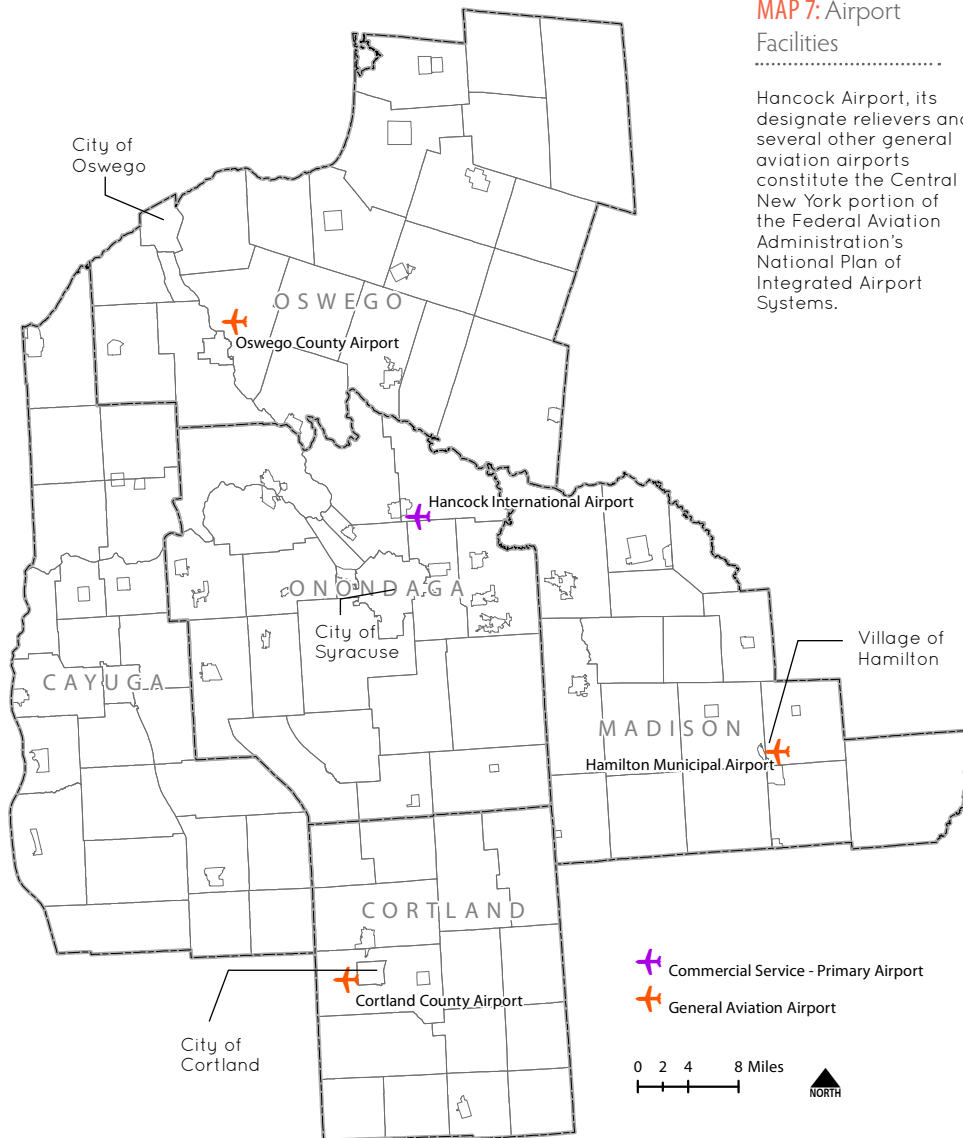


MAP 7: Airport

Facilities

Hancock Airport, its designate relievers and several other general aviation airports constitute the Central New York portion of the Federal Aviation Administration's National Plan of Integrated Airport Systems.



Air

Hancock International Airport is centrally located within the region approximately seven miles northeast of downtown Syracuse. The airport is owned and operated by a Regional Airport Authority, created by the NYS legislature in 2011 and approved by the Federal Aviation Administration in 2010. The City of Syracuse had owned and operated the airport since it opened at its current location in 1949. Hancock International Airport is the only airport providing commercial air passenger service in the Central New York Region.

The airport facilities are modern with space available to expand to meet new opportunities. In addition to commercial passenger service, Hancock provides an extensive air cargo operation, including U.S. Customs inspection service, as well as general aviation services for private pilots and military operations. There are currently two runways one at 9003 feet in length and one at 7500 feet in length. In 2009 there were over 2 million total passengers through the airport, with roughly half of the passengers boarding (enplaned) at the airport and the other half deplaned. The airport is also served by commercial freight service, including Federal Express and UPS which accounted for 92% of the total freight traffic (33,403,461 of 36,284,867 lbs.) in 2009.

Syracuse Hancock International Airport has 26 passenger boarding gates and is served by the following carriers: Air Canada, American Eagle, Delta, JetBlue, United Airlines, and USAirways. Other airlines that operate at the Airport include Comair (a Delta affiliate), CommutAir (a Continental affiliate), Allegheny, Mesa, Trans States, Colgan Air, Piedmont, Chautauqua, and shuttle America (affiliates of USAirways).

The City of Syracuse is proceeding with a major passenger terminal renovation project that will include a 147,000-square-foot addition connecting the two separate wings of the terminal on the second level, both pre- and post- passenger security screening points. Green design and construction techniques that will significantly reduce operating costs for the building and reduce the building's carbon footprint are being incorporated into the project.

Proposed techniques include solar panels to produce electricity and hot water; construction techniques that minimize waste and encourage recycling; extensive use of natural daylighting; enhanced indoor environmental quality; and the use of sustainable construction materials. The use of green technology combined with the installation of more energy-efficient HVAC equipment is estimated to reduce terminal operating and maintenance costs by as much as \$1.00 per square foot per year.

Hancock Airport, its designate relievers and several other general aviation airports constitute the Central New York portion of the Federal Aviation Administration's **National Plan of Integrated Airport Systems**. The general aviation airports provide alternative sites for privately owned aircraft whose pilots prefer a smaller airport setting. The Oswego County Airport is designated by the Federal Aviation Administration (FAA) as the general aviation reliever to Hancock International Airport, and is located at a distance of 25 miles. The Oswego County airport has approximately 25,000 take offs and landings per year, and has 41 hangar stalls and tie-down aircraft parking. The Village of Hamilton Municipal Airport is also designated as a reliever and the adjacent "airpark" is a development site. Cortland County also operates a reliever airport, the airport saw an average of 47 flights per day in 2009. There are several additional small airports within the region that do not possess the "reliever" airport designation including the Skaneateles Aerodrome.

Hancock has extensive air cargo operations including U.S. Customs inspection service. The airport in recent years has undergone a substantial expansion in the capacity to handle air cargo. A highly successful effort has been made by the private sector and the City of Syracuse to expand and modernize air cargo facilities and services.

Air Cargo companies that operate at Syracuse Hancock International Airport include Airborne Express, Air Now, Federal Express, United Parcel Service, the United States Postal Service, and Wiggins Airways.

According to the Syracuse Hancock International Airport's web site, the Air Cargo Operations are located on 22.5 acres of land. Carriers have ample office, parking, and loading dock space, as well as aircraft apron areas. Air cargo activity includes the handling of air cargo and express and regular mail. The existing air cargo facility is located southwest of the terminal complex. A 100,000 square foot cargo building with a parking apron allows direct aircraft access for quick and efficient cargo handling.

Hancock Airport has the land area capability for substantially expanding ground facilities that will accommodate the growth of air cargo operations to meet future needs. Other New York State airports are reportedly constrained in this respect. In addition, the capability for expanding runway and taxiway facilities serves not only air passenger growth but air cargo carriers as well, offering greater capacity and flexibility to meet changing circumstances.



Rendering of Hancock Airport passenger terminal renovation project depicting the 147,000-square-foot addition connecting the two separate wings of the terminal on the second level, green design and construction techniques will significantly reduce operating costs for the building and reduce the building's carbon footprint.

TABLE 4—Hancock International Airport - Amount of enplaned freight and mail by year from 2000 to 2010

Year	Enplaned Freight	Enplaned Mail	Total tons
2000	18,142	0	18,143
2001	21,300	1,325	22,625
2002	19,505	1,262	20,767
2003	19,186	697	19,883
2004	20,380	355	20,735
2005	20,958	176	21,134
2006	20,974	197	21,171
2007	24,928	44	24,972
2008	22,774	0	22,774
2009	18,142	0	18,142
2010	19,290	0	19,290

Source: Hancock International Airport, 2011

Water Facilities

Port of Oswego

The Port of Oswego is the first U.S. port of call on the Great Lakes. The Port offers a deep draft terminal with access to the New York State Barge Canal, and multi-modal connectivity that includes marine highway, on dock rail, and efficient connections to the Interstate highway system. Approximately

120 vessels call on the port on an annual basis, and the port moves in excess of one million tons per year in cargo including windmill components, cement, corn, soybeans, nuclear power components, aluminum, and petroleum products such as liquid asphalt and heating fuel.



The Port of Oswego has become major transportation player in the national renewable energy market. Since 2002 the Port has handled 188 full windmill units and 243 components, including tower sections, blades and nacelles.

Over recent years, the Port of Oswego has undergone a revival in commerce harking back to the time when the Oswego Harbor was filled with sailing schooners. In 2002, the Port received fewer than a dozen rail cars. Finishing 2011 the Port handled over 750 rail cars, with both grain, aluminum and windmill components equaling a close to a thousand percent increase. In 2003 the Port received no aluminum shipments by water, but by the conclusion of 2011, the Port logged eleven port calls by ship for aluminum discharge.

In 2004-2005, the Port aggressively sought agrimarket development and became home to Oswego Grain, Inc., a division of Perdue AgriBusiness. This, along with an increase in grain exports, led to a 318% increase in grain handling between 2008 and 2009. Oswego Grain also has corn contracts to support the Sunoco's ethanol plant which is the largest ethanol plant in the eastern United States, located just 10 miles from the Port.

Since 2004, the Port of Oswego has been a logistic partner with Novelis Oswego Aluminum Plant, located just three miles from the Port. Over the last several years, Novelis has used marine transport, utilizing the Port of Oswego to meet the escalating demand for aluminum sheet metal for the U.S. auto industry, an outgrowth of rising fuel economy standards. Novelis is currently expanding its manufacturing operations. Scheduled for completion in 2013, the expansion will allow the plant to produce an additional 440 million pounds of aluminum sheet a year for the automotive industry. The increase will represent five times the company's current North American capacity for producing aluminum sheet for that industry. The 200 million dollar expansion will add an additional 100 jobs to the 651 currently employed at the plant. At present about half of the aluminum produced at the plant is sold to the automotive markets.

The Port of Oswego has become major transportation player in the national renewable energy market. Since 2002 the Port has handled 188 full windmill units and 243 components, including tower sections, blades and nacelles. The Port's position on the eastern United States as a top tier green energy transportation center is well known in the industry. These projects have both utilized ship, rail and truck movement to installation points. The Port of Oswego is unique in Lake Ontario as it offers an intermodal deep water port with a location that is central to the best windmill placement sites.



MAP 8: Port of Oswego

The Port of Oswego is strategically located on the southeastern shore of Lake Ontario providing a connection between the NYS Barge Canal System which links to New York City, the St. Lawrence Seaway, and the Great Lakes system. Additionally, the port is well served by both rail and the Interstate Highway System (See Map 9 on pg 21).

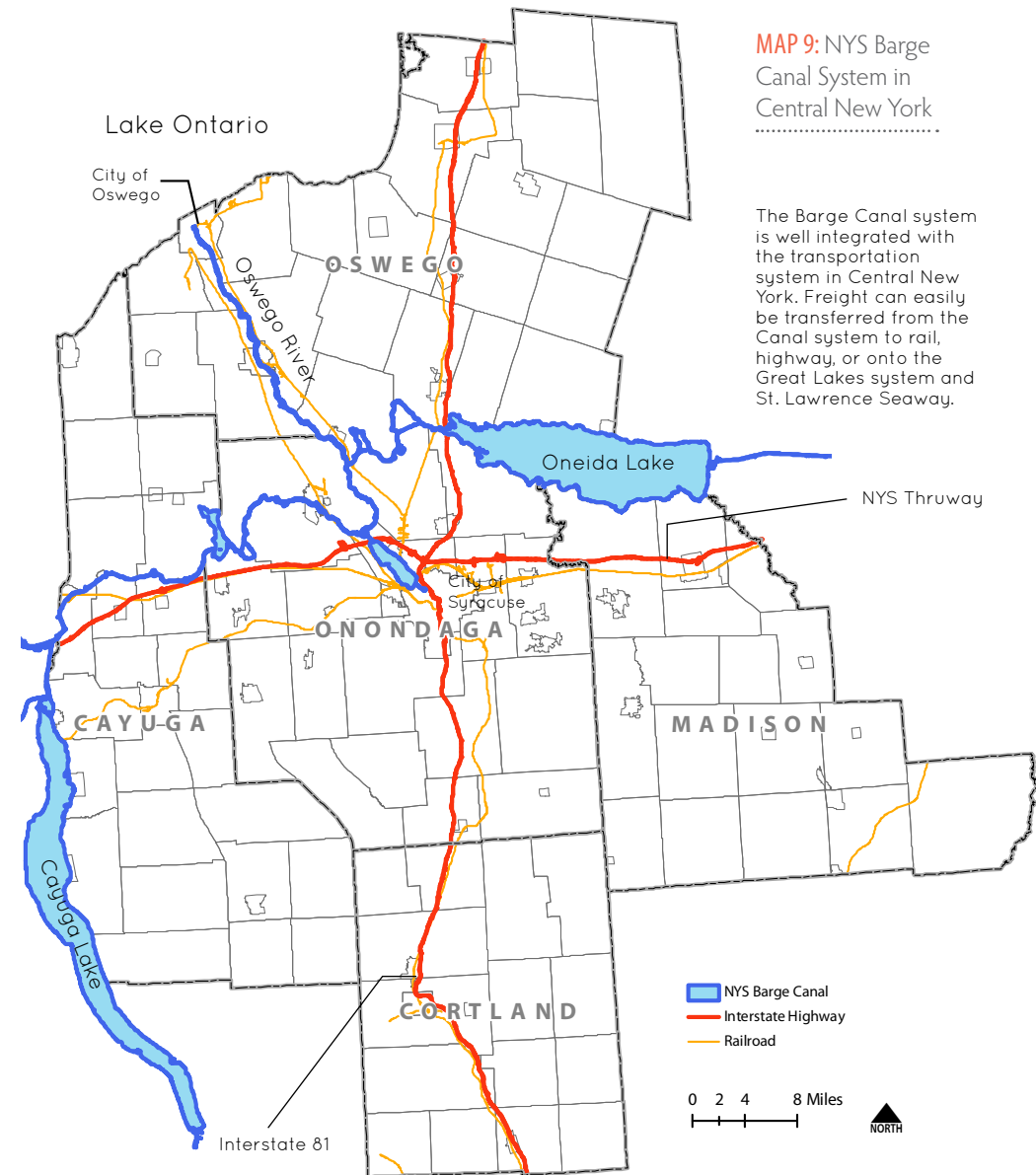
The Port of Oswego has been working to complete its East Terminal Connector project which will construct a combined connector roadway and rehabilitate and embed the existing railroad track between the former Fitzgibbons Boiler Works property and the Port of Oswego's existing Eastern Harbor Facility on the mouth of the Oswego River along the shore of Lake Ontario. The project will add an additional six acres to the existing port operations. This will effectively increase the open flat storage area on the Port's eastern shore from 6 to 12 acres. Rail freight shipments have increased 683% in the last several years at the Port and site storage is badly needed for the Port's future growth. The improved lot will be traversable by tractor-trailer and rubber tired cranes for loading and unloading materials. The design load for the lot's structural section will accommodate crane "picks" of up to 50 tons and provide adequate layout for circulation of equipment, which is need for the steady renewable energy projects.

New York State Barge Canal System

The New York State Canal Corporation is responsible for the overall operation, maintenance and rehabilitation of the 524-mile New York State Canal System. The statewide Canal System is made up of four canals: the Erie Canal, the Champlain Canal, the Oswego Canal and the Cayuga-Seneca Canal. Within the Central New York Region the Canal System includes Oneida Lake, the Oneida River, Onondaga Lake, the Oswego River, the Seneca River and Cross Lake (MAP). In 2005 there were 2,468 cargo vessels reported on the Canal, 119,113 recreational boats, and 8,163 tour boats.

The New York State Canal System is a commercially viable waterway connecting the Hudson River with the Great Lakes, Finger Lakes, and Lake Champlain. A 2010 study completed for NYSDOT identified the Barge Canal as a critical piece of economic infrastructure. Adding container barges to the New York State Canal System could relieve road congestion all along the Canal because each barge would have the capacity of 60 to 120 trucks. The report favorably compares the Port of NY/NJ and its connection with the NYS Barge Canal and Upstate NY to that of Rotterdam and its connection to the Rhine Valley in Germany where there is an active container-on-barge economy.

Combined with inland port upgrades currently being planned for regional freight rail facilities, the NYS Barge Canal system could play a significant role in increasing the sustainability of the regional economy.



Rail Facilities

Amtrak

Rail passenger service in the region is provided through the National Railroad Passenger Corporation (Amtrak), which provides intercity rail passenger service on three different routes (Lake Shore Limited, Empire Service, and Maple Leaf) through the Central New York region¹¹. The routes correspond with destinations – Lake Shore Limited connects to Chicago, while Empire Service connects to NYC – although the routes follow the same course through the region.

Amtrak passenger train ridership has increased in Syracuse (the sole passenger station in the region), where an average of 426 passengers per day began or ended their trips in 2011 up 12 percent from 2010. Statewide, Amtrak carried about 11 million passengers last year, but about 9 million were in New York City. Syracuse experienced the fifth highest total boardings/de-boardings of all stations in NYS in 2012.

TABLE 5– New York State FY 2012 Amtrak Station ons/offs
Top 5 Stations Source: Amtrak

Location	Ons/Offs
New York, NY	9,493,414
Albany-Rensselaer, NY	769,413
Rhinecliff, NY	177,375
Hudson, NY	167,286
Syracuse, NY	152,957
Total New York Ons/Offs	11,555,411

Finger Lakes Railway

Primarily a freight railroad, the Finger Lakes Railway has offered passenger services along the Finger Lakes Railway since 2000 in the form of special excursions sponsored by local organizations¹². In 2008, over 12,000

passengers boarded the train for a total of 62 days of excursions¹³. The railway can be boarded in a handful of locations within the SMTC MPA.

A local development group is working with the Finger Lakes Railway to create a stop for passengers in Auburn. The station would be near the current rail crossing on North Street. It is hoped the project would create another Auburn gateway for exploring the Finger Lakes by rail. Currently the railroad goes through many historic and interesting communities including Canandaigua, Geneva, Watkins Glen and Seneca Falls. In Auburn, the line traverses the city from the Finger Lakes Mall to Grant Avenue.

The proposed Auburn Station would be adjacent to a microbrewery or other restaurant amenity. The facility will start small, with a simple covered boarding area, but have room for expansion as demand increases. Though focused mainly on tourism at first, this will leave options of for a wider variety of passenger traffic including commuters. Depending upon regional transportation needs (as well as external factors such as fuel prices) rail may be an important option linking Auburn with other cities in the region.

Rail Facilities – Freight

The Central New York Region is well served by freight rail. There are approximately 285 miles of active rail lines within the region with 230 miles categorized as Class 1 lines¹⁴, 31 miles classified as Class 2, 22 miles as Class 3 lines, and about a mile of terminal lines. These lengths include all sidings and railyard tracks and were calculated using GIS software. While this data is 10 years old, it represents the best data available.

According to the NYSDOT bridge inventory, there are approximately 35 railroad bridges in the region (these bridges are not included in the 492 bridges inventoried in the SMTC bridge and pavement report). Additionally, there are approximately 110 at-grade crossings within the region.

Additionally, there is one major (Class 1) carrier, CSX Transportation; one regional carrier, New York, Susquehanna & Western Railway; and one shortline railroad, Finger Lakes Railway.

The region is currently pursuing two projects one in the town of Manlius associated with the current rail yard, and another located in Cortland County. These facilities would not only allow for the processing of imports from downstate, but could also allow for regional businesses to more actively participate in the global economy.

CSX Transportation

Nationally, CSX operates on more than 21,000 miles of track in 23 states, and has access to 70 ports and nationwide transloading and distribution services¹⁵. In New York State, CSX operates nearly 1,300 miles of railroad, maintaining more than 1,750 public and private grade crossings in the state¹⁶.

CSX operates the Chicago Main line that links Central New York with New York City, New England and the Midwest. The company also operates the Baldwinsville, Fulton, and St. Lawrence Subdivision lines to the north of Syracuse, with the St. Lawrence Subdivision being the gateway to Montreal and Canada. Another significant segment of CSX business is the rail/truck intermodal freight terminal located in the DeWitt rail yard. The DeWitt yard is a major intermodal facility serving the Northeast and is the only terminal of its type between New York City and Buffalo.

New York, Susquehanna & Western Railway (NYS&W)

The NYS&W is a regional railroad company operating on over 400 miles of track in New York, New Jersey, and Pennsylvania and is 286,000 pound gross weight capable on all lines¹⁷. In the Central New York Region, the railroad operates two lines: the Syracuse to Binghamton, and the Utica to Binghamton. In Syracuse, the NYS&W interchanges with CSX and in Binghamton with the Norfolk Southern Railway and the Canadian Pacific Railway. The Utica traffic is interchanged at Syracuse via Binghamton. The NYS&W has expanded its traffic base in Cortland County and in the Southern Tier. Much of the traffic base is in New Jersey on the railroad's southern branches. The NYS&W serves the Ainsley Superior Warehouse, a 175,000 square foot warehouse/distribution facility located on East Brighton Avenue in Syracuse¹⁸. Because of its location, the warehouse facility offers easy access to I-81, I-481 and the NYS Thruway.

Finger Lakes Railway

The Finger Lakes Railway, a privately owned Class III railroad, operates the shortline between Solvay and Geneva, and has produced significant results since taking ownership of the former Conrail Geneva Cluster (including the Auburn Branch)¹⁹. The Finger Lakes Railway has been able to stop the decline of rail traffic in its service area. The Finger Lakes Railway customers see benefits due to the interchange rights with two Class 1 railroads (CSX and Norfolk Southern [NS]) instead of one. Interchange with CSX occurs in Solvay and Lyons, while interchange with the NS occurs in Geneva.

MAP 10- Central New York Rail Network



TRANSPORTATION ISSUES AND TRENDS

The transportation sector is the largest contributor to the greenhouse gas emissions within the region, as it is in the United States as a whole. According to the US EPA, transportation represented 32 percent of U.S. CO₂ emissions in 2008. The regional greenhouse gas inventory prepared by the CNY RPDB as part of the process of developing the VisionCNY plan reported that transportation represented 43 percent of the region's emissions in 2010. The distribution within U.S. transportation sector CO₂ emissions can be seen in Figure 3.

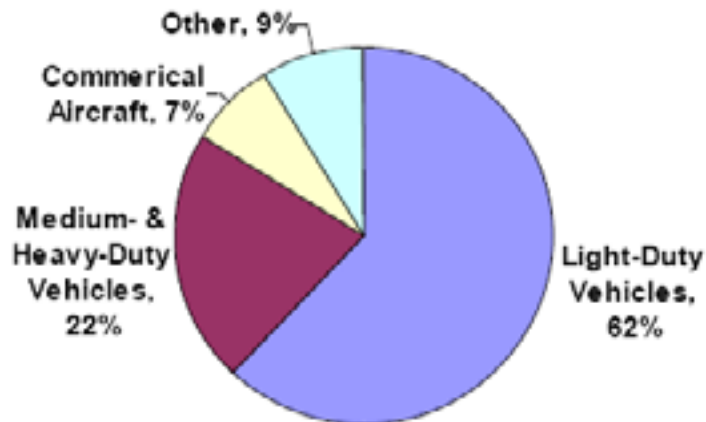


FIGURE 3—U.S. Transportation Sector CO₂ Emissions by Mode

Nationally, the transportation sector has accounted for 47 percent of the net increase in total U.S. GHG emissions since 1990, making it the fastest growing source of emissions through 2007.²⁰ The failure to coordinate transportation plans with local land use, combined with the imbalance of the transportation system with investments heavily weighted to the private automobile, has produced significant inefficiencies.²¹ The petroleum consumption by personal vehicles accounts for 60 percent of transportation related GHG emissions in the U.S., with an additional 20 percent originating from trucking.²²

The transportation sector's CO₂ emissions are a function of vehicle fuel efficiency, fuel carbon content, and VMT (vehicle miles traveled), factors often referred to as a "three-legged stool." More recently, a "fourth leg" has been added to the stool, formally known as transportation system management and operations, which involves operational improvements to optimize the performance of existing road infrastructure by implementing systems, services and projects that preserve capacity and improve the transportation system's security, safety and reliability (Figure 4).



FIGURE 4—U.S. Transportation Sector CO₂ Emissions by Mode
Source: Federal Highway Administration

Transportation operations strategies and their supporting intelligent transportation system (ITS) technologies focus on reducing the vehicle hours of travel (VHT), enhancing overall mobility and reliability. Implementing improvements to the operational efficiency of the surface transportation system can have an immediate impact on reducing GHG emissions through congestion mitigation strategies that reduce severe congestion, allowing traffic to flow at better speeds or techniques that eliminate the acceleration and deceleration events associated with stop-and-go traffic. Some examples of the strategies and ITS technologies that alleviate congestion, while in turn reducing harmful emissions and providing fuel savings, include: coordinated traffic-signal timing; electronic tolling systems; emergency and incident management; improved traveler information; speed harmonization via active traffic management; access management; integrated corridor management; and work-zone management.

Energy and climate policy initiatives at the federal and state levels have focused almost exclusively on technological advances in vehicles and fuels, the first two legs. Yet, there is a growing recognition that managing VMT has to be part of the solution -- this third leg is needed to support the stool and should complement vehicle technology and fuels policy. Projections show that more efficient fuels and 'clean' vehicles won't be enough to offset the projected 59 percent increase in driving between now and 2030. Even with expected improvements in vehicle and fuel economy, carbon emissions from the transportation sector would be 41 percent above today's levels by 2030 if driving is not curbed.²³ Between 1977 and 2001, for example, the U.S. population grew by 30 percent;

at the same time VMT grew by 151 percent.²⁴ Average trip lengths, trips per capita, and the proportion of drivers traveling alone all increased during this period as well.²⁵

Strategies geared towards reducing vehicular trips can have a positive impact on reducing region-wide emissions. Reducing vehicle miles traveled by increasing active forms of transportation, such as walking, bicycling and taking transit, can also produce significant community health and economic benefits. Portland, Oregon area residents and businesses reap a “green dividend” of more than \$1 billion annually in reduced transportation costs as a result of driving less than residents of other American cities. Similarly, evidence is increasingly emerging of the health benefits of reducing vehicle miles traveled, both in terms of improved air quality and increased levels of physical activity. Less vehicular travel places less stress on the regions road network as well.

The Intergovernmental Panel on Climate Change (IPCC) recommends modal shifts from driving to walking, bicycling, and transit as a key mitigation strategy.²⁶ At the same time the transportation infrastructure in the U.S. is not diverse enough to accommodate an increase in pedestrians, bicyclists, and transit users. Many trips are made by automobile because of incomplete streets that make it dangerous or unpleasant to walk, bicycle, or take transit. In fact, a national survey found that bike lanes were available for less than five percent of bicycle trips, and more than one-quarter of pedestrian trips were taking place on roads with neither sidewalks nor shoulders.²⁷ Other surveys have found that a lack of sidewalks and safe places to bike are a primary reason people give when asked why they don’t walk or bicycle more.²⁸

Streets need to be completed to include places for people to walk, bicycle, and safely reach transit stops.²⁹ Walking and bicycling are zero-emission transportation modes, and transit is a lower-emissions mode – using transit can help a solo commuter who switches from driving to transit to reduce carbon dioxide emissions by 20 pounds per day, or more than 4,800 pounds in a year.³⁰

The U.S. EPA published a study in 2007 looking to quantify the potential beneficial impacts of infill redevelopment on overall environmental health including air quality and GHG emissions. The report identified the challenge of balancing transportation needs with community revitalization and environmental protection – and the added difficulty of quantifying the regional air quality and transportation benefits of these investments. Fundamentally, the report suggests, well designed

neighborhoods in more accessible places make walking, biking, and transit more convenient options.³¹

Over the past several years, federal legislation and funding for transportation has given increasing consideration to bicycle and pedestrian travel and related infrastructure. Starting with the 1991 Intermodal Transportation Efficiency Act (ISTEA), new national attention was placed on bicycle and pedestrian provisions and **Metropolitan Planning Organizations** were mandated to consider bicycling and walking as transportation plans were prepared.

The **Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU)** continued to expand both legislative requirements as well as funding opportunities for pedestrian and bicycle facilities to be used for transportation purposes.

One reason that these non-motorized modes of travel are gaining in stature and importance is their positive effects on air quality. The federal Congestion Mitigation and Air Quality (CMAQ) program and the Transportation Enhancements Program (TEP) administered by the Federal Highway Administration are principal funding avenues for bicycle/pedestrian projects across the country, as a way of encouraging alternatives to private automobile usage for transportation. As successful as many of these projects have been, both of these funding sources have been limited compared to other transportation funding mechanisms and are highly competitive in nature. For example, four percent (4%) of the 2011-2015 TIP funding is programmed for bicycle and pedestrian projects.

The New York State Department of Transportation (NYSDOT) administers the State Transportation Improvement Program (STIP) that begins as a compilation of regional Transportation Improvement Programs that are generally adopted every two years by Metropolitan Planning Organizations (MPOs), includes rural areas where NYSDOT is responsible for programming federally funded projects, and evolves into a comprehensive list of all highway and transit projects that propose to use Federal funds.

The STIP is required by the Federal Highway Administration (FHWA) to be updated a minimum of every four years. The State may elect to update the Program more frequently. The Syracuse Metropolitan Transportation Council (SMTTC) is the designated MPO for Central New York. SMTTC’s planning area primarily covers Onondaga County with small portions of Madison and Oswego Counties. The SMTTC develops three key

documents that influence transportation planning and programming in Central New York including the Long-Range Transportation Plan (LRTP) and the Unified Planning Work Program (UPWP).

There is a growing interest in the idea of Sustainable Transportation (also called green transport), which identifies modes of transportation that have a low-impact on the environment. Sustainable Transportation includes non-motorized options such as walking and cycling, as well as transit-oriented-development (TOD), and pedestrian-oriented-development (POD). The term may also include transportation modes that reduce the overall carbon footprint of mobility – these systems may include Bus Rapid Transit, Light Rail, Regional Rail, and High Speed Rail systems, and have the most impact when they are combined with strategies to promote pedestrian, bicycle, and other forms of alternative mobility to the single occupancy vehicle. These strategies can also be combined with other infrastructure investments such as programs to improve the accessibility of rural regions to high speed internet access to encourage telecommuting options.

In order to improve the region's transportation system and reduce greenhouse gas emissions, it is necessary to address the form of the communities by putting in place policies, strategies, and projects that increase the amount of urban and suburban infill development that can help people to meet their daily needs with less driving.

Transportation Demand Management

Transportation Demand Management (TDM) is defined as a wide range of policies, programs, services and products that affect whether, why, where and how people travel. TDM programs and strategies are meant to encourage greater use of sustainable modes of transportation and trip decision making that reduces, combines or shortens vehicle trips. A TDM study for Downtown Syracuse was conducted in 2011 by UrbanTrans North America and IBI Group for the SMTC. The study identified potential strategies for reducing VMT including the following:

Coordinating with NYSDOT to utilize its carpool matching website

- + Create a guarantee ride home program
- + Identify and promote careshare opportunities
- + Advocate for transportation system improvements

- + Develop a bike parking system

The study concluded that some of the necessary elements for successful TDM programs do not currently exist as a whole in Downtown Syracuse. Traffic congestion, for example, is not a problem in downtown, while parking availability can be an issue in certain areas. While overall traffic congestion was not identified as an issue, the study did recommend working with larger employers (i.e. St. Joseph's Hospital, SUNY Upstate, and Syracuse University) to develop strategies to reduce parking demand. There are additional strategies that could combine to reduce overall VMT and facilitate the utilization of alternative transportation options as noted below.

Complete Streets

Complete Streets are essential in order to make it possible for Central New Yorkers to drive less and use our streets to get around more easily on foot, bike, and public transit. The 2001 National Household Transportation Survey found that 50% of all trips in metropolitan areas are three miles or less and 28% of all metropolitan trips are one mile or less – distances easily traversed by foot or bicycle. Yet 65 percent of trips under one mile are now made by automobile³², in part because of incomplete streets that make it dangerous or unpleasant to walk, bicycle, or take transit. Complete streets would help convert many of these short automobile trips to multi-modal travel. Other studies have calculated that 5-10% of urban automobile trips can reasonably be shifted to non-motorized transport.³³

Places that are giving people options are seeing a reduction in their emissions. Boulder, Colorado is working to create a complete street network, with over 350 miles of dedicated bike facilities, paved shoulders and a comprehensive transit network. Between 1990 and 2003, fewer people in the city drove alone, more people bicycled, and transit trips grew by a staggering 500 percent. The reduction in car trips has cut annual CO₂ emissions by half a million pounds.³⁴ Complete streets policies aren't just a worthy end in themselves. They're also an important means to help reduce heat-trapping pollution and should be an element of every jurisdiction's climate change toolbox.

One approach to establishing complete streets that is becoming more popular in the U.S. is a "Road Diet." Essentially, a road diet reduces and/or reconfigures lanes in an effort to incorporate bike lanes and instill traffic calming measures. This approach has been utilized in a few instances within the City of Syracuse including East Genesee Street between East Avenue

and the eastern City line. The number of travel lanes was reduced from two in each direction to one in each direction with a center turn lane, and bicycle lanes were added. The City of Syracuse has implemented road diets in other locations (West Fayette Street and North Salina Street) and is currently reviewing the possibility of adopting road diets along other corridors. A study was completed in 2012 looking at the potential for completing a Road Diet along the James Street corridor from downtown Syracuse to the city line.

A recent national push for Complete Streets and the development of Complete Streets policies has also been gaining momentum locally. Recently the Onondaga County Health Department was awarded the "Creating Healthy Places to Live, Work, and Play" grant by the New York State Department of Health. The goal of the grant is to prevent obesity, type 2 diabetes, and other chronic diseases in Onondaga County by implementing sustainable policies, systems, and environmental changes in communities where people live, work and play. One of Onondaga County's objectives through this grant is to work on Complete Streets policies and/or legislation, and to promote bicycling and walking within Onondaga County.

Safe Routes to School

Safe Routes to School (SRTS) is a federal, state and local effort to enable and encourage children, including those with disabilities, to walk and bicycle to school and to make walking and bicycling to school safe and appealing. In New York, as in other parts of this country, travel to school by walking and bicycling has declined dramatically over the past several decades. The adverse impacts of this trend on air quality, traffic congestion and childhood health are alarming.

The goal of New York's Safe Routes to School Program is to assist New York communities in developing and implementing projects and programs that encourage walking and bicycling to school while enhancing the safety of these trips. A major goal of the program is to increase bicycle, pedestrian and traffic safety. The City of Syracuse and the City of Cortland received funding through the program in 2012 to develop safe routes to school around several elementary schools.

Transit Oriented Development

Transit-Oriented Development, or TOD, is typically understood to be a mix of housing, retail and/or commercial development and amenities — referred to as "mixed-use development" — in a walkable neighborhood

with high-quality public transportation.³⁵ Transit-Oriented Development typically is utilized within metropolitan regions with multiple community centers and downtown areas, but it can also have a benefit in rural and suburban areas. A combination of land design practices including compact development, mixed-use, traffic calming, pedestrian – and public transit-orientation, and a mix of housing types can be employed to improve mobility options for residents of the region.

Implementing TOD within the region will require the development of a network of transit stations and an understanding of the role each neighborhood, community, and station can play in the regional network of transit-oriented places. It also requires an understanding of the real estate market, major employment centers, and travel patterns in the region. The Central New York Regional Planning and Development Board conducted an analysis of regional population density combined with jobs per acre to determine areas in the region where increased transit service might be viable (a minimum threshold of 10-25 Persons and Jobs/acre is considered appropriate for enhanced service) (Map 3 on page 88). These areas were then further analyzed to identify potential service nodes that could become transit nodes. The core of the City of Syracuse exhibits the highest densities in the region – most notably the corridor from University Hill to the Destiny USA regional shopping center and the James Street Corridor (which has the highest transit ridership in the region). Additionally the NYS Route 11 corridor north of Syracuse, Route 57 through Liverpool, the NYS Route 5 corridor east and west, as well as the NYS Route 104 Corridor in Oswego (Figure 5) serve as potential examples.

As Figure 6 on page 89 indicates in addition to the development of transit stations, implementing TOD requires increasing the

COMPLETE STREETS ARE THOSE DESIGNED FOR EVERYONE – REGARDLESS OF AGE AND ABILITY.

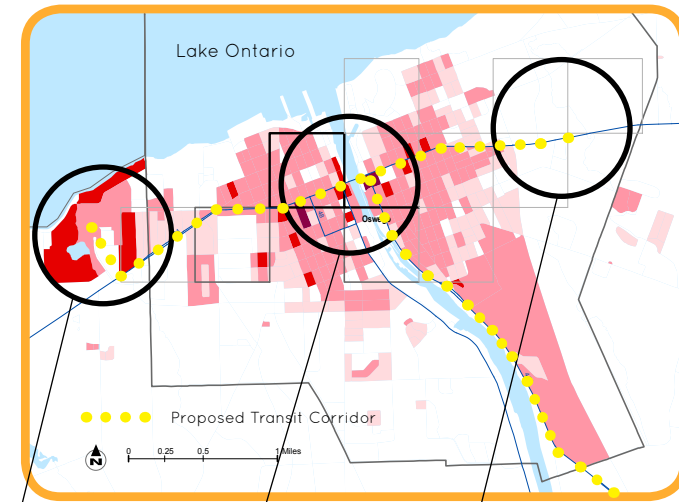
A complete street may include: sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more.



East Genesee Street Road Diet

TOD CORRIDOR ANALYSIS

FIGURE 5—City of Oswego Route 104 Transit Corridor



SUNY OSWEGO -

The SUNY Oswego campus houses 6,000 full and part-time students and 1,000 faculty members

DOWNTOWN OSWEGO

The Stevedore lofts are located along the Oswego river in the city of Oswego. The project includes 49 loft apartments and 6,000 square feet of class-a commercial office space.

104 EAST SHOPPING DISTRICT

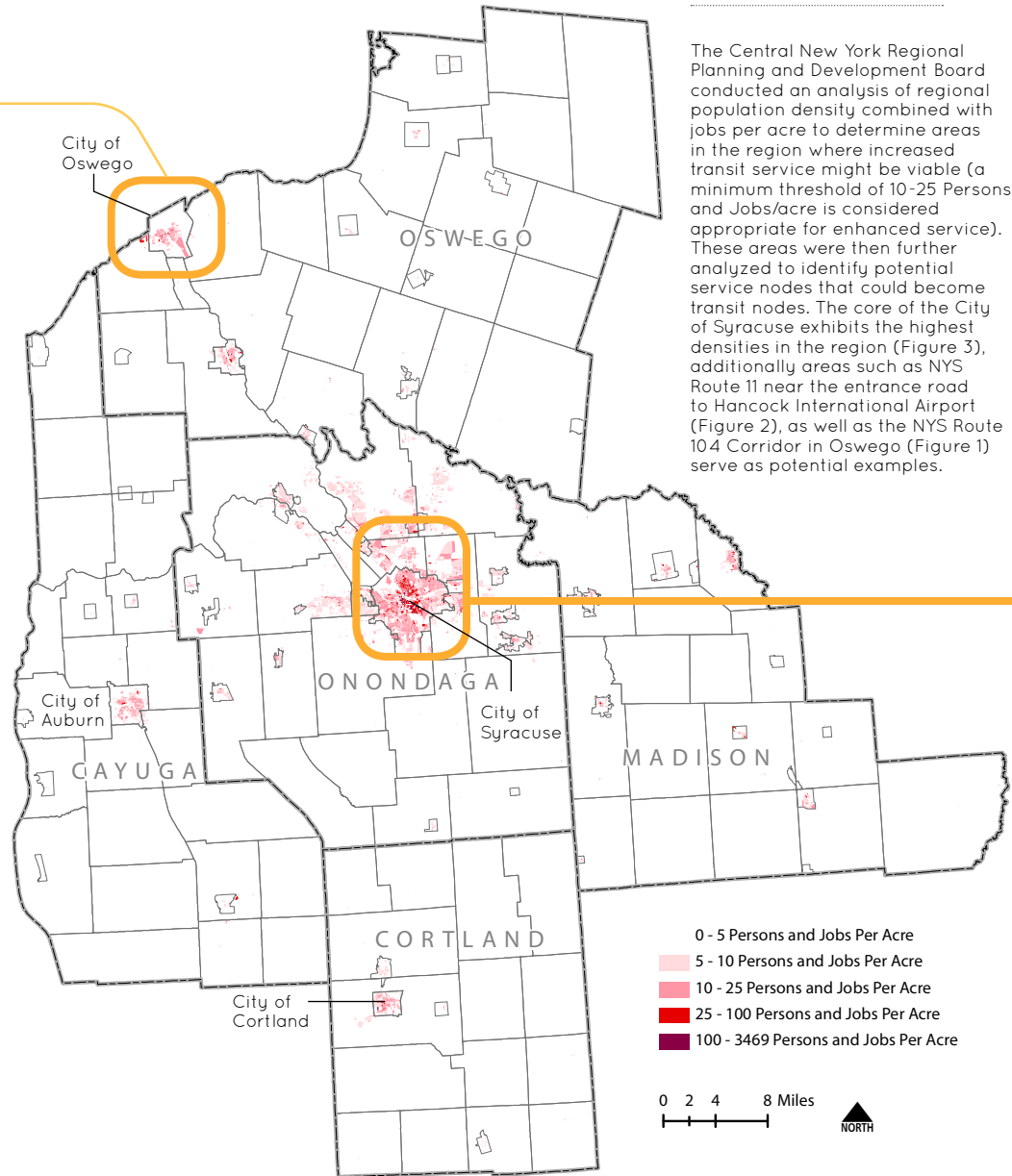
The Stevedore lofts are located along the Oswego river in the city of Oswego. The project includes 49 loft apartments and 6,000 square feet of class-a commercial office space.

The City of Oswego exhibits potential for enhanced service along the NYS Route 104 corridor that runs East to West through the city. This corridor connects the SUNY Oswego campus, Downtown Oswego, and the 104 East Shopping district.

The City's Vision 2020 Vision Plan identifies the importance of the Route 104 corridor for the future growth and development of the city.

Oswego is currently pursuing a study of the Route 104 corridor that would identify design strategies for implementing a complete streets strategy along the corridor that would improve pedestrian and bicycle mobility, as well as enhance the transit service currently operated by Centro.

Combined with an updated wayfinding program the City of Oswego could become a model for small cities of how to incorporate alternative transportation mobility.



MAP 3—Regional Jobs and Persons per Acre Analysis

The Central New York Regional Planning and Development Board conducted an analysis of regional population density combined with jobs per acre to determine areas in the region where increased transit service might be viable (a minimum threshold of 10-25 Persons and Jobs/acre is considered appropriate for enhanced service). These areas were then further analyzed to identify potential service nodes that could become transit nodes. The core of the City of Syracuse exhibits the highest densities in the region (Figure 3), additionally areas such as NYS Route 11 near the entrance road to Hancock International Airport (Figure 2), as well as the NYS Route 104 Corridor in Oswego (Figure 1) serve as potential examples.

0 - 5 Persons and Jobs Per Acre
5 - 10 Persons and Jobs Per Acre
10 - 25 Persons and Jobs Per Acre
25 - 100 Persons and Jobs Per Acre
100 - 3469 Persons and Jobs Per Acre

0 2 4 8 Miles
NORTH

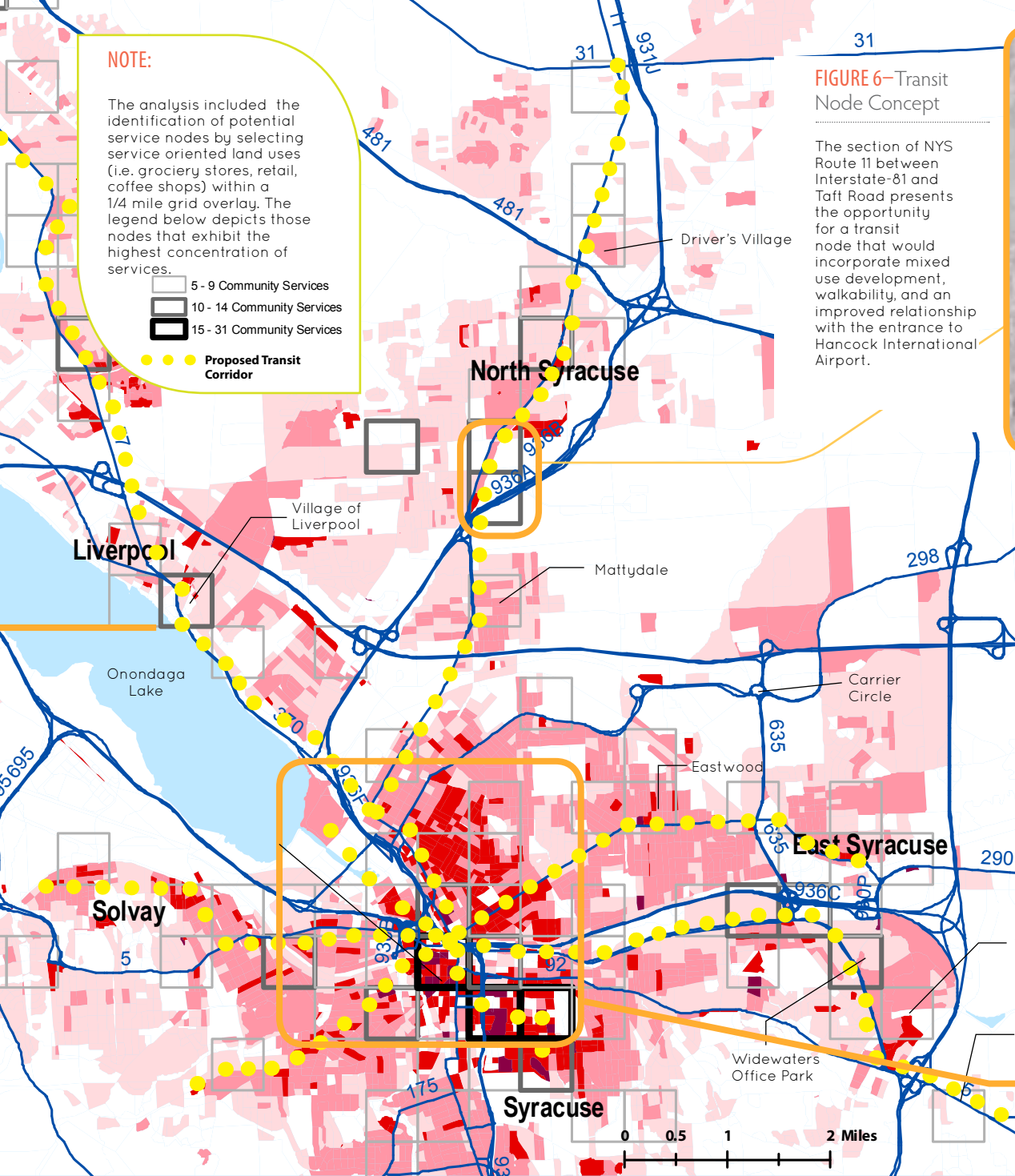
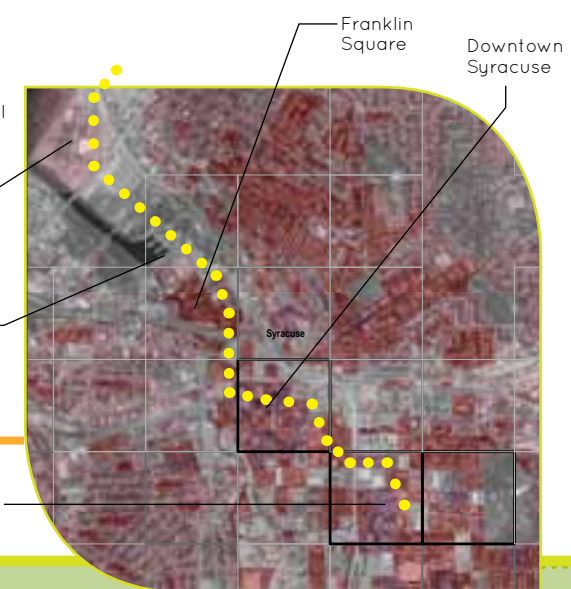


FIGURE 7—Downtown Syracuse Transit Corridor

An enhanced transit service corridor connecting University Hill, Downtown Syracuse, Destiny USA, and Hancock International Airport was identified in the 2007 Syracuse Metropolitan Transportation Council University Hill Study.



BUS RAPID TRANSIT



The Capital District Transportation Authority (CDTA) implemented a new limited stop bus service along the 17-mile stretch of Route 5 between downtown Albany and downtown Schenectady in April of 2011. The new service, called BusPlus, is the CDTA's version of Bus Rapid Transit (BRT) combining the benefits of commuter rail with the flexibility and cost advantages of buses. BusPlus ridership increased 25% and overall ridership on the Route 5 corridor increased by 13% in the first year of operation. BusPlus averages between 12,000 and 13,000 rides each weekday and connects with 30 other routes within the CDTA transportation network. The Route 5 corridor is the beginning of 40 miles of planned BRT service within the Capital Region.

supply of mixed-use development near transit. "Mixed-use" is most often defined as housing over retail, but the work trip accounts for nearly 60 percent of transit trips and studies show that concentrating employment near transit is more closely associated with higher ridership than housing. Increasing jobs near transit should be a priority.³⁶

Transit facilitates greater job density, knowledge agglomeration and the exchange of ideas — which can spur innovation. In knowledge-based industries, the per-capita invention rate or "patent intensity" of an urban region is positively correlated to the density of employment. Studies show that walkable places with urban character attract younger "knowledge talent," and that jobs near transit are more accessible to the increasing population of people in their twenties who are "transit-dependent by choice." National travel data from 2009 shows this age group drives an average of 7.7 percent fewer miles per year than the same age group did a decade ago, even as driving increased overall.

Some jobs are more transit-oriented than others — including jobs in professional, scientific and technical services, and the financial and insurance industries. Economic and land use policies and investments can be used to encourage these sectors to locate near transit instead of in auto-dependent places, which will help foster sustainable growth.³⁷

According to a 2002 study by the California Department of Transportation, TOD has the potential to reduce annual greenhouse gas emissions by 2.5 to 3.7 tons per year for each household. In 2010,

CTOD found that in the Chicago metropolitan region, the transportation-related GHG emissions of households within one-half mile of fixed-guideway public transportation are 43 percent lower than the regional average, and that the emissions of households located in central business districts — which typically have the highest concentration of transit, jobs, housing, shopping and other destinations — are 78 percent lower than regional averages.

Moreover, money that households around stations would have spent on owning and maintaining one or more cars can be spent on consumer purchases instead, thereby boosting investment in the local economy. The nonprofit organization CEOs for Cities estimates that the 2 million people who live in the Portland, Oregon, region save a total of \$1.1 billion a year by commuting 4 less miles per day than the national average of 24.3 miles. While most of the money spent on cars and gasoline travels out of the state, this transportation savings can be spent in restaurants or on homes or other purchases that have a multiplier effect in the local economy.

Because a regional network of transit-oriented destinations enables people to drive less and produce less GHG emissions, regions and cities increasingly view coordinated transportation and land use strategies as essential components of an effective climate action plan (Figure 3). For this reason, some MPOs support station area plans and development to reduce GHG emissions. For example, in Atlanta, local governments can apply for grants from the Atlanta Regional Council's Livable Centers Initiative to complete station area plans, and then apply for capital funding to implement their plans. As of 2009, 34 station area plans had been adopted and will reduce greenhouse gas emissions in all but one station area.⁴⁰

Bus Rapid Transit

BRT is an innovative, high capacity, lower cost public transit solution that can significantly improve urban mobility. This permanent, integrated system uses buses or specialized vehicles on roadways or dedicated lanes to quickly and efficiently transport passengers to their destinations, while offering the flexibility to meet transit demand. BRT systems can easily be customized to community needs and incorporate state-of-the-art, low-cost technologies that result in more passengers and less congestion.

BRT should be evaluated as a service option for developing high-capacity transit routes within CNY. Potential service routes were identified by the CNY RPDB as part of the TOD corridor analysis on page 88.

Alternative Fuel Vehicles, Carshare, and Bikesharing

Alternative-fuel, advanced technology vehicles coupled with a new urban logistical infrastructure is a major pathway toward reducing transportation related greenhouse gas (GHG) emissions, air pollution and energy security due to dependence on imported sources of oil.

In California, the Global Warming Solutions Act, which requires that 36 percent of the state's GHG emission reductions come from transportation by 2050, is likely to spur adoption of this approach. The California Air Resources Board estimates that 87 percent of the California vehicle fleet will have to be powered by low or zero-carbon fuels to achieve this goal by the law's deadline. Similarly, the New York State Climate Action Plan Interim Report notes that "to approach the 80 by 2050 vision and goal for the whole transportation sector, 100 percent of new light-duty vehicles (LDVs) sold in 2035 would have to be near-zero-GHG. There would need to be a mix of plug-in electric vehicles (PEVs), hydrogen fuel-cell vehicles, and bio-fueled vehicles."

The Plan also notes that "in contrast to most other policy options, implementation of this policy is not fully within the discretion of New York State and instead depends on federal or California action," with the State adopting California's program through a rulemaking process as it has done in the past. To make this substantial transition will also require consumer perceptions of these technologies and of vehicle ownership (e.g., acceptance of shared-used vehicles) and the urban infrastructure to support them to be modified.

While the vehicle mix of the future will depend on a variety of factors beyond the region's control, there are a number of actions that can be taken now to support new technologies. One of the most promising technologies is electric vehicles. Electric vehicles are propelled by an electric motor (or motors) powered by rechargeable battery packs, instead of a gasoline engine. Unlike hybrid vehicles, the electric vehicle is powered exclusively by electricity, rather than being partially powered by gasoline. Electric cars are able to produce an approximate driving range of 100 miles before needing to be recharged and produce no tailpipe emissions. They also have substantially lower energy costs, while gasoline costs about 12 cents or more per mile driven, electric vehicles may have an energy cost as low as 2 cents per mile driven.

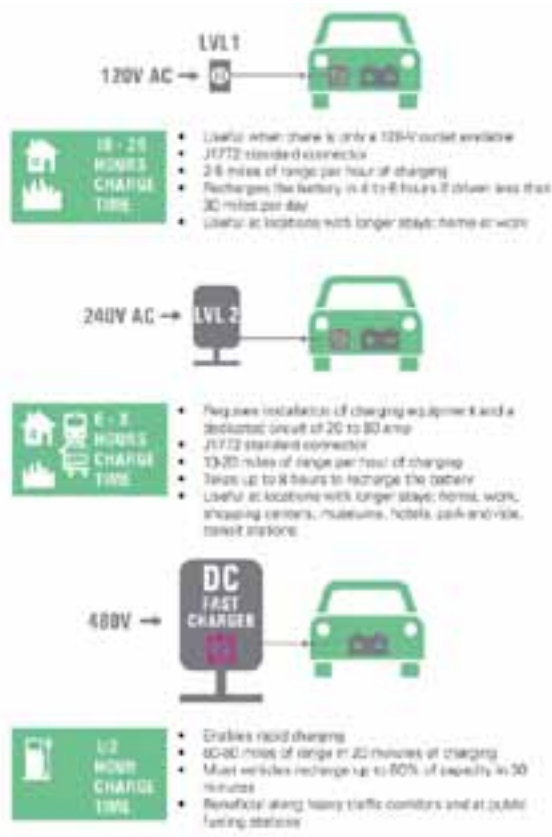
According to the NYS Climate Action Plan, one possible vehicle mix scenario that would help the State to achieve its greenhouse gas reduction goals includes:

- + 69 percent of all new light-duty vehicles (LDVs) sold in 2030 are plug-in electric vehicles (PEVs), and the remainder is conventional vehicles;
- + Of the new PEV fleet, about half (49 percent) are all battery electric vehicles (BEVs), 17 percent are plug-in hybrid electric vehicles (PHEVs) with a 10-mile range, and 34 percent are PHEVs with a 40-mile range;
- + Cellulosic ethanol comprises 21 percent of fuel used in conventional and PHEVs.

The NYS Climate Action Plan concluded that through 2025, the state has adequate generation and transmission grid capacity to accommodate a maximum 30 percent anticipated penetration of EVs and PHEVs, but that "smart charging" as well as local distribution (transformer) upgrades are likely to be necessary to minimize grid impacts. In addition, local storage as well as supportive local codes, policies, regulations and business models should be part of the long-term solution to make electric vehicles a cost-effective means of achieving low-carbon mobility.

While some obstacles to greater EV penetration such as the bulk, weight and cost of batteries are beyond the influence of regional stakeholders, one of the key actions that can be taken at the local and regional level is the development of electric vehicle supply equipment (EVSE), particularly publicly accessible charging stations. Access to conveniently located charging stations is critical to addressing the "range anxiety" that current or prospective EV owners may face. As Level III or so-called "Quick Charging" stations, which are capable of adding 50 to 60 miles of driving range in about 30 minutes, become more available, EV drivers will become more comfortable and more dependent on public charging as opposed to charging at home. Already, with limited availability of Level III stations, the U.S. DOE-sponsored EV Project, which tracks the electric car driving and charging patterns of 6,300 EV drivers, recently reported that in the third quarter of 2012 Nissan Leaf owners did only 67 percent of their charging at home, down 11 percent from the 78 percent of home charging that took place earlier in 2012. The EV Project further reported a 20 percent increase in average charge times, suggesting trip distances are growing.

While there are only about 30 all-electric or plug-in electric hybrid cars registered in Central New York as of June 2012 and only 962 statewide according to the NYS Department of Motor Vehicles, the market for



EVs is growing with 5,909 sold in September 2012, up from 1,754 sold in September 2011. Over 25,000 were sold in the first eight months of 2012, greater than the number of hybrid electric vehicles sold in all of 2001, the second year in which they were widely available. Nissan recently announced that the retail price of the Leaf will drop by nearly 20 percent, which may lead to increased sales in 2013.

It is projected that with the with further price reductions in the cost of EVs and the adoption of supportive policies the number of plug-in electric vehicles (PEVs) on the road in New York State could increase to 30,000-40,000 in 2018, over 196,000 in 2020, and perhaps as much as one million in 2025.³⁸ According to Pike Research, sales of PEVs in the U.S. are expected to grow at an annual compound growth rate of 30 percent between 2012 and 2020, and are forecast to represent 3.5 percent of total vehicle sales in New York by 2020. To support 40,000 PEV

sales over the next five years, the state would need about 3,000 charging stations based on calculations by the Electric Power Research Institute (EPRI). There are currently about 800 installed or planned electrified parking spaces in the state. Central New York already enjoys a relatively high concentration of electric vehicle charging stations as a result of the ARRA-funded project administered by Synapse Sustainability Trust, which resulted in the installation of 68 electric car charging units throughout the region. This early leadership provides the region with an opportunity to build momentum and should be pursued further.

Moving forward, the region should focus on installing EVSE in places with high visibility, increasing usage by current EV owners, and persuading potential owners that there are sufficient public charging opportunities, even if that owner may not use the public EVSE in question. Ideal locations for installation of EVSEs include office buildings or parks because of consistent patterns and long dwell times, government or public facilities such as commuter lots, airports, and parks because of the leadership and public demonstration effect, colleges and universities because of the higher educational attainment of likely EV owners, and



Level II EV Charging Station, Syracuse, NY

retail and leisure destinations such as hotels because of the marketing opportunity to draw in potential customers or extend their stay.

In addition, greater public outreach and education is necessary to build comfort with PEVs. Many drivers currently have only a vague understanding of plug-in electric vehicles. Similarly, many local policymakers currently do not know what they can do to help bring PEVs to their communities.

The region stands to benefit greatly from the widespread adoption of EVs, including lower costs of ownership and reduction of greenhouse gas emissions. According to a recent report from the Union of Concerned Scientists, EVs cost much less to fuel than internal combustion engines (ICEs), with a typical Nissan Leaf owner saving nearly \$13,000 per year compared with an owner of a gasoline-powered car that achieves 27 mpg. While EV driving does move pollution to the point of energy generation, ICEs would need to achieve at least 115 mpg in Central New York to achieve a GHG emission level equivalent to that of a BEV, due to the relatively low carbon content of the region's electricity grid.³⁹ Even larger emissions reductions can be achieved when EVSE is powered by renewable sources of electricity generation such as solar PV, as has been proposed in the Village of Skaneateles through a partnership between the Village, the CNY RPDB, the New York Power Authority (NYPA) and EPRI.

It is recommended that the region prepare a feasibility study to examine to ways that the City of Syracuse and other municipalities can support and promote the use of EVs. This Electric Vehicle Feasibility Study should aim to identify what actions must be taken to make the region "EV Ready" including both policy and charging station location recommendations. It should also include information on EV use and demand, existing charging infrastructure, best practices on becoming an EV Ready city, and a checklist for EV readiness. The City of Albany, as part of its overall sustainability planning efforts, recently completed such a study with support from NYSEDA and NYS DOT.

Carsharing and ridesharing are other alternatives that can reduce GHGs. Providing on-demand vehicle access to people who can make most trips without a car reduces the likelihood that they will purchase one, which in turn reduces their vehicle-miles traveled and the associated emissions. One-way carsharing enables members to leave the shared vehicle at a location different from where they picked it up. Peer-to-peer carsharing, in which individual car-owners lend their cars to members of the peer-to-peer network, eliminates the need for centralized carsharing

locations, facilitating penetration into suburban markets, and expanding urban markets. Growth in the popularity of collaborative consumption, which utilizes sharing, trading, and renting instead of ownership, is also facilitating growth in carsharing. Similarly, new technologies have increased the appeal of public bikesharing programs and made them more cost-effective and easier to manage.⁴⁰

Pilot programs have propelled rapid growth in carsharing and bikesharing programs. One exemplary bikesharing program is "Denver B-Cycle," which began in 2007 and has grown to 52 stations with 520 bikes supported by government and foundation grants, corporate subsidies, and user fees. New and innovative carsharing programs are



Rendering of solar car charging station proposed for the Village of Skaneateles.

being piloted, such as "car2go's" one-way carsharing service. At present, there are eight peer-to-peer carsharing programs operating in the U.S., with three operating in the pilot phase. Finally, formal linkages between bikesharing and carsharing are planned to launch in Buffalo and San Francisco in 2012.

Freight and Passenger Management

Commercial Shipping

Changes in the international shipping world, impacted primarily by the pending completion of the expansion of the Panama Canal in 2015, could help to make exporters in the CNY region more competitive. Bigger locks currently under construction will open the Panama Canal to ships with nearly three times the capacity. The larger ships will overwhelm the handling capacity of ports like the port of NY/NJ, which will create opportunities for inland ports to process imports and exports.

Commercial Shipping is 300 percent more energy efficient than moving freight by truck, and also uses less fuel than trains⁴¹. The strategic location of the Port of Oswego along the Great Lakes and with access to the NYS Barge Canal system, as well as Rail is an important aspect of regional sustainability. The Port has been pursuing projects to improve the overall sustainability of its operations including portside electrification, and the installation of a solar photovoltaic system. Additionally, as the enlargement of the Panama Canal is set to open in 2015, the addition of container handling equipment will become more important.⁴²

The Army Corps of Engineers and the EPA found, in separate studies, that commercial marine navigation has a relatively minor effect on air quality. A study by Canadian National Railways showed that barges produce 33 percent less pollution than diesel trains and 373 percent less pollution than trucks.

In recent years local roads have been inundated with truck traffic transporting landfill waste from NYC to the Seneca Meadows Landfill. Available landfill space exists at Seneca Meadows less than a mile from the Canal, the entire trip could be made by barge from NYC.⁴³ Water transport is the safest mode of surface transportation, exhibiting the fewest number of incidents, fatalities and injuries. It is also a gentle mode, absent the shocks and vibrations common with wheeled travel. According to US Coast Guard statistics, water vessels have fewer accidental spills and collisions than any other transportation mode.⁴⁴

Air Transport

The Federal Aviation Administration (FAA) has begun the support of a Sustainable Airport Planning program where it is providing funding to airports to develop comprehensive sustainability planning documents. To date, 25 airports across the U.S. have been funded, including the

Ithaca-Tompkins Regional Airport in Tompkins County (the first funded Sustainable Master Plan in the United States for an Airport).

High Speed Rail

Supporters say a high speed rail network in the Empire Corridor, linking the full 463 miles from Niagara Falls to New York City, would reduce fuel costs for people and freight, cutting a train trip from Syracuse to New York City by two hours, down to 3.5 hours or less – faster than a trip by car. Mayors in every large Upstate city are on board, saying high-speed rail could help create at least 21,000 new jobs and \$1.1 billion in new wages across the state.⁴⁵

The federal government launched an ambitious funding program for implementing high speed rail in key markets throughout the U.S. in 2008. The 463-mile Empire Corridor, which stretches from Niagara Falls to New York City has been shown to demonstrate potential for increased ridership. Thus far New York State has received \$557.7 million in federal funding for improvements along the Empire Corridor that will allow for increased speeds and will reduce congestion along the corridor.

For high speed intercity passenger rail (HSIPR) to be competitive with other modes, the following must be accomplished⁴⁶:

- + Increase Service Frequency
 - o Currently, there are only 4 round trips between Albany and Buffalo per day
 - o At 110 mph round trips would double to 8 between Albany and Buffalo per day
- + Improve On-Time Performance
 - o Currently, on-time performance is only 77% on average, and only 64% from Buffalo/Niagara Falls to Albany
- + Provide travel times that are Comparable with other modes
 - o Current travel time between Albany and Buffalo is 5 hours and 15 minutes and is not competitive with other travel modes

HIGH SPEED RAIL

The preliminary findings from a market analysis and ridership forecast conducted by New York State have indicated that a market clearly exists for enhanced passenger rail service on the Empire Corridor. The analysis determined that under a 110 mph scenario that annual boardings in Syracuse would more than triple by 2035, and under the 125 mph scenario would increase by 20 times⁵².

NYS is currently developing a Tier 1 Environmental Impact Statement (EIS) for the Empire Corridor to evaluate the potential benefits and impacts of investments in improving rail speeds to a minimum of 110 mph along the corridor. As part of the alternatives analysis the project team is evaluating impacts to the natural and man-made environment. The results of this analysis will be documented in the Tier 1 EIS. The project team has documented the

existing conditions identifying the resources that could be impacted by the alternatives (acres of wetlands, locations of parks, or community facilities, etc.) along the corridor. The Tier 1 EIS focuses on a high level constraints analysis, identifying potential areas for detailed evaluation in the Tier 2 analyses.

The Buffalo to New York City Empire Corridor was recently ranked 11th out of the top 17 corridors in the northeast for its potential to support high speed rail. With a length of 439 miles and an employment base of 18.2 million people within 25 miles of major nodes (i.e. potential station centers), this corridor is competitive with many nationwide. The Albany to NYC leg of the Empire is characterized as the highest performing rail corridor off of the mainline routes on the eastern seaboard, and outranks most other corridors around the U.S.⁵³

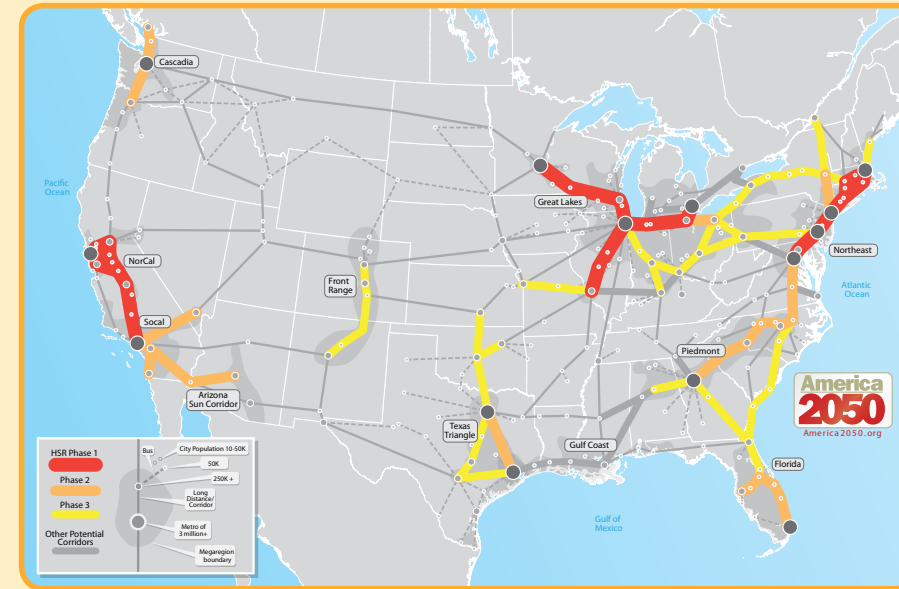


FIGURE 8—America 2050 Proposed Trans-American Rail Network

America 2050's High-Speed Rail Phasing map illustrates the results from the "Where High-Speed Rail Works Best" analysis as well as taking into account the current state of rail planning across the United States. It prioritizes the connection of major metropolitan centers within 500 miles with high levels of economic activity and integration.

- o At 110 mph the total travel time between Buffalo and NYC would be 7 hours and 20 minutes, travel time from Syracuse to NYC would be close to or even below 3 hrs

It should be noted that improvements to the regional and statewide rail networks will have a net positive impact on rail freight as well, reducing shipping times and costs. Combined with the development of inland port facilities within the region, these investments can have a significant impact on both reducing the greenhouse emissions of the Central New York Region, and improving the competitiveness of the regional economy.