimated the cost of implementing two BRT corridors at just under $300 million (including capital and operating costs over 20 years). SMTC is completing the Syracuse Metropolitan Area Regional Transit Study Phase 1 as the next step (following-on the STSA) toward securing the funding necessary to implement an enhanced transit system.

Two additional transit projects were also identified for inclusion in this plan: a reduction of off-peak headways throughout the Centro system and implementation of an express route on I-81 north of Syracuse with park-n-ride facilities along the highway. However, the shortfall in transit funding necessitated that these projects be removed from the analysis. These projects have the support of the SMTC members, if additional funding can be secured in the future.

The proposed inland port project has received some funds, with $40 million allocated in the most recent New York State budget to the Port of Oswego "to link with the Port of New York, and to create additional intermodal rail yards in Syracuse and Binghamton."[2] As plans for an inland port progress, the need for associated roadway improvements will become more clear and such projects may be considered for funding in future programming cycles.

Working with the LRTP SAC, the SMTC developed a list of other additional projects that may be considered if additional funding becomes available. This list of projects was presented at the April 2015 public meetings (see Appendix C), and meeting attendees were asked to indicate which projects, if any, we should prioritize if transportation funding increases in the future. Bicycle and pedestrian projects (including "complete streets," completion of the Erie Canalway Trail, and general on-road bicycle infrastructure) as well as "increased maintenance work to bring pavement and bridges to good condition" received the most support from the public meeting attendees. Expanding the regional trail network was already identified

Public support for additional projects focused on bicycle and pedestrian projects and increased maintenance work on the existing transportation system.

[2]Weaver, Teri. (2015, March 31). $50 for NYS Fair in final budget, Cuomo says. http://www.syracuse.com/news/index.ssf/2015/03/50_million_for_nys_fair_in_final_budget_cuomo_says.html

Infrastructure condition trends

In the past eight bridge rating cycles (from 2006 to 2013), the percent of bridges in the MPA that are deficient has gone from 35 percent to 46 percent. Compared to the rest of the State, the percent of deficient bridges in the MPA is markedly higher: 46 percent versus the State's 32 percent. Pavement is also falling behind in several respects, including the average rating of all roads. Based on NYSDOT's 1-10 (poor-excellent) rating system, roads in the MPA have gone from an average rating of 7.1 to 6.5 from 2009 to 2014. Pavement is also languishing compared to the State. For example, for all State-owned roads, 27 percent of those in the SMTC area have "poor" pavement compared to the State's 9 percent. More details about pavement and bridge conditions can be found in the SMTC's Bridge and Pavement Condition Management System Report.

early-on in this process as a regional priority, and improving bicycle and pedestrian infrastructure is a general theme of the plan, as is the substantial unmet need for increased maintenance projects. Based on this feedback, coupled with the financial realities facing the region as discussed above, the decision was made not to include any additional specific highway projects in the LRTP.

The need for additional highway maintenance projects was, however, supported by the SAC members and the public input. The maintenance costs included in Table 6.2 are based on what the SMTC has programmed over the last few years, projected out over the life of this plan, and, therefore, assume that maintenance activities will continue at their current rate. But we know that the condition of our roads, bridges, and transit system has been declining faster than we can fix them (even though around 80 percent of the funds in our recent capital programs have been spent on pavement and bridge projects) and that additional money will be needed to stop further decline and bring the majority of the system into good condition. SMTC staff worked with our member agencies to estimate the funding that would be necessary to bring a substantial portion of our system into good condition by 2030. This figure was estimated to be on the order of $2 billion for additional maintenance activities. This is a substantial investment in our transportation system above and beyond the funding that we currently anticipate for the foreseeable future.

An additional $2 billion would be necessary to bring most of our roads and bridges into good condition over the next 15 years.

Chapter 7: Conclusion and Next Steps

7.1 SUMMARY OF ANTICIPATED FUTURE

7.1.1 Development and demographic trends

Over the next 35 years, the region's demographic and economic growth is expected to continue along lines established in previous decades, although more population growth is expected in the City of Syracuse than in the recent past – particularly in Downtown and the Lakefront. With continued population growth in the northern suburbs, as well as in the Towns of Camillus and Onondaga, and continued employment growth in the City of Syracuse and the Town of DeWitt, existing commuting trends – primarily utilizing single-occupant vehicles – are likely to continue.

The LRTP will influence these trends by supporting new transportation options, like bus rapid transit, and making existing alternatives, such as commuting by bike, more attractive. However, transportation options must be supported by land use decisions. Developments such as apartments, businesses, and senior facilities should be sited to take advantage of these existing and future transportation options.

The region's median age will continue to rise over the next few decades, with the Baby Boom generation aging into its 80s, 90s, and beyond, and relying on increasingly specialized transportation solutions. At the same time, the Millennials will be transitioning into adulthood and middle age. By dint of its unusual size and its predilection (to date) for living in urbanized areas and avoiding or delaying car ownership, this generation is in a position to have a significant influence on how the region develops over the next 35 years. Transportation investments that complement these tastes may pay larger dividends than ever before. These trends will be carefully monitored in subsequent updates to this plan.

Evolving vehicle technology

Technology will also continue to influence how we get around in the future. Improvements in fuel efficiency and increasing adoption of electric vehicles will continue to dramatically reduce emissions from vehicles even as our total vehicle miles traveled is expected to increase. A single disruptive technology, such as widespread use of autonomous vehicles, may dramatically alter elements of our travel and land use patterns, but the fundamentals of the suburban-urban commute via a vehicle will remain, with the associated infrastructure needs, such as good pavement conditions and well-designed facilities.

7.1.2 System conditions

Private vehicle. From the point of view of a resident of the region who relies on a car or truck to get around every day, the existing transportation system is working fairly well. Low levels of congestion, overall safety, and an abundance of accessible freeways make it easy to get from Hastings to Tully and from Geddes to DeWitt. From the point of view of overall system conditions, however, there has been a persistent erosion of pavement and bridge conditions regionally. As seen in the financial projections in Chapter 6, maintenance of the existing system will use a large portion of the region's federal funding for the foreseeable future.

Transit. Centro's transit service is extensive and has seen major upgrades in recent years, including the addition of the Connective Corridor bus service and the creation of a new all-weather Transit Hub in Downtown Syracuse. Desired future improvements include adding more buses to Centro's routes during the non-commuting hours and creating an express bus service for the park and ride lots along I-81 north of Downtown Syracuse.

Bicyclists and pedestrians. The passage of New York State's Complete Streets law in 2012 made accommodating bicyclists and pedestrians an integral part of transportation planning and design. Just as the Americans with Disabilities Act has gradually transformed buildings and streets over the past two decades, the Complete Streets law will ensure that sidewalks, bicycle facilities, and trails are continuously built into the public right-of-way. This LRTP includes performance measures to address both the quantity of facilities (e.g., sidewalk and bike infrastructure mileage) and the safety of cyclists and pedestrians. These items will be factored into the selection of future transportation projects.

Freight movement. The Syracuse region sees relatively little congestion on its primary freight corridor system and this is not expected to significantly change over the next 35 years. The presence of an international airport, the CSX DeWitt Rail Yard, and the I-81 / I-90 interchange will continue to give the region a competitive advantage in terms of freight movement. These factors also contribute to the

potential for an inland port facility (see Chapter 3), which could generate new freight traffic. A development of that magnitude would trigger a re-examination of regional projections.

7.1.3 Regional priority projects

Four projects remain regional priorities: the I-81 Viaduct Project, an enhanced transit system, an expanded regional trail network, and an inland port facility. As noted earlier, the first three projects have been the subject of substatial community discussion and there is broad public support for advancing these projects. Proposals for an inland port in the region are currently being discussed, and the full scope of the project and its impacts are not yet clear to the public.

The LRTP identified four regional priorities: the I-81 viaduct, an enhanced transit system, an expanded regional trail network, and an inland port facility.

Many of the comments received from the public throughout this LRTP development process focused on the need to make a decision about the I-81 viaduct in downtown Syracuse. The NYSDOT is continuing to progress this project through the necessary environmental review. Once a decision is made, the SMTC will update this LRTP to reflect the chosen option for the future of I-81. Securing funding for the I-81 Viaduct Project – as well as many local projects that may be associated with whatever option is finally selected – will remain a top priority for the region.

The region's transit system may be revolutionized by the outcome of the Syracuse Metropolitan Area Regional Transit (SMART) Study. The SMART Study will point us to a preferred alternative – including alignment, mode, station location, and other factors – for enhanced transit. Implementing these recommendations will also require a substantial investment above what we currently expect to receive in federal allocations, and it is likely that the region will need to compete for discretionary funds for this project. Continued public involvement and support, as well as land use policies that support transit oriented development, will be crucial to the future success of this project.

Compared to the I-81 Viaduct Project and development of an enhanced transit system, expanding our regional trail network is the "low-hanging fruit" – the easiest to accomplish, while improving the quality of life for those that live in the region by offering non-motorized

commuting options as well as recreational opportunity. The cost of bicycle, pedestrian, and trail amenities is relatively small (especially compared to the two projects above), but the potential benefits to the region are great. Progress has been made on the Onondaga Lake Trail, the Onondaga Creekwalk, and the Erie Canalway Trail, and plans are being made to expand and connect all three trails.

Current status of regional trail projects

The most recent section of the Onondaga Lake Trail opened in May 2014, adding 2.5 miles of trail, and extending the trail from Onondaga Lake Park on the east side to the trailhead near the New York State Fairgrounds. Onondaga County has begun to examine options for connecting the next portion of this trail from the New York State Fairgrounds trailhead to the Onondaga Creekwalk. Planning for this section of the trail is challenging due to the railroad tracks, I-690, swamps, and private land.

The Onondaga Creekwalk currently runs from Onondaga Lake to Armory Square, and an extension south to Kirk Park is in the preliminary design phase with construction anticipated to begin in 2018 and to be completed in 2019. Phase Three of the project, which is only a concept at this time, would extend the Creekwalk to the southern border of the City at Dorwin Avenue.

"For more than 20 years, state and local governments have been transforming old towpath and abandoned rail corridor into multi-use pathways" to close the gaps in the Erie Canalway Trail (PTNY, Cycling the Erie Canal, 2012, p.6). The trail stretches about 360 miles between Buffalo and Albany, with approximately 78% of the off-road trail complete as of September 2015. Once complete, the Erie Canalway Trail will be one of the longest trails of its type in the country. In addition, the Canal Corporation plans to eventually develop the entire 524-mile Canalway Trail System following the active canals – the Oswego, Champlain, and Cayuga-Seneca.

The Erie Canalway Trail has its local roots in Camillus and DeWitt, but the gap in the off-road route between these communities is one of the largest gaps in the state and is considered to be one of the most difficult sections in the state to complete due to the urbanized area it will traverse, along with its associated cost and the need for a local champion to spearhead the effort. To address this, the SMTC recently developed a short-term on-road connection. SMTC is working with the municipalities along the route to get the short-term route signed, while continuing to develop a permanent route for the trail that is off-road to the extent possible. Both the short-term and permanent Erie Canalway Trail routes examine connections to the Onondaga Creekwalk and Loop the Lake Trail.

Several communities also have plans for local trails that could integrate with regional systems. The Town of Skaneateles is currently examining potential trail connections that eventually reach the Erie Canalway Trail. In reviewing the public's ideas for the Erie Canalway Trail, some community members suggested a trail connecting to Jamesville. There are also ongoing trail networks planned in the Seneca River area near Baldwinsville, and Lakeview Amphitheater plans will help connect the Village of Solvay and Town of Geddes to the Onondaga Lake Trail through Milton Avenue, Bridge Street, and the New York State Fairgrounds. The Town of DeWitt is also actively examining potential trail extensions and connections.

Linking suburban communities and city neighborhoods to our regional trail network will expand options for cycling and strengthen the overall network. The SMTC's 2013 Bike Commuter Corridor study identifies preferred corridors for investments in bicycle lanes and other infrastructure for cyclists from suburban communities. The City of Syracuse has been expanding its network of bicycle facilities over the past few years, with the Connective Corridor project and the addition of shared lane markings (sharrows) and bike lanes to a handful of city streets. These improvements follow the recommendations outlined in the Syracuse Bike Plan 2040 (a component of the City of Syracuse Comprehensive Plan 2040), which proposes bike infrastructure for over 65 miles of roads throughout city neighborhoods, including 4.2 miles of priority areas in downtown.

7.1.4 Other anticipated future projects

The SMTC's member agencies identified projects that they are likely to complete by 2030, which totaled about $1.3 billion, including maintenance/replacement in-kind at existing levels. (See page 89 for a definition of "maintenance" projects.) However, the projects listed in Chapters 5 and 6 of this document will still have to compete for capital funds through the SMTC TIP process and be judged against other projects proposed in the individual TIP cycle for their ability to meet the new LRTP goals and objectives and to ensure progress on our performance measures. Also, as costs for I-81 become more clear and additional local projects associated with the I-81 construction are identified, some of the projects included in this LRTP may be pushed to later years or reprioritized.

Additionally, we know that the condition of our roads, bridges, and transit system has been declining faster than we can fix them even though we currently spend a substantial portion of our funds on maintenance activities. Public feedback during the LRTP's development reiterated the need for increased maintenance work on the existing system. Working with our member agencies, the SMTC estimated that around $2 billion in additional funding would be necessary to bring a substantial portion of our system into good condition by 2030. Given the maintenance/replacement in-kind needs of the existing system,

The LRTP does not anticipate significant expansion of the capacity of our existing transportation system. Maintenance/replacement in-kind on the existing system will continue to be a funding priority.

limited financial resources, and the fact that our existing road system generally operates very well, we do not anticipate spending significant funds to expand the capacity of the existing transportation system.

7.1.5 Fiscal outlook

Uncertainty about future funding levels remains, but based on draft bills circulating at the time of this writing, we are hopeful that the next transportation law will have a longer (6+ year) timeframe. This will enable transportation planners and departments of transportation to make longer-term plans for the transportation system, which may include completing more projects with local funds. Whatever the source of funds, unless funding levels are increased substantially, our maintenance need will continue to grow and the system will continue to deteriorate.

7.2 IMPLEMENTING THE PLAN

7.2.1 Linkage with capital programming

Future capital projects will be selected based on the new goals, objectives, and performance measures of this plan.

Projects selected to receive capital funds through the Transportation Improvement Program (TIP) must be aligned with the goals and objectives of the LRTP. Projects funded with TIP money should also help the region make progress towards performance targets. Although we are still awaiting guidance on performance targets, the 2050 LRTP has defined performance measures and stated general targets within the objectives (i.e. reduce, improve, maintain, etc.). The TIP selection criteria will be revised to reflect the new goals, objectives, and performance measures of the 2050 LRTP. This revision process will take place in consultation with the SMTC member agencies. The 2017-2021 TIP will be the first program aligned to the 2050 LRTP and subject to new project selection criteria.

7.2.2 Schedule for updating the plan

Since the SMTC MPA is no longer designated as an air-quality maintenance area, our LRTP must be updated at least every 5 years. However, a decision about I-81 will prompt an update of the LRTP in the intervening years (although the exact timing of this decision is not known.)

Although there is uncertainty about the next transportation bill, we anticipate that performance-based planning is here to stay. Our system performance report will be updated along with future updates of the LRTP to determine if the region is making progress towards our goals and objectives. Since this LRTP is the first in our region to incorporate performance measures, we anticipate that some adjustments will be needed as we move through implementation of this plan. For example, some performance measures may prove too cumbersome and data-intensive for their potential benefit. Once performance targets are defined by the state, those will be incorporated into our LRTP.

7.3 VISION FOR OUR FUTURE

The 2050 LRTP articulates goals, objectives, and performance measures that, taken together, form a vision for the transportation system in our community over the next 35 years.

Transportation infrastructure investment decisions have a profound effect on how communities develop socially and economically. Canals and railroads supported the very early development of our city and villages, and eventually the highway systems of the mid-twentieth century enabled the redistribution of population and jobs throughout suburban towns in our region. Now, as we consider our future, we must address the challenges presented by our extensive and aging roads, highways, railroads, and bridges, which were originally designed to accommodate the needs of a bygone manufacturing era. At the same time, we must consider the changing needs and preferences of our society and ensure that our transportation system provides access to opportunities for all members of our community.

As the crossroads of New York State, our strategic location will likely contribute to increases in intermodal freight activity in our region. This will place new demands on our railways, interstate highways, and state roadways. As our transportation system is improved to keep up with these demands, it should be designed to move freight safely and efficiently, while protecting and enhancing the character of our community and maximizing local economic benefits.

Looking to the future, we will support infrastructure investments that contribute to safe and walkable urban centers. Reinvesting in our aging streets and roads will mean opportunities to add green infrastructure and other design elements that will enhance our community. Local plans and initiatives envision a region of robust villages and town centers anchored by a revitalized and growing City of Syracuse, connected by roads, trails, bike lanes, and an enhanced transit system. We anticipate that our region will continue to add residents and jobs at a moderate rate, and recent trends suggest that employers and homeowners will seek out locations in established communities, where they will find that previous generations' investments in parks, streets, and sidewalks continue to pay dividends.

By investing in transportation projects that support the objectives of this LRTP, the Greater Syracuse region of the future should offer residents additional means to travel within and beyond their neighborhoods by embracing options to walk, bike, ride, and drive. Our infrastructure investment decisions will further strengthen our existing communities: our villages, suburban town centers, city neighborhoods, and the heart of our region, downtown Syracuse. Transportation infrastructure enhancements for all modes of travel will have a positive impact on our quality of life and the character of our communities.

This is our vision for moving towards a Greater Syracuse region.