



ELMIRA-CHEMUNG TRANSPORTATION PLAN 2035

ELMIRA URBANIZED AREA FREIGHT MOVEMENT STUDY



MARCH 2015

This Study has been developed with funding from the Federal Highway Administration (FHWA).
The content solely represents the views and policies of the Elmira-Chemung Transportation
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This Freight Movement Study was prepared by RSG in cooperation with
CDM Smith, Inc., Fitzgerald Halliday Inc., and Twaddell Associates, LLC.



LIST OF ABBREVIATIONS

ECTC	Elmira-Chemung Transportation Council
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GDP	Gross domestic product
HOST	Horseheads Sand and Transloading Terminal
JIT	Just in time
LQ	Location quotient
NHPP	National Highway Performance Program
NHS	National Highway System
NS	Norfolk Southern
NY	New York-Newark-Bridgeport
NYS DOT	New York State Department of Transportation
NYSEG	New York State Electric and Gas



**ELMIRA-CHEMUNG TRANSPORTATION PLAN 2035:
ELMIRA URBANIZED AREA FREIGHT MOVEMENT STUDY**

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

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CHAPTER 1: INTRODUCTION

A region's economic competitiveness relies greatly on the quality and reliability of its transportation system. Businesses expect and rely on fast, low-cost, and secure access to their suppliers, labor, and markets. Similarly, consumers expect easy and fast access to services and goods, regardless of their source of production. Chemung County must maintain a transportation system that can deliver these goods and services and meet expectations of businesses and consumers in order for the region to continue to prosper.

The Elmira-Chemung Transportation Council (ECTC) commissioned this urbanized area freight movement study as part of the **Elmira-Chemung Long-Range Transportation Plan (LRTP) 2035**. The purpose of this study is to help the ECTC better understand freight movement patterns, needs, and options in the county, with an ultimate goal of identifying potential strategies and plans that can be pursued to help facilitate freight mobility into the future.

This report provides the ECTC with detailed information about the county's economy and freight transportation system; it is intended to help guide future freight transportation and related economic development decisions. Key findings include the following:

- Chemung County is a net importer of freight in tonnage and value, with about 72% of total commodity tonnage and about 54% of total commodity value inbound to the county in 2011.
- Trucks carry the majority of freight, in both tonnage and value, to and from Chemung County, and are projected to continue to do so through at least 2040. Forecasts show the overall tonnage of truck-borne freight to and from the county may increase by over 80% between 2014 and 2040.
- Almost half (20 out of 45) of Chemung County's largest private employers are manufacturers. Between 2001 and 2011, the county's manufacturing GDP increased over 35%. During this same period, however, manufacturing employment decreased by about 30%—suggesting that manufacturers are finding ways to increase productivity without hiring additional labor.
- The Northeast U.S., principally areas within New York State and Pennsylvania, is Chemung County's major trading partner. In addition, there is significant freight movement between the county and the Midwest U.S., including Indiana, Ohio, Chicago, and Michigan.
- Overall, the transportation system in the ECTC planning area (Chemung County) generally accommodates current freight movement needs across the different modes without significant problems. However, based on future commodity-flow forecasts, regional employment and economic change, and physical infrastructure conditions, as well as the input from regional freight stakeholders, ECTC should consider options and opportunities for near-term planning that will maintain the region's freight mobility for the long term as outlined in the Recommendations section of this report.

This report consists of the following sections:

- **Chapter 1—Introduction:** Provides an overview of the full report.
- **Chapter 2—Regional Characteristics:** Contains an overview of the study area.
- **Chapter 3—Regional Economy and Freight Profile:** Provides a detailed analysis of existing conditions in the region's economy and freight transportation system.

- **Chapter 4—Needs Assessment:** Provides an analysis of needed freight transportation investments, strategies, and policy changes.
- **Chapter 5—Recommendations:** Provides suggested strategies and projects that could be taken to facilitate reliable, efficient, and safe freight mobility into the future.

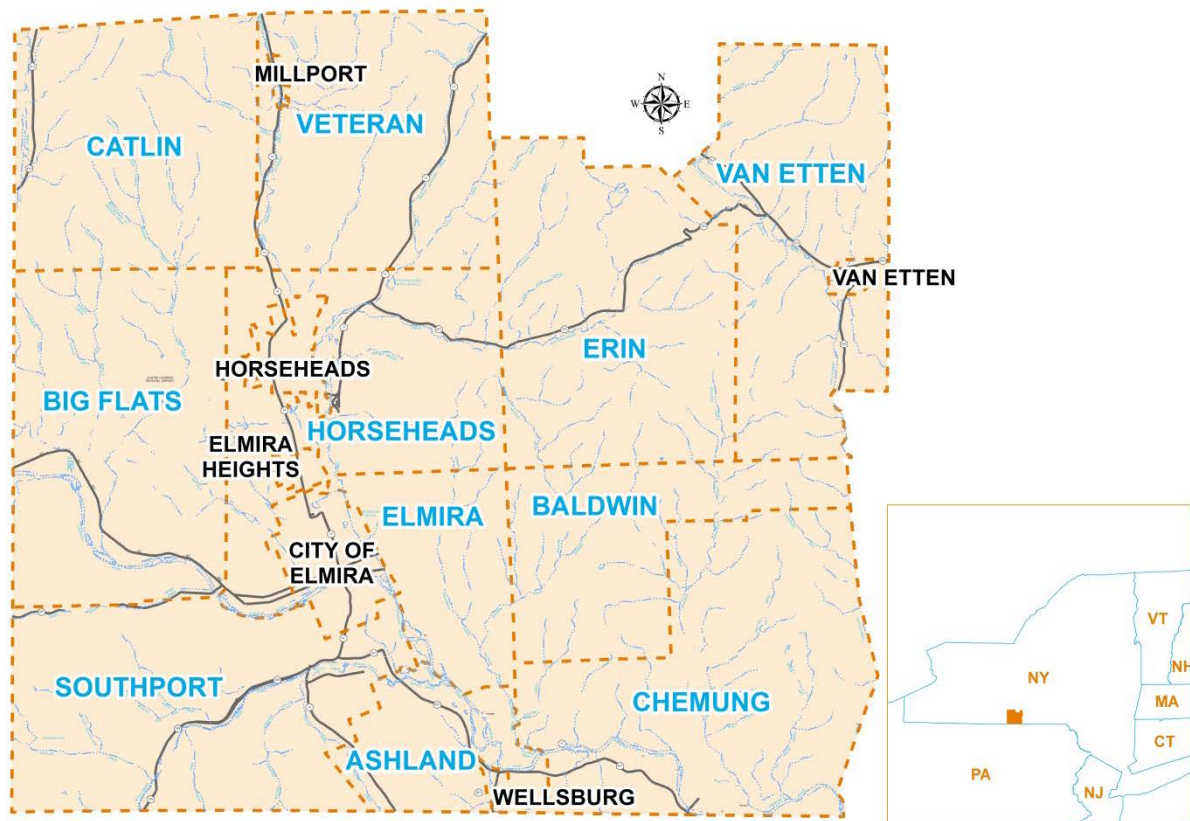
CHAPTER 2: REGIONAL CHARACTERISTICS

The ECTC's planning area is located in Chemung County and a small portion of Steuben County in the southern tier of New York. Due to the availability of data and the relatively small portion of located in Steuben County, this study will focus solely on the Chemung County portion of the MPO.

Chemung County borders the State of Pennsylvania. The county contains the following municipalities (see Figure 1):

- Towns (11): Ashland, Baldwin, Big Flats, Catlin, Chemung, Elmira, Erin, Horseheads, Southport, Veteran, and Van Etten
- Villages (5): Elmira Heights, Horseheads, Millport, Wellsburg, and Van Etten
- City (1): Elmira

FIGURE 1: MAP OF CHEMUNG COUNTY



Like most of the communities in Upstate New York, the Elmira metropolitan area's population has declined over the past four decades. This decline is generally attributed to a decrease in economic activity. Fewer jobs makes the region less attractive for those entering the workforce; young people tend to leave, resulting in an aging population. Since the 1970s, Chemung County's population has declined each decade, with the 2010 population only slightly greater than the population in 1950. At the same time, the City of Elmira has also

followed a trend well-documented among “Rust Belt” metropolitan areas: the central city declines even when the county is growing (1950–1970), and then continues on that trend. As a result, the city houses less of the region’s population. In a study of Upstate New York, the Brookings Institution labeled this phenomenon “sprawl without growth.”¹ Table 1 summarizes these changes, as recorded by the United States Census Bureau from 1940 to 2010.

TABLE 1: HISTORIC POPULATION TRENDS

YEAR	CHEMUNG COUNTY POPULATION	PERCENT (%) CHANGE	CITY OF ELMIRA POPULATION	CITY AS PERCENT (%) OF COUNTY
1950	86,827	17.8%	49,716	57.3%
1960	98,706	13.7%	46,517	47.1%
1970	101,449	2.8%	39,945	39.4%
1980	97,656	-3.7%	35,327	36.2%
1990	95,195	-2.5%	33,724	35.4%
2000	91,070	-4.3%	30,940	34.0%
2010	88,830	-2.5%	29,200	32.9%

While most towns experienced slight decreases in population between the decennial censuses, slight population increases were experienced in Big Flats (7.0%), Van Etten (2.6%), and Veteran (1.3%), which are all towns located farther away from the central city.

¹ Pendall, Rolf, “Sprawl without Growth: The Upstate Paradox,” The Brookings Institution, Washington, DC, 2003.

CHAPTER 3: REGIONAL ECONOMY AND FREIGHT PROFILE

ECONOMIC CHARACTERISTICS

Over the past decade, Chemung County's employment levels have reflected those of New York State. Unemployment rose to 9.0% in 2009 during the height of the Great Recession, but decreased to 6.9% in 2014—indicating that the labor force has nearly recovered. Figure 2 illustrates the similarity in employment trends between Chemung County and New York State as a whole.

FIGURE 2: UNEMPLOYMENT RATE FOR CHEMUNG COUNTY, NEW YORK STATE, AND U.S. (2000–2014)

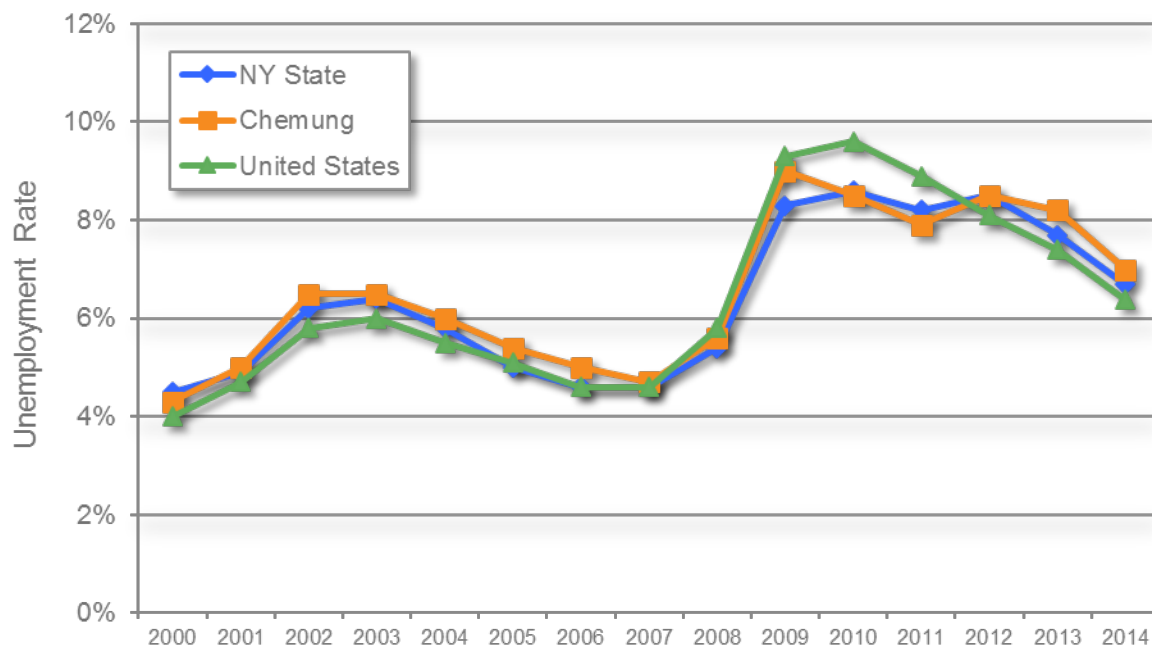


Table 2 summarizes employment by North American Industry Classification System (NAICS) sector in 2001, 2006, and 2011, and illustrates how employment fluctuated over the span of one decade. In 2011, healthcare represented the largest share of employment in the county (16.9%), while manufacturing (12.8%), retail trade (14.2%), and educational services (10.1%) also accounted for significant shares.

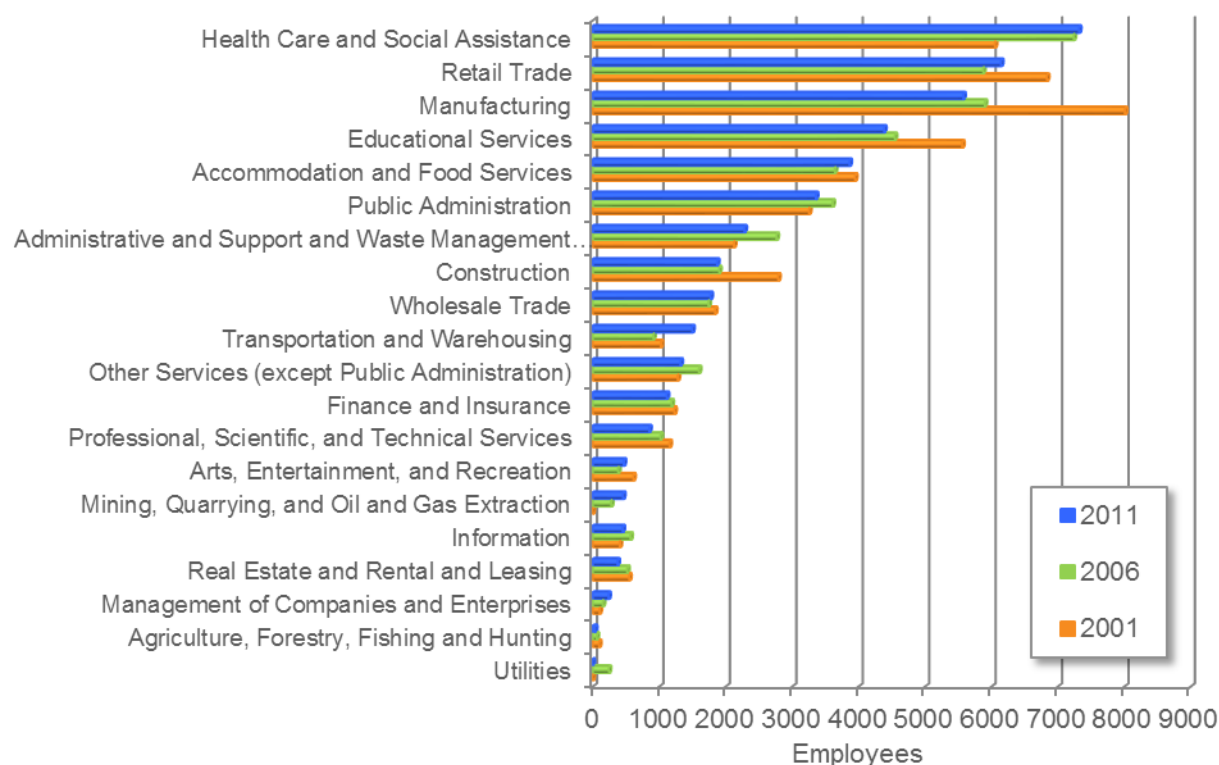
Figure 3 shows the absolute change in employment, by industry, between 2001, 2006, and 2011.

TABLE 2: 2001, 2006, 2011 EMPLOYMENT, BY INDUSTRY²

	NAICS CODE	2001	2006	2011	% OF '11 TOTAL	'06-'11 CHANGE	'01-'11 CHANGE
11	Agriculture, Forestry, Fishing and Hunting	99	62	37	0.1%	-40.3%	-62.6%
21	Mining, Quarrying, and Oil and Gas Extraction	N/A	280	460	1.1%	64.3%	N/A
22	Utilities	N/A	246	N/A	N/A	N/A	N/A
23	Construction	2,795	1,907	1,874	4.3%	-1.7%	-33.0%
31-33	Manufacturing	8,012	5,903	5,581	12.8%	-5.5%	-30.3%
42	Wholesale Trade	1,844	1,747	1,776	4.1%	1.7%	-3.7%
44-45	Retail Trade	6,840	5,880	6,148	14.2%	4.6%	-10.1%
48-49	Transportation and Warehousing	1,027	915	1,501	3.5%	64.0%	46.2%
51	Information	410	570	453	1.0%	-20.5%	10.5%
52	Finance and Insurance	1,233	1,189	1,118	2.6%	-6.0%	-9.3%
53	Real Estate and Rental and Leasing	552	522	376	0.9%	-28.0%	-31.9%
54	Professional, Scientific, and Technical Services	1,159	1,023	854	2.0%	-16.5%	-26.3%
55	Management of Companies and Enterprises	107	156	240	0.6%	53.8%	124.3%
56	Administrative, Support, Waste Mgmt, Remediation	2,130	2,770	2,288	5.3%	-17.4%	7.4%
61	Educational Services	5,564	4,550	4,389	10.1%	-3.5%	-21.1%
62	Health Care and Social Assistance	6,056	7,244	7,322	16.9%	1.1%	20.9%
71	Arts, Entertainment, and Recreation	615	387	470	1.1%	21.4%	-23.6%
72	Accommodation and Food Services	3,952	3,647	3,867	8.9%	6.0%	-2.2%
81	Other Services (except Public Administration)	1,283	1,602	1,325	3.1%	-17.3%	3.3%
92	Public Administration	3,259	3,613	3,363	7.7%	-6.9%	3.2%

² QWI Explorer Extracted Data, <https://www.census.gov/econ/susb/>

FIGURE 3: 2001, 2006, AND 2011 EMPLOYMENT, BY SECTOR



Note: Data not available for NAICS Category 21: Mining, Quarrying, and Oil and Gas Extraction for year 2001. Data not available for NAICS Category 22: Utilities for years 2001 and 2011.

When compared to regional employment from 2001 and 2006, Chemung County has experienced significant fluctuation between sectors, which impacts the type of transportation needed to facilitate the movement of goods and services into, out of, and within the region. Healthcare, the strongest industry in 2011, showed an increase of 20.9% between 2001 and 2011. Retail trade, the second-highest employment sector, showed a 10.1% decline in employees. Manufacturing, previously one of the county's strongest industries, also experienced an employment decline, but at a greater level of 30.3% between 2001 and 2011. While the increases in healthcare could yield only slight increases on freight volume, declines in retail and manufacturing may cause decreases in freight travel to and from Chemung County.

Conversely, mining, quarrying, and oil and gas extraction (64.3% between 2006 and 2011), management of companies and enterprises (124.3%), and transportation and warehousing (46.2%) rose by significant percentages. While these sectors are relatively small compared to the overall Chemung County employment total, these shifts in employment reflect changes in the regional and national economic climate. These increases may be attributed to the development of natural gas hydraulic fracturing ("fracking") in adjacent areas in Pennsylvania. The ability to produce and distribute natural resources has allowed certain industries to increase their relevance to the overall economy. If they continue to rise in coming decades, it may ultimately increase demand for transportation infrastructure to support additional goods movement.

Table 3 summarizes the major employers in Chemung County, by number of employees and business type.

TABLE 3: MAJOR EMPLOYERS IN CHEMUNG COUNTY IN 2014

MAJOR EMPLOYER	BUSINESS TYPE	EMPLOYEES
Arnot Health	Healthcare Services	2,300
CAF USA	Manufacturing Trains	800
Hilliard Corporation	Manufacturing Machinery, Filter Systems	625
Hardinge Inc.	Manufacturing Machinery	590
CVS	Distribution Center	450
General Revenue Corporation	Contact Center	450
DePuy Synthes	Manufacturing Bio-Medical	400
Anchor Glass Container Corp.	Manufacturing Glass Containers	375
Kennedy Valve	Manufacturing Water Valves Hydrants	350
F. M. Howell & Company	Manufacturing Packaging	350
Vulcraft of New York	Manufacturing Metal Products	325
Schlumberger	Gas Services	300
Elmira College	Education	300
Chemung Canal Trust Company	Financial Services	300
Eaton Electrical	Manufacturing Electronics	275
DeMet's Candy Company	Manufacturing Food	250
Elcor Health Services	Adult Healthcare Services	250
Travelers Insurance	Contact Center	250
Cameron Mfg. & Design	Manufacturing Metal Products	235
Walmart	Retail	225
Dalrymple Contracting	Mining	200
Tops Supermarkets	Retail	200
NYS Electric & Gas	Utility	175
Verizon	Utility	175
Southern Tier Custom Fabricators	Manufacturing Metal Products	165
Wegmans Supermarkets	Retail	160
Guthrie Healthcare	Healthcare Services	150
Elmira Savings Bank	Financial Services	125
Trayer Products	Manufacturing Metal Products	120
Emhart Glass	Manufacturing Machinery	115
Access Midstream	Gas Services	100
Corning Inc.	Manufacturing Ceramics	100
Swift Glass Company	Manufacturing Ceramics	100
Hunt Engineers	Engineering Service	100
Elmira Coca-Cola Bottling	Wholesale Distribution	90
Pepsi Bottling Group	Wholesale Distribution	85
Talisman Energy	Gas Services	75
Mirion Technologies	Manufacturing Electronics	70
Seneca Beverage Corporation	Wholesale Distribution	70
Streeter Associates	Construction	70
Eastern Metal/USA-SIGN	Manufacturing Metal Products	70
Salient Corporation	Software Manufacturing	70
Motor Components	Manufacturing Auto Components	55
Fennell Spring Company	Manufacturing Auto Components	50
Gas Field Specialists	Gas Services	50

Table 4 provides the location quotient for Chemung County compared to New York State and the United States as a whole. A location quotient (LQ), derived from the United States Bureau of Economic Analysis data, is an analytical statistic that measures a region's industrial specialization relative to a larger geographic unit (usually the nation). An LQ is computed as an industry's share of a regional total for some economic statistic (e.g., earnings, gross domestic product [GDP] by metropolitan area, employment, etc.) divided by the industry's share of the national total for the same statistic.³ An LQ value of greater than one indicates that the industry is stronger within Chemung County compared to either New York State or the country as a whole. An LQ value lower than one indicates the opposite.

Table 4 uses LQs, by employment sector, to illustrate the concentration of sectors of employment in Chemung County relative to all of New York State and the United States as a whole. LQs over one are highlighted to illustrate areas where Chemung County's industry sectors are currently strongest. Mining, quarrying, and oil/gas extraction is significantly above that of New York State and high compared to the nation as a whole. Chemung County's manufacturing sector is also significantly above that of New York State and the rest of the country. Though not as strong comparatively, Chemung County's retail trade and health care services are also higher than both the State and the nation as a whole.

TABLE 4: STATE AND NATIONAL LQS FOR CHEMUNG COUNTY⁴

NAICS CODE & INDUSTRY	CHEMUNG COUNTY TO NEW YORK STATE			CHEMUNG COUNTY TO UNITED STATES		
	2001	2006	2011	2001	2006	2011
11 Agriculture, forestry, fishing and hunting	ND	0.40	0.23	ND	0.12	0.07
21 Mining, quarrying, and oil/gas extraction	ND	7.45	20.35	ND	1.02	1.99
22 Utilities	ND	ND	ND	ND	ND	ND
23 Construction	1.27	0.95	1.09	0.96	0.67	0.94
31-33 Manufacturing	2.24	2.37	2.95	1.49	1.53	1.77
42 Wholesale Trade	0.91	0.80	ND	0.92	0.77	ND
44-45 Retail trade	1.43	1.38	1.29	1.27	1.27	1.20
48-49 Transportation and Warehousing	ND	ND	ND	ND	ND	ND
51 Information	0.44	0.47	0.38	0.62	0.67	0.56
52 Finance and insurance	0.40	0.46	0.47	0.62	0.67	0.64
53 Real estate and rental and leasing	0.50	0.54	0.44	0.69	0.74	0.62
54 Professional and technical services	0.39	0.33	0.29	0.48	0.39	0.33
55 Management of companies and enterprises	0.12	0.21	0.39	0.13	0.24	0.41
56 Administrative and waste services	0.62	0.98	0.76	0.54	0.80	0.64
61 Educational services	0.61	0.65	0.58	1.23	1.31	1.05
62 Health care and social assistance	1.12	1.12	1.07	1.47	1.46	1.29
71 Arts, entertainment, and recreation	0.68	0.48	0.49	0.72	0.54	0.55
72 Accommodation and food services	1.17	1.15	1.08	0.93	0.90	0.90
92 Other services, except public administration	0.63	0.92	0.77	0.72	1.07	0.87

Note: ND = No Data

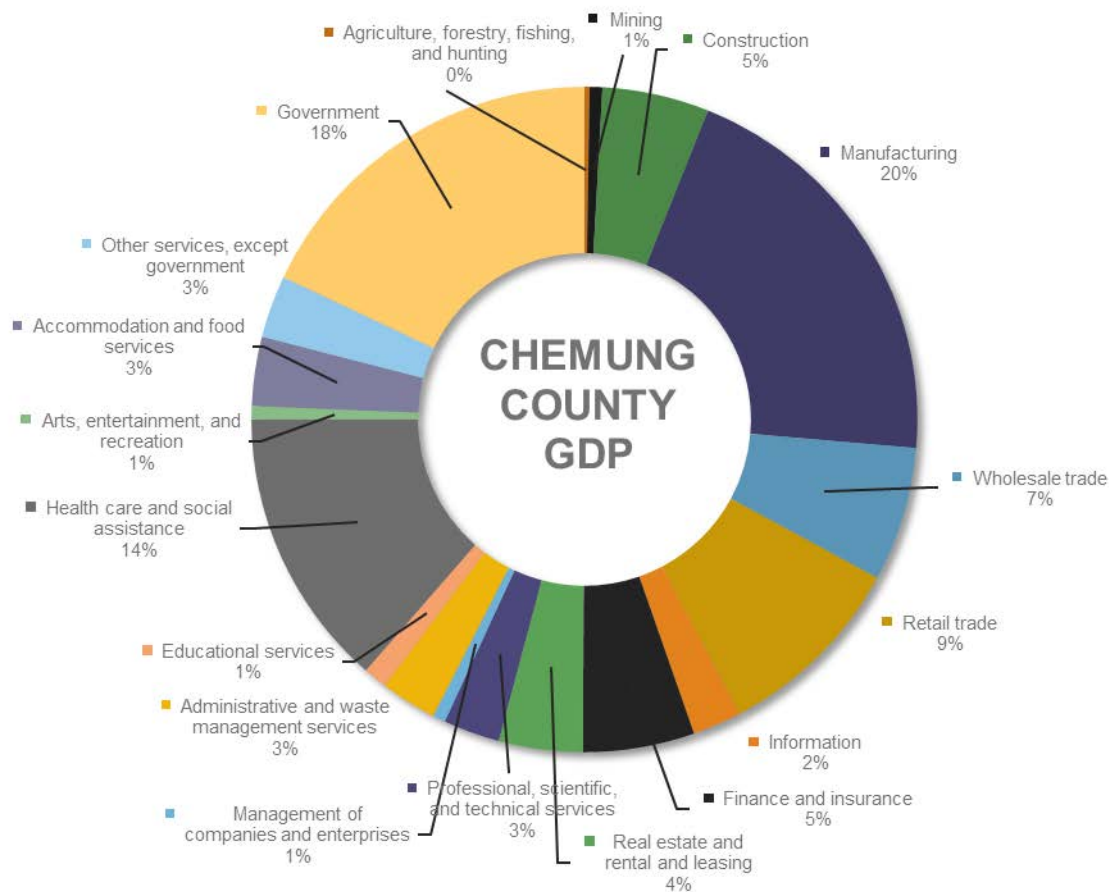
³ http://www.bea.gov/faq/index.cfm?faq_id=478

⁴ http://data.bls.gov/location_quotient/ControllerServlet

MARKET ANALYSIS

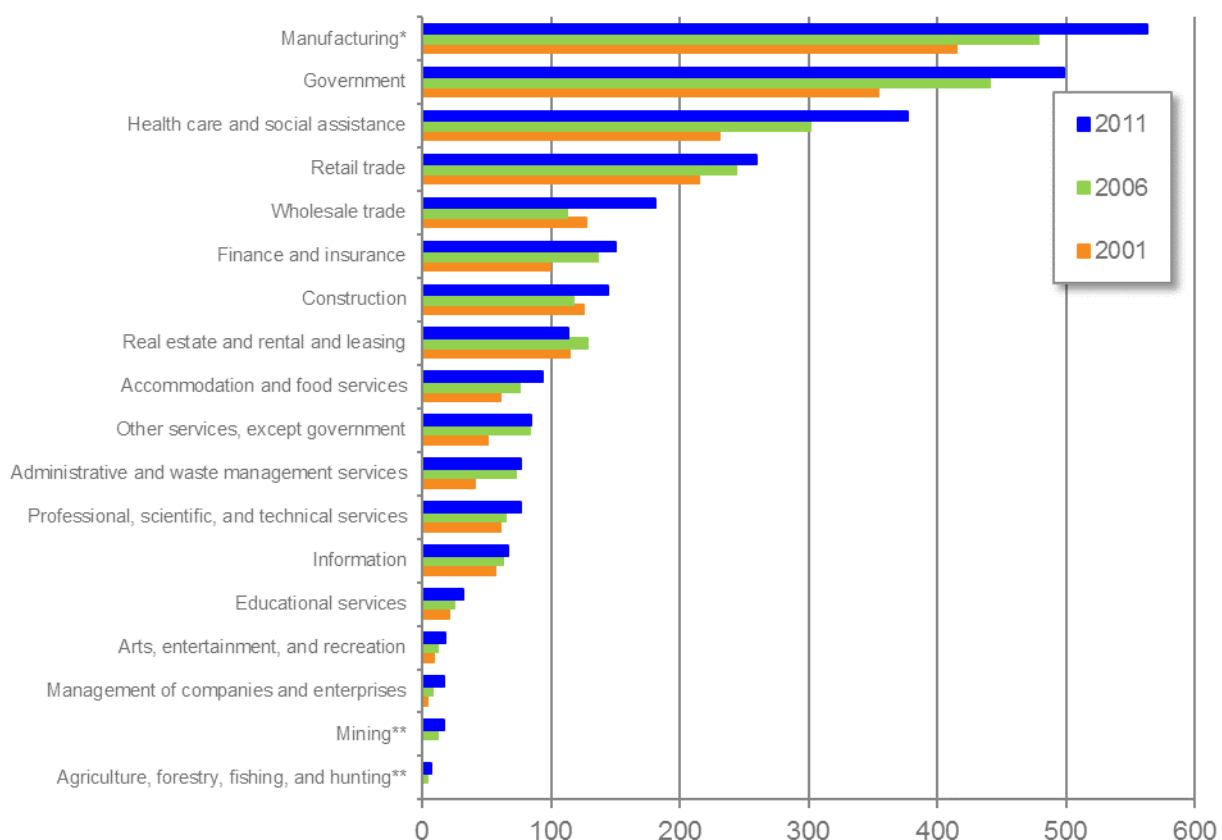
Figure 4 illustrates 2011 GDP, or value of all goods and services produced, in the Chemung County region, by sector. Manufacturing (20%), government (18%), healthcare (14%), and retail trade (9%) comprise the greatest percentages of GDP in the county. Figure 5 shows absolute change in GDP from 2001, 2006, and 2011. While some of these sectors do not generate significant freight, it is important to note these changes as part of an overall understanding of the regional economy.

FIGURE 4: CHEMUNG COUNTY GDP, BY SECTOR (2011)⁵



⁵ Bureau of Economic Analysis (BEA)

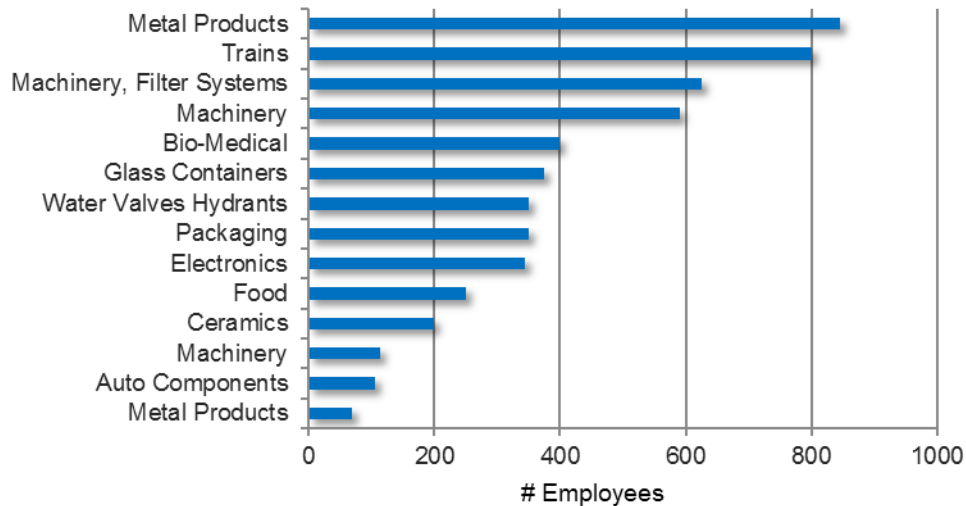
FIGURE 5: CHEMUNG COUNTY GDP, BY SECTOR (2001, 2006, 2011)⁶



The following section includes a combination of data available from the U.S. Department of Commerce Bureau of Economic Analysis (BEA), the U.S. Department of Labor Bureau of Labor Statistics (BLS), and TRANSEARCH to illustrate local markets by employment sector in Chemung County. TRANSEARCH data is derived using information provided by both producers and transportation servers throughout the United States to report commodity origin and destination flows by mode. This information is available for year 2011 and used to provide estimates for year 2040 to suggest anticipated growth by commodity, mode, and flow. While data-driven in nature, these estimates are subject to uncertainty.

Manufacturing (NAICS 31-33) is one of the strongest industry sectors in Chemung County, showing a concentration of manufacturing firms and employees, as compared to New York State and the nation as a whole. While the county's manufacturing GDP increased over 35% between 2001 and 2011, the number of employees decreased by about 30%. Despite the decrease in the actual number of jobs, there are extensive manufacturing opportunities in the region, as illustrated by the fact that 20 of the 45 largest firms shown in Table 3 are manufacturers. Figure 6 displays the number of employees, by manufacturing category, as defined by the 2014 list of major employers in Chemung County provided in Table 3.

⁶ BEA

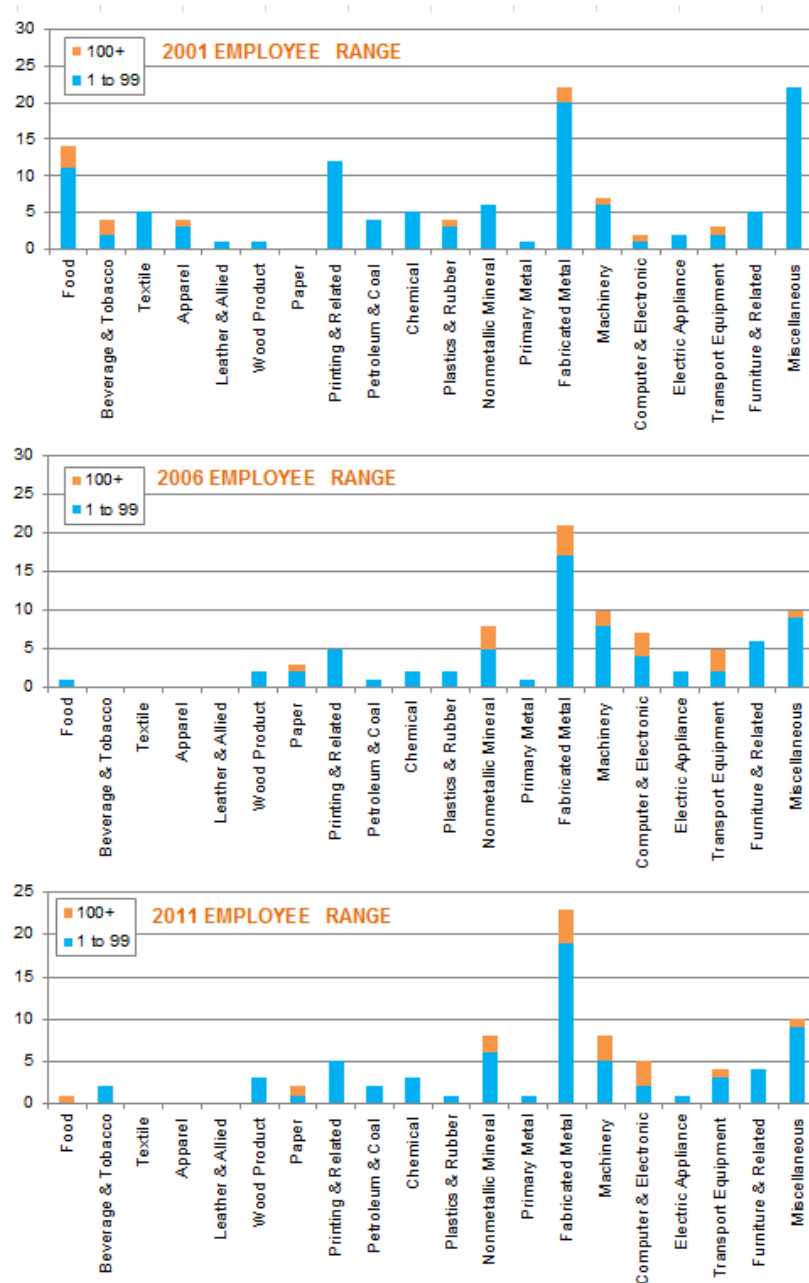
FIGURE 6: MANUFACTURING EMPLOYMENT BASED ON MAJOR CHEMUNG COUNTY EMPLOYERS

This report used census data to review changes in manufacturing sector employment over time. Due to restrictions on census data reporting, the number of employees by manufacturing sector is not available; however, the census does report the number of firms by employment range.

Figure 7, which is based on these data, indicates employment increases in Chemung County in fabricated metal, nonmetallic minerals, and machinery manufacturing from 2001 to 2011. This period also encompassed significant decreases in food, beverage/tobacco, textile, apparel, and printing/related manufacturing.

In 2011, only one firm crossed the 500-employee threshold: an engine, turbine, and power transmission equipment manufacturing firm—which falls within the “machinery” category. In addition, an aerospace product and parts manufacturing firm broke the 1,000-employee threshold. However, this firm, which was categorized under “transport equipment,” is no longer conducting business in the county.

FIGURE 7: CHEMUNG MANUFACTURING FIRMS, BY EMPLOYEE RANGE (2001, 2006, 2011)⁷

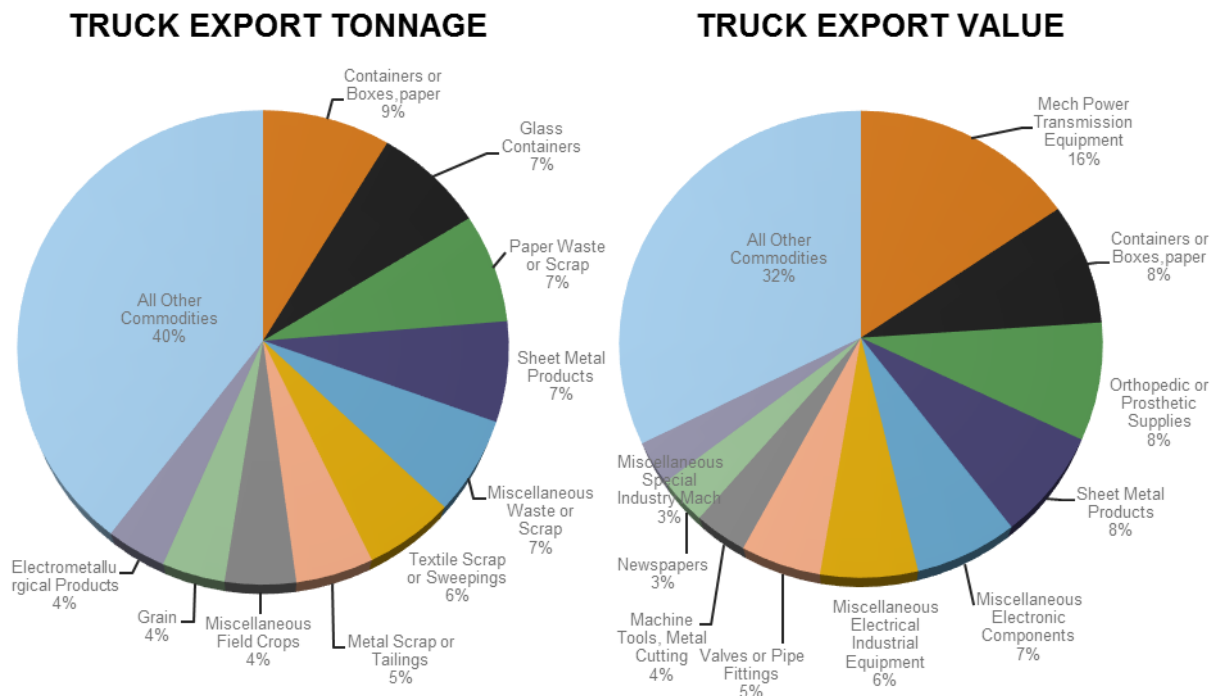


The increase in the fabricated metal industry in Chemung County, as illustrated in Figure 6 and Figure 7, is also reflected in regional exports—as sheet metal products comprise 7% and metal scrap/tailings accounts for another 5% of outbound tonnage. Nonmetallic mineral firms manufacture ceramic, glass, and cement products. The growth of this manufacturing sector is represented by glass container export, which includes 7% of all export tonnage. Machinery industry development is reflected in export value, with 4% of export value being attributed to machine tools.

⁷ Quarterly Census of Employment and Wages (QCEW) arranged for use by the New York State Department of Labor, Division of Research and Statistics.

Some of the other highest-value and tonnage manufacturing-related commodities exported from Chemung County include paper containers/boxes, electrometallurgical products, electronic tubes, orthopedic and prosthetic supplies, electrical equipment, and mechanical power transmission equipment. Figure 8 illustrates the breakdown of Chemung County's 2011 exports via truck, based on tonnage and value, to show which manufactured goods are most commonly exported.

FIGURE 8: 2011 CHEMUNG COUNTY TRUCK EXPORTS, BY TONNAGE AND VALUE



While trucks carry the majority of exported Chemung County manufacturing products, a few select manufacturing products are sent from Chemung County via rail. For example, CAF USA, the second-largest employer in the county, conducts final assembly and testing for new railcars. The firm imports railcar parts to its Chemung County facility from Spain, which is reflected in the 5,880 tons, or \$5.6 million, in railroad car imports. After final assembly and testing are complete, the railroad cars are then shipped to their final destinations by rail. CAF USA recently produced—or is under contract to produce—railcars and light-rail vehicles for projects in Boston, Kansas City, Cincinnati, and Houston.

Health care and social assistance (NAICS 62) comprises almost 17% of the county's employment. Arnot Health has over 2,300 employees at two locations in Elmira: the Arnot Medical Center and St. Joseph's Hospital. Elcor Health Services is another significant employer, with over 250 employees at their Elcor Nursing and Rehabilitation Center in Horseheads just west of the I-86 and Route 14 interchange. Guthrie Healthcare is the third-largest medical employer in the area and has clinic locations in Big Flats, Southport, the City of Elmira, and a new hospital just over the county border in Steuben County.

Medical facilities generate a significant amount of freight movement. Projections suggest that over \$76 million is anticipated in orthopedic and prosthetic supply imports in 2040. Additionally, pharmaceutical imports via air freight are anticipated to increase by 36% between 2011 and 2040. Medical supplies are often not

significant in weight, but can be high in value. Medical facilities typically do not have large amounts of storage space to accommodate large shipments; therefore, most medical deliveries are sent via expedited shipping to deliver products within one or two days. Due to timeliness and value in delivery, these medical facilities may increase commodity volumes on truck and air freight modes.

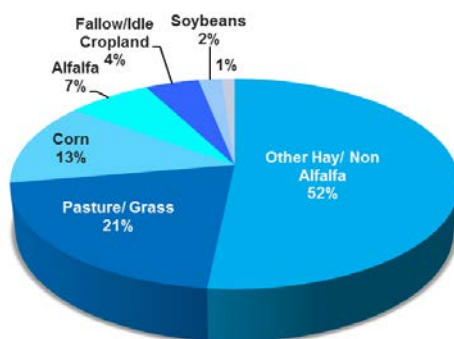
Retail trade (NAICS 44-45) is major source of employment in the Elmira region. Between 2001 and 2011, retail GDP rose over 20% and the LQs held strong when compared to both statewide and national retail employment. Countywide, about 6,100 jobs are in the retail sector, comprising about 14% of the county's employment.

Retail trade has a significant bearing on the regional freight market, as it involves moving a large amount of goods from manufacturers and distribution centers to retail stores. Walmart and Tops Supermarkets are some of the largest retailers in the region, each with over 200 employees. The Walmart Supercenter is located in Horseheads, just south of I-86. There are three Tops Supermarket locations in Chemung County: one in Big Flats Consumer Square, one in Southport on Cedar Street, and another in Elmira on Main Street. Wegmans Supermarket, located in downtown Elmira off Route 14, is another major retail employer with 160 employees. Ensuring that trucks of various sizes and specifications can access these large retail locations is imperative to supporting inventory.

Agriculture, forestry, fishing, and hunting (NAICS 11) had a 2011 GDP of \$7 million, with both “miscellaneous field crops” and grain falling in the top 10 commodities exported⁸ from Chemung County based on 2011 tonnage. Milk and dairy represent over 60% of agricultural production in the county from a value perspective, while cattle are the second-highest agricultural value at approximately 12%.

According to the 2011 Agricultural Economic Development Plan,⁹ an estimated 25% of the land in Chemung County is active farmland. The majority of acreage is categorized as “Other Hay/Non-Alfalfa,” as illustrated in Figure 9. Five percent of cropland in the region is categorized as idle, while 21% is pastureland.

FIGURE 9: ACREAGE, BY CROP (2011)



⁸ The terms “export” and “import” are used throughout this report to refer to outbound and inbound movements, respectively, of freight from and to Chemung County.

⁹ [www.chemungcounty.com/usr/Planning/Ag%20and%20Farmland%20Protection%20Plan%20March%2017,%202011%20Final%20Version\[1\].pdf](http://www.chemungcounty.com/usr/Planning/Ag%20and%20Farmland%20Protection%20Plan%20March%2017,%202011%20Final%20Version[1].pdf)

While agricultural employment in the Chemung County decreased by over 60% between 2001 and 2011, and its GDP is relatively low, agricultural production still has a significant impact on regional transportation. Equipment and supplies must be imported by farmers to maintain their lands and produce crops. Fertilizer products typically come to Chemung County via rail. In 2011, the county imported over 20,000 tons of fertilizer mineral, valued at about \$1.77 million. Agricultural products must also be moved out of Chemung County. In 2011, grain accounted for over 24,000 tons and “miscellaneous field crops” accounted for over 27,000 tons of commodities exported via truck. Only two tons of grain were exported via rail in the same year.

Mining, quarrying, and oil and gas extraction (NAICS 21) is one of the highest growth industries in Chemung County, with employment more than doubling in the latter part of the first decade of the twenty-first century. Chemung exhibits a distinctively high LQ for mining, quarrying, and oil/gas extraction in the State of New York because of these mining activities. Mining, quarrying, and oil and gas extraction currently accounts for only 1% of the county’s GDP, but this industry has the potential to expand in coming decades.

Dalrymple Contracting, with over 200 employees, is the largest mining industry firm in the county. Dalrymple has both a hot-mix asphalt and gravel plant in the Town of Chemung and a hot-mix asphalt plant in the Town of Horseheads. The company mines, crushes, and sells stone aggregates.

In addition, the Millennium Pipeline runs through Chemung County and includes meter stations at Catlin Station, Hickory Grove, Anschutz, HOST, Latta Brook Road, Monahan Well, and Cooper Hill. There is also an interconnect point at Seneca Lake and a compressor station in the Town of Corning right near the county line. The presence of this energy source and transportation resource is vital in the consideration of Chemung County for natural gas industry development.

In December 2014, the New York State government announced a statewide ban on natural gas extraction by hydrofracking. Thus, it is difficult to know if or when the ECTC should consider the possibility of tapping this resource in future transportation plans.¹⁰ If the ban is eventually modified or lifted, the ECTC will need to plan for the vast quantities of materials needed for the extraction process that will need to be imported, including gravel and sand, which are already significant shares of rail import and export tonnage. Products of the extraction process would also require movement out of the county. Rail infrastructure will be critical to these types of economic development due to the heavy nature of the inbound and outbound materials associated with natural gas extraction.

Utilities (NAICS 22) are not reported in terms of employment, LQ, or GDP. Major utilities in Chemung County include New York State Electric and Gas (NYSEG) and Verizon. The NYSEG facility is located in the southwest quadrant of the intersection of I-86 and Route 14 in Horseheads.

Construction (NAICS 23) employment is relatively strong in Chemung County. The construction industry’s GDP increased over 15% between 2001 and 2011, indicating a continued spectrum of growth. There are over 1,800 individuals employed by construction-related firms in the region, accounting for approximately 4% of total employment. Construction slowed over the past decade, requiring fewer construction material imports. In 2011, about 23,600 tons of concrete products, 21,600 tons of ready-mix concrete, 14,300 tons of asphalt, and 15,700 tons of lumber were imported to Chemung County. Projections suggest that this inbound tonnage

¹⁰ See the ECTC Plan “Transportation Impacts of High Freight Volume Energy Resource Development.”

will increase, by commodity, from between 45%–105% by 2040, indicating anticipation that construction will increase in future decades. The vast majority of these construction materials move via truck.

Wholesale trade (NAICS 42) LQs were not available for 2011. Previous data indicate a quotient below that of the state and nation. There are over 1,700 individuals employed by wholesale distributors in Chemung County. Employment has remained stable over the past decade. Major wholesale distributors in Chemung County include Coca-Cola Bottling, Pepsi Bottling, Seneca Beverage Corporation, and CVS. Wholesale trade GDP rose over 40% between 2001 and 2010, indicating a steadily growing industry. While LQs for wholesale trade were not available for 2011, previous data indicate a quotient of about 0.8 compared to both the state and nation.

Transportation and warehousing (NAICS 48-49), though only 4% of regional employment, is a critical sector to consider in the assessment of the regional freight system. Warehouse and distribution goods accounted for 15% of 2011 import tonnage (134,500 tons) and 13% of 2011 import value (\$150 million).

CVS has one of its 17 large national distribution centers located just north of I-86 near the Chemung-Tioga County line and the New York-Pennsylvania line in the Town of Chemung. The facility is 751,000 square feet and has over 450 employees. This major distribution center helps organize and dispense commodities to retail stores throughout the Northeast.

The Horseheads Sand and Transloading Terminal (HOST), formerly known as the Center at Horseheads) is a privately owned industrial park originally constructed by the United States Army Corps of Engineers during the 1940s to serve as a military transshipment depot. The Center is zoned for industrial uses and is served by the Norfolk Southern Railroad's Southern Tier line, which provides freight service connections between Buffalo and New York City, with connections to the east and west coasts. The Center is fully served by industrial-scale public sewer and water supply infrastructure in addition to natural gas, electricity, and telecommunications service. Road access to the Center from state and interstate highways is currently limited to local roadways.

In 2012, HOST opened a 200-acre site that provides over 5 miles of railroad, 13 warehouses, and 1.5 million square feet of storage for fracking sand movement and storage. The facility was developed to import and store fracking sand from Midwest and Northwest states to serve the entire Marcellus Shale Region. HOST operates 24 hours per day, year round. HOST reported that over 544,000 tons of fracking sand were unloaded at the facility in 2013, accounting for a significant percentage of the inbound tonnage to Chemung County. The opening of this facility marked the importance of natural gas extraction as a regional market and created infrastructure to support the materials required for gas extraction processes. With the New York State 2014 ban on hydraulic fracturing of natural gas, this facility primarily serves just the Northern Tier of Pennsylvania operations.

Information (NAICS 51) includes firms that specialize in publication, production, recording, telecommunications, and other information services. Employment in the information industry has increased since 2001. GDP increased by 15% from 2001 to 2011. The information industry does not yield a significant impact on transportation or freight movement.

Finance and insurance (NAICS 52) employs over 1,000 individuals in the Elmira region, accounting for about 3% of employment. Major finance firms include the Chemung Canal Trust Company and the Elmira

Savings Bank. GDP has increased about 51% from 2001. The financial and insurance industry does not yield a significant impact on transportation or freight movement.

Real estate and rental and leasing (NAICS 53) is a relatively insignificant industry in the Elmira region. Employment has dropped by over 30% in this industry since 2001 and GDP has remained stagnant. Real estate has a minor impact on transportation and freight movement. When real estate markets are doing well and demand for housing is high, there is an increased need for construction and construction supplies to be created or brought into the region. In this instance, the stagnant real estate market will not have a large impact on freight movement.

Professional and technical services (NAICS 54) comprise only 2% of employment in Chemung County. The GDP in 2011 was reported at \$76 million—a 24% increase over 2001. The professional and technical service industry does not yield a significant impact on transportation or freight movement.

Management of companies and enterprises (NAICS 55) is a small industry with just over 200 employees. This industry has observed growth over the past decade but does not yield a significant impact on transportation or freight movement.

Administrative and waste services (NAICS 56) include remediation services and waste removal. This industry comprises about 5% of total countywide employment. Waste and scrap products accounted for almost 40,000 tons and paper waste accounted for 45,000 tons of outbound truck commodities from Chemung County. These export portions are anticipated to increase to over 96,000 tons of miscellaneous waste and over 58,000 tons of paper waste per year by 2040. While these waste products are not high in value, they are heavy and voluminous commodities that will have significant implications on the freight network.

Educational services (NAICS 61) have significant employment, comprising about 10% of all jobs in Chemung County. In addition to primary, grade, and high schools, Chemung County is home to Elmira College, a private four-year educational institute located in the City of Elmira. Elmira College has a student population of just over 1,100, and the college received \$2.25 million of Empire State Development funding to build a new Health Sciences Center to expand its existing programs in health care education. Expansions to the college could increase freight to and from the campus, but this market would not be significant enough to affect regional freight flows. A satellite campus of Corning College is also located in downtown Elmira, but yields little impact on the freight network.

Arts, entertainment, and recreation (NAICS 71) is a relatively small industry in Chemung County, accounting for 1% of employment and 1% of GDP. This industry does not have a significant impact on the freight network.

Accommodation and food services (NAICS 72), with just over 3,800 jobs, comprises about 9% of total employment in Chemung County—a 20% increase from 2001. While the delivery of food and supplies to restaurants, hotels, and similar facilities is relatively consistent, these deliveries are often made in off-peak hours and thus do not affect traffic/goods flow, rendering this industry relatively inconsequential to the freight network.

FREIGHT INFRASTRUCTURE

The interstate and state highway systems provide the backbone of Chemung County's freight infrastructure. I-86 runs from the west to southeast, while State Routes 13 and 14 are the primary north-south arterials. State Route 13 is a significant arterial between Ithaca and Elmira. Figure 10 and Figure 11 illustrate the multimodal freight infrastructure system, including all roadways, railways, and the Elmira-Corning Airport in Chemung County and the Elmira Downtown area.

FIGURE 10: ROADWAY, RAILWAY, AND AIRWAY GEOGRAPHY IN CHEMUNG COUNTY

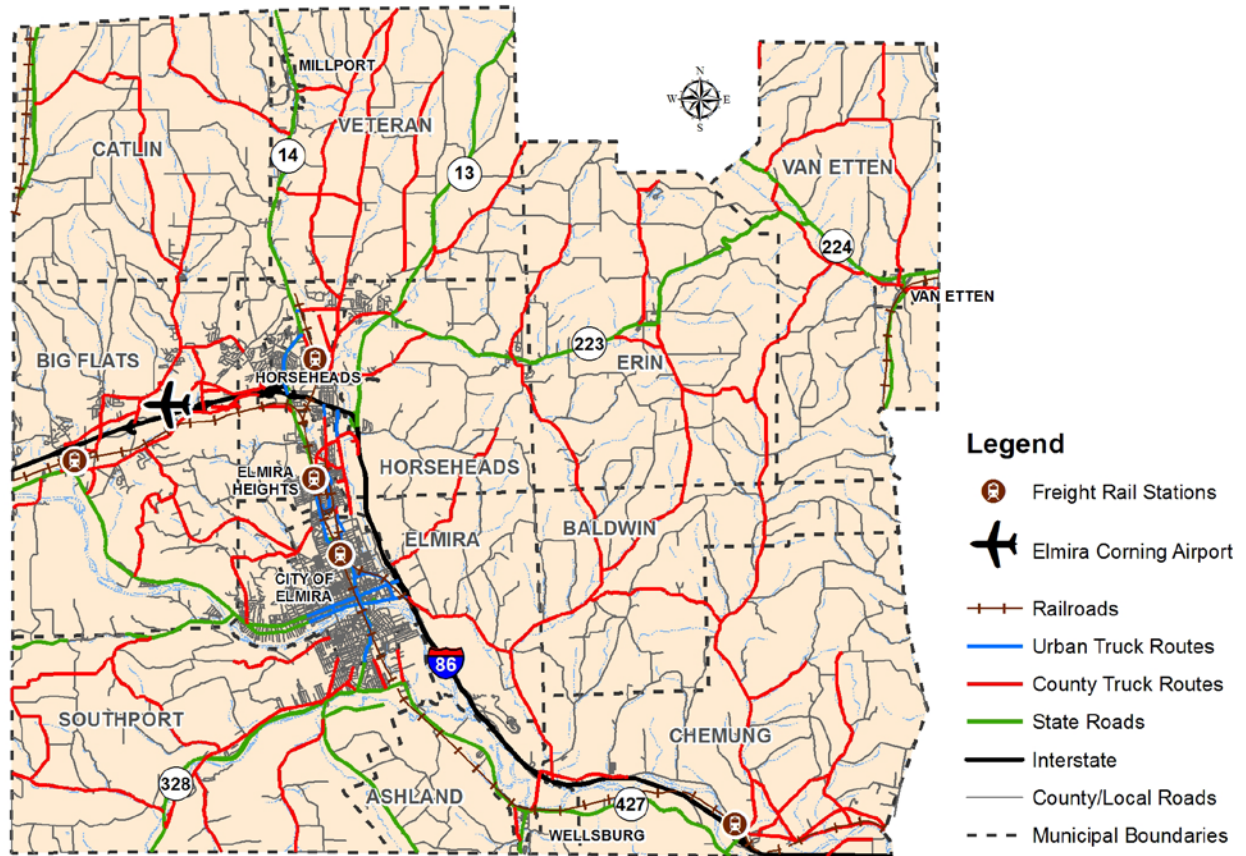
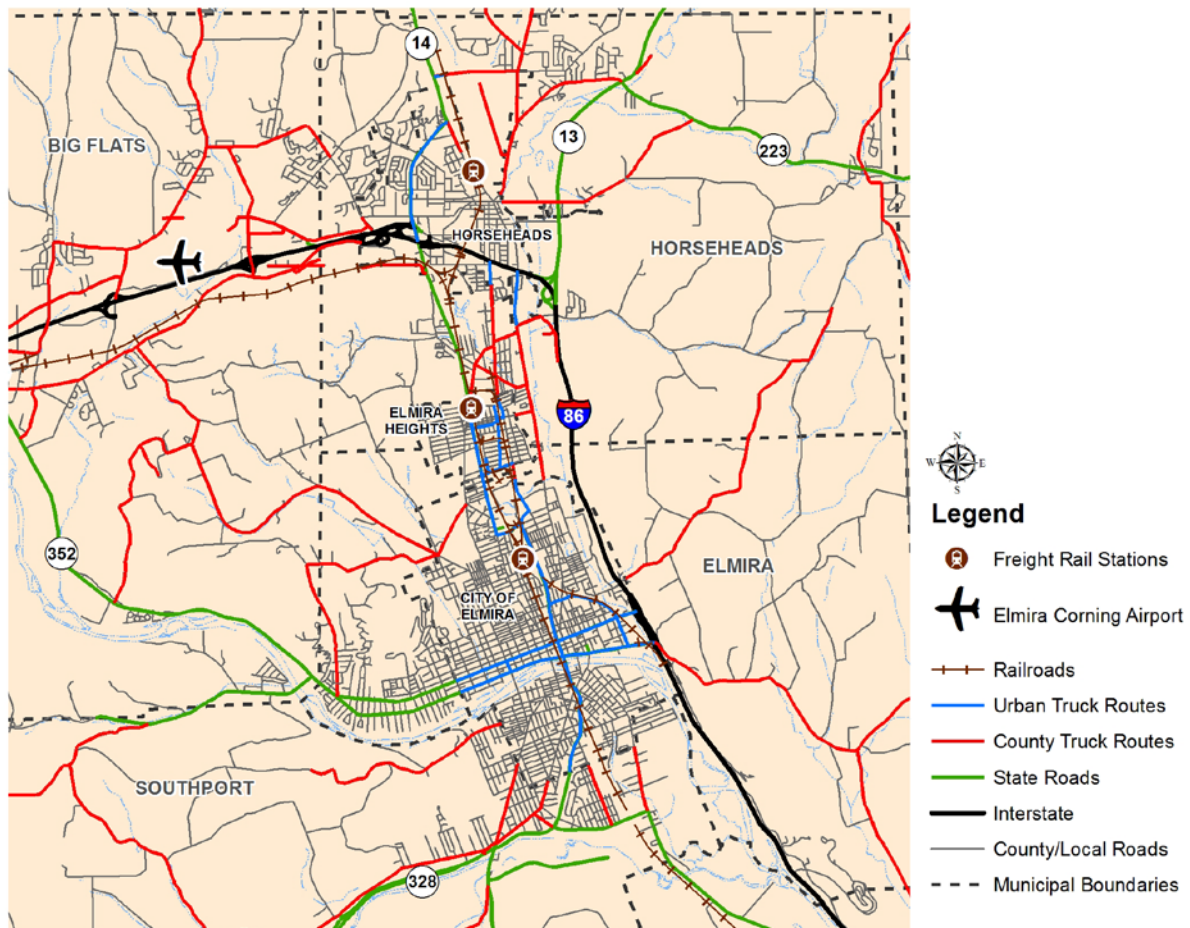


FIGURE 11: ROADWAY, RAILWAY, AND AIRWAY GEOGRAPHY IN CENTRAL CHEMUNG COUNTY

ROADWAYS

Trucking on roadways is the most common mode of freight movement, accounting for 98% of exports. For heavy items, there is a stronger pull toward rail; however, with valuable goods, trucks are the more frequently used mode.

As shown in Table 5, over 1.5 million tons of truck-transported commodities traveled on Chemung County's roadways in 2011. Weight is anticipated to grow as the amount of commodities traveling into and out of the county increases over time. Therefore, Chemung County must be cognizant of pavement conditions, bridge conditions, and truck-specific system accommodations to ensure safe and efficient movement of these goods and materials. Table 6 summarizes the state-owned highway lane-miles in Chemung County. While truck traffic commonly utilizes interstates and other major facilities, local roads provide access to freight generators and receivers and may be equally important to serving customers.

TABLE 5: OBSERVED AND ESTIMATED TONNAGE AND VALUES OF TRUCK-TRANSPORTED COMMODITIES FOR CHEMUNG COUNTY¹¹

TRUCK	FROM CHEMUNG COUNTY			TO CHEMUNG COUNTY		
	TONS	VALUE	VALUE/TON	TONS	VALUE	VALUE/TON
2011	605,668	\$1,105,580,107	\$1,825	907,605	\$1,175,622,048	\$1,295
2040	1,105,058	\$3,703,816,340	\$3,352	1,717,231	\$4,119,258,214	\$2,399
Increase (%)	82%	235%	84%	89%	250%	85%

TABLE 6: STATE-OWNED ROADWAYS IN CHEMUNG COUNTY, BY FUNCTIONAL CLASS AND AREA TYPE

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

Truck traffic by state route is available in Table 7, verifying that the most substantial volumes are on interstates and principal arterials. I-86, the Southern Tier Expressway, runs from west to east through the southern portion of Chemung County connecting the Town of Chemung to the City of Elmira through Horseheads and Big Flats to Corning. I-86 is the largest facility in the County and provides truck access across the county. Other major roadway facilities include State Route 13, which runs southwest from east of Syracuse through Cortland and Ithaca to intersect I-86 in Horseheads, and State Route 14, which runs from Sodus Bay, follows the west side of Seneca Lake, and travels through Horseheads and Elmira moving into Pennsylvania.

Note that “Average Annual Daily Truck Traffic” uses a methodology that adjusts specific multiday counts with seasonal and other adjustment factors developed by NYSDOT based on actual experience. Roadways are divided into segments for measurement purposes.

¹¹ TRANSEARCH

Table 7 reflects the sum and average of the segment counts for each highway in Chemung County.

TABLE 7: AVERAGE ANNUAL DAILY TRUCK TRAFFIC (AADTT) BY STATE ROUTE¹²

ROUTE	# OF AADTT COUNTS	SUM OF AADTT COUNTS	AVERAGE OF AADTT
I-86	70	263,970	3,771
State Route 13	44	35,881	815
State Route 14	140	68,173	487
State Route 223	56	1,885	34
State Route 225	19	308	16
State Route 328	22	1,744	79
State Route 352	64	1,987	31
State Route 367	8	294	37

Reviewing the pavement conditions of the various New York State highways shows that the majority of both urban and rural interstate lane-miles are in good to excellent condition. A large portion (74%) of rural principal arterials, however, were rated “5” or less, indicating a high need for rural principal arterial facilities. Almost 12% of urban principal arterials were also recognized as being in “poor” condition and should also be prioritized for pavement improvement. Pavement condition ratings highlighted an upcoming need for pavement improvements on urban collector facilities, with almost 90% of roadways ranked as “poor” or “fair.” While these types of facilities have relatively low truck counts, pavement conditions are still imperative to maintaining truck access for last-mile goods movement. Table 8 summarizes the pavement conditions by area type and functional classification.

TABLE 8: NEW YORK STATE HIGHWAYS IN CHEMUNG COUNTY: PAVEMENT CONDITION (%)¹³

FUNCTIONAL CLASS	LANE-MILES			POOR (1-5)		FAIR (6)		GOOD (7-8)		EXCELLENT (9-10)	
	TOTAL	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN
Interstate	110.12	54.92	55.2	0.0%	6.9%	0.0%	21.7%	46.6%	56.7%	53.4%	14.7%
Principal Arterial	103.2	17.55	85.65	73.7%	11.8%	1.5%	24.3%	0.0%	22.5%	24.8%	41.4%
Minor Arterial	55.78	30.43	25.35	5.9%	14.6%	28.2%	14.3%	0.0%	52.7%	65.9%	18.4%
Collector	61.06	47.88	13.18	3.7%	8.5%	65.3%	80.0%	3.0%	0.0%	28.0%	11.5%
Total	330.16	150.78	179.38								

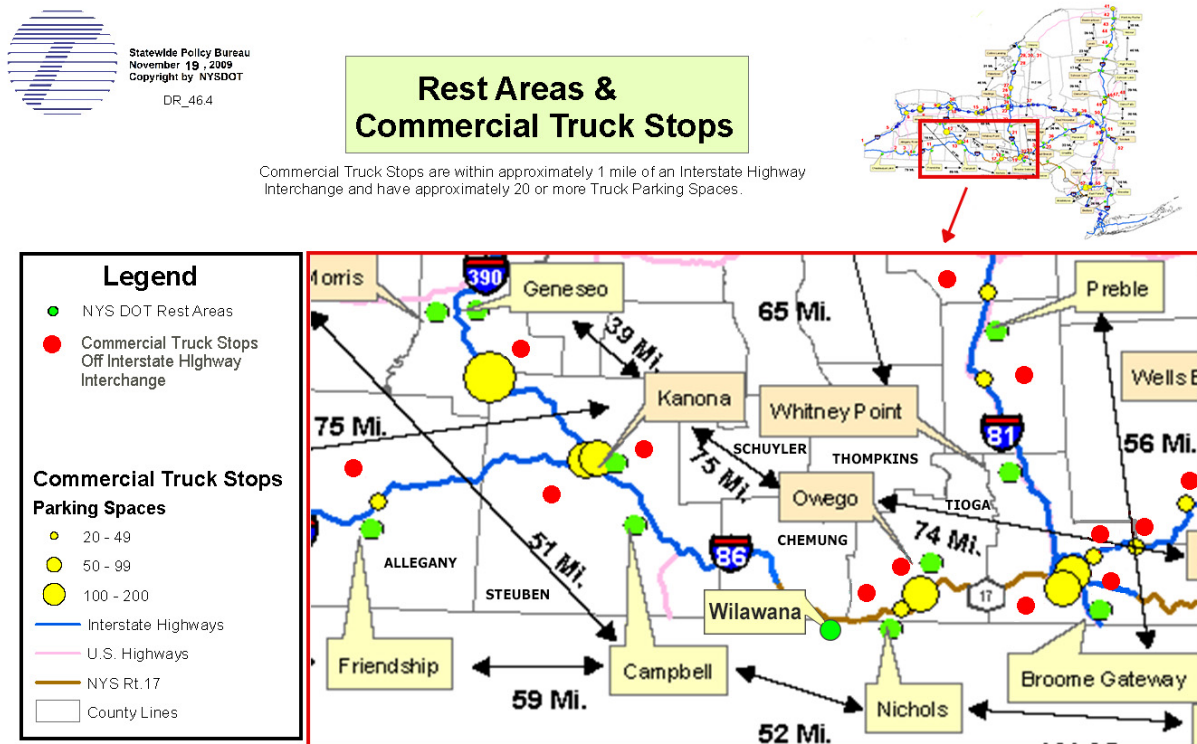
There are two NYSDOT rest areas along I-86 near (but not in) Chemung County. As shown in Figure 12, the first is the Campbell lot (milepost 160) in the town of Campbell in Steuben County with 55 spots, of which 12 are marked as truck-only parking locations. The second is the Nichols lot (milepost 212) in the town of Nichols in Tioga County with 54 spots, of which 14 are marked as truck-only parking locations. Both lots are open 24 hours per day and have a maximum parking time of eight hours per vehicle. Between these two lots, there are about 26 designated truck parking spaces within an hour of central Chemung County. In the past,

¹² HPMS Data

¹³ NYSDOT Chemung County State System Pavement Data, 2014.

there was a NYSDOT rest area on I-86, westbound, in the Town of Chemung. It has since been closed. There is also a truck parking facility in the City of Elmira, on Water Street at the I-86 Interchange, across the street from Kennedy Valve Co. This is a public Park & Ride lot with truck parking facilities. Utilization rates appear low.

FIGURE 12: NYSDOT REST STOP AREAS NEAR CHEMUNG COUNTY¹⁴



RAILROAD

Freight rail service in Chemung County is provided by Norfolk Southern Railroad (NS), a Class 1 railroad that provides service throughout the eastern United States. NS operates 12 to 14 trains per day along the Southern Tier mainline—a major freight route between Buffalo and northern New Jersey—including the Port of New York and New Jersey.¹⁵

While most of the rail traffic in the Southern Tier is through-traffic, there is some freight destined for and originating in Chemung County. Table 9 summarizes the observed and estimated annual commodity tons and values shipped into and out of Chemung County by rail. Chemung County exports significantly less, by both tonnage and value, than it imports. In addition, imported commodities equate to a substantially higher value per ton.

¹⁴ NYSDOT

¹⁵ Portageville Bridge Project Environmental Impact Statement.
<https://www.dot.ny.gov/divisions/operating/opdm/passenger-rail/passenger-rail-repository/portageville-repository/02%20Project%20Context.pdf> 2-5.

TABLE 9: CHEMUNG COUNTY OBSERVED AND ESTIMATED TONNAGE AND VALUES OF RAIL TRANSPORTED COMMODITIES¹⁶

RAIL	FROM CHEMUNG COUNTY			TO CHEMUNG COUNTY		
	TONS	VALUE	VALUE/TON	TONS	VALUE	VALUE/TON
2011	13,004	\$232,135	\$18	680,614	\$139,628,516	\$205
2040	24,220	\$595,097	\$25	1,178,588	\$168,967,144	\$143
Increase (%)	86%	156%	39%	73%	21%	-30%

Most rail freight traffic passes through the County; however, NS provides critical shipments of specialty sand from the Midwest to hydrofracking operations in Pennsylvania via this line. A NS spur railroad line links the Southern Tier mainline to a location just north of HOST near State Route 14 in Horseheads. From that spur, a privately owned shortline goes into HOST and its transloading facility.

The private hydrofracking industry developed the HOST terminal to serve the gas industry's needs in northern Pennsylvania. Terminal operators state that over 500,000 tons of frack sand has been transloaded in the past year. The terminal includes over three miles of heavy-gauge rail and is capable of accepting 100-car unit trains. In the next 20 years, if New York State lifts its ban on hydrofracking and such activities begin in Chemung County and the Southern Tier, increases in rail traffic associated with HOST would be expected.¹⁷

AIR CARGO

The Elmira-Corning Regional Airport is owned and operated by Chemung County. It is located in the Town of Big Flats with immediate access from Interstate 86. Three major carriers that connect to hub destinations currently serve the airport: Delta (Detroit), United (Chicago), Allegiant (Orlando), and US Airways (Philadelphia).

Table 10 summarizes the observed and estimated annual commodity tons and values shipped into and out of Chemung County, by air. Again, Chemung County exports less, by both tonnage and value, than it imports. Air cargo typically involves commodities of high value and relatively low weight that require expedited shipping. Air cargo value per ton is higher for commodities exported from Chemung County.

TABLE 10: ELMIRA-CORNING AIRPORT OBSERVED AND ESTIMATED TONNAGE AND VALUES OF AIR TRANSPORTED COMMODITIES¹⁸

AIR	FROM CHEMUNG COUNTY			TO CHEMUNG COUNTY		
	TONS	VALUE	VALUE/TON	TONS	VALUE	VALUE/TON
2011	5	\$777,501	\$156,663	12	\$1,294,106	\$107,278
2040	11	\$1,817,904	\$171,246	18	\$1,891,243	\$107,250
Increase (%)	120%	134%	9%	50%	46%	0%

¹⁶ TRANSEARCH Data, 2011.

¹⁷ See the ECTC Plan "Transportation Impacts of High Freight Volume Energy Resource Development."

¹⁸ TRANSEARCH Data, 2011.

LOGISTICS AND COMMODITY FLOWS

Based on 2011 commodity-flow data, Chemung County is a net importer of freight, by tonnage and, to a lesser extent, by value. However, commodity value is more evenly split with regard to inbound and outbound traffic. Figure 13 depicts the breakdown of freight mode by both tonnage and monetary value.

FIGURE 13: FREIGHT TRANSPORTATION MODE, BY WEIGHT AND VALUE (2011)¹⁹

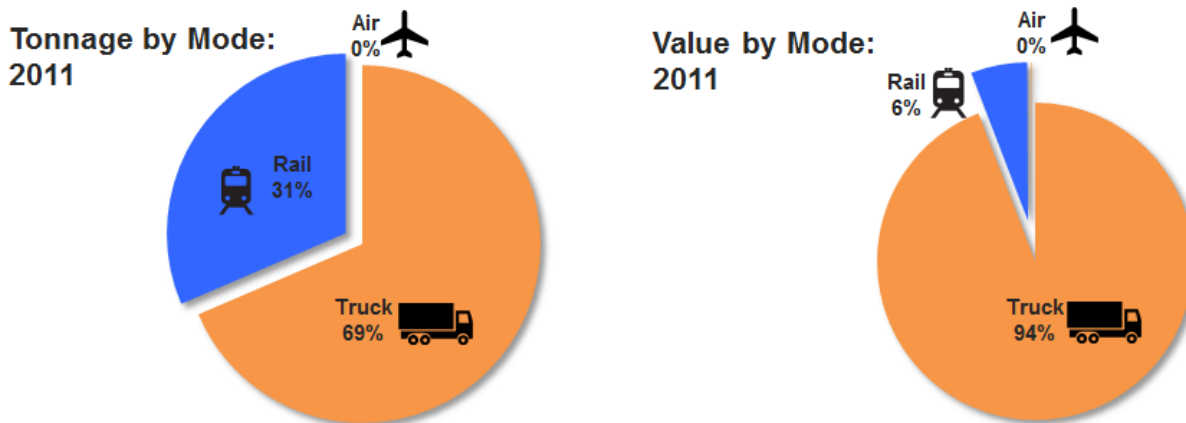
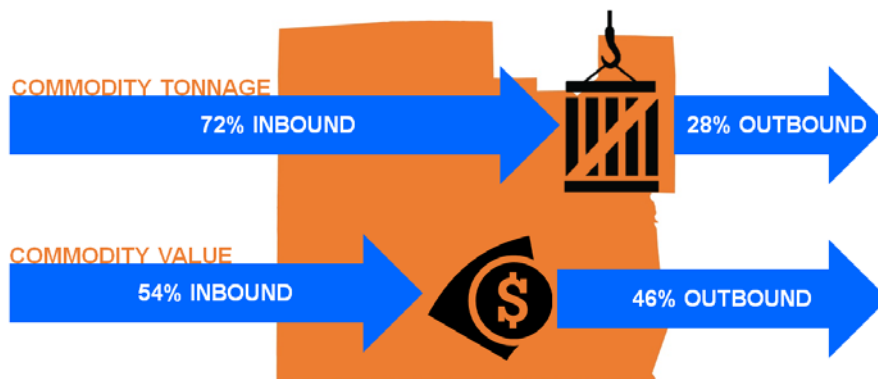


Figure 14 illustrates the directionality of both commodity tonnage and value in 2011. As shown in Figure 15, trucks move almost 100% of Chemung County export value and 98% of export tonnage. Rail accounts for about 2% of export tonnage and air freight only moves about five tons annually. Air cargo, however, characteristically contains more valuable goods.

Import tonnage is more evenly dispersed across modes. Rail brought about 43% of 2011 import tonnage to Chemung County—mostly gravel and sand—while the remainder of tonnage was imported via truck, with the exception of 12 tons carried via air. Most inbound freight travels by truck (89% or \$1.175 billion of commodities). About 11% (\$139 million) of inbound freight travels by rail, with the remainder (\$1.2 million) traveling by air.

FIGURE 14: COMMODITY-FLOW DISTRIBUTION IN 2011²⁰



¹⁹ TRANSEARCH Data, 2011.

²⁰ TRANSEARCH Data, 2011.

FIGURE 15: 2011 TONS AND VALUES, BY MODE AND DIRECTION

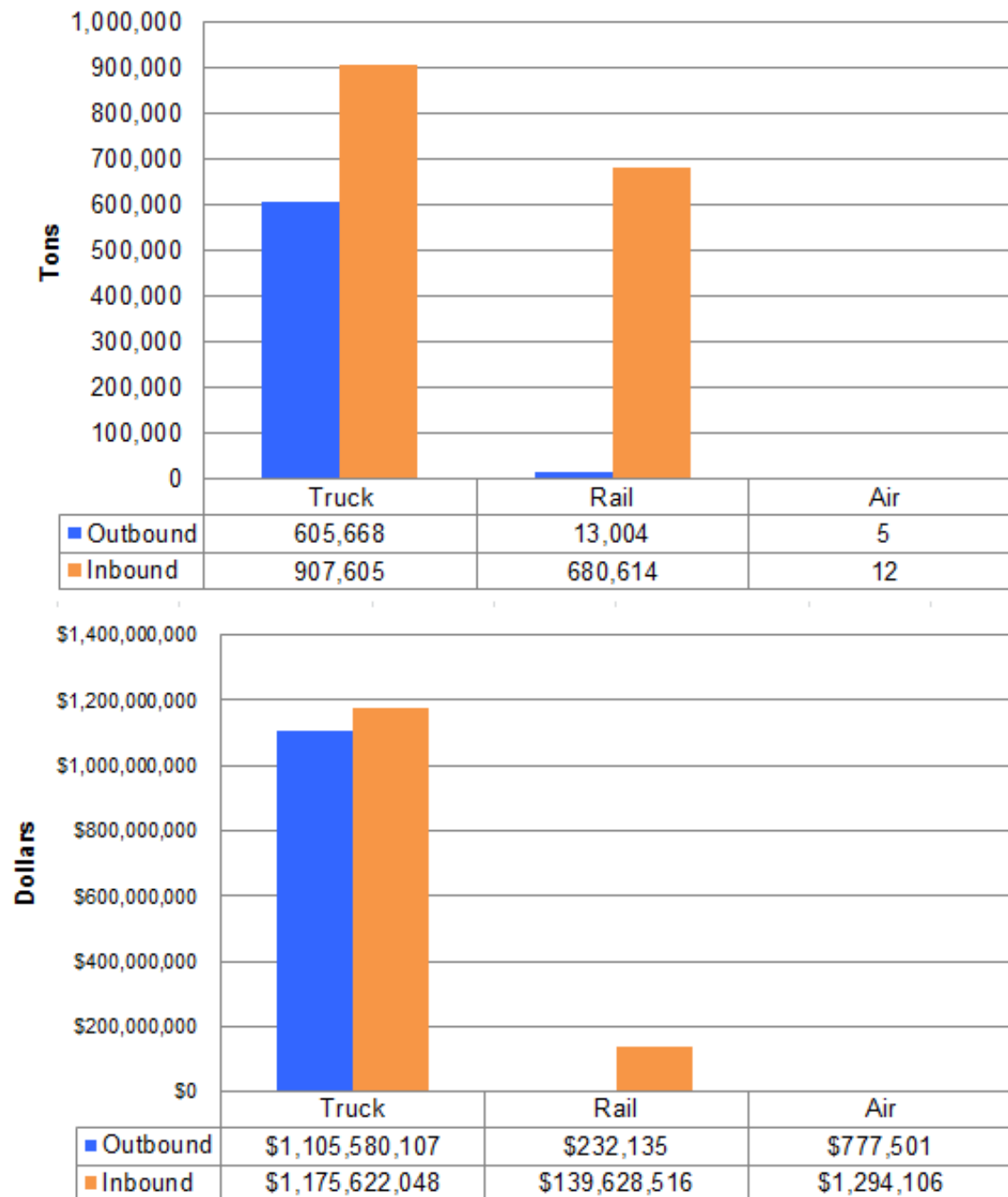


Table 11 summarizes Chemung County's top trading partners, by tonnage and value. The Northeast, specifically New York and Pennsylvania, is the County's major trading partner. There is significant outbound movement, however, to the Midwest, including Indiana, Ohio, Chicago, and Michigan.

TABLE 11: 2011 TOP IMPORT AND EXPORT PARTNERS FOR CHEMUNG COUNTY²¹

TONS: IMPORTS			TONS: EXPORTS		
REGION	TONS	%	REGION	TONS	%
Bradford County (PA)	297,897.04	28%	Luzerne County (PA)	46,708.28	16%
Traverse City (MI)	188,068.00	18%	New York-Newark-Bridgeport (NY)	39,650.74	13%
Omaha-Council Bluffs-Fremont (NB)	163,527.47	15%	Broome County (NY)	35,422.84	12%
Chicago-Naperville-Michigan City (IL)	86,410.51	8%	Montgomery County (PA)	31,936.46	11%
Tioga County (NY)	77,737.32	7%	Boston-Worcester-Manchester (MA)	31,658.24	11%
Washington-Baltimore-Northern Virginia (VA)	76,490.31	7%	Lackawanna County (PA)	29,367.30	10%
Indianapolis-Anderson-Columbus (IN)	55,523.71	5%	Lycoming County (PA)	26,719.30	9%
Mc Kean County (PA)	38,940.40	4%	New York-Newark-Bridgeport (NJ)	22,825.77	8%
Albany-Schenectady-Amsterdam (NY)	37,224.90	4%	Hartford-West Hartford-Willimantic (CT)	16,324.14	6%
Madison-Baraboo (IA)	33,890.55	3%	Bradford County (PA)	16,092.96	5%
DOLLARS: IMPORTS			DOLLARS: EXPORTS		
REGION	TONS	%	REGION	TONS	%
Cleveland-Akron-Elyria BEA (OH)	\$218.86	31%	Boston-Worcester-Manchester (MA)	\$189.01	32%
Indianapolis- Anderson- Columbus (IN)	\$91.22	13%	New York-Newark-Bridgeport (NY)	\$108.98	19%
Boston-Worcester-Manchester (MA)	\$87.05	12%	Hartford-West Hartford-Willimantic (CT)	\$59.78	10%
Hartford-West Hartford-Willimantic (CT)	\$66.71	10%	New York-Newark-Bridgeport (NJ)	\$50.40	9%
New York-Newark-Bridgeport (NY)	\$46.58	7%	Boston-Worcester-Manchester (NH)	\$37.07	6%
New York-Newark-Bridgeport (NJ)	\$45.16	6%	Cleveland-Akron-Elyria (OH)	\$32.64	6%
Albany-Schenectady-Amsterdam (NY)	\$44.97	6%	Boston-Worcester-Manchester (RI)	\$26.70	5%
Mc Kean County (PA)	\$36.66	5%	Columbus-Marion-Chillicothe (OH)	\$26.49	5%
Chicago-Naperville-Michigan City (IL)	\$31.51	5%	New York-Newark-Bridgeport (CT)	\$26.05	4%
Hudson County (NJ)	\$30.69	4%	Montgomery County (PA)	\$25.15	4%

²¹ TRANSEARCH Data 2011.

The Elmira region has a strong manufacturing industry and strengths in transportation, warehousing, and wholesale distribution. It is predicted that these industries will either remain stable or grow over the next three decades. The identification of the commodities produced or needed to maintain these industries must be investigated to understand infrastructure priorities that will ultimately guide investment.

Table 12 summarizes outbound flow values by commodity in 2011 and 2040. The top 2011 truck exported goods were mechanical power transmission equipment, containers/boxes, orthopedic or prosthetic supplies, sheet metal products, and miscellaneous electronic components. On rail, gravel/sand is the highest export but has a relatively low value. Figure 16 illustrates both 2011 and 2040 outbound value flows. The highest metropolitan export area for Chemung County goods was the Boston metropolitan area, to which almost \$190 million worth of commodities were exported in 2011. This value is projected to increase to \$617 million in 2040. The New York Portion of New York-Newark-Bridge metropolitan area is the second-largest export value destination, with approximately \$109 million in exports in 2011 and a predicted \$313 million.

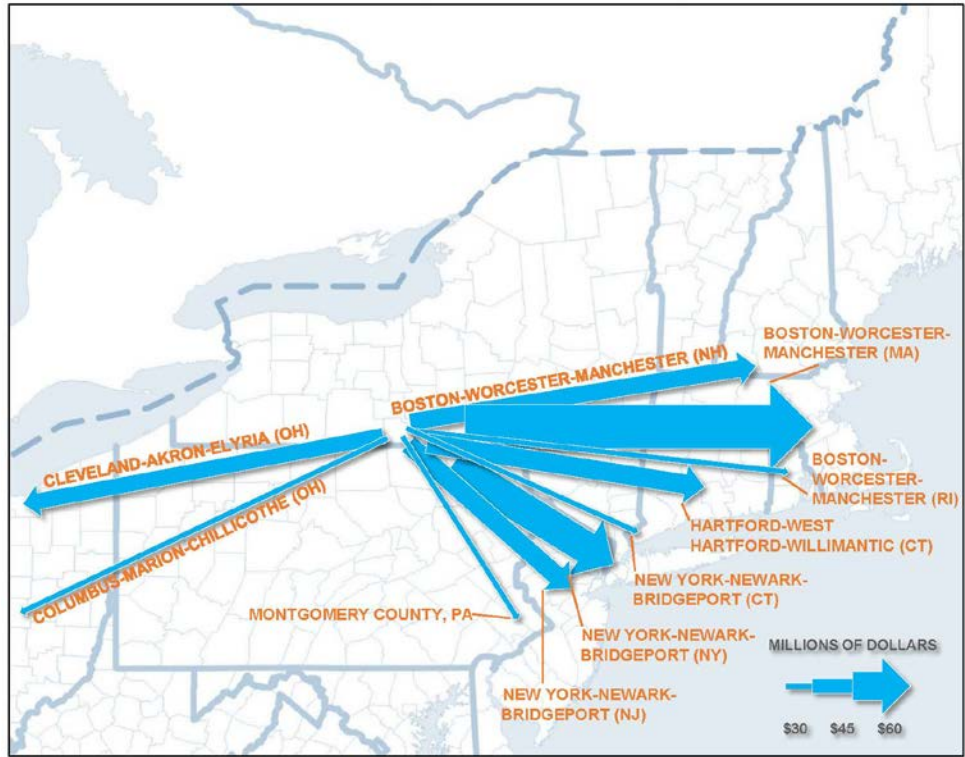
Predictions for 2040 show a significant increase in the export of electronic tubes. This commodity went from out of the top 10 to having an export value of over \$970 million. The export of orthopedic or prosthetic supplies, internal combustion engines, and other mechanical/industrial equipment also increased. The increase in export of these commodities coincides with a jump in exports to the Midwest and NC in 2040.

TABLE 12: OUTBOUND VALUES

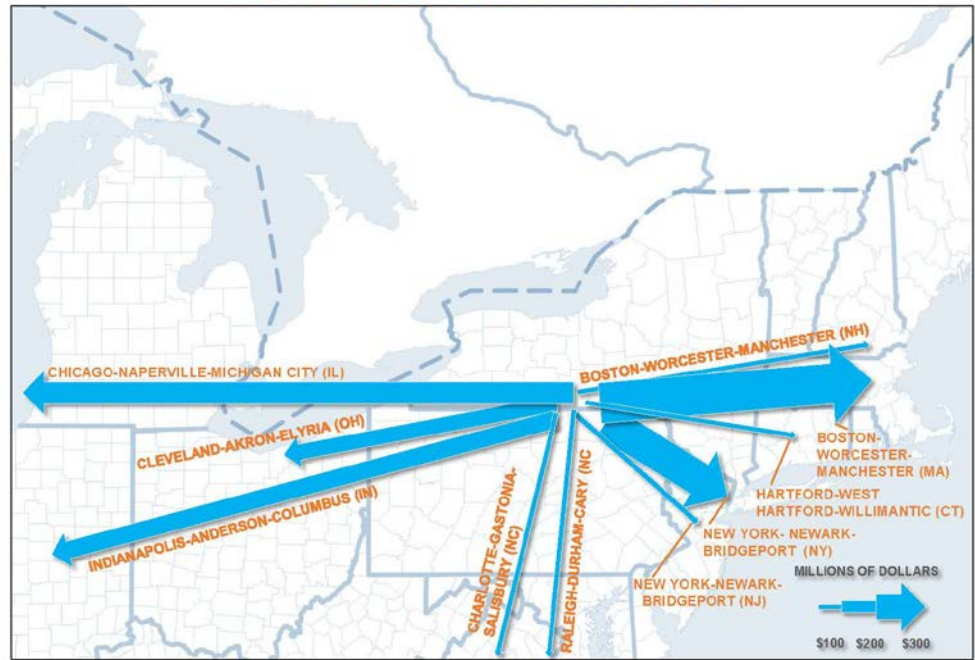
FROM CHEMUNG VIA TRUCK (in millions)			
COMMODITY	2040	2011	CHANGE
Electronic Tubes	\$970.98	N/A	N/A
Orthopedic or Prosthetic Supplies	\$673.87	\$ 90.08	648%
Misc. Electrical Industrial Equipment	\$314.27	\$ 70.08	348%
Mech Power Transmission Equipment	\$287.78	\$171.70	68%
Misc. Electronic Components	\$180.44	\$ 74.41	142%
Sheet Metal Products	\$130.97	\$ 82.59	59%
Misc. Internal Combustion Engines	\$110.01	N/A	N/A
Machine Tools, Metal Cutting	\$106.96	\$ 38.34	179%
Valves or Pipe Fittings	\$100.52	\$ 58.00	73%
Ophthalmic or Opticians Goods	\$ 91.38	N/A	N/A
<i>All Other Commodities</i>	\$736.62	358.06	N/A
FROM CHEMUNG VIA RAIL (in millions)			
COMMODITY	2040	2011	CHANGE
Gravel or Sand	\$ 0.18	\$ 0.10	80%
Mech Power Transmission Equipment	\$ 0.12	\$ 0.03	300%
Motor Vehicles	\$ 0.07	\$ 0.04	75%
Railroad Cars	\$ 0.07	\$ 0.02	250%
Containers or Boxes	\$ 0.02	\$ 0.01	100%
Metal Scrap or Tailings	\$ 0.02	\$ 0.01	100%
Miscellaneous Glassware	\$ 0.02	\$ 0.01	100%
Newspapers	\$ 0.02	\$ 0.01	100%
Machine Tools, Metal Cutting	\$ 0.01	\$ 0.00	100%
Glass Containers	\$ 0.01	\$ 0.00	100%
<i>All Other Commodities</i>	\$ 0.05	\$ 0.01	N/A
FROM CHEMUNG VIA AIR (in millions)			
COMMODITY	2040	2011	CHANGE
Electrical Equipment	\$ 1.36	\$ 0.55	148%
Machinery	\$ 0.38	\$ 0.18	108%
Transportation Equipment	\$ 0.07	\$ 0.04	68%
Pulp, paper or Allied Products	\$ 0.01	\$ 0.01	-1%
<i>All Other Commodities</i>	\$ 0.00	\$ 0.00	N/A

FIGURE 16: OUTBOUND VALUE

INTER-REGIONAL FREIGHT MOVEMENT FLOWS TO TOP 10
DESTINATIONS: OUTBOUND VALUE, 2011



INTER-REGIONAL FREIGHT MOVEMENT FLOWS TO TOP 10
DESTINATIONS: OUTBOUND VALUE, 2040



As identified in the outbound tonnage commodity summary in Table 13, containers/boxes, glass containers, paper waste/scrap, and sheet metal products were the highest-tonnage truck exports for 2011. Gravel/sand is the only major rail export from a tonnage standpoint. Tonnage exports in 2011 mainly fell within eastern Pennsylvania, the New York-Newark metropolitan area, and the Boston metropolitan area. Figure 17 illustrates outbound tonnage flows by metropolitan area.

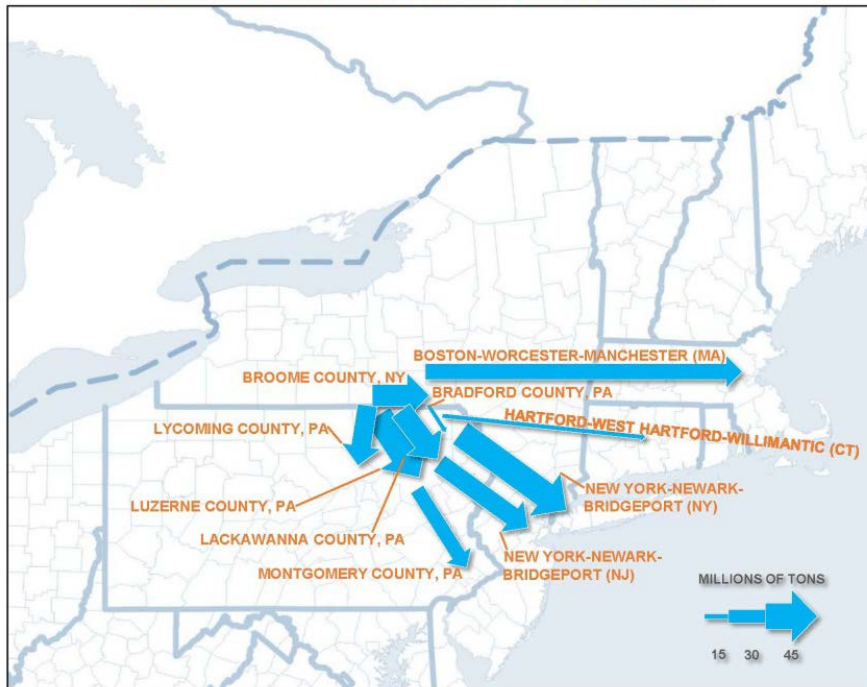
By 2040, miscellaneous waste/scrap is predicted to grow to the top Chemung County export by weight. Sheet metal, metal scrap, and electrometallurgical products are also expected to increase substantially. Gravel/sand remains the highest-tonnage export by rail, doubling from 2011 tonnage. The export of containers/boxes decreased substantially—falling out of the top 10. Tons of glass containers exported fell from 8% of all export tonnage to 5%. Export destinations are predicted to remain in the same general areas of eastern Pennsylvania, the New York-Newark metropolitan area, and the Boston metropolitan area. The Albany Region will also be a growing export market for Chemung County.

TABLE 13: OUTBOUND TONNAGE

FROM CHEMUNG VIA TRUCK (in tons)			
COMMODITY	2040	2011	CHANGE
Miscellaneous Waste or Scrap	96,516.8	39,831.7	142%
Sheet Metal Products	65,622.3	41,383.3	59%
Metal Scrap or Tailings	62,892.6	30,293.0	108%
Electrometallurgical Products	61,161.7	23,486.2	160%
Electronic Tubes	59,217.8	N/A	N/A
Paper Waste or Scrap	58,768.1	45,262.6	30%
Orthopedic, Prosthetic Supplies	57,520.4	N/A	N/A
Glass Containers	56,557.4	45,661.2	24%
Textile Scrap or Sweepings	53,310.9	35,134.2	52%
Miscellaneous Field Crops	47,374.1	27,509.0	72%
<i>All Other Commodities</i>	<i>486,115.9</i>	<i>240,077.3</i>	<i>N/A</i>
FROM CHEMUNG VIA RAIL (in tons)			
COMMODITY	2040	2011	CHANGE
Gravel or Sand	24,050.2	12,948.0	86%
Metal Scrap or Tailings	59.8	21.3	181%
Miscellaneous Glassware	22.5	6.7	237%
Railroad Cars	18.7	5.6	233%
Containers or Boxes	13.0	4.0	230%
Mech Power Transmission Eq.	9.3	2.3	307%
Motor Vehicles	8.5	4.2	100%
Glass Containers	6.9	2.0	238%
Soap or Other Detergents	5.8	N/A	N/A
Grain	5.3	2.0	166%
<i>All Other Commodities</i>	<i>19.8</i>	<i>6.21</i>	<i>N/A</i>
FROM CHEMUNG VIA AIR (in tons)			
COMMODITY	2040	2011	CHANGE
Electrical Equipment	6.1	2.4	148%
Machinery	3.7	1.8	108%
Pulp, Paper or Allied Products	0.6	0.6	-1%
Transportation Equipment	0.3	0.2	68%
<i>All Other Commodities</i>	<i>0.0</i>	<i>0.0</i>	<i>N/A</i>

FIGURE 17: OUTBOUND TONNAGE

INTER-REGIONAL FREIGHT MOVEMENT FLOWS TO TOP 10
DESTINATIONS: OUTBOUND TONNAGE, 2011



INTER-REGIONAL FREIGHT MOVEMENT FLOWS TO TOP 10
DESTINATIONS: OUTBOUND TONNAGE, 2040

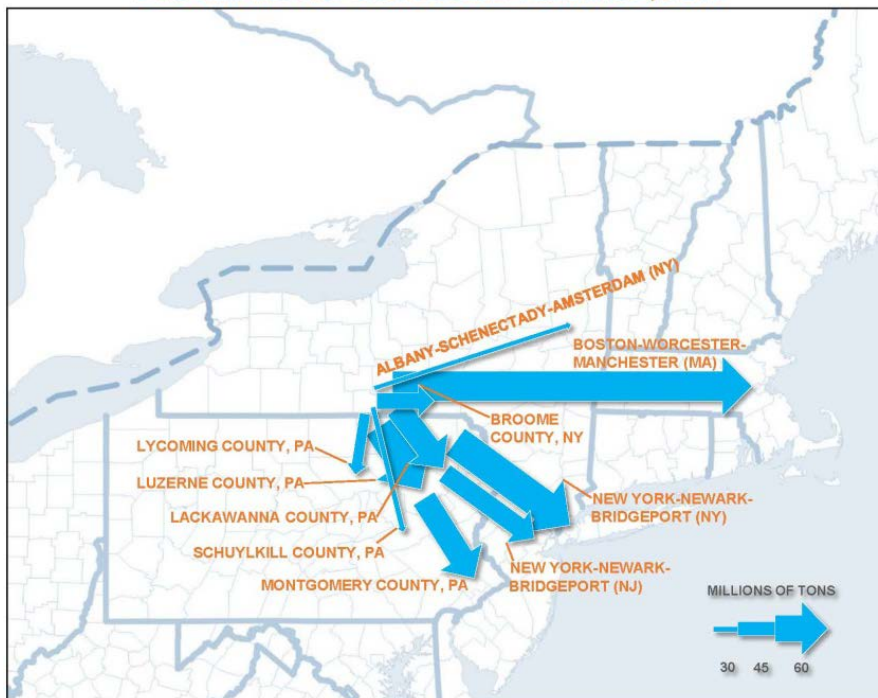


Table 14 compares 2011 and 2040 inbound flow values by commodity. Warehouse and distribution center materials, typically carried by truck, were the highest-valued imports in 2011. The value of these imports are predicted to increase by 170% by 2040. Primary iron/steel products were the second-most significant import and are anticipated to steadily increase into 2040. These products are typically carried by rail due to their weight. While not substantial in 2011, solid-state semiconductors are predicted to increase substantially in import value. These devices are used in the development of electronics, which is related to manufacturing in the Elmira region.

Figure 18 illustrates inbound value by metropolitan area. The New York and Boston metropolitan regions, as well as areas in the Midwest, are predicted to remain strong trade partners in coming decades. The Cleveland region is projected to remain the most substantial source of commodities by value, while NC and VA rise to the top 10.

TABLE 14: INBOUND VALUE

TO CHEMUNG VIA TRUCK (in millions) ²²			
COMMODITY	2040	2011	CHANGE
Solid-State Semiconducts	\$ 601.20	N/A	N/A
Warehouse & Distribution Center	\$ 407.17	\$ 150.64	170%
Motor Vehicles	\$ 143.48	\$ 42.45	238%
Misc. Electrical Industrial Equipment	\$ 95.49	\$ 50.28	90%
Radio or Tv Transmitting Equipment	\$ 85.54	N/A	N/A
Electronic Tubes	\$ 80.57	N/A	N/A
Orthopedic or Prosthetic Supplies	\$ 76.69	N/A	N/A
<i>All Other Commodities</i>	\$1,414.1	\$ 627.60	N/A
TO CHEMUNG VIA RAIL (in millions)			
COMMODITY	2040	2011	CHANGE
Primary Iron or Steel Products	\$ 134.45	\$ 113.04	19%
Railroad Cars	\$ 11.74	\$ 5.60	110%
Gravel or Sand	\$ 7.71	\$ 4.15	86%
Potassium or Sodium Compound	\$ 6.20	\$ 5.07	22%
Petroleum Refining Products	\$ 6.07	\$ 9.36	-35%
Chem or Fertilizer Mineral Crude	\$ 1.68	\$ 1.77	-5%
Miscellaneous Glassware	\$ 0.43	\$ 0.22	95%
Frozen Fruit, Veg or Juice	\$ 0.28	\$ 0.14	100%
Nut or Veg Oils or By-products	\$ 0.16	\$ 0.14	14%
Misc. Shipments N.E.C.	\$ 0.08	N/A	N/A
<i>All Other Commodities</i>	\$ 0.18	\$0.11	N/A
TO CHEMUNG VIA AIR (in millions)			
COMMODITY	2040	2011	CHANGE
Machinery	\$ 1.13	\$ 0.81	41%
Primary Metal Products	\$ 0.41	\$ 0.24	66%
Instrum, Photo Equip, Optical Equip	\$ 0.14	\$ 0.05	163%
Chemicals or Allied Products	\$ 0.06	\$ 0.07	-12%
Pharmaceuticals	\$ 0.05	\$ 0.04	36%
Misc. Manufacturing Products	\$ 0.04	\$ 0.04	5%
Rubber or Miscellaneous Plastics	\$ 0.03	\$ 0.01	94%
Industrial Chemicals	\$ 0.02	\$ 0.01	60%
Transportation Equipment	\$ 0.01	\$ 0.02	-33%
Fabricated Metal Products	\$ 0.00	\$ 0.00	96%
<i>All Other Commodities</i>	\$ 0.00	\$ 0.00	N/A

²² Significant increases projected for aircraft parts and engines were removed from predicted inbound values due to the closing of an aircraft manufacturing firm located in Chemung County. This data, however, could not be extracted from the commodity flow information.

FIGURE 18: INBOUND VALUE

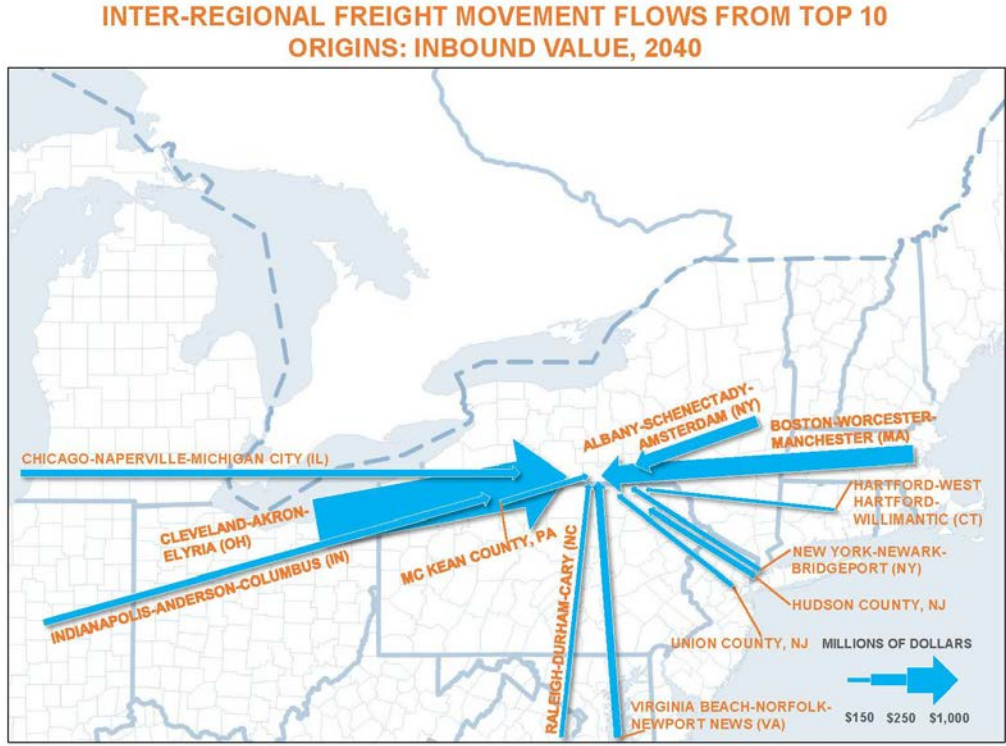
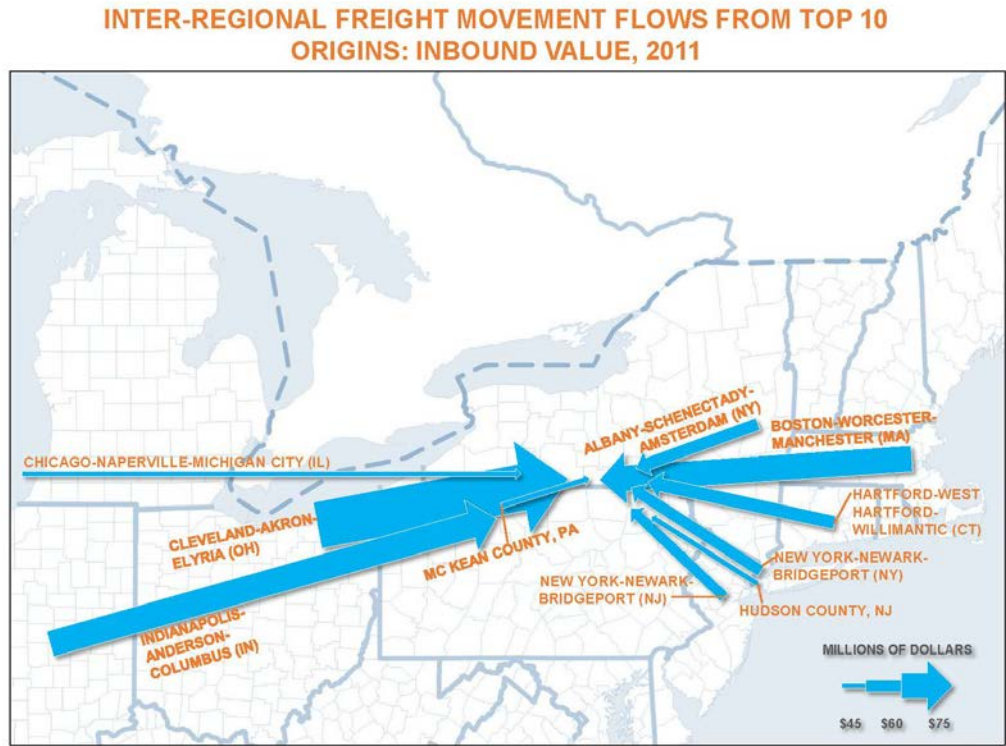


Table 15 summarizes inbound tonnage commodity changes between 2011 and 2040. In 2011, gravel/sand accounted for an outlying tonnage (35%) of all imports. Broken stone/riprap, warehouse and distribution materials, and primary iron or steel products were the other highest-tonnage imports. A significant portion of the 2011 imports were materials related to construction or manufacturing.

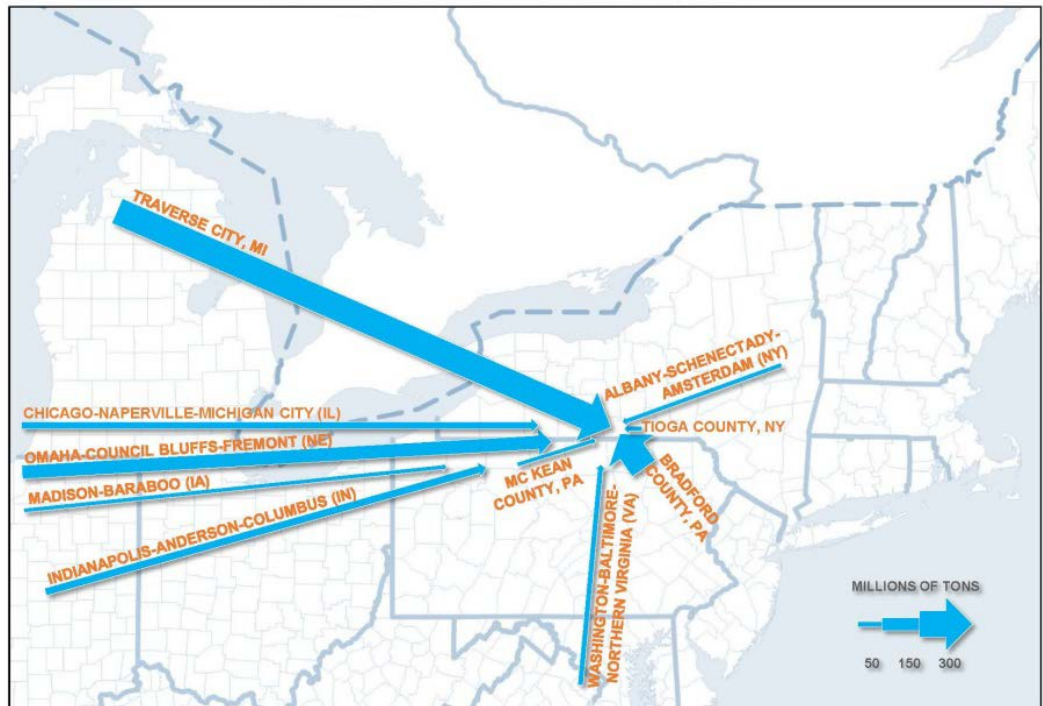
Figure 19 illustrates inbound tonnage flows by metropolitan area. High-tonnage import trading partners in 2011 were concentrated in the Midwest; however, Bradford County (PA) and Traverse City (MI) were the highest-tonnage suppliers. Suppliers are anticipated to remain concentrated in Bradford County, Traverse City, and the Midwest in 2040. The Virginia portion of the Washington, DC, metropolitan is also a significant importer to Chemung County.

TABLE 15: INBOUND TONNAGE

TO CHEMUNG VIA TRUCK (in tons)			
COMMODITY	2040	2011	CHANGE
Broken Stone or Riprap	644,115.2	367,773.2	75%
Warehouse & Distribution Center	363,705.3	134,558.3	170%
Ready-mix Concrete, Wet	44,204.6	21,582.4	105%
Petroleum Refining Products	43,448.3	48,117.9	-10%
Concrete Products	40,320.9	23,575.3	71%
Clay Ceramic or Refrac Minerals	26,565.4	N/A	N/A
Asphalt Paving Blocks or Mix	23,814.9	14,350.2	66%
Lumber or Dimension Stock	22,886.3	15,747.2	45%
Solid-State Semiconducts	19,681.3	N/A	N/A
Paper	18,264.0	13,749.3	33%
<i>All Other Commodities</i>	<i>470,225.1</i>	<i>244,114.4</i>	<i>N/A</i>
TO CHEMUNG VIA RAIL (in tons)			
COMMODITY	2040	2011	CHANGE
Gravel or Sand	1,028,066.3	553,485.0	86%
Primary Iron or Steel Products	87,159.2	73,280.0	19%
Potassium or Sodium Compound	19,317.2	15,800.0	22%
Chem or Fertilizer Mineral Crude	19,050.9	20,120.0	-6%
Railroad Cars	12,316.7	5,880.0	109%
Misc. Glassware, Blown or Pressed	6,059.1	3,177.6	91%
Petroleum Refining Products	5,013.8	7,729.3	-35%
Nut or Veg Oils or By-products	860.4	765.6	12%
Frozen Fruit, Veg or Juice	314.4	163.1	93%
Lumber or Dimension Stock	101.9	52.6	94%
<i>All Other Commodities</i>	<i>328.0</i>	<i>160.54</i>	<i>N/A</i>
TO CHEMUNG VIA AIR (in tons)			
COMMODITY	2040	2011	CHANGE
Machinery	10.9	7.8	41%
Primary Metal Products	3.8	2.3	66%
Rubber or Miscellaneous Plastics	0.8	0.4	94%
Chemicals or Allied Products	0.7	0.8	-12%
Instrum, Photo Equip, Optical Eq	0.7	0.3	163%
Industrial Chemicals	0.3	0.2	60%
Pharmaceuticals	0.2	0.1	36%
Fabricated Metal Products	0.1	0.1	96%
Misc. Manufacturing Products	0.1	0.1	5%
Transportation Equipment	0.0	0.1	-33%
<i>All Other Commodities</i>	<i>0.0</i>	<i>0.0</i>	<i>N/A</i>

FIGURE 19: INBOUND TONNAGE

INTER-REGIONAL FREIGHT MOVEMENT FLOWS FROM TOP 10
ORIGINS: INBOUND TONNAGE, 2011



INTER-REGIONAL FREIGHT MOVEMENT FLOWS FROM TOP 10
ORIGINS: INBOUND TONNAGE, 2040

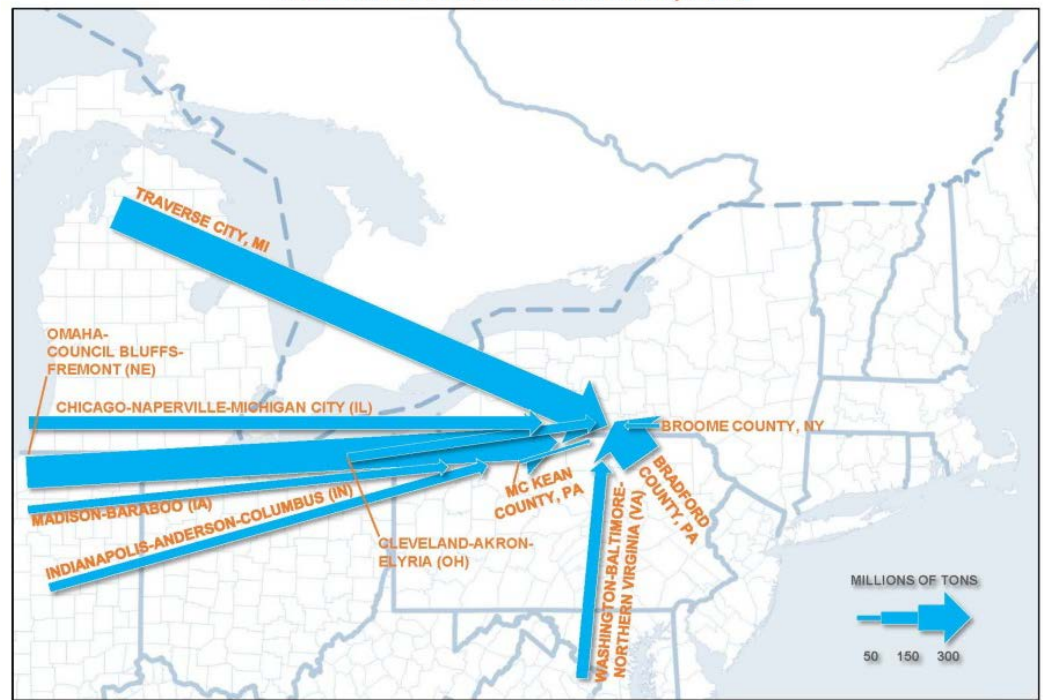


Table 16 summarizes the existing and potential growth in each of the major industries that affects regional freight movement.

TABLE 16: SUMMARY OF MAJOR INDUSTRIES AFFECTING REGIONAL FREIGHT

INDUSTRY (NAICS #)	2011 EMP	2001-11 % EMP GROWTH	2011 LQ	% OF 2011 GDP	2011 RELATED INBOUND COMMODITIES	2011 RELATED OUTBOUND COMMODITIES	2040 PROJECTIONS
1 Agriculture	37	-62.6%	0.07	0%	Chem/Fert: 20,100 Tons/\$2M via Rail	Grain: 2 Tons via Train Misc. Field Crops: 27,500 Tons via Truck	Slight decrease in inbound commodities. Double in outbound commodities.
21 Mining/ Quarry/Gas Extraction	460	64.3%* (2006- 2011 growth)	1.99	1%	Gravel/Sand: 553,500 Tons/\$4M via Rail	Not Available	High potential for industry growth. Major increase in import of gravel/sand. Should be noted that much of this will be stored at HOST site rather than used for extraction.
23 Construction	1,874	-33.0%	0.94	5%	-Ready-mix Concrete: 21,500 Tons via Truck -Concrete Products: 23,600 Tons via Truck -Asphalt Blocks/Mix: 14,350 Tons via Truck -Lumber/Dimension Stock: 15,700 Tons via Truck/53 Tons via Rail	Not Available	Construction industry to remain stable. Estimated 2011 - 2040 Increases: Ready-mix Concrete: 105% Concrete Products: 71% Asphalt Blocks/Mix: 66% Lumber/Dim Stock: 45%
31-33 Manufact- uring	5,581	-30.3%	1.77	20%	-Primary Iron/Steel Products: 73,300 Tons/\$113M via Rail -Potassium/Sodium Comp: 15,800 Tons/\$5M via Rail -Railroad Cars: 5,900 Tons/\$6M via Rail -Misc Glassware: 3,200 Tons via Rail -Clay Ceramic/Refrac Materials: N/A in 2011 -Indust/Electric Equip: \$50M via Truck -Misc Manuf Commodities: 4 Tons/\$1M via Air	-Sheet Metal Products: 41,400 Tons via Truck -Electrometal Products: 23,500 Tons via Truck -Glass Containers: 45,700 Tons via Truck/2 Tons via Rail -Misc Glassware: 7 Tons via Rail -Railroad Cars: 6 Tons via Rail -Containers/Boxes: 4 Tons via Rail -Mech Power Transm Equip: 2 Tons via Rail -Motor Vehicles: 4 Tons via Rail -Electric Equip: 2 Tons via Air -Machinery 2 Tons via Air -Soap/Detergent: N/A in 2011 -Electronic Tubes: N/A in 2011 -Orthopedics/Prosthetics: N/A in 2011	Manufacturing industry has potential to remain stable. Estimated 2011 to 2040 Increases: Misc. Glassware - Imports: 91%, Exports: 237% via Rail Railcar - Imports: 110%, Exports: 230% via Rail Primary Iron/Steel Product Imports: 19% Potassium/Sodium Comp Imports: 22% Containers/Boxes Exports: 230% Mech Power Transm Equip Exports: 307% Motor Vehicles Exports: 100% Glass Container Exports: 24% via Truck, 238% via Rail Truck Sheet Metal Product Exports: 59% Electrometal Product Exports: 160% Soap/Detergent Exports: 5.8 Tons via Rail Electronic Tube Exports: 59,200 Tons via Truck Orthopedics/Prosthetic Exports: 57,500 Tons via Truck

INDUSTRY (NAICS #)	2011 EMP	2001-11 % EMP GROWTH	2011 LQ	% OF 2011 GDP	2011 RELATED INBOUND COMMODITIES	2011 RELATED OUTBOUND COMMODITIES	2040 PROJECTIONS
42 Wholesale Trade	1,776	-3.7%	No Data	7%	Not Available	Not Available	Wholesale trade has potential to remain stable. GDP had 40% increase from 2001 to 2011
44-45 Retail Trade	6,148	-10.1%	1.2	9%	Not Available	Not Available	Retail trade has potential to remain stable. GDP had 20% increase from 2001 to 2011
48-49 Transport and Warehouse	1,501	46.2%	No Data	No Data	-Warehouse/Distrib Center: 134,600 Tons/\$151M via Truck -Gravel/Sand: 553,500 Tons/\$4M via Rail	Gravel/Sand: 12,900 Tons via Rail	Warehouse/Distrib Center projected to increase by 170% to 363,700 annual tons via truck. Gravel/Sand imports and exports to increase by 86%, equating to 24,000 annual import tons and 1,028,000 export tons.
56 Admin and Waste Services	2,288	7.4%	0.64	3%	Not Available	-Metal Scrap/Tailings: 21 Tons Via Rail, 30,300 Tons via Truck -Misc Waste/Scrap: 39,800 Tons via Truck -Paper Waste/Scrap: 45,300 Tons via Truck -Textile Scrap/Sweepings: 35,100 Tons via Truck	Projected Increases in export of scrap: Metal Scrap/Tailings: 181% Via Rail, 142% via Truck Misc. Waste/Scrap: 108% Paper Waste/Scrap: 30% Textile Scrap/Sweepings: 52%
62 Health Care	7,322	20.9%	1.29	14%	Pharmaceuticals: 0.1 Ton/ \$.04M via Air	Not Available	The healthcare industry has the potential to grow, causing increased need for medical devices, expedited shipments, and high value goods movement via air. Pharmaceuticals projected to increase to .2 Tons and \$.05M by 2040.

IMPLICATIONS OF COMMODITY FLOWS

The following list provides potential implications indicated by the current and forecasted commodity flows to and from Chemung County:

- Agriculture will yield slight increases in truck trips to/from farm facilities in the peripheries of the county.
- Potential growth of the mining/quarry/gas extraction industry may likely cause increases in rail traffic to/from Horseheads, as well as increased truck traffic to/from areas where hydraulic fracturing may occur. The potential for growth with these should take into account that hydrofracking is currently banned, but the projection is for 2040.
- Predicted increases in construction materials may cause increases in truck traffic due to increased movement of construction materials.
- While recent manufacturing trends illustrate employment decline, manufacturing remains one of Elmira's largest industries. Predictions suggest significant increases (over 200%) on freight rail export demand and increases in truck movement to/from manufacturing firms. Truck movement predictions are not as significant as rail.
- Stability in wholesale trade indicates consistent truck traffic for movement of wholesale goods in the future.
- Stability or potential minor decreases in retail trade indicate consistent to lower truck traffic for movement of retail goods moving forward.
- High projections for growth in transportation and warehousing may yield significant increases in demand on both the truck and freight rail components of the system, as well as increased frequency of rail trips to Horseheads short line.
- Increasing waste volumes will result in increased demand for truck movements to disposal facilities.
- Potential increases in the healthcare sector may cause slight increases in truck/air movement demand.

FINDINGS FROM FREIGHT STAKEHOLDER MEETINGS AND INTERVIEWS

Key stakeholders in Chemung County's freight movement system participated in meetings and interviews for this study. These stakeholders provided detailed information on issues, needs, and opportunities associated with the County's freight transportation system, operations, planning, and investment. The information obtained through these meetings and interviews is anecdotal and subjective; however, it is useful to have such information to supplement the objective "hard" data already presented in this study.

The following are key points raised in the meetings and interviews:

- Chemung County does not currently suffer from major freight or logistics congestion or volume problems. Most major firms and organizations that experience significant freight movement are located at sites with adequate access to and from I-86 or state highways that can accommodate significant truck movement.

- Several stakeholders cited a general lack of accessible and physically adequate truck parking lots and/or spaces in the County. This issue has grown in importance, in terms of both logistics efficiency and safety, as truckers respond to general increasing demand for time-sensitive or “just in time” (JIT) deliveries and pickups. If a trucker is early or late for a scheduled pickup or drop-off at a shipper or receiver facility, he/she will usually need to park off-site until the scheduled (or rescheduled) time. However, stakeholders said there are few safe and accessible truck parking facilities within a reasonable distance of most of the shipper/receiver facilities in Chemung County, particularly for overnight parking. These stakeholders therefore suggested that the ECTC and other agencies actively pursue developing additional private truck parking facilities closer to major shipper/receiver zones, perhaps through public-private partnerships with local firms that rely on JIT service from trucks.
- Several stakeholders also suggested that there is lack of adequate signage on state and local roads directing trucks to available parking and appropriate roads designed to accommodate heavy trucks. It was noted by one stakeholder that while the City of Elmira operates a parking lot on Water Street, adjacent to an I-86 interchange and across the street from Kennedy Valve, with several spaces that can accommodate trucks, there is no signage on I-86 indicating this. The purposes of the signage would be to inform truckers that the facility exists and directs them to it.
- There is concern among some stakeholders regarding a lack of local freight carriers that offer competitive prices for shipping outbound manufactured products. They believe this is a consequence of the limited availability and coverage that trucking firms are willing to provide in a relatively small area such as Chemung County. To address this issue, some stakeholders are seeking collaborative arrangements with other firms to arrange for consolidation of shipments into truckloads that could both decrease unit-shipping costs and provide more options for moving freight to and from Chemung County.
- Some stakeholders noted that with the growth of the scale and amount of activity at the HOST facility in Horseheads, the safety and adequacy of the roads that provide truck access to and from the facility may deteriorate. One stakeholder believes that the increase in truck volumes associated with HOST expansion has made the intersection of Ridge Road with Old Ithaca Road unsafe because the intersection geometry and sight distances are inadequate for trucks turning onto or off Old Ithaca Road. This stakeholder also suggested that developing a direct-access road from HOST to State Route 13 could largely mitigate the Old Ithaca Road intersection issue. (Note: The stakeholder was unaware that Chemung County study conducted a study to assess such a potential connector road.) He further suggested that the ECTC might be able to pursue such a direct-access road through a public-private partnership with HOST and its tenants.
- While rail is not the primary mode of shipping freight into or out of Chemung County, several stakeholders noted that they rely heavily on rail for shipments. Representatives of both Vulcraft of New York and Anchor Glass Container said they receive significant quantities of materials required for their manufacturing processes via rail. Similarly, facilities within the HOST terminal receive significant amounts of sand used in hydraulic fracturing by rail. HOST employs a “communal” transload ramp that is used by multiple tenants for moving sand between rail and trucks and storage buildings. One stakeholder suggested that the ECTC should investigate the feasibility of developing a similar centralized rail facility that multiple shippers and receivers could use that might provide

economies of scale for both those firms and the railroad. (Note: This comment was made prior to the hydraulic fracturing ban.) Without the increased activity from hydraulic fracturing, the additional facilities would not be needed.

The results of these meetings and interviews provide information that supplements and complements the data on freight flows, trading partners, and commodities extracted from TRANSEARCH and federal, state, and regional public sources. This information helps provide additional context and credibility to the analyses and findings of this report.

CHAPTER 4: NEEDS ASSESSMENT

Overall, the transportation system in the ECTC planning area (Chemung County) generally accommodates current freight movement needs across the different modes without significant problems. However, based on the data reviewed concerning future commodity-flow forecasts, regional employment and economic change, and physical infrastructure conditions, as well as the input from regional freight stakeholders, there is evidence that the ECTC should consider options and opportunities for near-term planning and investments that will maintain the region's freight mobility for the long term.

Table 17 provides an assessment of potential changes in demand, by industrial sector, on the Chemung County freight transportation system between now and 2040.

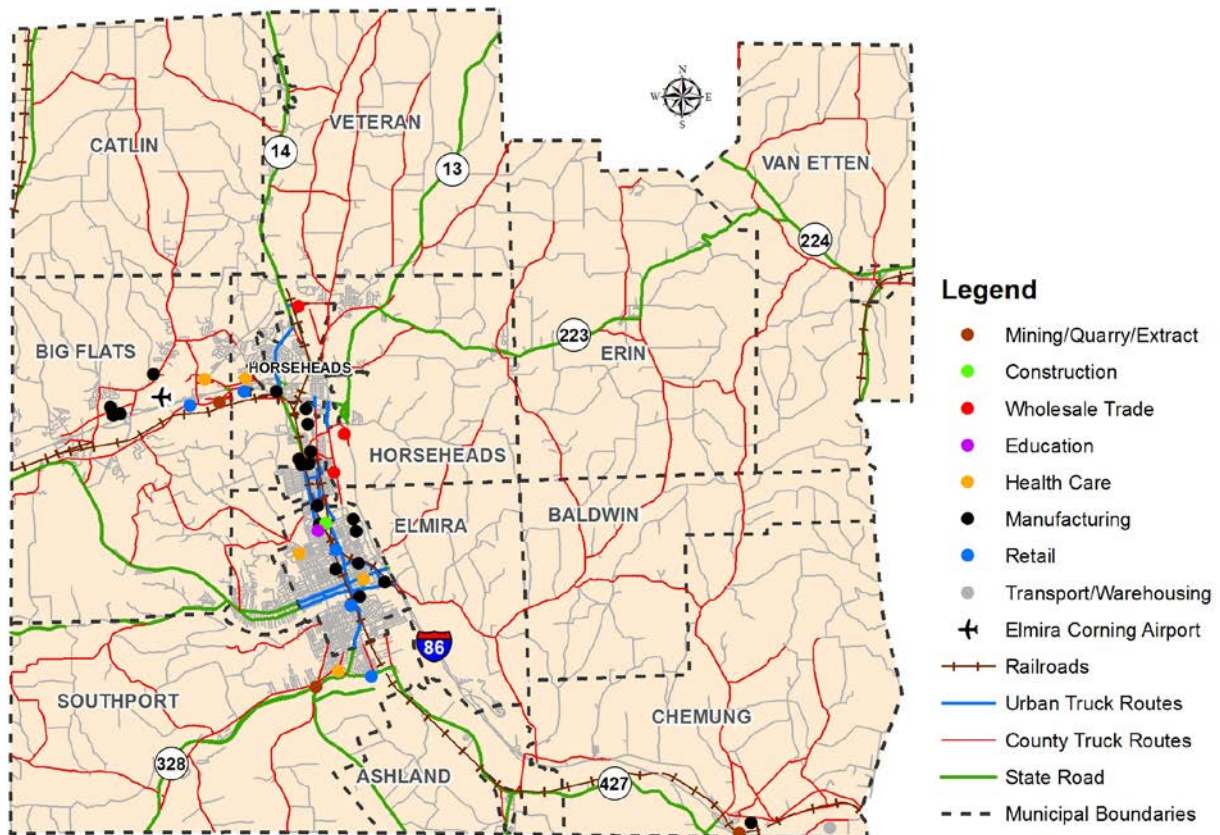
TABLE 17: ASSESSMENT OF FREIGHT DEMAND CHANGE, BY INDUSTRIAL SECTOR, 2014-2040

INDUSTRIAL SECTOR (NAICS CATEGORIES)	POTENTIAL CHANGE IN FREIGHT NETWORK DEMAND
11 Agriculture, Forestry, Fishing and Hunting	<ul style="list-style-type: none"> • Modest increase in truck trips to/from farm facilities
21 Mining, Quarrying, and Oil/Gas Extraction	<ul style="list-style-type: none"> • Increased rail traffic to/from HOST in Horseheads • Increased truck traffic to/from HOST and areas where hydraulic fracturing may occur
23 Construction	<ul style="list-style-type: none"> • Increased truck traffic resulting from increased demand for construction materials
31-33 Manufacturing	<ul style="list-style-type: none"> • Significant increase (over 200%) in demand for outbound freight rail capacity/service • Lesser increase in truck movement to/from manufacturing firms
42 Wholesale Trade	<ul style="list-style-type: none"> • Stable truck traffic levels for movement of wholesale goods
44-45 Retail Trade	<ul style="list-style-type: none"> • Steady increases in truck movement both in support of brick and mortar retail outlets and for logistics associated with e-commerce-related deliveries
48-49 Transportation and Warehousing	<ul style="list-style-type: none"> • Significant increases in demand on both the truck and freight rail components of the system
56 Administrative and Waste Services	<ul style="list-style-type: none"> • Increasing waste volumes will result in increased demand for truck movements to disposal facilities
62 Health Care and Social Assistance	<ul style="list-style-type: none"> • Potential for slight increase in truck/air movement demand

As shown in Figure 20 and Figure 21, many of the industries and firms encompassed in the aforementioned categories are concentrated in the urbanized areas of the I-86 corridor, including Elmira, Horseheads, and Big Flats. However, while some agricultural facilities are located in these areas, most such facilities are located outside the urbanized zone in the less populated sections of the county—where significant land for farming

and road capacity are available. The Chemung County landfill is also located outside the Elmira urbanized area.

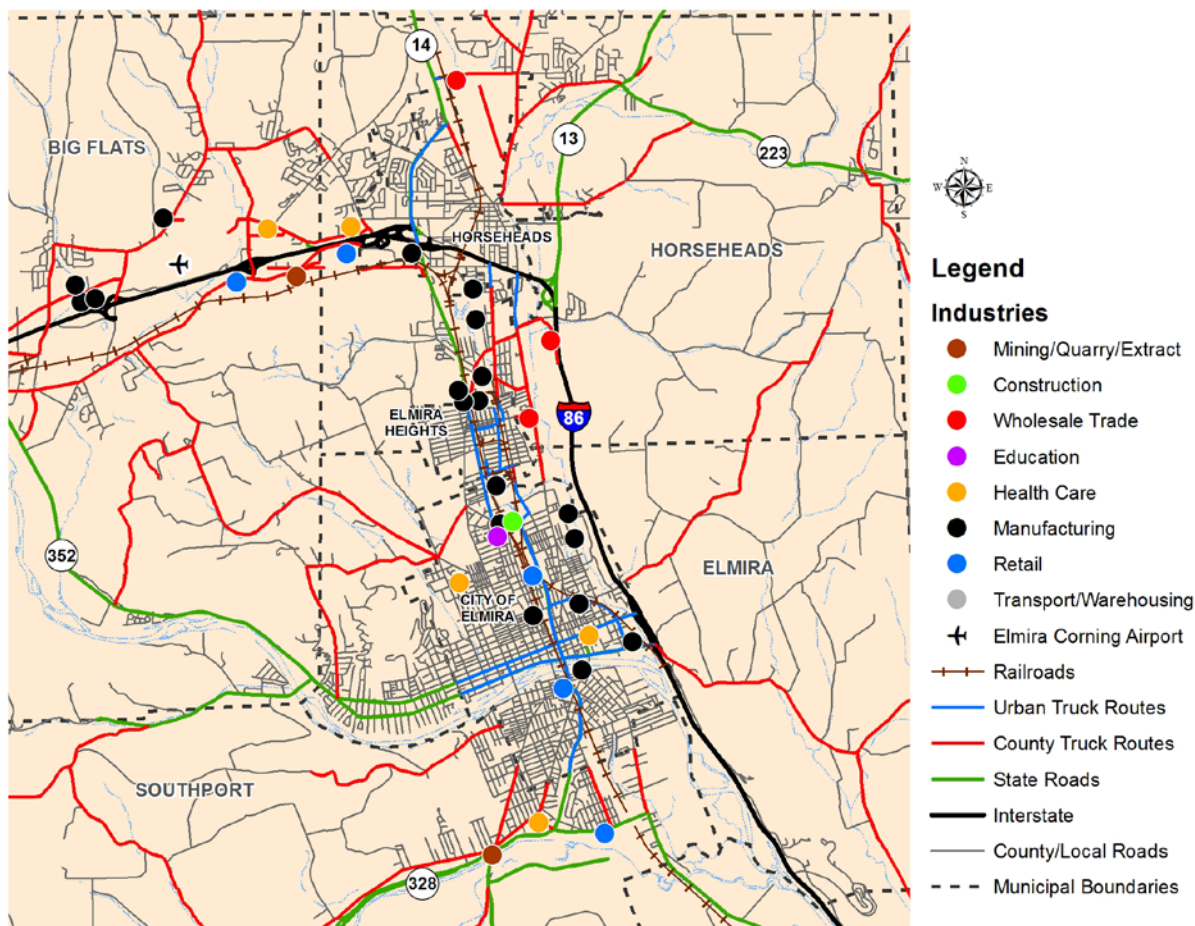
FIGURE 20: INDUSTRY LOCATIONS IN CHEMUNG COUNTY



The clustering of industries and manufacturers in these concentrated geographic zones presents challenges for the region's transportation system. For example, the roadways connecting these areas with I-86 and state highways experience a disproportionately high volume of truck traffic. Thus, these roadways need to be constructed and maintained to a level adequate to handle truck weights and service frequency.

In addition, some of these roadways are within or adjacent to residential and/or non-industrial commercial neighborhoods. This means that truck traffic may interact with cars, buses, pedestrians, and bicyclists in areas not necessarily designed to accommodate such interactions safely or efficiently. While "No Truck Route" signs are currently posted on some County roads, the routes need to be reviewed and new signs placed, and some signs removed, to better reflect current conditions and needs.

FIGURE 21: INDUSTRY LOCATIONS IN CENTRAL CHEMUNG COUNTY



The limited amount of “official” truck parking areas and spaces convenient to Chemung County’s industrial clusters, and the lack of truck information signage, may exacerbate this situation. Truck drivers unfamiliar with the area can make these situations more challenging, since they may use non-truck route roads to access their destinations and/or park in inappropriate or unsafe places while waiting for a scheduled pickup or delivery. Considering that there are currently no official or clearly publicized truck stop locations in Chemung County, a truck parking facility would benefit truckers along this corridor by providing safe parking and rest access near areas of pickup/delivery. Potential areas could include the Town of Chemung where a rest area on westbound I-86 was closed; Ashland, where more space is available due to less development than anticipated; or Big Flats, where space is available.

The current rail infrastructure in Chemung County appears adequate to accommodate current demand. Many firms in the county rely on rail service for supplies and shipments. However, there are many grade crossings with roadways throughout Chemung County, including in the industrial zones of the urban core and in Horseheads adjacent to the HOST facility. While it is important to maximize the ability of rail to serve demand in the county, it will also be important to ensure that increased rail traffic does not disrupt mobility and access in the community. The ECTC should partner with NS and NYSDOT to better understand options and opportunities for safely and efficiently accommodating rail freight growth. Options may include

identifying strategic grade crossing separation projects, quiet zones (no train horn) in residential areas, and public-private partnerships to coordinate grade crossing signals with roadway traffic signals in congested areas.

In addition, the 2011 arrival of the CVS Distribution Center in Chemung signaled the potential for the county to serve as a warehouse and distribution (W/D) hub for both New York and Pennsylvania. In fact, the wholesale trade industry has seen a steady increase in employment in Chemung County since 2001. With significant “greenfield” industrial and commercial lands available adjacent to the I-86 corridor, the county (and greater region beyond the county borders) may experience growth in the W/D industry. Such facilities typically operate 24 hours per day, seven days a week, and require reliable access to and from high-level transportation facilities (e.g., I-86). These levels of activity are often incompatible with certain types of land uses, such as residential and pedestrian-oriented mixed use. Therefore, as the W/D sector grows in Chemung County (through either “natural” growth or active development efforts), it will be important to ensure that the planning and development of W/D facilities is conducted in coordination with overall transportation, land use, and development planning.

CHAPTER 5: RECOMMENDATIONS

The ECTC can take the following action in order to: 1) further pursue planning and investment related to preserving important existing trucking road facilities; and 2) facilitate future management of areas, corridors, and routes to ensure continued reliable, efficient, and safe access for trucks to and from concentrations of logistics-related businesses.

DEVELOP A REGIONAL TRUCK INFORMATION PROGRAM

It is recommended that the ECTC work with the county, municipalities, and NYSDOT to develop a program for providing truck operators, shippers, and receivers with a list of appropriate truck routes and parking locations. Such a program should include—to the extent standards allow—the installation of informational signage on I-86, key state highways, and other facilities frequented by trucks. In addition, the program should include creation and publication of a “truckers’ map” of the greater Chemung County region, which could include designated truck routes and the locations of truck parking areas.

The ECTC and its planning partners could also develop this map as a web-based tool with “clickable” information links. These links could include the State, County, and City Special Hauling Permits (Overweight and Overdimension). This truck information program would provide trucks with dependable guidance on safe and physically sound roads for pickups and deliveries across the county. Making such information readily available is important, especially as overall freight movement volumes grow in the coming years and the density of development within the region intensifies. ECTC will also work to ensure that these maps are kept up-to-date given any shifts in parking supply.

DEVELOP FREIGHT FACILITY ACCESS AND MOBILITY PLANS

Although Chemung County does not presently suffer from major freight or logistics congestion or volume problems and most major firms and organizations that experience significant freight movement are located at sites with adequate access to and from I-86 or state highways that can accommodate significant truck movement, it is recommended that the ECTC continue to consider long-range freight transportation access and mobility for areas within Chemung County, particularly for the major concentrations of freight system users, as shown in Figure 19.

As noted in the “Elmira-Chemung Transportation Plan 2035 Opportunities and Challenges,” two potential freight connectivity issues have been identified. There is a potential benefit to extending the Clemens Center Parkway as a Northern Arterial to I-86. This would create a second high-quality northern access into the City and on to Pennsylvania. Second, an industrial access issue that has been identified is the concept of a direct connection for the HOST to State Route 13. This connection would provide quick and convenient access to I-86. HOST tenants include those who serve the natural gas drilling industry in Pennsylvania by bringing significant amount of material in by rail and shipping it out by truck. As also noted in the “Elmira-Chemung Transportation Plan 2035 Opportunities and Challenges,” there are currently no identified funds to progress these two projects as each has a considerable cost well beyond the federal and state resources identified in the 2035 Plan.

In addition, as noted previously, Chemung County contains numerous rail-highway grade crossings. If rail traffic on the NS Mainline grows significantly and/or rail activity to and from facilities such as HOST

increases significantly, NYSDOT should consider options for eliminating any crossings with significant potential safety and/or mobility impacts on freight operations or general highway traffic. Obviously, identifying, analyzing, and prioritizing these grade crossing elimination projects would require close coordination and collaboration with affected municipalities, neighborhoods, NYSDOT, and the rail owner/operator.

Some of the actions or projects identified above would potentially provide significant direct benefits to freight facility owners, shippers, operators and/or receivers. Therefore, there may be opportunities to pursue implementation through public-private partnerships.

Periodic review of the designated local truck routes could address new routes needed for any new industries and routes no longer needed that previously served vacated industrial locations.

PARTNER WITH NYSDOT TO IDENTIFY AND MAINTAIN FREIGHT DATA AND PERFORMANCE MEASURES

It is recommended that the ECTC, in coordination with NYSDOT, attempt to establish a regular program of freight performance data collection and reporting for Chemung County. NYSDOT is preparing to initiate a statewide multimodal freight planning process, which will include identification and establishment of MAP-21 compliant performance measures. Because this effort will include significant data collection and organizing at the sub-state level, the ECTC may have an opportunity to partner with NYSDOT to identify existing applicable county-level data. The ECTC may be able to support NYSDOT in developing the more geographically fine-grained measurement of performance that the ECTC will require for regional planning. This effort should also include application of the most current TRANSEARCH commodity flow and volume information available through NYSDOT's periodic purchases of that data. Note that the State's freight planning effort will not be completed until 2016 and it is unclear if it will include frequent enough purchases of freight data applicable to Chemung County. In addition, the ECTC should continue collecting freight mobility data (qualitative and quantitative) through regular (e.g., annual) surveys of freight system users (operators, shippers, receivers) in the county to track and understand trends, changes, and issues that can be addressed through the transportation planning process.

PURSUE PROJECTS WITH NEAR-TERM FREIGHT MOBILITY BENEFITS

It is recommended that the ECTC pursue transportation system improvements that would have near-term benefits for freight mobility and, by extension, overall mobility for people and goods. Under MAP-21, the National Highway Performance Program (NHPP) provides funding for construction and maintenance projects located on the newly expanded National Highway System (NHS), which includes the entire interstate system and all other highways classified as principal arterials. Obviously, the ECTC would pursue any of these projects in partnership with NYSDOT and possibly other public agencies and/or private entities. It should be noted, however, that programming and implementation of projects requiring the maximum possible federal funding share would not be able to advance until the NYSDOT Freight Plan is completed and accepted by FHWA, which has a target completion in 2016.

PUBLIC COMMENTS

There were no comments received from the public.