

# Chapter 1: Introduction

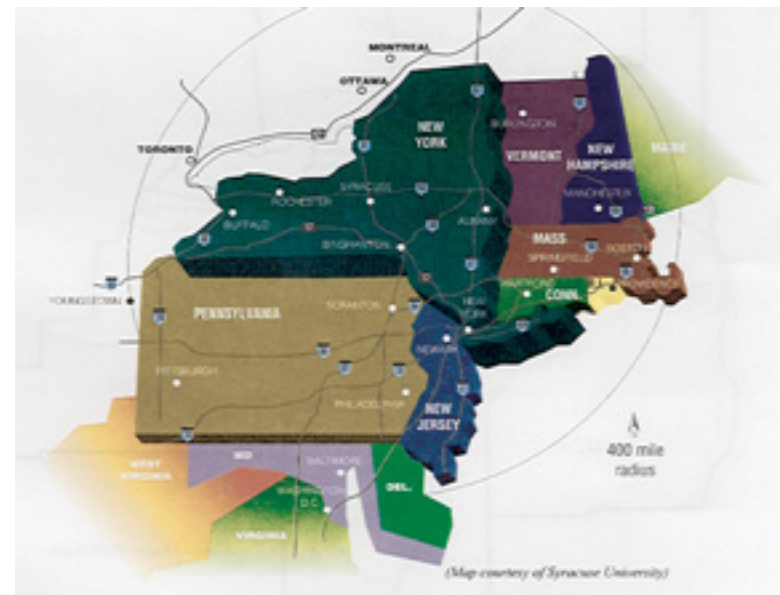
## THE CENTRAL NEW YORK REGION

**Central** *New York is geographically centered in Upstate New York and includes the counties of Cayuga, Cortland, Madison, Onondaga, and Oswego. The region covers an area of 3,622 square miles, comprising a balance of an urban center the City of Syracuse, suburban areas, small cities and towns, and rural farming communities.*

The region is located in close proximity to the cities of Rochester, Ithaca, Utica, Buffalo, Albany, and Binghamton and is within a 4–5 hour drive to several major metropolitan areas in the northeast including New York, Toronto, Boston, Montreal, and Philadelphia. Over 136 million people live within a 750-mile radius of Syracuse including over 50 percent of the population of Canada and the United States.

### History and Culture

Prior to the earliest colonial settlement in the region and New York State land purchases of 1795 and 1807, Central New York was the home and seasonal hunting and fishing grounds of the Haudenosaunee, Native Americans of the Iroquois Confederacy. The earliest colonial settlers to the region established water-powered saw mills across the region to process harvested lumber with the abundant perennial stream flow as forests were cleared and productive farmlands



established, and by the mid-nineteenth century, grain mills producing flour, and creameries producing milk and butter, along with cheese, meat, wool and other local products were being shipped from settlements in the region to markets as distant as New York City, Chicago, Philadelphia and Boston.

The New York State Barge Canal (completed in 1825) and an extensive system of railroads (beginning in 1826) laced across the region providing direct connections between the smallest rural settlements of Central New York to bustling metropolitan centers of the northeast U.S. Ingenuity, available immigrant labor and talent in traditional trades, and the wealth of natural resources in the region brought an influx of commerce and land use development and the growth of bustling communities, productive farmlands, and commercial ventures.

By the early-twentieth century, Central New York, with the City of Syracuse its' center had become a collection of productive, small- to mid-sized commerce- and industry-driven centers located along its' major waterways. Surrounded by vast acres of farmland, mainly producing field crops and dairy cows, communities in the region were growing, but remained centered on their churches, schools, post offices and libraries. The most robust employment centers in the region historically were Syracuse, Auburn, Cortland, Oswego, and Fulton. Rural centers located along primary travel routes, active canalways and railways including Pulaski, Skaneateles, Cazenovia, Phoenix, Elbridge, Canastota, Moravia, Homer, Baldwinsville, Springport, Aurora, and King Ferry also experienced impressive development through the early twentieth century.

Today, the CNY Region has an abundance of cultural attractions including the Syracuse Stage, Erie Canal Museum, Landmark Theater, the New York State Fairgrounds, the Everson Museum of Art, Milton J. Rubenstein Museum of Science and Technology, Auburn Public Theater, Harriet Tubman House, and numerous historic and heritage areas. In addition to arts and cultural institutions, the CNY Region is home to world-renowned tourist attractions including Skaneateles, Finger Lakes wineries, the Erie Canal and Erie Canalway Trail. These assets contribute to a strong tourist economy and increase the quality of life of existing residents.

## Socio-Economics

Central New York is home to approximately 791,500 people, with tremendous diversity from county-to-county. Cortland, Cayuga, and Madison counties both have populations under 100,000 whereas

Onondaga County has just over 467,000 residents, which underscores the significant differences in population density between counties. These demographic differences are reflected in the unique income, housing and employment profiles of each county. Table 1 presents the population and number of households in the Region by county. The average household size is 2.51 persons.

TABLE 1—Population and Household Characteristics, 2010

Location	Population	Percentage of Total Population	Number of Households	Household Size	Population Density per Square Mile
Cayuga	80,026	10.1	31,445	2.53	115
Cortland	49,336	6.2	18,671	2.50	98
Madison	73,442	9.3	27,754	2.48	112
Onondaga	467,026	59.0	187,686	2.46	599
Oswego	122,109	15.4	46,400	2.60	128
CNY Region	791,939	100	311,956	2.51	213

Since 1990, the Region's population has increased by about 799. The largest city is Syracuse, located in Onondaga County, with a population of just over 145,000 persons as of the 2010 census. Most of the Region's 3,720 square miles is rural in nature, and over 58.5 percent of residents live in these rural areas. Only about 11.2 percent of the population lives in the Region's five small cities and another 12.0 percent live in its 47 villages.

national and State population. The Region mirrors the national trend of an aging population phenomenon; however, Central New York is losing its younger demographic to outmigration, too, presenting an imbalance in the workforce, service needs and provision, and housing. Over 38 percent of the region's population has attained a college associate's degree or higher.

The Region's 311,956 households and 344,778 housing units mirror to some degree those of the State and the nation. While significant numbers of households pay in excess of 30 percent of their income on housing costs, the proportion in Central New York is less than in New York and the nation as a whole. The housing stock is also more stable with a larger proportion of owner-occupied units and a larger proportion of households living in the same unit for over 10 years. However, compared with national averages, the Region's housing stock is much older, with roughly two-thirds of all housing built before 1970 and one-third before 1940. Such housing is less likely to have been built to modern energy efficiency standards, and, considering the Region's aging population, this older housing stock presents maintenance and upgrade challenges to ensure safe and healthy living conditions.

**TABLE 2**—Selected Population Information

	CNY Region	NYS	USA
Total Population	791,939	19,378,102	308,745,538
Population Density, persons per sq. mi.	213	411.2	87.4
Percent Minority Population	12.94%	40.80%	35.30%
Median Age	38.8	37.7	36.9
Percent of Population 25 Years Plus with College Degree or better	27.56%	32.10%	27.90%
Total Households	792,191	7,317,755	116,716,292
Percent Households: Married Couple with children	18.56	19.80%	21.10%

Central New York's population differs from the State and the nation. Most strikingly, the Region's population is much less diverse. Only 12.94 percent of residents are members of minority groups, while more than one-third of the national and state populations are part of minority groups. Central New York residents also tend to be older than the

**TABLE 3**—Selected Housing Information

	Region	NYS	US
Total Housing Units	344,369	8,110,823	131,826,591
Percent Built 1939 or earlier	30.5	34.0	14.1
Percent Built 1969 or earlier	61.1	71.0	42.6
Owner-Occupied Units	209,463	55.2	66.6
Moved into Housing before 2000	143,044	49.4	42.1
Owner-Occupied Units with a Mortgage	135,882	41.3	37.6
Owner-Occupied Units without a Mortgage	73,581	22.5	15.6
Renter Occupied Units	96,170	51.6	50.8

Median household income was \$49,848 in 2010 (see Table x.x), six percent lower than the national average and nearly 12 percent lower than the state average. In 2011, 8.7 percent of the Region's families lived below the poverty line, roughly 2 percentage points higher than both the national and the NYS average.

**TABLE 4**—Household Income and Poverty Rate, 2010

Location	Median Annual Income (5 year estimate)	Average Household Income	Percent Families below poverty
Cayuga	50,140	60,133	8.2
Cortland	45,956	57,878	8.3
Madison	53,473	65,444	7.0
Onondaga	52,636	68,807	9.5
Oswego	47,036	58,097	10.7
CNY	49,848	62,071	8.74
NY	56,951	82,698	11.0
US	52,762	72,555	10.5

## Jobs and Businesses

The region's labor force currently numbers more than 394,600 workers and has remained stable over the past ten years. The number of jobs in the Region has decreased slightly over the last 10 years, from 350,211 jobs in 2001 to 337,389 jobs in 2010. The region's annual payroll in excess of \$13.6 billion. Average wages have increased by almost 25 percent over this same time frame. The average annual wage cost in the five-county area is estimated to equal \$40,286 which is competitive with national levels and significantly below major metropolitan areas in the northeast. Every sector experienced wage growth except for forestry and logging, which was down less than 5 percent.

The government sector is the main employer, most notably in Onondaga County. Over 28,500 jobs are based in the manufacturing sector with a total payroll of approximately \$1.8 billion. The top five employing

industries in the Region include government, healthcare, retail trade, manufacturing, and hospitality and food services. (see Table x.x and x.x).

Industry Title	Average Employment
Total, All Government	62,503
Health Care and Social Assistance	46,142
Retail Trade	40,318
Manufacturing	32,064
Accommodation and Food Services	27,382

Source: NYS DOL QCEW

Industry Title	Reporting Units
Retail Trade	2,637
Construction	2,024
Health Care and Social Assistance	1,950
Other Services	1,864
Accommodation and Food Services	1,781

Source: NYS DOL QCEW

Consistent with national trends, the Region has seen an increase in unemployment rates during the recent economic downturn. According to the latest projections (November 2012), the regional unemployment rate is 8.1 percent, with Oswego County the highest at 9.5 percent. Table x.x presents regional labor force characteristics.

Location	Percent Unemployed
Cayuga	7.5
Cortland	8.1
Madison	8.1
Onondaga	7.4
Oswego	9.5
Region	8.12

Regional economic challenges are very similar to the issues faced by all of upstate New York. While the loss of manufacturing employment in the 1960s and 1970s eroded the foundation of the Region's economy, Central New York's manufacturing base is stronger than in many other upstate New York regions. Health care and education have since become major sectors of the economy. The area's resources, including a capable and available workforce, world-class universities and businesses, magnificent natural features, and productive farmland, can help address these challenges.

Industry clusters in Central New York include defense, distribution, insurance, agriculture, and manufacturing. Carrier Corporation, a Fortune 500 company, maintains its R&D facility in Onondaga County, and several high-tech firms have a strong presence in the Region, including Lockheed Martin, Syracuse Research Corporation, and Welch Allyn. The Region is also home to a growing clean tech cluster of companies. Through its Commercialization Assistance Program (CAP), established by the Syracuse Center of Excellence in partnership with CenterState CEO and Empire State Development, SyracuseCoE has awarded more than \$1 million to 26 upstate companies for projects that have commercialized new clean tech products and services, and created or retained more than 152 green jobs in New York State. Regional companies that have benefited from CAP grants include: Air Innovations, Ephesus Technologies, NuClimate Air Quality Systems, e2e Materials and Synairco.

The CNY Region is home to 18 institutions of higher education with 20 campuses across Central New York, including several professional and graduate-level programs. Among the many prominent universities, colleges, and community colleges in Central New York are the top-ranked Syracuse University, the State University of New York College of Environmental Science and Forestry, and Colgate University. All of these

are major economic drivers in the Region; Syracuse University also has one of New York State's six Centers of Excellence with its focus on Energy and Environmental Systems.

## Connectivity

Central New York has an extensive transportation network, which includes Syracuse Hancock International Airport, the deep water Port of Oswego, several rail freight carriers, a CSX intermodal rail center, Amtrak passenger rail service, Interstate Routes 81 and 90, and a public transportation bus service maintained by the CNY Regional Transportation Authority. In 2011, Centro operations in Central New York carried 1,533,000 passengers, who traveled over 7,750,000 miles, which is approximately 42,000 passengers per day. That same year, nearly 153,000 passengers got on or off Amtrak in Syracuse. This was the fifth-highest in the state, and second-highest in Upstate NY, behind Albany. The Region's transit ridership is concentrated in Onondaga County, while direct service is also offered in Cayuga and Oswego Counties.

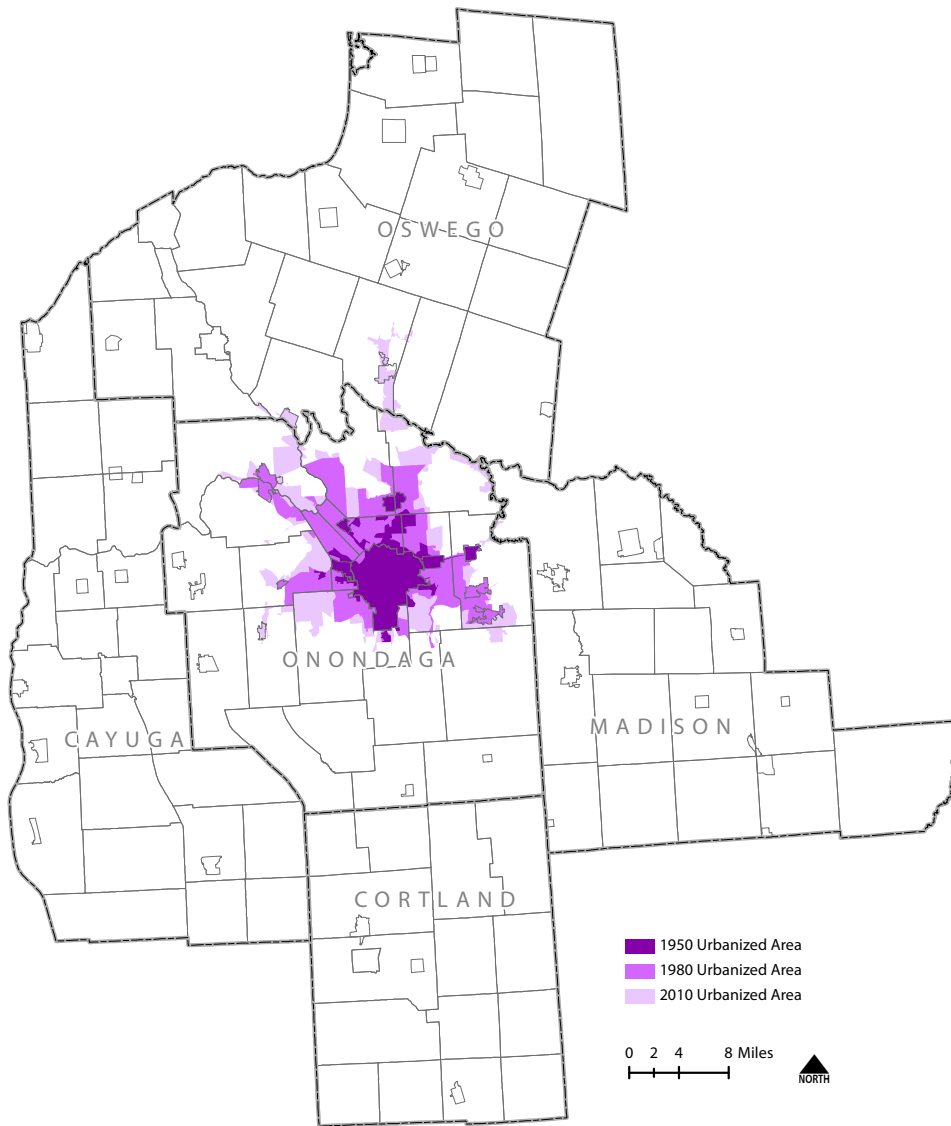
The region is also served by an advanced telecommunications system that is provided by such major service providers as Verizon, Time Warner, and AT&T.

## Land Use and Development

The CNY Region covers just over 3,720 square miles, contains 147 municipalities, and is situated in the geographic center of NYS, centered around the Syracuse metropolitan area. The Region is bisected from north to south by Interstate 81 and from east to west by the NYS Thruway. The Region has a great diversity of human and natural landscapes, including dense, urbanized cities, small towns and villages, rural farms and orchards, and extensive undeveloped forest lands.

Central New York includes 7.6 percent of NYS' land area, containing approximately 4.2 percent of its population and housing. Over 200 square miles, or 5.4 percent of the Region, is defined by the 2010 U.S. Census as "urban area," with a minimum population density of at least 500 persons per square mile (see Figure 1.2).

With the rise of the automobile and the decline of the extensive railroad system and use of the barge canal system in the region, rural



centers that once hosted diverse and thriving businesses lost their transit-connected competitive advantage, and many soon returned to less vibrant and less populated agricultural centers. The realities of urban residential life, congested and old, with limited space and heavy industrial environmental conditions combined with the long-term impacts of 1930's federal policy and disinvestment in the region's urban centers. Combined postwar population growth and 1950's federal highway policy spurred continued movement of urban populations toward developing suburban areas with now easy commuting to outlying areas and with attractive larger lots, scenic views, and newer schools. To meet the demands of this new suburban development, infrastructure, commuter roadways and schools district services expanded across the region.

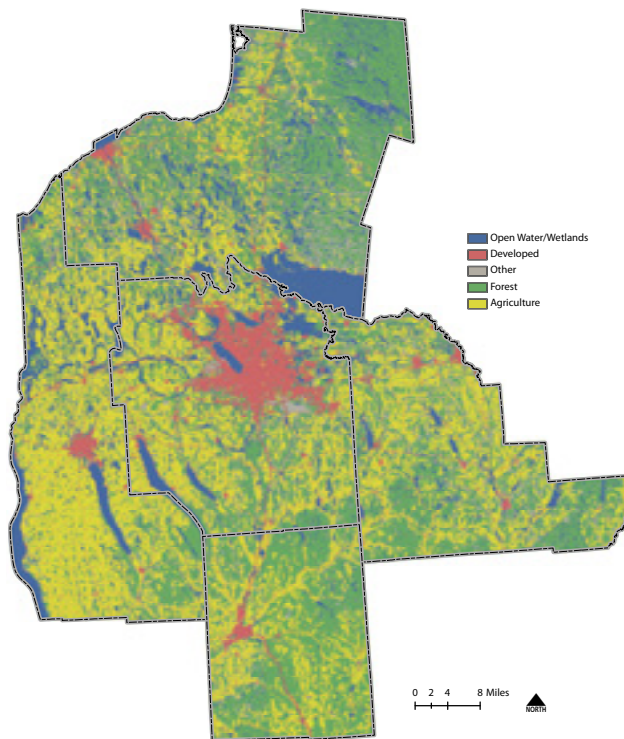
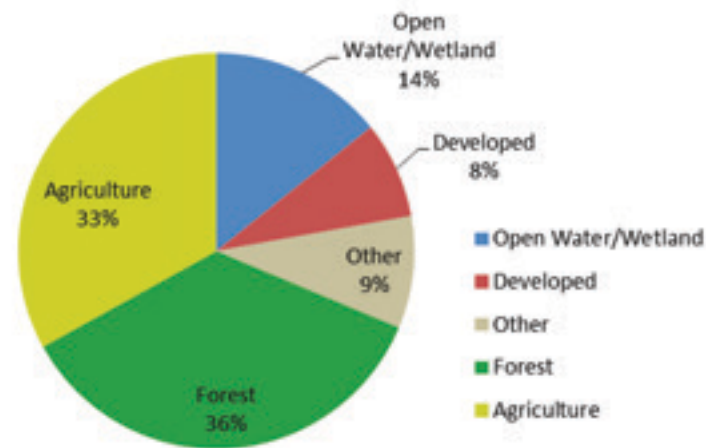
## Natural Systems

Central New York's geography consists of hilly terrain interspersed with relatively flat valleys along the rivers and streams traversing the Region. Four of New York's eleven Finger Lakes are within the Region. Cayuga, Oswego, Skaneateles and Otisco Lakes are important sources of drinking water, marine habitat, and recreation as well as significant regional tourist destinations.

**Working lands.** Forests and farmlands dominate the Region's landscape. Forests, comprising a majority of Central New York, provide direct economic benefits from timber production and wildlife. They also support important ecosystem functions including carbon sequestration, water filtration, and stormwater run-off reduction. In 2010, 1,229 acres were active farmland, representing approximately 33 percent of the Region's land area. Animal husbandry, primarily dairying, is the largest agricultural production industry followed by significant crop cultivation. The total value of agricultural products sold in the region is estimated at more than \$532 million.

These open lands serve other purposes as well; they provide important corridors and connections between forests and water sources for wildlife, separated from urban and suburban development, and may be particularly important as species distributions change in response to climate change and other environmental alterations.

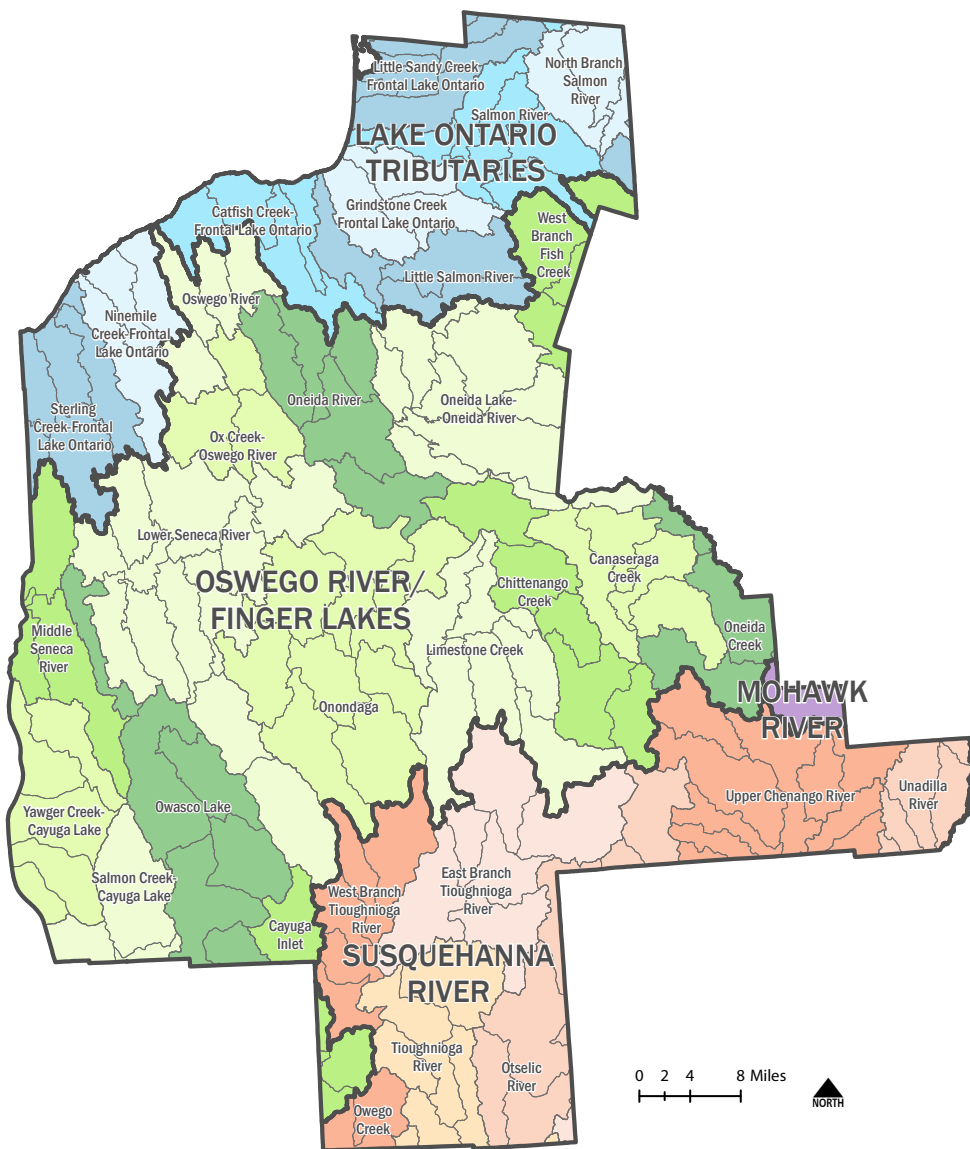
**Water resources.** Central New York has an abundance of rivers and streams that continue to shape the landscape. The Region's rivers and lakes are vital components of the area's character and support the



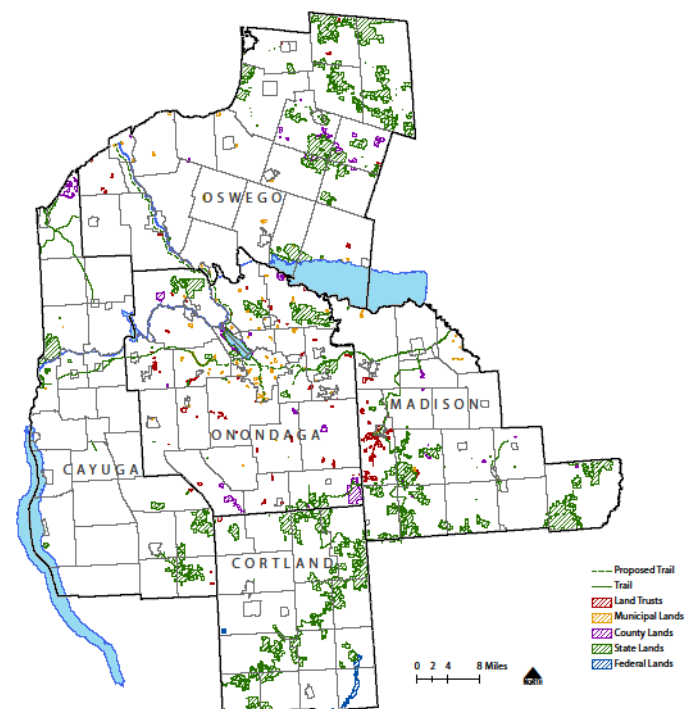
quality of life of its residents. Major rivers include the Salmon, Oswego, and Chenango, in the eastern portion of the Region, and the Seneca and Tioughnioga in the western portion. Additionally, four of the eleven Finger Lakes, Cayuga, Oswego, Skaneateles and Otisco, are located in the Region. The southern portion of Central New York is located within the Susquehanna River watershed eventually draining to the Chesapeake Bay. In 2010, the U.S. Environmental Protection Agency established the Chesapeake Bay Total Maximum Daily Load, a “pollution diet” with the intent of restoring clean water in the Chesapeake Bay and its tributary streams, creeks, and rivers. Portions of the Region are in the Oswego River/Finger Lakes watershed, primarily in Onondaga, Oswego and Madison County, which flows northward to the Great Lakes.

Wetlands are found throughout the Region, although high-quality wetlands are particularly rare because historic and current land use practices have destroyed them outright or have introduced non-native invasive species. Where wetlands do exist they provide vital wildlife habitat and critical ecosystem services including flood attenuation, water filtration, and groundwater recharge. Perhaps the most important service wetlands perform for people in this flood prone Region is stormwater retention — these are the places where stormwater can spread out, slow down, and soak in. Aquifers are located throughout Central New York. Primary aquifers, which are heavily utilized and are capable of yielding a great deal of groundwater, are located in three of the area’s counties: Cortland, Onondaga and Oswego.

**Parks and trails.** The region’s natural beauty is an important economic asset, with annual tourism spending in Central New York exceeding \$4 billion. Central New York is home to seven State Parks and the New York State Park at the Fair, two State Historic Sites and innumerable local parks, providing a variety of outdoor recreation opportunities for residents and visitors. The Region has been increasingly focused on planning for and constructing multi-use trails. The Finger Lakes Trail is a part of a 950-mile system extending from the western NY/Pennsylvania Allegany County line to the Catskills in the east. In Central New York, the Finger Lakes Trail links many local trails as it traverses two of the Region’s counties and serves as a primary recreational resource. The Erie Canalway Trail is a network of approximately 300 miles of multiple-use trails across upstate New York that follows the towpaths of both active and historic sections of the New York State Canal System as well as adjacent abandoned rail corridors. Major portions of the Canalway Trail follow the legendary Erie Canal route from Buffalo to Albany. Along the way, the Erie Canalway Trail links the cities of Rochester, Syracuse and Utica. Over 75% of the Erie



Canalway Trail is completed off-road. The Erie Canalway Trail is 65 miles long in Central New York. This multi-use recreational trail complements several state, federal and local efforts to reinvigorate the historic canal corridor



## 2010 Energy and Greenhouse Gas Emissions Profile

In the 2010 GHG emissions inventory, total GHG emissions for Central New York were estimated to be 9.9 million metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e). This resulted from building and mobile energy consumption of 135.3 million MMBTU, as well as non-energy sources including waste, agriculture, and industrial processes. Central New York's 2010 GHG emissions represented about 4 percent of the 2008 New York State total (the most recent year for which a complete GHG inventory is available), while the Region consumed about 4 percent of total state energy.

Energy usage in Central New York is divided between stationary fuel combustion (39 percent), fuel use in transportation (46 percent), and indirect fuel use resulting from electricity consumption (16 percent). When combining stationary fuel combustion and electricity consumption, buildings account for 54 percent of all energy consumption. GHG emissions are generated primarily through the combustion of fossil fuels that releases both energy and carbon dioxide. Total consumption by sector is shown in TABLE x-x below, both with and without electricity consumption distributed by end use sector. Natural gas is the most common energy source in the Region, comprising 70 percent of energy consumption, followed by wood and fuel oil (11 percent and 10 percent, respectively).

Energy use was the largest source of the Region's GHG emissions, accounting for 84 percent of total emissions. This total includes 41

percent of all emissions from buildings (27 percent from fuel use and 14 percent from electricity consumption), 43 percent of all emissions from transportation, and 4 percent from energy supply activities, including production, transmission, and distribution losses. This is comparable to the United States as a whole, where energy-related activities also account for 87 percent of all emissions. The primary difference is that in Central New York, transportation accounts for 43 percent of all emissions, versus just 27 percent for the United States. This is a result of land use patterns and the relatively low level of industrial activity in the Region. With five small cities and one large central hub and a dispersed rural population, daily extended travel for work, commercial services, medical services, recreation and entertainment, and other amenities is a reality for most residents of the Region.

Table x.x. Total Energy Consumption, by Source (MMBTU)

Source	Total Energy Use	Percent of Total	Total Energy Use (Electricity Included in Stationary Sector)	Percent of Total (Electricity Included in Stationary Sector)
Electricity Consumption	21,143,696	16%		
Residential	7,687,321	6%		
Commercial	5,346,056	4%		
Industrial	8,110,320	6%		
Stationary Fuel Combustion	52,184,798	39%	73,328,494	54%
Residential	26,073,134	19%	33,760,454	25%
Commercial	15,425,438	11%	20,771,494	15%
Industrial	10,686,227	8%	18,796,546	14%
Transportation	61,979,705	46%	61,979,705	46%
On-road	54,269,017	40%	80,342,151	59%
Off-road	4,936,660	4%	20,362,098	15%
Rail	1,147,837	1%	11,834,063	9%
Marine	1,626,190	1%	63,605,895	47%
Air	2,419,300	2%	56,688,317	42%
TOTAL	135,308,199	100%	135,308,199	100%

In addition to the energy-related emissions above, the Region's power plants generated over 25,001,693 MWh of electricity, resulting in GHG emissions of approximately 2.2 MMTCO<sub>2</sub>e. While the inventory captures these data, these energy and emissions are counted separately from the region's total emissions baseline inventory, since emissions associated with electricity consumption are already included in the regional inventory.

Likewise, the GHG emissions inventory evaluates and quantifies the natural process of carbon sequestration that is occurring in forests, open land, and water in Central New York, and it specifically evaluates changes in forest carbon stocks. While this category of analysis is not a required source in the NYS GHG protocol, it is included to highlight the significance of the Region's large forest resource and to present an estimate of the GHG reduction benefits this resource provides. This is an evolving area of science and there is a great deal of uncertainty involved with these estimates. Therefore, the overall inventory results focus on gross emissions, and do not include the Region's substantial forest carbon sequestration resources. Nevertheless, due the extent of forest in the Region, it will be important for Central New York to consider carbon sequestration options for the Region's climate actions.



