

INFRASTRUCTURE

A N A L Y S I S



OSWEGO
COUNTY

in support of the Oswego County Economic Advancement Plan

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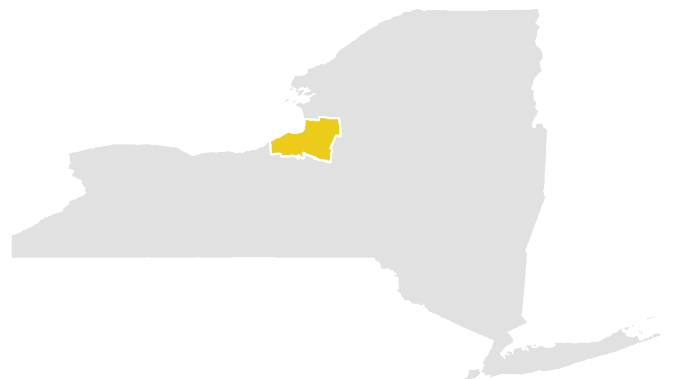
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INTRODUCTION

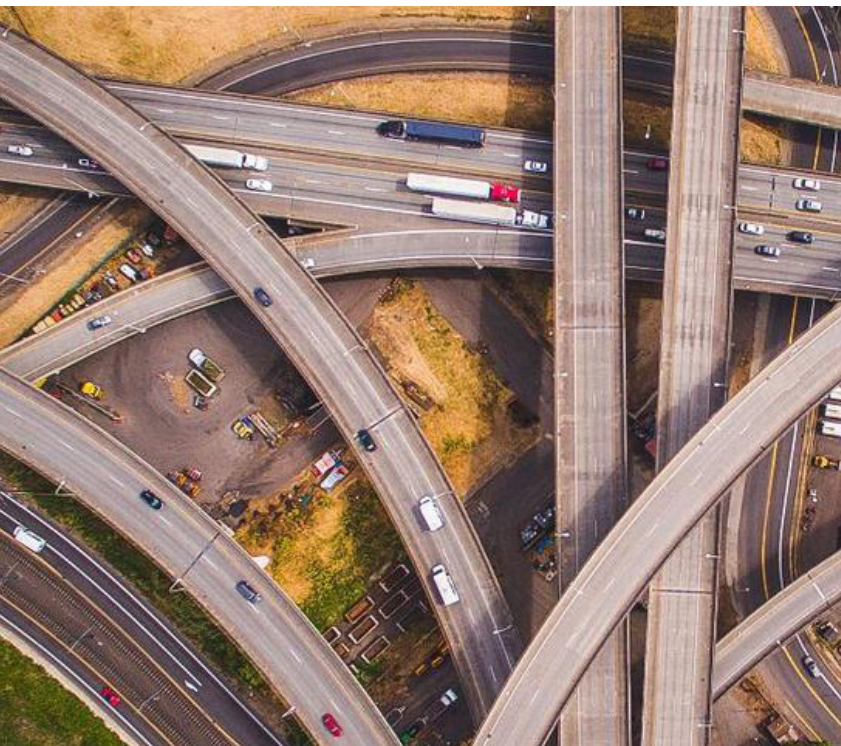
Overview and Purpose

The purpose of this analysis is to provide a broad overview of infrastructure in Oswego County, noting both development limitations and opportunities based on data, interviews with stakeholders, phone calls to municipalities, as well as case studies of other communities. The findings of this analysis informed the recommendations included in the Oswego County Economic Advancement Plan.



The Importance of Infrastructure

Infrastructure is used every day by every industry, every business, and every person in the country. Access to roads, sewer, water, communication technologies, and electricity are prerequisites for economic growth. As a result, efficient, reliable, and abundant infrastructure systems are vital to the American economy. Investment in said infrastructure contributes to economic growth by reducing operating costs for businesses, expanding productivity, and creating opportunities for increased commerce. Studies and economic literature have come to a general consensus that infrastructure investment often results in positive economic impacts, an estimated 20% rate of return according to the McKinsey Global Institute.¹ Infrastructure investments are also associated with positive spillover effects for the surrounding areas, including increased energy efficiency, public health, and quality of life. Public investment in infrastructure is not only financially justifiable, it is also essential to provide businesses with an environment in which they can successfully operate and expand.



Key Takeaways from this Report

Prior infrastructure investment has resulted in significant assets that benefit Oswego County and can be leveraged to attract businesses to the area. The county's intermodal transportation system, including an international port and road and rail networks, is a significant asset that enables the county to contribute to and benefit from participation in the broader regional economy. Components of the infrastructure system that currently function well, provide abundant service, and have the potential to support increased capacity include the county's:



International Port;



Road and Rail Networks; and



Power Supply.

The county should consider investing in infrastructure that does not presently provide comprehensive or reliable coverage, including the following systems:

Sewer;



Water; and



Telecommunications.



Investment in improving or expanding infrastructure should focus along the Route 481 and I-81 corridors, since it is these areas where existing infrastructure and population concentrations make development most feasible.

¹ McKinsey Global Institute. *Bridging Global Infrastructure Gaps*. 2016. <http://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global->.



TRANSPORTATION INFRASTRUCTURE

Introduction

A well-functioning and well-maintained transportation system, which is comprised of road, rail, air, and port facilities, is imperative to the efficient movement of people and goods throughout the county. As a result, transport availability, or lack thereof, can act as a boon or barrier to economic growth.

Transportation and economic development are closely interrelated. For instance, economic development can stimulate demand for enhanced transportation capacity by increasing the number of commuters and shipments. Furthermore, the quality and quantity of available transportation infrastructure may attract new businesses to an area or encourage existing businesses to stay or

expand. The creation or expansion of a rail line or highway might encourage businesses to relocate to an area that otherwise may not have been considered. Developers often consider transportation access when siting projects, since optimal transportation conditions can reduce operating costs and increase productivity. As a result, businesses with transportation access and intermodal connectivity can expand their market size. Likewise, efficient transportation systems enable businesses to reduce the cost and time required for commuting and shipping, thereby enabling expanded output. In essence, transportation is a cost of doing business, meaning that locations that can effectively lower this cost may be able to engender a competitive advantage over other regions.²

² NYSDOT. *Rail Plan*. 2009. <https://www.dot.ny.gov/divisions/policy-and-strategy/planning-bureau/state-rail-plan/repository/State%20Rail%20Plan%202009-02-10.pdf>.

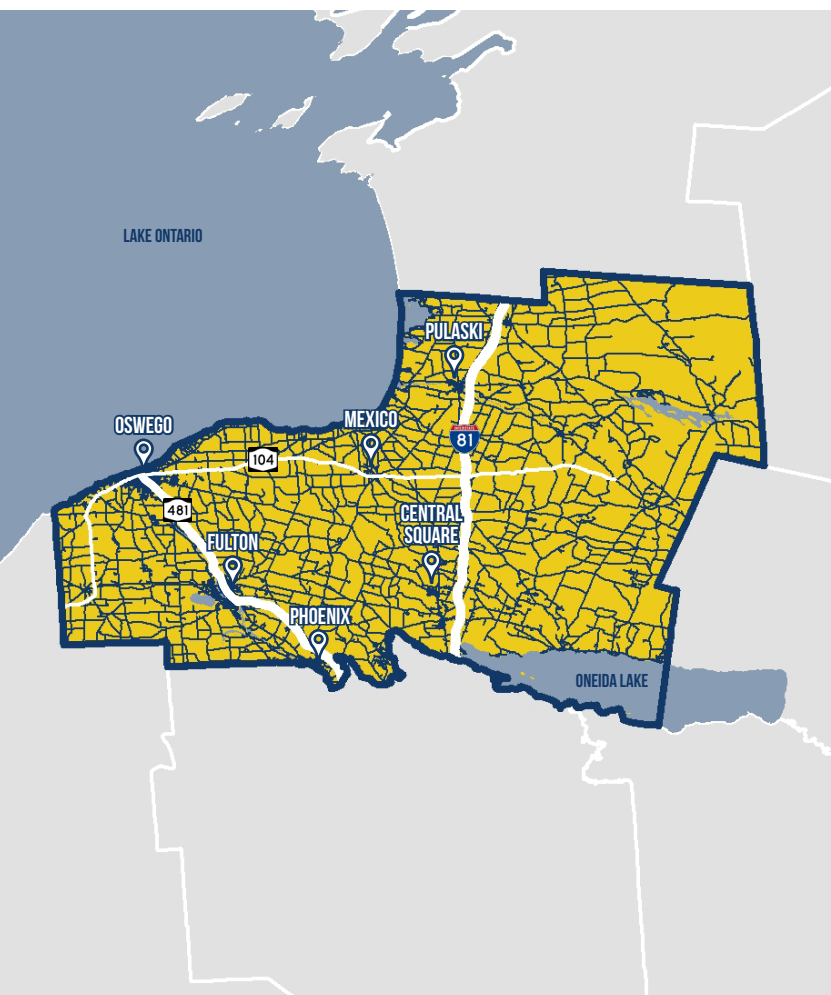
Roads

Importance to Economic Development

Roadways are arguably the most integral component of the transportation network, providing convenient access for both civilian and commercial use. Numerous studies have shown a positive correlation between the presence and quality of highway infrastructure and economic development. Roadways enable greater mobility, thereby allowing producers to reach markets faster and to increase the size of their market area.

Existing Conditions

The major and most heavily utilized roadways in Oswego County are NYS Route 481 and Interstate 81. Both roadways are classified as principal arterials, meaning that they link major population centers. Within the boundaries of Oswego County, both roadways average a total of between 10,000 and 25,000 vehicle trips per day.³ Route 481 and I-81 connect to both the NYS Thruway – which travels through major upstate cities from Buffalo to Albany – and Route 104, which traverses the county from east to west. These connections provide convenient access to major cities throughout the state.



Travel Times to Various Destinations

Southern Oswego County line to Syracuse:	20 MINS
Northern Oswego County line to Syracuse:	45 MINS
City of Oswego to Rochester:	1 HR 30 MINS
City of Oswego to Buffalo:	2 HR 30 MINS
Pulaski to Albany:	2 HR 40 MINS
Central Square to NYC:	4 HR 15 MINS

3 NYS Traffic Data Viewer. 2015. <https://gis3.dot.ny.gov/html5viewer/?viewer=tdv>.

Route 481

Route 481 enters Oswego County near the Town of Schroepfel as a four-lane road, and continues east of the Village of Phoenix through mostly undeveloped areas before reaching the City of Fulton. From the southern county line to the City of Fulton, Route 481 is classified as a non-interstate principal arterial, indicating that the roadway passes through mostly rural areas but still experiences substantial interstate travel. This stretch of Route 481 is also limited-access, meaning that there are very few intersecting cross-streets.

Once Route 481 enters the City of Fulton, it is classified as an urban principal arterial because this portion of the route serves major centers of activity and generally experiences the highest traffic volumes. Through the City of Fulton, Route 481 acts as the main north-south thoroughfare, serving both residential and commercial properties before narrowing to a two-lane roadway and exiting the city. Approximately three miles north of Fulton, Route 481 widens to a four-lane road and continues as such until it reaches the southern boundary of the City of Oswego, where it narrows again to a two-lane road. Between Fulton and Oswego, the route serves mostly undeveloped areas.

Once in the City of Oswego, Route 481 briefly travels alongside the Oswego River before entering the main downtown area and widening to a four-lane road. In the downtown area, the route fronts mostly commercial properties before terminating at Route 104, which traverses the city from east to west.

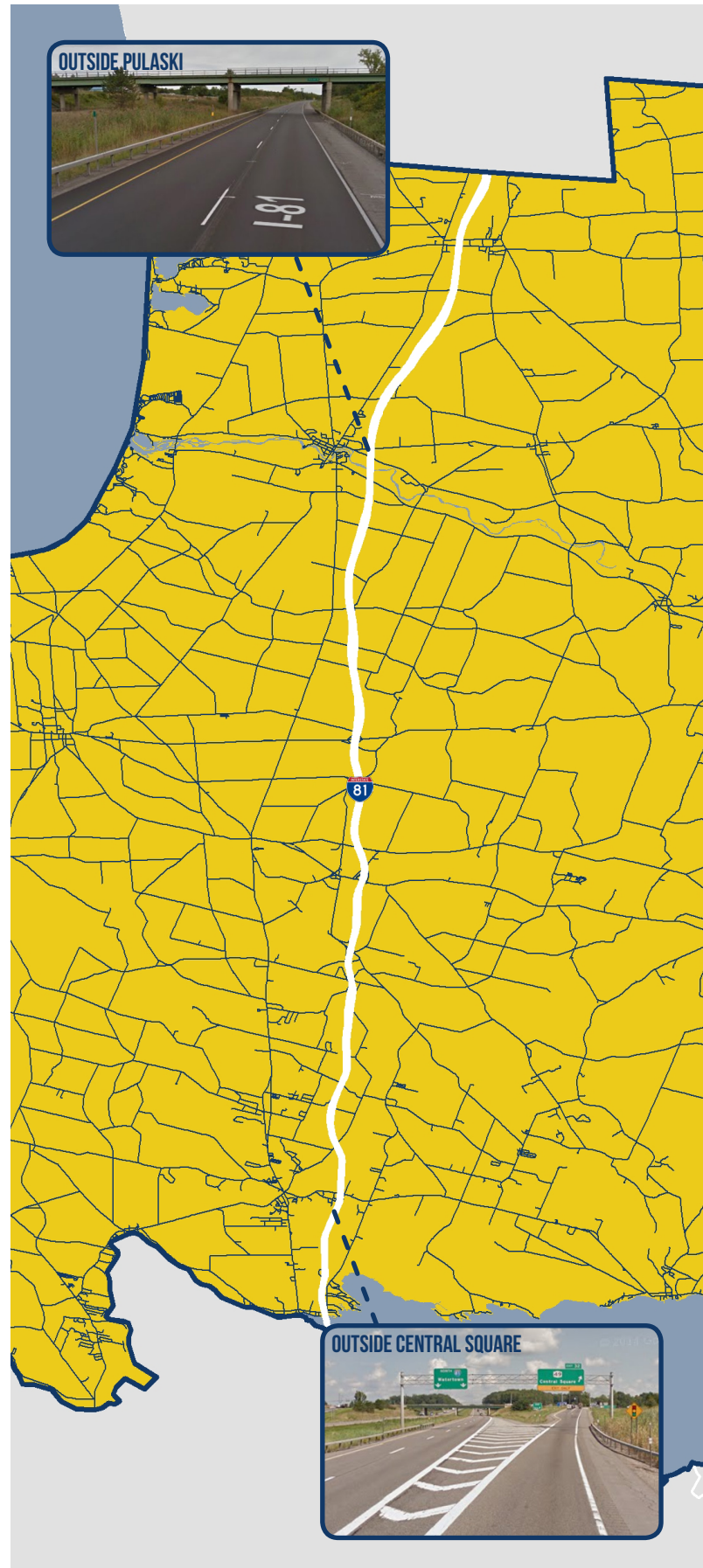
Route 481 experiences its highest traffic volumes in the City of Fulton, with some segments averaging nearly 22,000 vehicles per day. Traffic volumes also near 21,000 vehicles per day east of Phoenix where Route 481 leaves Onondaga County, suggesting that these relatively high traffic volumes may be coming from Syracuse and surrounding areas. In the City of Oswego, traffic volumes along Route 481 average less than 13,000 vehicles per day.



Interstate 81 (I-81)

I-81 runs north from Syracuse and enters Oswego County after traversing Oneida Lake. When the interstate passes east of the Village of Central Square, the roadway narrows from six to four lanes and continues as such until it reaches the northern boundary of the county. Aside from passing east of the Villages of Central Square, Parish, Pulaski, and Sandy Creek, the interstate runs through a mixture of undeveloped lowlands and fields, with fairly level gradation.

In Oswego County, the most heavily traveled portion of I-81 is near the southern border of the county, experiencing almost 40,000 vehicles per day. Since this section of I-81 connects directly to North Syracuse, much of this traffic is likely coming from or going to the city. As I-81 moves northward toward Jefferson County, traffic volumes steadily decrease from 24,000 vehicles per day near the Village of Parish to 15,000 vehicles per day near the Village of Sandy Creek.



Development Limitations

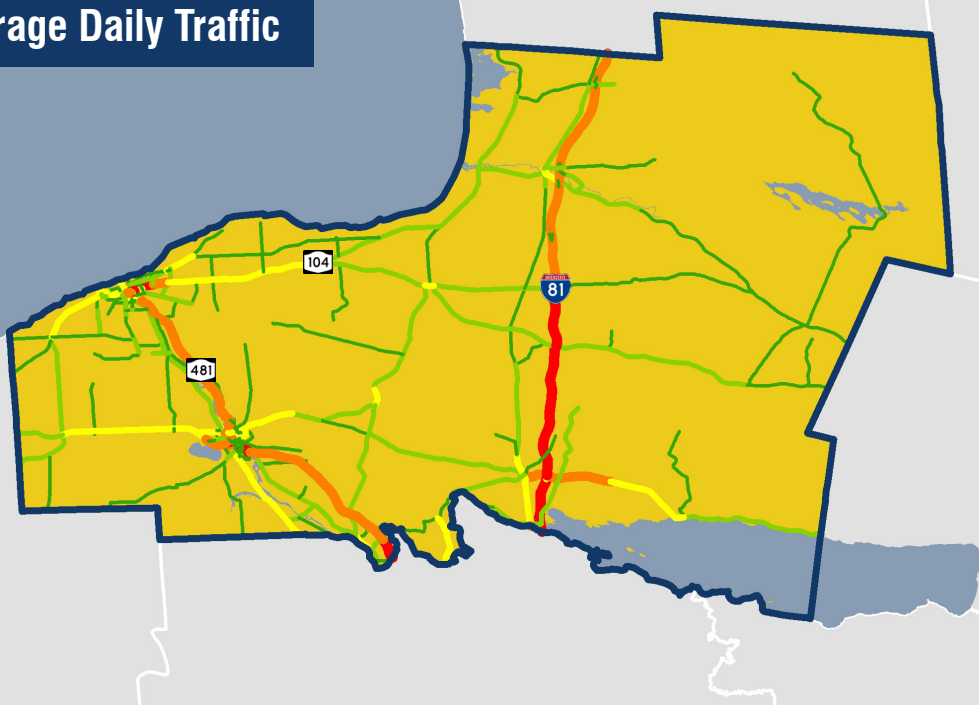
Because much of Route 481 and I-81 run through undeveloped areas, access to public water and public sewer is limited to developed areas such as Phoenix, Fulton, and Oswego along Route 481 and Central Square, Parish, and Pulaski along I-81. If new development were to occur in an area currently unserved by public water, sewer, or wastewater treatment facilities, the local municipality could pursue multiple courses of action related to infrastructure expansion including:

- Engaging with developers to identify and implement funding strategies for private investment, with the possibility for tax breaks and incentives; or
- Establishing a public-private, profit-sharing partnership with developers in which the developer operates and maintains the utilities while the municipality owns and controls the utilities.

Opportunities

Aside from the relatively limited access to utilities along the entirety of the Route 481 and I-81 corridors, these roadways are important assets for the county. Multiple stakeholder interviews indicated that transportation via highways and roads is not an issue, and that significant development potential exists along both corridors. Much of the land adjacent to these corridors is undeveloped, leaving the vast swaths between urbanized areas available for new developments, which could include large-scale manufacturing or industrial facilities, agricultural plants, or themed attractions like outlet malls.

Annual Average Daily Traffic



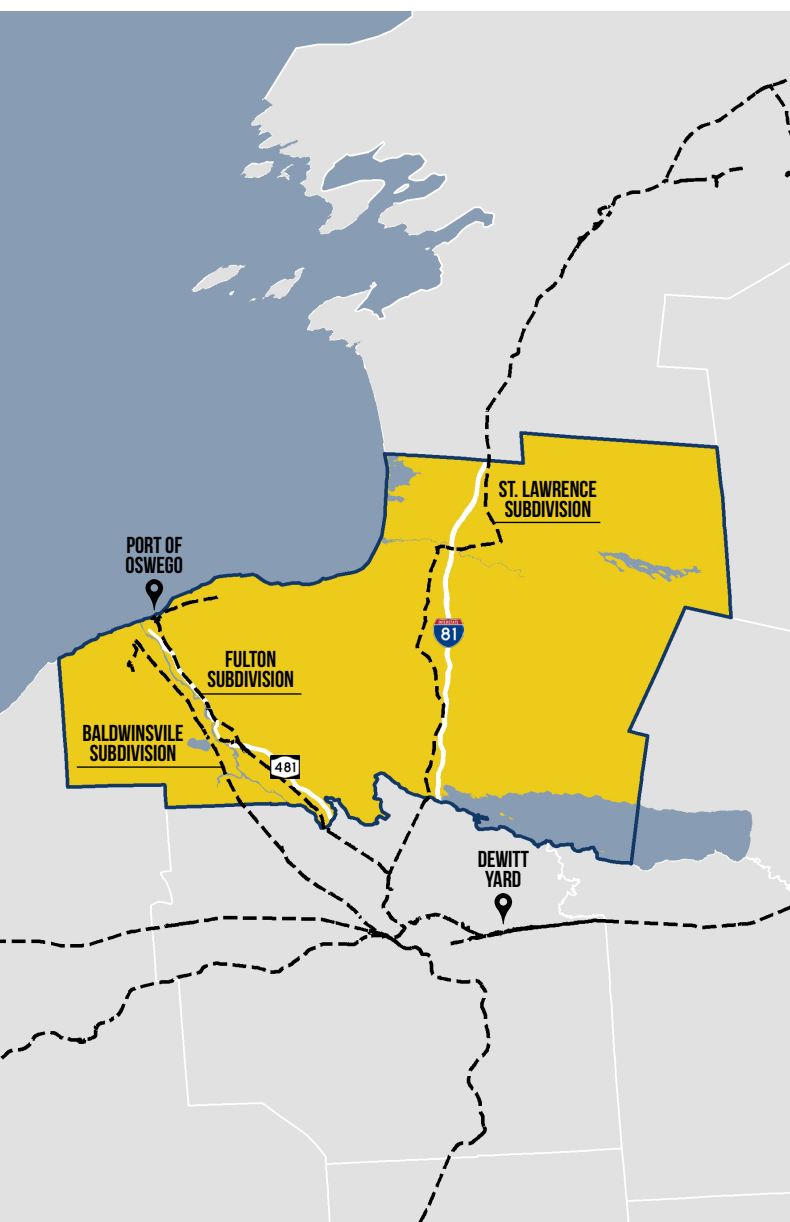
Vehicles per Day



Rail

Importance to Economic Development

Like roadways, railroads are an integral component of an effective transportation network. Railroads provide an additional transportation option, increasing intermodal connectivity, alleviating congestion on highways, and reducing energy consumption.



Existing Conditions

At present, three freight railroad lines are in operation throughout Oswego County, all of which are owned and operated by CSX Transportation, Inc. Both the Baldwinsville and Fulton Subdivisions run from Syracuse to Oswego, with the latter paralleling Route 481 and providing direct service to both Fulton and the Port of Oswego. The third line, also known as the St. Lawrence Subdivision, more-or-less parallels I-81 and runs from Syracuse through Watertown and up to Massena near the Canadian border.

All three lines connect to the DeWitt Yard, the largest intermodal rail yard in the state. The yard transfers both domestic and international freight containers between trains and trucks, allowing shipments to travel via rail and road. As of 2009, the yard was handling 376 rail cars per day.⁴

According to a national study conducted in 2007, all three lines were classified as Level of Service (LOS) A, indicating that rail traffic was below capacity. Since the early 1990s, rail traffic volumes in Oswego County have been generally decreasing. From 1991 to 2003, freight transport on the Fulton Subdivision decreased by more than one million gross tons per mile of freight.⁵

As a result of this decrease in demand, several abandoned railroads traverse the county, primarily in the east-west direction. Additionally, some associated facilities have been discontinued due to lack of need, such as the switch crew that used to operate at the former Fulton rail yard.

⁴ NYSDOT. *Rail Plan*. 2009. <https://www.dot.ny.gov/divisions/policy-and-strategy/planning-bureau/state-rail-plan/repository/State%20Rail%20Plan%202009-02-10.pdf>.

⁵ *Oswego County Comprehensive Plan*. 2008. <http://www.oswegocounty.com/planning/2008%20comp%20plan%20proposal%20-%20transportation.pdf>.

Development Limitations

Freight transit through Oswego County is constrained by weight limits along the three CSX lines. In recent years, there has been increased usage of high axle load cars nationwide, which weigh between 286,000 and 315,000 pounds. Presently, the Baldwinsville Subdivision is only able to accommodate cars weighing less than 273,000 pounds. However, both the Fulton and St. Lawrence Subdivisions can transport high axle load cars. Furthermore, the similarity in the routes of the Baldwinsville and Fulton Subdivisions suggests that any high axle load cars requiring transport between Syracuse and Oswego can utilize the Fulton line.

Since all of the lines through Oswego County are classified as Class I railroads, it is expected and required of CSX to allocate sufficient resources to maintain track and bridge structures. As such, track condition is not considered a development limitation.

It should be noted that, if development were to significantly increase rail traffic, ancillary facilities may need to either become operational again or be newly constructed. For instance, increased rail traffic along the Fulton Subdivision may necessitate the reopening of the Fulton rail yard. Likewise, direct rail service may need to be extended to Mexico if necessitated by a significant development. At present, freight service to Mexico must be intermodal, requiring tractor trailer transport via Route 104.



Railcars near the Dewitt Yard in Syracuse.

Opportunities

Since the county's railroad system is presently underutilized, additional freight transport could be encouraged and developed. Furthermore, the capacity of the system could be leveraged as an asset to potential developers. Because the lines roughly parallel Route 481 and I-81, the rail and road networks work in tandem to create an intermodal network, offering businesses multiple transportation and shipment alternatives.

Another significant asset to the rail system is the DeWitt Yard in nearby Syracuse. The yard provides additional opportunities for intermodal transit, with the capability to transfer rail cars onto truck beds.

Opportunities also exist to develop the rail system itself, primarily the Fulton Subdivision. With shipments exceeding nearly one million tons of cargo annually at the Port of Oswego, the Fulton Subdivision line provides a direct link from the Port to Syracuse, and then to other New York cities or to Canada.

It may also be possible to extend services to include passenger lines, since present use of the rail lines for commercial purposes is lacking. However, the implementation of passenger services would be dependent upon consumer demand. Such passenger service might only be warranted after significant development has occurred along either the Route 481 or I-81 corridors.

Other opportunities exist along the abandoned rail lines, especially for recreational uses. Much like the Harbor Rail Trail in the City of Oswego, portions of these abandoned rail lines can be converted to pedestrian or biking trails. Some of these abandoned lines have already been converted into groomed snowmobile trails, and now connect to Oswego County's 400-mile snowmobile trail system as well as to the larger regional system. Such recreational trails provide additional amenities to residents and visitors, thereby improving quality of life – an important consideration for businesses when determining where to site new developments or expansions.

What is Intermodal Transit?

Intermodal transit uses multiple modes of transportation during a single journey. Seamless connectivity between these different modes of transportation is especially important for businesses' supply chain. Oftentimes, a single shipment travels via ship, rail, and truck before reaching its final destination.



Rails-to-trails concept rendering.



Air Service

Importance to Economic Development

With increasing globalization, business markets are becoming national and international in scale. As such, general and commercial aviation are increasingly viewed as catalysts of local and regional economic development. When properly leveraged by the municipality, airports can attract new businesses, thereby justifying public investments in airport construction and expansion. Airports also generate jobs and spur direct and indirect investment in the local area. As an example, at the Syracuse Hancock International Airport, direct and indirect impacts combined to create over 7,500 jobs and nearly \$600 million in economic output in 2011.⁶

Economic Impact of the OCA (2011)

Direct jobs created:

22

full and part time

Direct output:

\$3.9 MIL

including on-airport businesses
and visitor spending

Existing Conditions

At present, the Oswego County Airport (OCA) is the only airport in the county, located 2 miles northeast of the City of Fulton in the Town of Volney. The Oswego County Airport is considered a general aviation reliever airport for the Hancock International Airport, meaning that the Oswego County Airport provides capacity for general aviation (including non-scheduled corporate, agricultural, recreational, medical, and law enforcement flights) while the Hancock International Airport provides commercial cargo aviation and scheduled passenger services.

The airport is owned and operated by Oswego County, with two paved runways that support general aviation activities including business, industry, and private aviation for small and mid-size aircraft. The airport also offers short and long-term tie-down parking and over 30 hangar stalls for rental. As of 2017, nearly 70 aircraft were based at the airport with an annual operation of over 20,500 flights, 14,000 of which served local areas.⁷ On a daily basis, 56 flights take off from or land at the airport. Over the years, various industries have used the airport for business purposes, including Anheuser-Busch, Constellation Energy, and Entergy Nuclear Northeast. A private firm, True Course Flight School, operates at the airport, providing pilot instruction and chartered flights.



⁶ NYSDOT. *Airport Economic Impacts Study*. 2010. <http://www.savehto.org/files/92372917.pdf>.

⁷ FAA. 2017. <http://www.airnav.com/airport/KFZY>.

Development Limitations

At present, the Oswego County Airport is served by water but is not served by any wastewater treatment facilities, thereby presenting a constraint to additional development at the airport and new development in the surrounding areas. Existing but underutilized wastewater treatment plants may be able to extend service to the airport.

The airport is also constrained by its hangar space and lack of a terminal, thereby limiting corporate aviation and precluding scheduled passenger service altogether.

Opportunities

Presently, the airport has additional capacity to operate more flights per day. Stakeholders have expressed interest in increasing traffic volume through encouraging corporate aviation. New facilities like the planned hangar should be marketed to businesses as amenities.

Additional corporate capacity and amenities could also attract developers to the Oswego County Airport Industrial Park, a more than 150-acre site prime for industrial or commercial developments. The county should continue marketing this site, especially to companies interested in direct taxiway access. The county could also consider applying for grants from the state or the FAA, with the awarded funds being offered to developers through RFPs.

Some stakeholders indicated that the airport could also increase utilization by tapping into scheduled passenger service. However, its close proximity to the Hancock International Airport and the relatively small market in the area suggest that the Oswego County Airport would be unlikely to attract a major carrier in the foreseeable future.

The airport is also encouraged to continue offering corporate and industrial developers transportation to and aerial views of prospective sites and facilities. An updated airport would also benefit these trips, reflecting well on Oswego County and its commitment to economic development.



Water Transit

Importance to Economic Development

Shipment via water provides distinct advantages over other methods of transport. For instance, heavy and bulk goods can be easily transported via water, while lower weight thresholds limit roadway and rail transport. Likewise, most ports are accessible from any other international port, thereby allowing product and service globalization. Ports also serve as engines for local economic development, allowing businesses to easily ship finished products and receive inputs. Recreational waterfront access via marinas also increases quality of life for residents and encourages tourism.

Existing Conditions

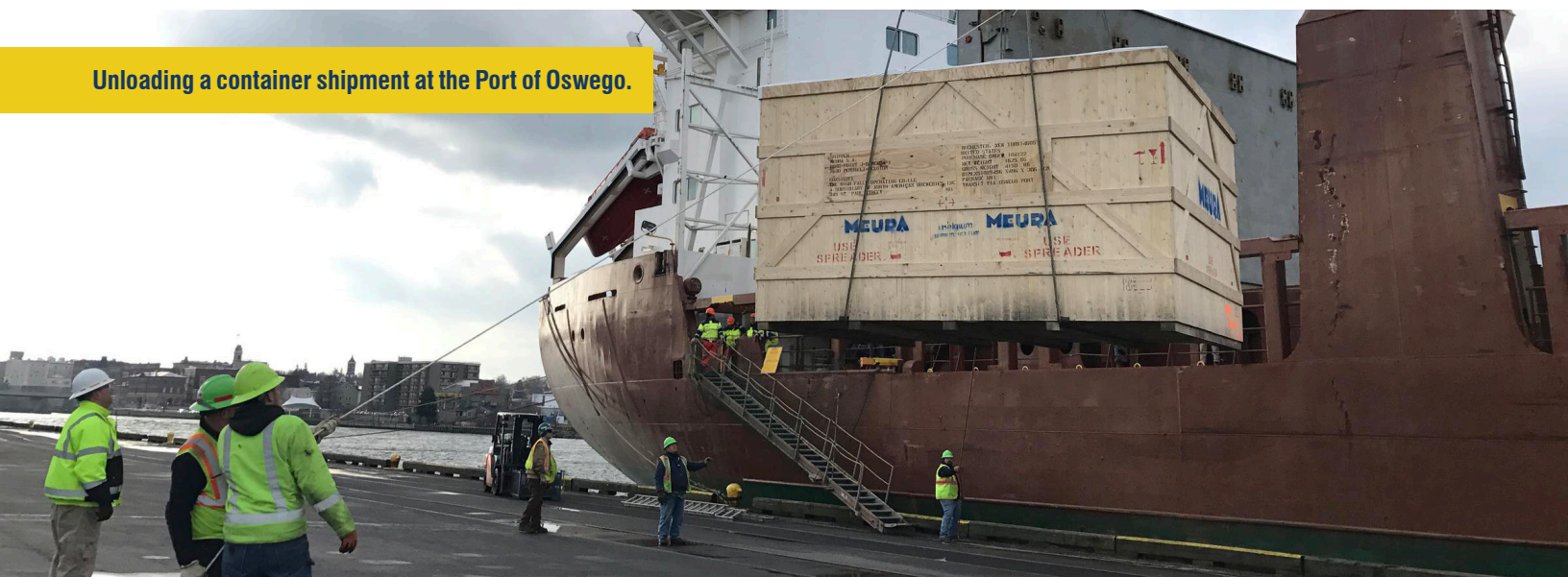
Oswego County is bordered to the northwest by Lake Ontario and to the southeast by Oneida Lake. The Oswego River and the Oswego Barge Canal run through the county adjacent to Route 481, from Oswego to Phoenix. The Port of Oswego, located on the banks of Lake Ontario in the City of Oswego, is currently the only seaport in the county. The Port's deepwater marina for recreational use is one of five marinas on the Oswego County shoreline.

Port of Oswego

The Port of Oswego is the first U.S. port of call on the Great Lakes, meaning that ships entering the country from the St. Lawrence Seaway can make intermediary stops at the Port. The Port of Oswego is also a deepwater port, enabling larger and heavier ships to dock. With connections to the Atlantic Ocean from the St. Lawrence Seaway, the Port is accessible from any international port in the world and retains worldwide clients.

Including both domestic and international shipments, the Port of Oswego is one of the most productive ports in North America, handling nearly 120 vessels and one million tons of cargo per year. The Port is capable of handling various commodities including: aluminum, steel, petroleum, salt, and agricultural products. Additional features include warehouse and storage spaces as well as dockside rail service by the CSX Fulton Subdivision, which provides direct service to Fulton and Syracuse. Likewise, with immediate connections to Route 481 and additional connections to I-81 and I-90, the Port also provides tractor-trailer access.

Unloading a container shipment at the Port of Oswego.





Oswego River | Barge Canal

The Oswego River runs from Oneida Lake to Lake Ontario along Route 481, dividing the Cities of Fulton and Oswego. The Barge Canal generally follows the route of the Oswego River and connects the Erie Canal to Lake Ontario at the City of Oswego. Both the River and the Canal are used for commercial and recreational travel.

Recreational Marinas

Oswego County has five marinas along the Lake Ontario shoreline, with the Port of Oswego recreational slips and Wright's Landing located in the City of Oswego. Wright's Landing is a recreational marina owned by the City of Oswego at the confluence of the Oswego River and Lake Ontario. The marina offers seasonal and transient boat slips, a boat launch, as well as restroom and shower facilities among other amenities.

Commercial Shipping along the Erie Canal

After its construction nearly 200 years ago, the Erie Canal became the premier form of transportation and shipping across New York State. However, with the growth of rail and roadways in the 20th century, commercial traffic along the Canal diminished and it became a primarily recreational byway, attracting boaters, fishers, and tourists. Recently, though, the Canal has seen a resurgence in commercial use and has carved out a niche for cargo too big or too heavy to be shipped in any other way. In the past 5 years, the Oswego Canal – a north-south tendril of the Erie Canal – has seen increased barge traffic as Canadian agriculture is shipped across Lake Ontario. In 2017, the state expects nearly 200,000 tons of cargo to be shipped along the Canal System.⁸

⁸ Jesse McKinley. *Alloft on the Erie Canal: Sonar Gear, Ferris Wheel Parts and Beer Tanks*. 2017. <https://www.nytimes.com/2017/05/28/nyregion/erie-canal-rebound-commercial-shipping.html?mcubz=1>.

Development Limitations

Though business at the Port of Oswego has grown nearly 500% over the last ten years, existing development around the Port precludes the possibility of expansion.⁹ As indicated by the director of the Port of Oswego Authority, available space is the Port's most significant issue. However, improvements at the Oswego Intermodal Center, just upshore of the Port, would provide additional railcar storage capacity.

Additionally, although the Port of Oswego is an ice free port and is not impaired by winter conditions, the St. Lawrence Seaway is closed to navigation during the winter, meaning that shipments during these months are restricted to those coming from and going to the northern shore of Lake Ontario, or the southern Canadian border.

Another environmental issue that limits development at the Port is rising water levels on Lake Ontario. At present, high water levels and large waves could be causing millions of dollars' worth of damage to the Port, according to the director of the harbor facility.¹⁰ In the spring of 2017, warehouses storing agricultural products had to be sandbagged to prevent water from entering. Although the Port was built to withstand water levels based on the 100-year flood plain estimate, levels during this episode were beneath this threshold and still managed to impact operations. As such, the Port may want to consider reinforcing its facilities to ensure long-term sustainability and to protect against similar events.



A ship leaves Oswego Harbor.

Oswego Intermodal Center

To enable increased flexibility at its staging area and provide additional storage capacity, the Port of Oswego was recently awarded \$3 million from the New York State Department of Transportation and the Central New York Regional Economic Development Council. The funds will be used to connect the Port to the Intermodal Center via rail, limiting the distance grain and other raw materials need to be shipped for storage. These improvements will reduce shipping costs for local farmers and make the Port more competitive in the global market. These improvements will also help to position Oswego County as a prime location for the proposed CenterState NY Inland Port, furthering its position as a strategically located rail and water transportation hub.

⁹ Central New York Regional Economic Development Council. *Strategic Plan Update*. 2015-2016. <https://regionalcouncils.ny.gov/sites/default/files/regions/centralny/CNYREDC-2015-Progress-Report.pdf>.

¹⁰ David Figura. *Port of Oswego: Lake Ontario Waters could be causing 'Millions' in Damages*. 2017. <http://s.newyorkupstate.com/qjRLcKQ>.

Opportunities

The Port of Oswego is ideally located at the intersection of the northeastern North American and southern Canadian shipping markets, supporting both domestic and international shipments. As a significant asset to potential developers, the Port's capacity and convenience could be leveraged to support economic development.

In order to ensure continued intermodal rail and truck access, local roads and railways leading to the Port could be improved. As of 2017, New York State awarded nearly \$2 million in funding to extend the Port's rail line and increase capacity.¹¹ Some of this funding is also allocated for enhancing truck accessibility within and to the Port.

To provide additional connectivity between the Port and other domestic destinations, the Port of Oswego Authority should continue pursuing options related to an inland port. If constructed, this port would reduce local and regional shipping costs while increasing connectivity between the Port of Oswego and the largest port on the east coast – the Port of New York/New Jersey.

The Port should also explore additional connections with Canadian shipping markets, especially during the months in which the St. Lawrence Seaway is closed for navigation. To ensure that the Port maintains lucrative operations during winter, the Port of Oswego Authority should consider container shipment partnerships with Canadian ports in Hamilton, for instance.

Capitalizing on existing agriculture production and facilities in the region, the Port could also increase its capacity to handle agricultural products. The Central New York Regional Economic Development Council has approved plans to purchase a bulk ship-barge loader to enable grain barges to be loaded at the port, thereby reducing shipping costs and expanding markets for local farmers. This capability would enable the county to better attract large-scale agricultural production.

The Wright's Landing Marina also presents significant recreational tourism opportunities, and is promoted as both an anchor for the County's recreational system and as an entry point for tourists. Boaters arriving at the marina have access to a variety of recreational amenities as a result of trail connections to and from the marina.

Pedestrian connections also exist between the Port of Oswego's recreational slips and Fort Ontario, which is an important tourist destination for the county and the region. Connectivity between water- and land-based recreational opportunities is beneficial to the county's tourism economy.

Planned Investments at the Port of Oswego

NYS Department of Transportation:

\$1.75 MIL

truck accessibility
rail enhancements
new storage area

NYS Department of Agriculture and Markets:

\$250,000

improve agriculture
handling ability

¹¹ Port of Oswego Set for Major Expansion of Rail Capabilities. 2017. <http://www.localsyr.com/news/local-news/port-of-oswego-set-for-major-expansion-of-rail-capabilities/651766212>.

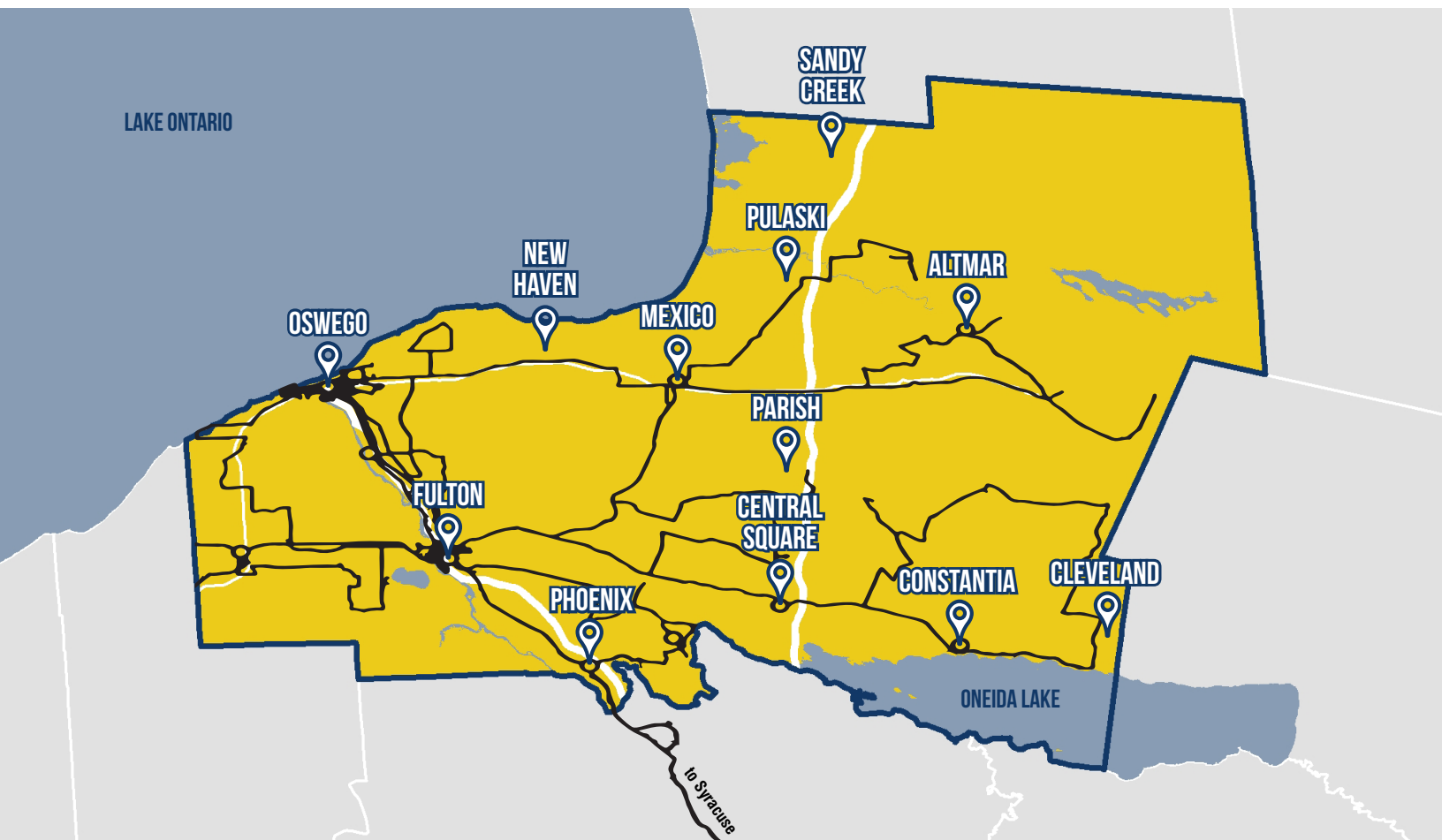
Public Transit

Importance to Economic Development

Public transit access is essential for the county's economic prosperity and for its disadvantaged population. For those with limited mobility options, public transit is essential for commuting. Transit also relieves congestion, reduces energy consumption, and stimulates economic growth around stations and nodes. Indeed, transit-oriented development – or development near transit hubs – is often used to enhance tax revenues, revitalize downtowns, and encourage business growth.

Existing Conditions

At present, two bus companies operate in Oswego County: Oswego County Opportunities, Inc. (OCO) and the Central New York Regional Transportation Authority (Centro). OCO is a designated Community Action Agency, a social service agency that provides shelter, food, and healthcare in addition to transportation services. OCO offers 13 public routes throughout Oswego County and also provides non-emergency medical, Medicaid, and Call-N-Ride services for eligible individuals. Centro offers 16 routes throughout the county, with free fares for students at SUNY Oswego and Cayuga Community College. Using Centro and its connections, riders have convenient access to the William F. Walsh Regional Transportation Center in Syracuse, which provides regional train and bus service.



Development Limitations

According to the *Oswego County Coordinated Public Transit Study*, public transit connections are limited for those living in more rural parts of the county. Frequency of service was also noted as an issue, preventing both casual riders and workers, particularly off-shift workers, from getting to their destinations in a timely fashion and limiting the availability of service after 6:00 PM.

Opportunities

New developments in the county could attract rural workers, making convenient public access important for connecting employers to employees. The county could consider extending public service in currently underserved areas and may also benefit from the implementation of a dedicated, on-demand, rural-to-urban transit service that is available to all, regardless of age or income level.

B.C. Country Rural Transit Service

Broome County offers rural-to-urban transit service dubbed “Broome County (B.C.) Country” that enables clients to reserve rides in advance and receive transportation from their homes to designated urban areas throughout the county. One-way rides cost \$3.00 for adults, with reduced fares for children, seniors, and individuals with disabilities. B.C. Country serves most of Broome County, allowing rural residents with limited mobility options convenient transport and access to urban employment centers. In Oswego County, those ineligible for OCO Call-N-Ride service are limited to taxi service in rural areas, leaving a gap in the county’s current public transit system.



Centro bus.

Bicycle, Pedestrian, and Snowmobiling

Importance to Economic Development

Although bicycle, pedestrian, and snowmobiling routes are not used for commerce or shipments, they are still important to the economic development of a region. Such infrastructure provides an additional amenity to residents and increases quality of life, which developers consider as an important factor when determining where to site projects. Such infrastructure can also generate business, with more than 50% of people indicating they would be more likely to patronize a business if it was bicycle- or pedestrian-friendly.¹² The existence of these trails also encourages recreational tourism, which can generate significant expenditures for the entire region.

Existing Conditions

Oswego County is traversed by multiple bicycle, pedestrian, and snowmobile trails. Bike trails include the national scenic byway Seaway Trail, which runs along the shore of Lake Ontario and connects to the Wright's Landing Marina, and the on-road NYS Bicycle Route 11, which parallels I-81, among other informal routes. Numerous pedestrian trails also line the county from the Harbor Rail Trail in Oswego to the 26-mile long Oswego County Recreational Trail, which stretches from Fulton to Central Square to Cleveland along an abandoned rail bed. Additionally, over 360 miles of snowmobile trails cross the county, driving significant winter tourism in the area.



¹² League of American Bicyclists. *Bicycling Means Business*. 2012. http://bikeleague.org/sites/default/files/Bicycling_and_the_Economy-Econ_Impact_Studies_web.pdf.

Development Limitations

Extending bicycle and pedestrian trails along some roadways may not be possible due to the inability to meet state safety standards, which require eight-foot shoulders along arterial roads and six-foot shoulders along collectors. To determine which routes would be most appropriate for trail development, the county should systematically consider roadways that meet these safety standards and are not burdened by excessive vehicular traffic.

Opportunities

As previously noted, the existence of several abandoned railroads throughout the county provides opportunities to convert rail beds to multi-use recreational trails, similar to the Oswego County Recreational Trail.

The county and local municipalities should continue encouraging bicycle and pedestrian projects, like the City of Oswego Route 104 Complete Streets, Fulton Footpaths, and Salmon River Greenway Trail projects.

To the extent possible, additional trail development should be concentrated on or near the Route 481 and I-81 corridors, considering the fact that most population centers in the county front these routes. Long-term development should focus on eliminating gaps in the county's trail network and promoting connections among trails and other recreational destinations, such as the Wight's Landing Marina. To ensure coordination among the various municipalities lining these corridors, the county should consider preparing a county-wide recreation and trail master plan.

To promote its existing bicycle and pedestrian trail network to tourists, the county should continue creating and distributing in-print trail maps and brochures as well as enhancing its interactive trail map. Likewise, a strategic marketing campaign featuring the county's abundance of biking, pedestrian, and hiking trails among other recreational opportunities could spur tourism and support the county's identity as an all-season recreation destination.





WATER AND SEWER INFRASTRUCTURE

Introduction

All sectors of the economy rely on water and wastewater treatment in some capacity, from manufacturing to agriculture to commercial industries. Without widely available, reliable, and affordable water and wastewater services, development projects would not have adequate resources to be economically feasible. As such, accessible and affordable water and sewer services can retain existing businesses, attract developers to an area, and improve health and quality of life for residents.

The Problem of Fractured Governance

Nearly 52,000 community water systems exist in the United States, many of which cross geographic and political boundaries thus leading to operational inefficiencies and creating barriers to effective water investment.¹³ New York State's town law actually facilitates the development of a fractured municipal water system by requiring that water districts be formed at the municipal level. However, it is possible to apply a more streamlined regional governance structure to service provision. As of 2017, a total of 27 public water authorities were operating in New York State.

13 Alison Burke. *10 Facts about Water Policy and Infrastructure in the U.S.* 2017. <https://www.brookings.edu/blog/brookings-now/2017/03/21/10-facts-about-water-policy-and-infrastructure-in-the-us/>.

Water

Existing Conditions

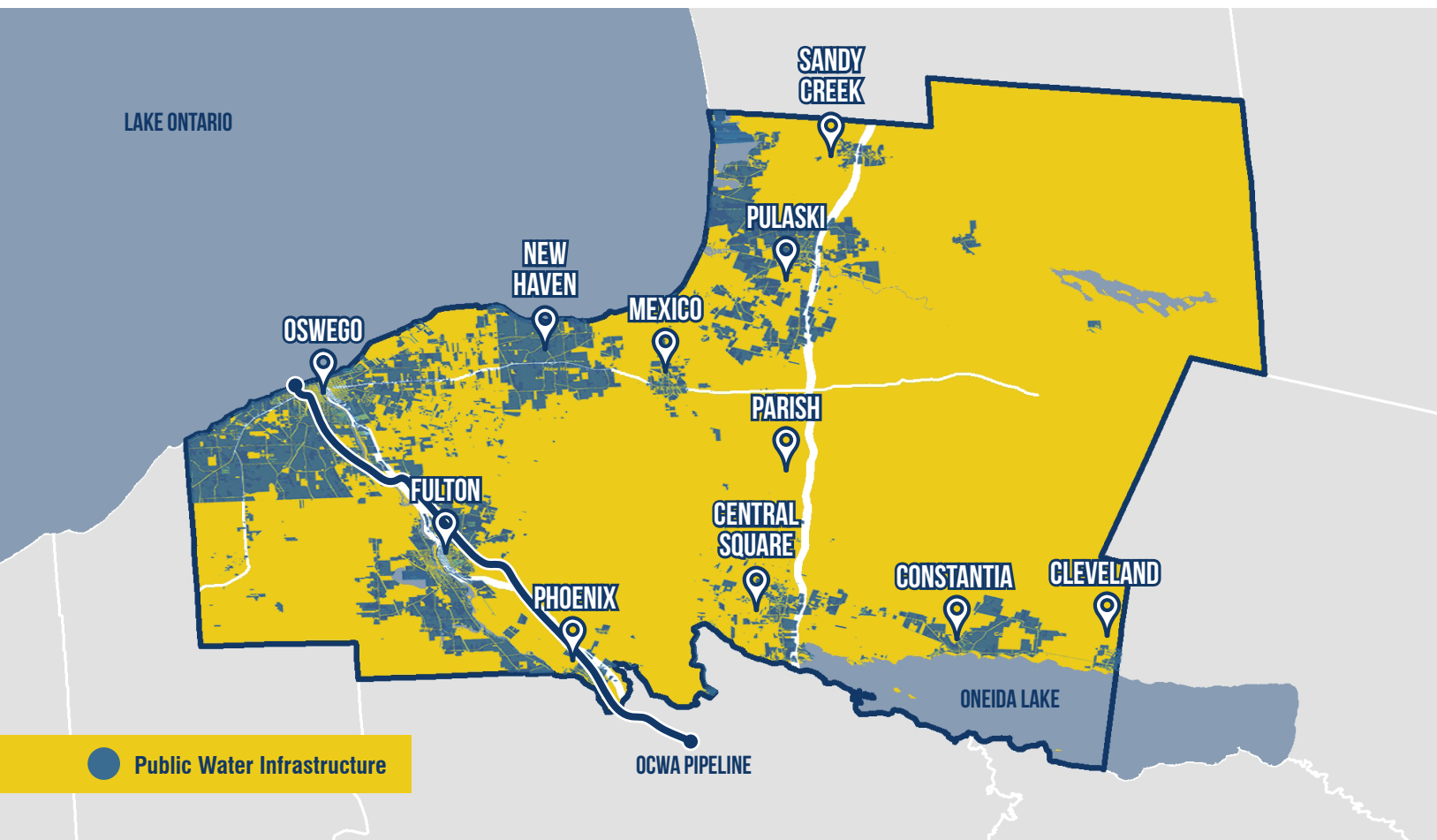
Public water service in Oswego County is provided either by the local municipality or by the Onondaga County Water Authority (OCWA). Some municipalities, like the Village of Richland, rely on groundwater while other municipalities and the OCWA source their water from Lake Ontario.

The OCWA has a water line that runs from Lake Ontario to Syracuse, enabling it to serve various communities along the Route 481 corridor including Minetto, Granby, and Volney. OCWA service also extends briefly along the I-81 corridor, from Central Square through Hastings. Municipalities served by the OCWA can either purchase water wholesale and maintain their own distribution and

billing systems, or can allow residents to purchase water directly from the OCWA. In the near future, the Town of Richland plans on transitioning away from its own well system in order to improve supply and quality, purchasing water from the OCWA instead.

In addition to municipalities served by the OCWA, other municipalities – such as New Haven, Mexico, Pulaski, and Sandy Creek – provide public well water systems. The Village of Cleveland also has a public water system that supplies additional residents in the Town of Constantia and the Town of Vienna in Oneida County.

Areas not served by public systems use private wells.

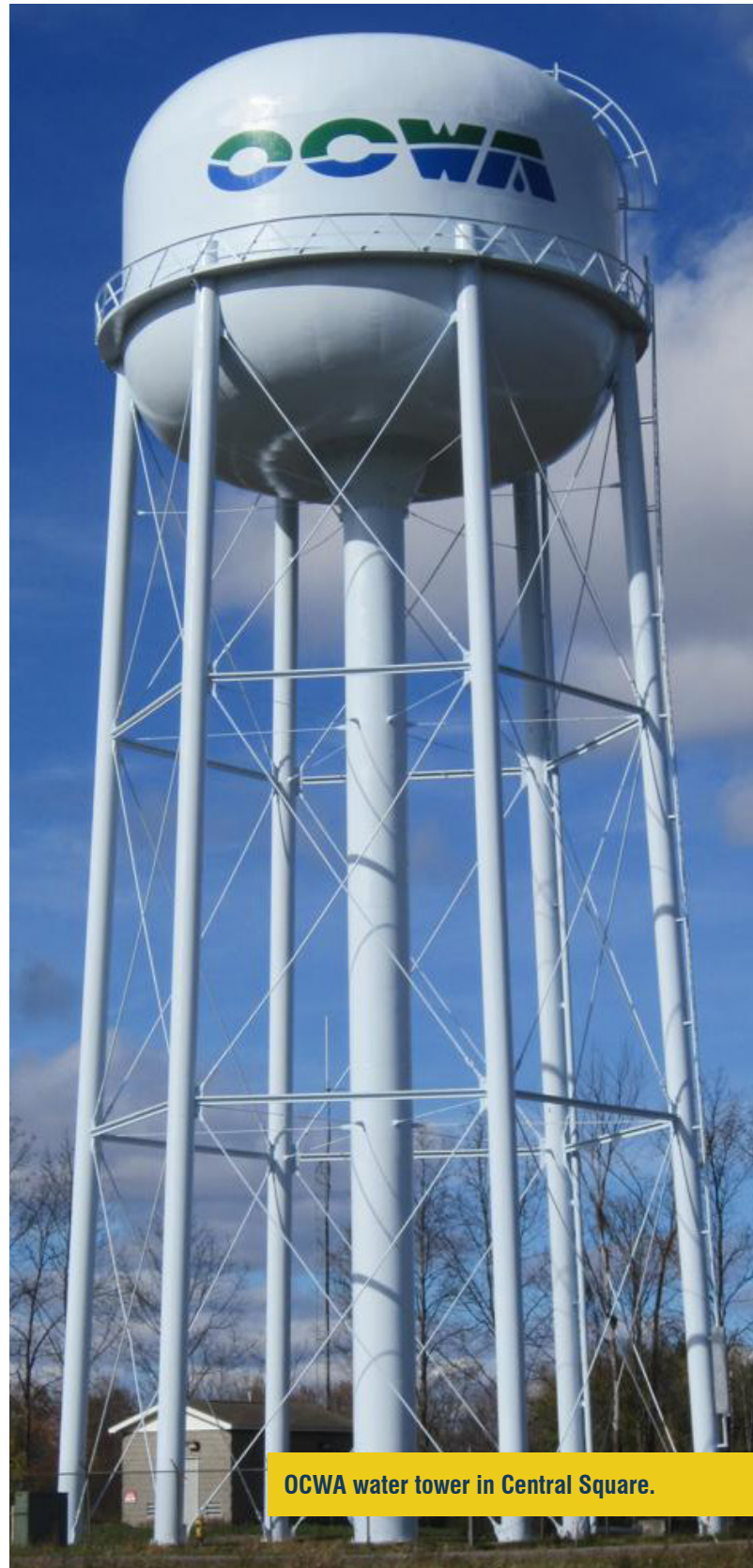


Development Limitations

When the *2008 Oswego County Comprehensive Plan* was prepared, 24% of the county by land area was designated as an approved water district, indicating that subsurface water infrastructure already exists in these areas or has the potential to be extended to these areas. Although this seems like a relatively limited portion of the county, over 56% of the population lived within a water district.¹⁴ Likewise, population density in the eastern areas of the county is not high enough to warrant the extension of public water systems to these areas.

Though less expensive and more feasible than extending public systems to eastern portions of the county, extending public systems along the Route 481 and I-81 corridors is still a costly endeavor. For instance, Granby Water District 3 cost an estimated \$9 million. However, the state offers various grants to assist municipalities with the improvement and extension of water infrastructure. Likewise, public investment in such infrastructure is justified by the eventual return on investment resulting from increased development in undeveloped areas.

Any extension must also consider existing capacity of wastewater treatment facilities in the local area. If these facilities cannot meet the additional demand created by an extension of public water services, new facilities may need to be constructed or the feasibility of the extension of water services may need to be reevaluated altogether. As previously noted, any development slated to take place in an unserved area can extend public services or require developers to construct their own services, as well as implement a public-private partnership.



OCWA water tower in Central Square.

¹⁴ *Oswego County Comprehensive Plan*, 2008. <http://www.oswegocounty.com/planning/compplan.pdf>.

Opportunities

Since multiple stakeholders have indicated that public water availability is a significant issue in many areas, the county should consider extending public water services, primarily along the Route 481 and I-81 corridors. It is along these corridors that existing concentrations of intermodal transportation infrastructure as well as water and wastewater treatment facilities are located. As such, these areas are most appropriate for future development. Extending public water and sewer systems along these corridors would provide another amenity for potential developers. Water service extension should more immediately focus on the I-81 corridor, as it is particularly underserved, especially between Central Square and Pulaski. Other areas that would benefit from water service extension include the stretch of Route 481 between Phoenix and Fulton. However, prior to extending services, the county should ensure that it is making the most efficient use of its existing systems.

To parallel the county-wide approach to economic development, Oswego County has recognized that it may also be beneficial to explore alternative strategies for the distribution of public water and/or the collection and treatment of wastewater.

Case Study: County-wide Water System¹⁵

In 1990, McDuffie County, Georgia formed a multi-jurisdictional county-wide water supply and wastewater system. By combining resources, the county acquired additional sources of potable water and drastically expanded water services.

After 10 years of infrastructure construction, service expanded from:

1% → 75%
of county of county

The county-wide system also attracted industry to the area; Advance Auto Parts built a distribution center that produced:

400
jobs

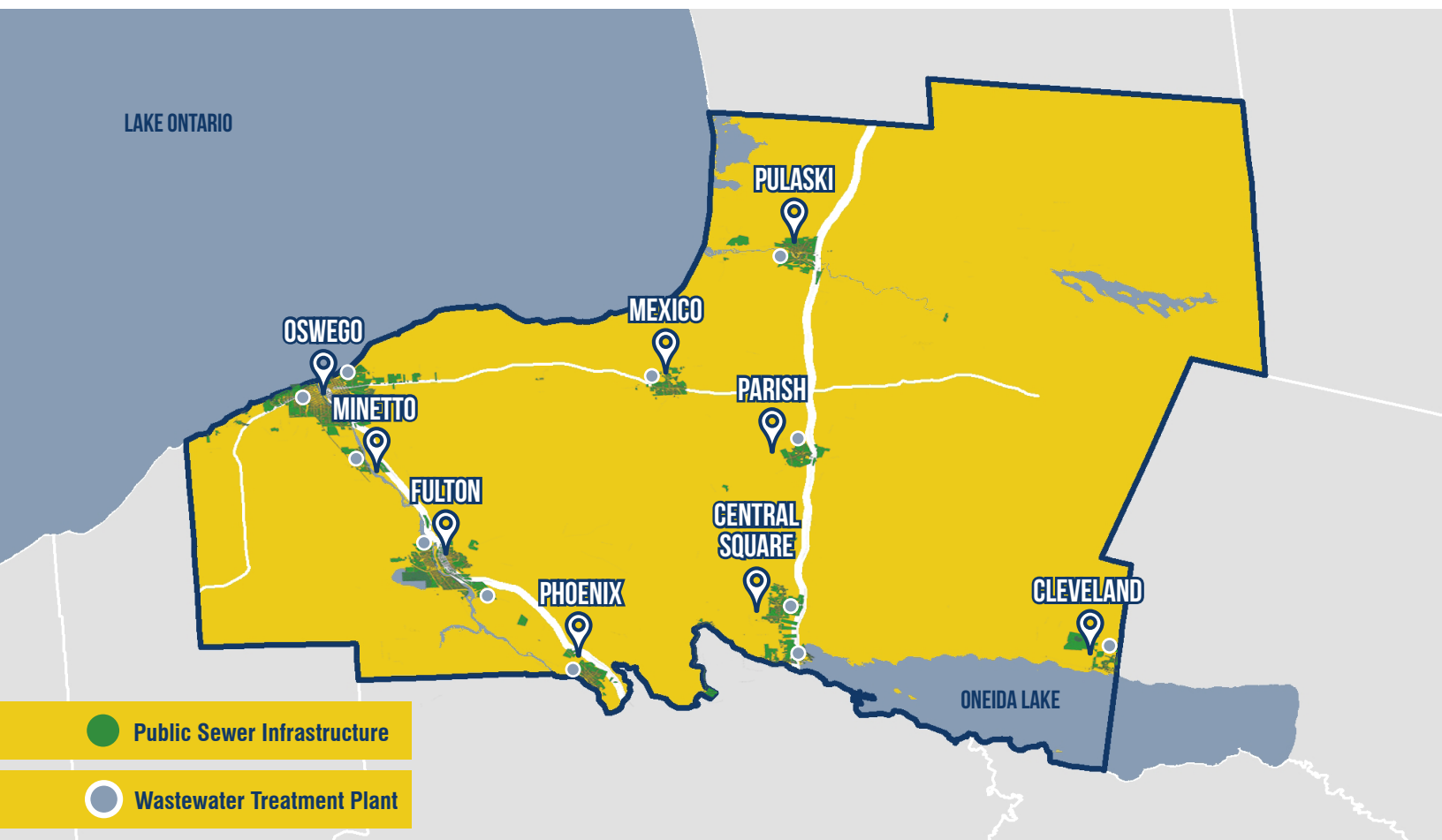


¹⁵ McDuffie County Chairman. *Water Resources Management Case Study: Multi-Jurisdictional Water Commission & Innovative Financing*. https://casesimportal.newark.rutgers.edu/storage/documents/multi_level_governance_networking/public/case/City_of_Thomson_McDuffie_County.pdf.

Sewer

Existing Conditions

Presently, Oswego County has over ten public sewer systems, each with its own wastewater treatment plant (WWTP). Sewer availability is more limited than water availability, and is constrained to the major population centers along the Route 481 and I-81 corridors. Over the last 20 years, municipal sewer systems have not kept pace with the growth of municipal water systems.¹⁶ Existing wastewater treatment plant utilization varies from a low of 10% in Minetto to a high of 87% in Mexico. Utilization along Route 481 averages around 44% while utilization on the I-81 corridor averages around 56%.



¹⁶ Oswego County Comprehensive Plan, 2008. <http://www.oswegocounty.com/planning/compplan.pdf>.

Development Limitations

Sewer system limitations are the greatest barrier to future economic growth, creation of jobs, and expansion of the tax base in Oswego County. The limited service area of public sewer systems in the county constrains future development, since developers are more likely to move forward with a site if public water and sewer are already provided. Likewise, future development is also limited by the capacity of the existing wastewater treatment facilities. Sewer systems that are operating at or close to capacity limit the number of additional connections that can be made to the system.

At the Oswego County Industrial Park, for instance, wastewater treatment occurs at the Village of Phoenix treatment plant, which was not designed to handle large loads and has limited excess capacity, especially on rainy days. Due to this limitation, potential bids for projects have been lost and the county is unable to effectively market the industrial park. In addition to the Phoenix treatment plant, several other key plants along the Route 481 and I-81 corridors may be challenged by a large, new industry. Some plants are also under consent orders

with the Department of Environmental Conservation, limiting certain intakes until systems can be brought into compliance.

Wastewater treatment is also constrained by the service life of the systems, many of which were installed in the 1970s. Systems of this age typically have leaking and infiltration issues, which Parish, Phoenix, and Mexico are currently experiencing. System modernization and improvements may be necessary to replace old pipes, fix infiltration issues, and address network limitations.

Other system issues may result from the extension of public water services through the OCWA pipeline, which reduces the need for wells but simultaneously increases the water table. Where septic systems and leach fields are the only means of sewage treatment, a higher water table results in improper infiltration. The county could attempt to mitigate these issues through the installation of drains, like tile and perimeter drains, to disperse groundwater away from soil absorption fields and enable proper infiltration.



The table below highlights the current issues facing wastewater treatment plants (WWTPs) across the county. By comparing the average and peak hourly flows to the capacity of each facility, it was possible to identify deficiencies in the system. The *10 States Standards* for wastewater treatment plants recommends designing facilities with enough capacity to accommodate a peak hourly flow derived from the average flow and a ratio based on population. For all WWTPs – with the exception of the Town of Minetto – peak hourly flows exceed the capacity of the plants. In some cases, such as the Villages of Mexico and Pulaski, capacity would need to be more than doubled to accommodate peak hourly flows. Although peak hourly flows are not sustained throughout the day, the *10 States Standards* recommends that WWTP capacity should be sufficient to handle peak hourly flows, meaning that most WWTPs in the county are under designed. All WWTPs have enough capacity to handle average flows throughout the day.

Usage Calculations

$$\text{average usage} = \frac{\text{average flow}}{\text{capacity}}$$

$$\text{peak usage} = \frac{\text{peak hourly flow}}{\text{capacity}}$$



WWTPs with peak usages
at or above 100% are
under designed

	Capacity (MGD)	Average Flow (MGD)	Population	Peaking Ratio	Peak Hourly Flow (MGD)	Peak Usage	Average Usage
City of Oswego East WWTP	5.35	2.09	18,000	2.7	5.64	105%	39%
City of Oswego West WWTP	4.00	3.18	18,000	2.7	8.59	215%	80%
City of Fulton WWTP	3.40	1.35	13,000	2.8	3.77	111%	40%
Village of Central Square WWTP	0.45	0.25	1,800	3.7	0.93	206%	56%
Village of Cleveland WWTP	0.15	0.04	700	3.9	0.16	104%	27%
Village of Mexico WWTP	0.30	0.26	5,200	3.2	0.83	277%	87%
Village of Parish WWTP	0.14	0.08	500	4.0	0.32	229%	57%
Village of Phoenix WWTP	0.60	0.30	2,400	3.5	1.05	175%	50%
Village of Pulaski WWTP	0.65	0.40	2,400	3.5	1.4	233%	62%
Town of Hastings WWTP	0.25	0.18	9,450	3.0	0.54	216%	72%
Town of Minetto WWTP	1.20	0.12	1,100	3.8	0.46	38%	10%
Town of West Monroe WWTP	0.05	0.03	4,300	3.3	0.10	198%	60%

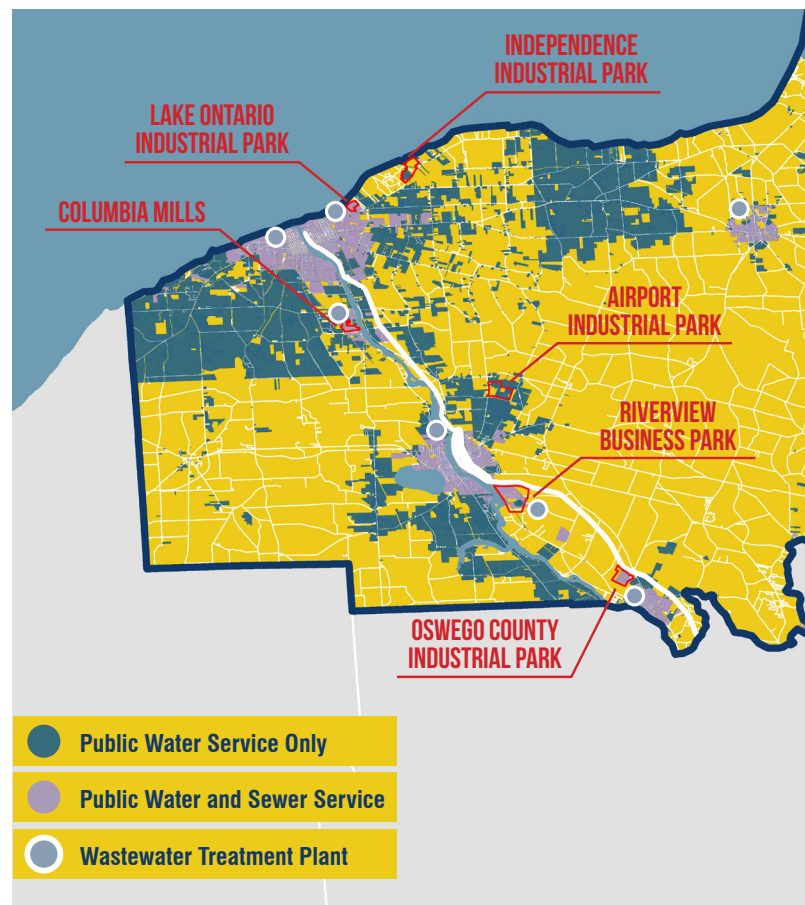
Opportunities

Most treatment plants are operating around 50% capacity and, as a result, sewer expansion is not a priority in all communities. However, some strategically-located treatment plants are operating near capacity, thereby limiting the amount of new development that can occur nearby. Similarly, some industrial parks – along with other prime industrial real estate – are located in areas unserved by sewer systems or served by sewer systems that cannot handle additional capacity. To alleviate capacity issues at strategic development locations, the county should consider supporting the:

- Extension of sewer services from the wastewater treatment plant by the former Miller Brewing plant to serve areas from Phoenix to Fulton;
- Expansion of capacity at the Phoenix wastewater treatment plant to better meet existing and future demand, especially at the Oswego County Industrial Park;
- Marketing of the Columbia Mills industrial park in order to better utilize capacity at the Minetto wastewater treatment plant;
- Identification of strategic parcels near treatment plants with excess capacity in order to create development projects in the area that would be served by the plant;
- Utilization of the wastewater treatment plant at Felix Schoeller North America in Pulaski for industrial sewage since the plant is using less than 2% of its capacity;¹⁷ and
- Combination and consolidation of existing sewer districts to serve larger portions of the county, similar to the way in which the Town of Hastings is adding additional connections for West Monroe and Schroepfel.

As recommended for water systems, the expansion of sewer systems should be concentrated along the Route 481 and I-81 corridors, in order to serve the largest populations and create development opportunities for the most desirable areas. To the extent possible, the expansion of sewer systems should follow the expansion of water systems, since both systems work in tandem and require similar facilities and infrastructure. Both water and sewer could be operated under a regional or county-wide structure.

The county might also want to consider providing financial assistance to those unserved by the public water or sewer system, who are experiencing difficulties with their private wells or septic systems. As such, the county should continue its Community Development Block Grant program for income-eligible households.¹⁸



¹⁷ Operation Oswego County. *Peck Industrial Site Profile*. 2011. <http://www.oswegocounty.org/pdfs/2011-09-28%20Final%20Site%20Profile%20Report%20Centerville.pdf>.

¹⁸ County Accepts Applications for Well and Septic System Grants. 2015. <http://oswegocountytoday.com/county-accepts-applications-for-well-and-septic-system-grants/>.



TELECOMMUNICATIONS INFRASTRUCTURE

Introduction

In this day and age, telecommunications services – meaning long distance and data telephone services as well as wireless, fiber optic, and cable internet connections – are ubiquitous. Telecommunications services provide the technical foundation for business, government, and civilian communication. Nearly every industry relies on telecommunications in some way for activities as mundane as sending emails or making phone calls to activities as complicated as running a global enterprise.

Existing Conditions

Oswego County is serviced primarily by Verizon, Windstream, and Spectrum. Together, these companies provide wireless and broadband coverage for over 92% of the county.¹⁹ The county also partnered with New Visions Communications to construct a 60-mile fiber optic loop that connects county buildings along Route 481, 104, and I-81. This loop is capable of providing internet access to thousands of additional homes and businesses.

Telecommunications Technologies



¹⁹ Broadband Now. 2017. <http://broadbandnow.com/New-York>.

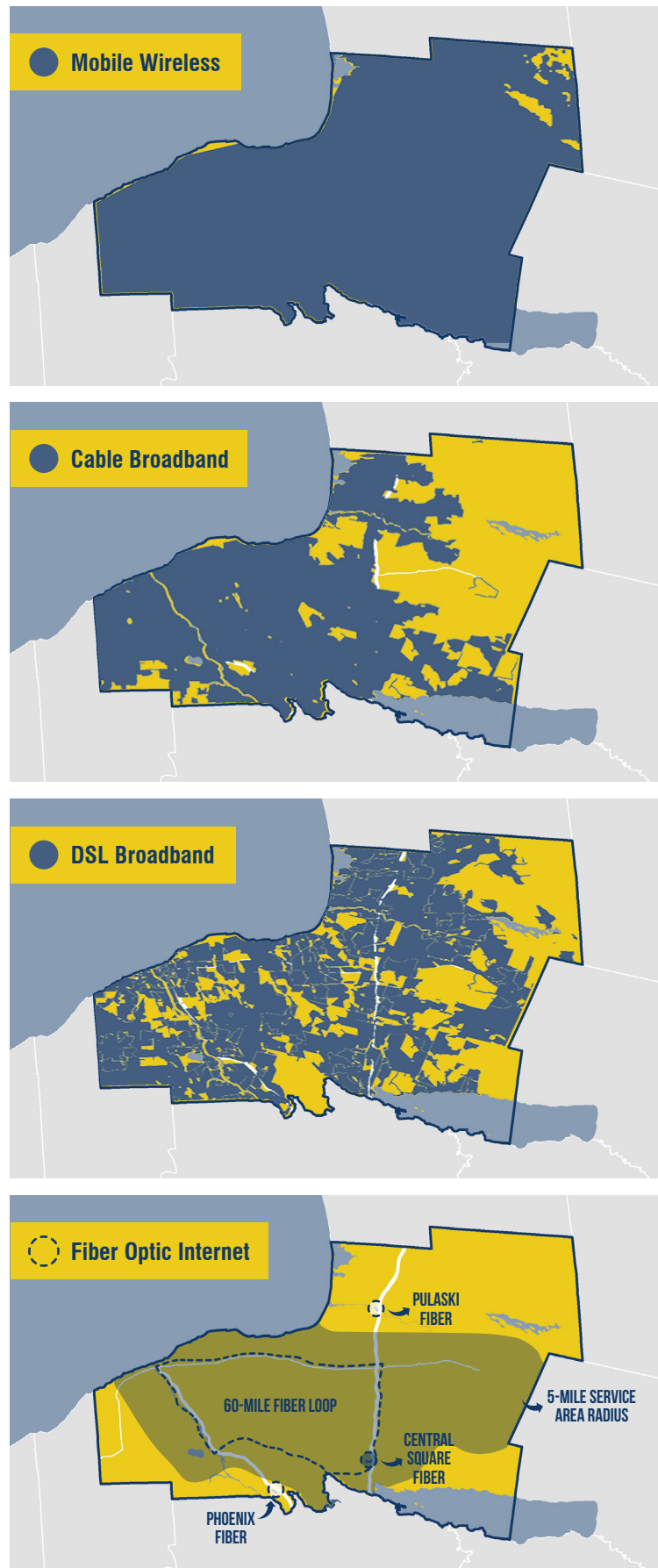
Development Limitations

Although providers indicate that their coverage extends across most of Oswego County, stakeholders have suggested otherwise. Additionally, a crowdsourcing campaign led by Senator Schumer reported a total of 118 wireless dead zones – or areas where wireless service is unavailable – in Oswego County, leading the Central New York region.²⁰ Most of these dead zones are located in rural portions of the county, east of the I-81 corridor. In today's world, access to internet and phone service is generally expected in most areas, implying that consumers may find it burdensome when these services are not available. Furthermore, limited access to these services also presents a safety hazard, leaving people unable to call emergency services if necessary.

Opportunities

Although coverage may not be entirely reliable, infrastructure currently exists to serve much of the extent of both the Route 481 and I-81 corridors. To maximize the effectiveness of existing infrastructure, utilities should be modernized to increase the reliability of coverage. Likewise, phone and internet service should be extended to those portions of the Route 481 and I-81 corridors that are currently unserved. The primary area of focus should be along the eastern edge of the I-81 corridor. Ultimately, developers considering sites in this area will expect extensive and reliable telecommunications services. Increased tourism in this area will also demand a reliable level of service.

The county's 60-mile fiber optic loop should also be marketed as an attractive asset to developers since fiber provides benefits over other internet providers including increased speed, reliability, bandwidth, and security. The county may consider extending the loop towards Phoenix in order to capitalize on existing infrastructure assets in that area.



²⁰ Mark Weiner. *Schumer: Upstate New York has 4,300 Wireless Dead Zones*. 2016. http://www.newyorkupstate.com/news/2016/09/schumer_upstate_new_york_has_4300_wireless_dead_zones.html.



POWER INFRASTRUCTURE

Introduction

Power services are critical to the functioning of other components of the infrastructure system and to daily life, more generally. Without electricity, wastewater treatment plants would not function and lights would not turn on. Without gas, buildings would not be heated and some manufacturing processes would be restricted. Like other infrastructure services, gas and electricity have come to be expected in most areas. As such, developers do not expect to incur significant expenditures for basic infrastructure. Furthermore, projects that do require significant expenditure on the part of the developer for the extension of such services ultimately limit the size of the overall development.

Power Sources in Oswego County



10 hydroelectric plants



4 natural gas, oil,
or alternative plants



3 nuclear reactors

Hydroelectric Power Plants

Along Route 481, eight hydroelectric power plants are located in areas already well-served by existing infrastructure, including the Cities of Oswego and Fulton, the Town of Minetto, and the Village of Phoenix. These plants use falling water from the Oswego River to turn turbines, generating electricity at a relatively low cost. Two additional plants are located along the Salmon River near Altmar, well east of the I-81 corridor.

In terms of energy returned on energy invested (EROI), which is a measure of the economic viability of different forms of energy, hydroelectric power production is more effective than coal – a traditional fossil fuel source.

Capacity at the existing hydroelectric plants could support additional demand for future developments. The plant in Minetto is capable of producing 10 MW of energy at full operation while capacity in both Oswego and Fulton exceeds 20 MW. According to the Business Council for Sustainable Energy, only 1 MW of hydroelectricity can power approximately 1,000 homes.²¹



Energy Return on Energy Invested (EROI)²²

EROI is a common measure used to compare the effectiveness of different forms of energy. The higher the EROI value, the less inputs required and, therefore, the more economically viable the energy source.

Hydro:	100	Nuclear:	75
Coal:	20	Wind:	18

Existing Hydroelectric Power Plant Capacity

		Capacity (MW)
Oswego	Varick Plant	8
	High Dam Plant	11.9
Fulton	Minetto Plant	10
	Granby Plant	10
	Fulton Plant	1.3
	Oswego Falls West Plant	3
	Oswego Falls East Plant	6
	Phoenix Plant	3.2
Altmar	Lighthouse Hill Plant	8
	Bennetts Bridge Plant	36

²¹ National Hydropower Association. <http://www.hydro.org/policy/faq/>.

²² Azimuth Project. *Energy Returned on Energy Invested*. <http://www.azimuthproject.org/azimuth/show/Energy+return+on+energy+invested>.

Natural Gas, Oil, and Alternative Energy Sources

Two fire-powered natural gas power plants are located along Lake Ontario in the City of Oswego and in the Town of Scriba. The Scriba plant alone, also known as the Dynegy Sithe Independence Station, has a capacity over 1,000 MW which is sufficient to supply roughly 1,000,000 households.²³

A combination gas and oil-fired power plant also exists northeast of the SUNY Oswego campus. This plant, run by NRG, has two boilers and is capable of producing over 1,600 MW of energy. As a peaking plant, the Oswego Harbor Power Plant only runs when there is high demand.

Additionally, two alternative fuel plants are located along the Route 481 corridor: an energy recovery facility north

of Fulton and an ethanol biorefinery south of Fulton. The energy recovery facility converts municipal solid waste into usable energy and has a capacity of 5.4 MW. The Sunoco ethanol biorefinery is located in the Riverview Business Park and converts corn into fuel-grade ethanol, but does not produce electricity. The county also retains lease, ownership, or power purchase agreements for 2.3 MW of solar energy, an important renewable source for which New York State provides a variety of incentives.

Aside from power and fuel plants, gas service is provided to the entirety of Oswego County by NRG, and electricity service can also be provided to the towns between the Route 481 and I-81 corridors.



Nuclear Power Plants

At present, two nuclear facilities (operating a total of three nuclear reactors) are located in Oswego County near the City of Oswego, both of which are run by Exelon. The James A. Fitzpatrick Nuclear Power Plant has one uranium nuclear reactor capable of producing 882 MW of energy. The Nine Mile Point Nuclear Station has two uranium nuclear reactors capable of producing a total of 1,900 MW of energy.

In recent years, these nuclear power plants have become less viable because of cheaper energy produced by natural gas power plants. However, next generation nuclear technologies are projected to become more cost effective and more energy efficient.

Development Limitations

Since the county has the capacity to generate over 5,000 MW of electricity from various sources, with high reliability, and limited interruptions of service, no constraints to energy generation were determined.²⁴

However, issues with energy distribution do exist. Some developable sites, like the Oswego County Industrial Park, are in locations where it is expensive to bring power. The industrial park is served by two power lines, both of which are sub-69 kV and are classified as medium, rather than high, voltage. Large projects may require power lines with higher voltages than currently exist at the industrial park, making this site potentially non-competitive.

It should be noted that stakeholders did express concerns over the transmission bottleneck at the Marcy substation, located near Utica. This bottleneck is caused by the substation's limited capacity, thereby hindering its ability to meet current demands. However, the state recently upgraded the Marcy substation, providing an additional 440 MW of capacity in order to relieve transmission congestion and improve reliability.²⁵

Another transmission bottleneck was identified by both stakeholders and the *NYS Transmission Assessment and Reliability Study* at the Volney East Interface. After conducting various modeling scenarios, the study determined that 1,039 MWs of additional transmission capacity would relieve congestion and economic inefficiencies at this presently constrained Interface.²⁶ The study also suggested that a second 345 kV transmission line from Oakdale to Fraser – which has been collectively proposed by transmission owners like National Grid and NYSEG – would alleviate this constraint altogether.²⁷

Opportunities

Though Oswego County is well-served by various power sources, it should consider leveraging its existing assets in order to expand into next generation nuclear technologies. These advanced technologies are more economical, effective, and safer than current nuclear power plants. Molten salt reactors, for instance, have an estimated energy return on energy invested value of 2,000 – far exceeding traditional power sources. Leveraging the county's existing expertise in and the community's strong support for nuclear generation presents a significant opportunity to attract next generation nuclear facilities to the county. Given the long timeline for development and pilot projects associated with these new technologies, planning, advocacy, and community outreach related to next generation nuclear should begin well in advance of specific proposals.

In addition to maintaining and expanding operations at its nuclear and hydroelectric power plants, the county could look to extend other renewable sources as well. Expanding into more renewable sources will provide developers with additional alternatives for power generation, enabling them to benefit from state tax credits and incentives.

24 Operation Oswego County. <http://www.oswegocounty.org/Utilities.php>.

25 NY Power Authority. *NYPA Completes Electric Grid Project to Improve Reliability and Bring More Renewable Energy Downstate*. <http://www.nypa.gov/news/press-releases/2016/20160614-marcy-south-completed>.

26 *NYS Transmission Assessment and Reliability Study*. 2012. http://www.nyiso.com/public/webdocs/services/planning/stars/Phase_2_Final_Report_4_30_2012.pdf.

27 NYSEG. *New York Transco Transmission Projects*. <http://www.nyseg.com/Transco/default.html>.



CONCLUSIONS

Overview

With the exception of sewer service, Oswego County has all the basic transportation, water, telecommunications, and power infrastructure to support new businesses and development. Investment in the strategic extension of sewer services or the expansion of wastewater treatment capacity would further contribute to the county's attractiveness to potential developers. Any investment in improved or expanded infrastructure services is justified by the eventual return on investment from newly-attracted industry and business.

The following recommendations were based on the needs and opportunities identified in the previous analysis. These recommendations address the county's most immediate infrastructure needs and should be considered priorities since they are generally prerequisites for future economic growth and development.

Recommendations

Focus Investment along Route 481 and I-81

As has been determined through this analysis, existing infrastructure in Oswego County is concentrated along the two main roadways, Route 481 and I-81. Furthermore, most residents of Oswego County live along or near these corridors in major population centers. Low population densities in more rural portions of the county preclude the expansion of services to these areas.

The Route 481 and I-81 corridors are critical to the county's economic development; improvement of existing services and expansion of additional services should be focused along these corridors whenever possible. Investment should also be focused in areas along these corridors with existing concentrations of infrastructure and population because these areas are most immediately appropriate for on-site development and have the potential to become thriving employment centers. Possible locations for priority investment include the Cities of Oswego and Fulton and the Village of Phoenix.

Return on Infrastructure Investment

Water and sewer infrastructure:²⁸

\$1 → **\$6.35**
of investment of economic output in the long-term

Transportation infrastructure:²⁹

\$1 → **\$3**
of investment of new economic activity by 2030

Telecommunications infrastructure:³⁰

10% → **1.5%**
increase in service economic growth

²⁸ Mayors Water Council. *Local Government Investment in Municipal Water and Sewer Infrastructure: Adding Value to the National Economy*. 2008. <http://www.cadmusgroup.com/wp-content/uploads/2012/11/Krop-et-al-2008-LocalGovt-InvtnMunicipalWaterandSewerInfrastructure.pdf>.

²⁹ Business Roundtable. *Road to Growth*. 2015. <http://businessroundtable.org/sites/default/files/2015.09.16%20Infrastructure%20Report%20-%20Final.pdf>.

³⁰ World Bank. *Exploring the Relationship between Broadband and Economic Growth*. 2016. <http://pubdocs.worldbank.org/en/391452529895999/WDR16-BP-Exploring-the-Relationship-between-Broadband-and-Economic-Growth-Minges.pdf>.

Establish a Regional Water and Sewage Authority

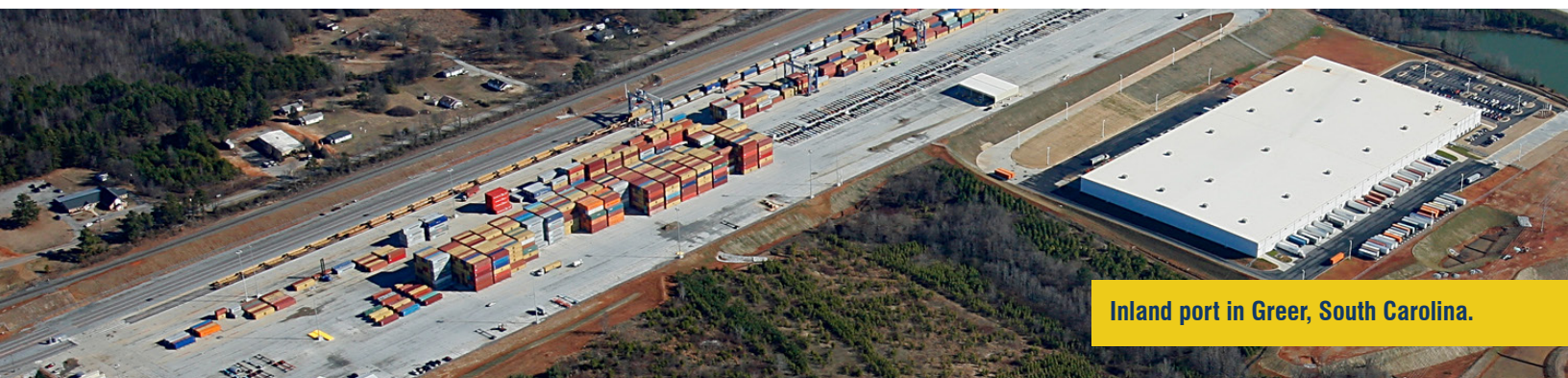
Water and wastewater treatment services in Oswego County are currently provided by numerous municipalities as well as the Onondaga County Water Authority. To encourage intermunicipal cooperation, consolidate and connect services, and reduce fractured governance, Oswego County could consider a regional water and sewage authority similar to that of Onondaga County. Streamlining services in this way would increase economies of scale, allowing the county to increase its service area and provide long-term cost-savings for municipalities and customers.

The establishment of such an authority is not without challenges, however. Communities with limited infrastructure at present may bear a larger burden of the costs, since such infrastructure will require greater investment to comply with the needs of the regional system. To that end, some communities with sufficient infrastructure may not see the need for or have interest in participating in a regional authority. True regional collaboration is a time-consuming process that requires dedication, financial resources, and frequent communication but also results in increased service, greater efficiency, and cost savings. Extending reliable services throughout the county will reduce the burden on developers for private investment in infrastructure expansion and will make more sites feasible for immediate on-site development. A regional water and sewage authority would also be an effective technique for addressing the county's current sewer and wastewater treatment limitations.

Construct an Inland Port

As global trade continues to increase, many coastal ports – like the Port of Oswego and the Port of New York/New Jersey – may soon be strained to their capacity limits. Rather than processing, storing, and distributing cargo at the coastal port, cargo is increasingly being transferred from the ship to railcars and to the inland port. These inland ports act as hubs to move international and domestic shipments more efficiently and effectively throughout the U.S. heartland. Recent trends, including the growth of intermodal transportation and the decline of the trucking industry, have created a fertile environment for inland ports. Oswego County itself is also ripe for the creation of an inland port, considering its intermodal connectivity, abundance of Class I railroads, and Foreign Trade Zone status. Once constructed, inland ports provide a variety of benefits including alleviating congestion at coastal ports, increasing economies of scale, creating jobs, and attracting other businesses.

As such, Oswego County and the Port of Oswego should continue supporting the construction of an inland port in the region, and consider options for locating a port in Oswego County if plans for a port in Syracuse are not realized. The construction of an inland port in or near Oswego County would better facilitate international shipments and would reduce shipping costs for local and regional companies, increasing their competitiveness. The inland port would serve as an important anchor for the county's intermodal transportation system, and would both benefit from and contribute to its existing transportation assets.



Inland port in Greer, South Carolina.

