

# NORTH COUNTRY

## A REGIONAL ASSESSMENT



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Prepared by the UB Regional Institute  
in support of the Upstate New York  
Revitalization Initiative

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## UNDERSTANDING WHERE THE REGION STANDS TODAY TO GUIDE STRATEGIC INVESTMENTS FOR THE FUTURE

### Economy & Industry

*How much does the region contribute to the Upstate economy?*

*Which industries are growing?*

*What industries have growing exports?*

*What are the region's industry specializations?*

*Where could the region potentially target investments based on the ability to compete in growing industries?*

### Tourism

*How do tourism employment and county spending compare?*

*What are the trends in tourism employment and wages?*

*How has visitor spending changed over time?*

*How do global exports of travel and tourism compare?*

### Demographics and Workforce

*How large is the labor force?*

*How has employment and population changed over time?*

*Who are the region's hard-to-place workers?*

*How educated is our population?*

### Innovation

*How much does the region contribute to innovation in Upstate?*

*How has innovation in the region changed over time?*

*How innovative are we compared to others?*

### Smart Growth & Development

*Do we make efficient use of land?*

*How car dependent is the region?*

*Are there development opportunities in existing employment centers?*

*Is farmland preserved to support the agricultural economy and regional food systems?*

Since Governor Cuomo introduced the concept of the Regional Economic Development Councils in 2011, 10 regions across the state have been engaged in a process of developing and refining economic strategies locally to address their particular strengths and weaknesses; and fostering projects and initiatives that support these strategies, attract private investment and create jobs. Not only would the Upstate Revitalization Initiative (URI) not exist without four years of sound research, collaboration, and investment, but it also creates a natural progression—an important next step—in the vision of an economically prosperous Upstate New York.

# NORTH COUNTRY

What has the region been working on?

What successes has the region seen?

What are the strengths and assets?

What are some of the strategies and initiatives fostering economic growth?

## A STARTING POINT IN DEVELOPING A URI PLAN FOR THE NORTH COUNTRY REGION



STRENGTHS & ASSETS  
BARRIERS & NEEDS  
REGIONAL STRATEGIES  
INITIATIVES THAT BUILD MOMENTUM

## REVIEW OF PLANS

### STRENGTHS & ASSETS

### BARRIERS & NEEDS

#### Economy & Industry

Forestry industry  
Olympic training center  
Military facilities  
Access to defense funding  
Food processing, transportation, and biotechnology clusters  
Higher education

Scarcity of agricultural processing and storage facilities

#### Demographics & Workforce

Several workforce development programs

Difficulty attracting and retaining young workers  
Inadequate agricultural workforce

#### Innovation

Institutions of higher learning that engage in public-private partnerships  
Business incubators across the region

Inadequate cellular and broadband coverage  
Dwindling and sporadic financial support for agricultural research  
Lack of public and private funding for non-traditional start-ups

#### Smart Growth & Development

Major natural attractions and recreation venues  
Natural resources, especially large sources of freshwater  
Proximity to Canadian border and population centers  
Largest area in Northeast U.S. with low light pollution  
Quality of life associated to micropolitan, rural areas

Insufficient and deteriorated public sewer, water, transportation infrastructure and services  
Limited local government capacity and resources to support community and economic development  
Spread of tree pests and diseases

## REGIONAL STRATEGIES

Build on growth in the **aerospace, transit equipment, defense, biotech, energy, and manufacturing industries**

**Leverage our gateway to Canada** to lead the State in global investment

**Attract and nurture entrepreneurs** through innovation

Invest in **community development infrastructure** that expands opportunity

Innovate effective **rural healthcare** and **education delivery networks**

Elevate global recognition of the **region as a place to visit, live, work and study**

**Activate tourism** as a driver to diversify our economies

**Invest in agriculture** as we help feed the region and the world

Create the **greenest energy economy** in the State



## EXAMPLES OF INITIATIVES THAT ARE BUILDING MOMENTUM

### Assembling Industry: Manufacturing and Education (AIME)

is an employer-driven technical and soft skills training program for unemployed and underemployed low to moderate income persons. Since its inception, **240 people have graduated from the program** and **80% have been hired by local companies.**

### ReEnergy Holdings

invested \$34 million to transform Fort Drum's coal-burning power plant into a state-of-the-art, Sustainable Forestry Initiative Standard-certified renewable energy provider. It created 33 jobs at the plant and contributed to the **creation of over 200 jobs in the forestry industry.** The plant generates all of Fort Drum's electricity and sells its renewable energy credits to NYSERDA.

With \$65,000 in support from the Regional Council, the **St. Lawrence Brewing Company opened its beer production facility in 2013.** It currently employs ten people and has an energy recovery system.

The **Adirondack Meat Company** is a regional meat packing facility with a retail outlet started in early 2014 with \$828,000 in state and federal support. They now **employ 10 people full-time** and link farmers to markets, restaurants, and consumers.

A \$23 million dollar project, the **1,000 Islands Harbor Hotel** in Clayton opened in 2014 and **created 90 new jobs.** The **Jefferson-Lewis Workforce Investment Board** helped the company recruit and train its staff.

## UNDERSTANDING GEOGRAPHIC SCOPE AND BENCHMARKS

Our scope of analysis for the sections that follow is the seven county North Country Region and its labor market, unless otherwise noted. Selected data, findings and trends are benchmarked against those for Upstate New York, New York State, and the nation.



A seven county region in Upstate New York



All regions except for NYC and Long Island



All 10 regions of the state



United States

# Economy & Industry

While the North Country's employment levels have stagnated and wages have declined, the region has excelled at growing global exports. Additional bright spots for the region include a strong Travel & Tourism sector and potential growth in emerging manufacturing industries such as Primary Metal, Plastics & Rubber Products and Transportation Equip. The region also aligned its REDC strategic priorities around industries demonstrating higher levels of competitiveness.

## ECONOMY & INDUSTRY BY THE NUMBERS

	NORTH COUNTRY	% OF UPSTATE TOTAL
PRIVATE SECTOR JOBS, 2013	105,439	4%
NUMBER OF FIRMS, 2013	9,478	4%
GDP (METRO), 2013 <sup>1</sup>	\$2.6 B	1%
EXPORTS, 2012	\$2.3 B	4%
JOBS IN STEM-INTENSIVE INDUSTRIES, 2013	4,338	2%
AVERAGE ANNUAL PRIVATE SECTOR WAGE, 2013	\$34,287	

<sup>1</sup> Only includes GDP of the Watertown-Fort Drum Metro Area which comprises Jefferson County. Percent of Upstate total uses GDP of Metro areas entirely within Upstate New York.

Source: NYS Department of Labor; U.S. Bureau of Economic Analysis; Brookings Institution.

## How much does the region contribute to the Upstate economy?

The North Country economy is Upstate's smallest in terms of jobs and firms. With 105,439 private sector jobs, the region's economy accounts for 4% of total jobs and 4% of all firms across Upstate. In comparison to its share of jobs and firms, North Country has a relatively low number of jobs in STEM-intensive industries and a less productive Metro Area (in terms of GDP), but is on par in global export value.

## Which industries have the most jobs?

TOP 10 INDUSTRIES BY EMPLOYMENT AND SHARE OF TOTAL PRIVATE EMPLOYMENT, 2013



Source: NYS Department of Labor.

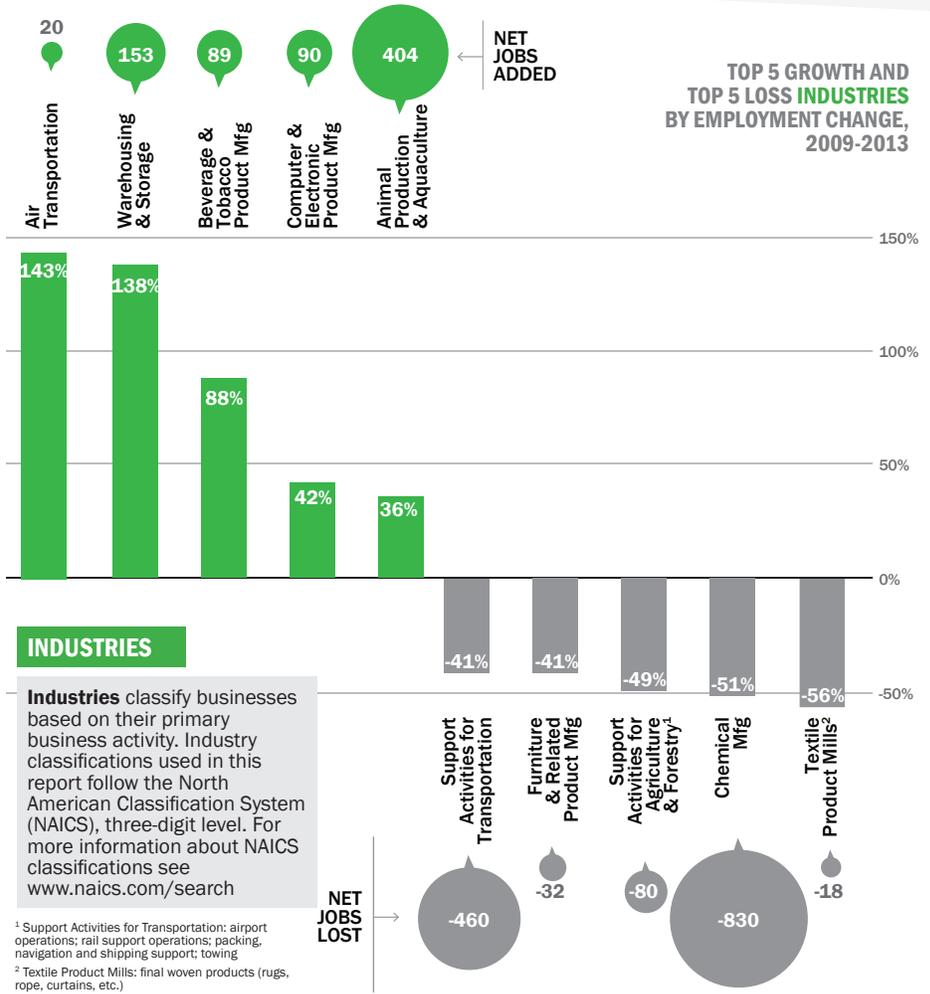
The ten leading industries are all service providers and account for about half of jobs in the region.

In terms of private sector employment, health care and social assistance, retail, accommodation and food services sectors dominate the regional economy. Food Svcs & Drinking Places is the largest single industry, accounting for 11,299 jobs, followed by Hospitals with 7,422 jobs. Including many jobs in the top ten industries, the health care and social assistance sector employs 21% of workers, while the retail trade sector employs 20%, and the accommodation and food service sector employs 14%.

## Which industries are growing?

A mix of goods producers and service providers accounted for the greatest gains and losses.

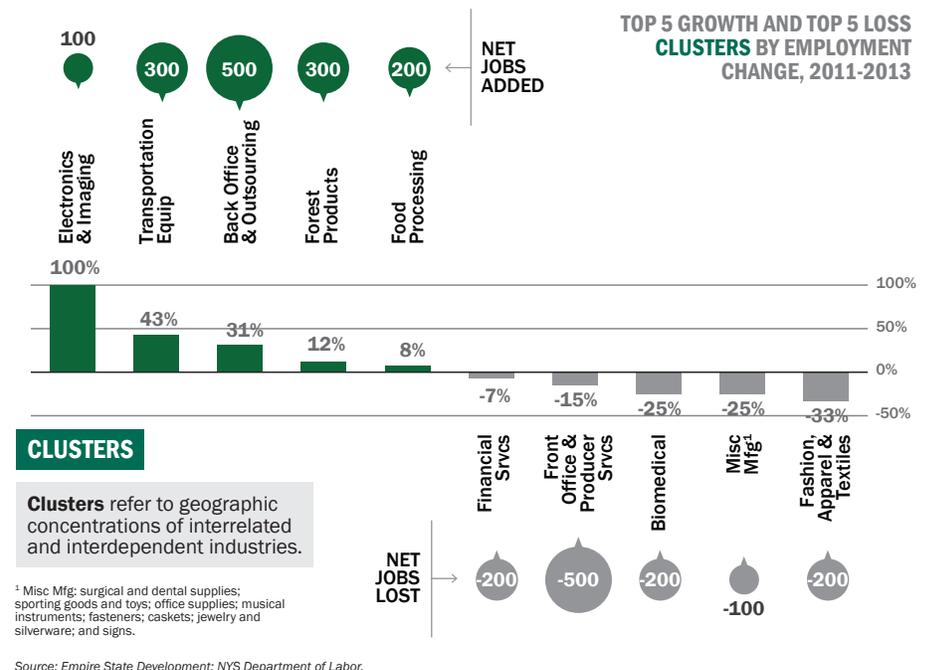
The North Country economy lost a total of 380 jobs, or less than 1%, between 2009 and 2013. Warehousing & Storage exhibited substantial growth, more than doubling its workforce and adding 153 jobs. Other industries that experienced significant job gains (but in percentage terms were not in the top five) were Food Svcs & Drinking Places which saw the greatest increase, adding 1,033 net new jobs; and the Accommodation industry which added 630 new jobs. But, at the same time, Chemical Mfg lost 830 jobs, Support Activities for Transportation lost 460 jobs and construction-related industries (also not shown) lost 740 jobs, offsetting gains.



## Which industry clusters are expanding?

Clusters relating to Back Office & Outsourcing and Transportation Equip added the most jobs, and Electronics & Imaging doubled its workforce.

Being part of a cluster offers a competitive advantage as clusters tend to be export oriented and more productive. The largest percentage gain was in the Electronics & Imaging cluster, which may indicate an emerging regional strength in a field that is expanding globally and pays above average wages. The Back Office & Outsourcing cluster grew the most in terms of net jobs (500). But, at the same time, 500 higher wage jobs were lost in the Front Office & Producer Svcs cluster, offsetting the gains in Back Office jobs.



## How do we measure up across employment, wages firms and exports?

**North Country lagged behind Upstate and New York State in most metrics, but outpaced both in global export growth.**

Between 2009 and 2013, employment growth and growth in firms remained relatively flat, but the region lost a significant share of its STEM-intensive industry jobs and wages failed to keep pace with inflation. A bright spot for North Country is its 17.7% growth in global exports from 2009 to 2012. Looking forward, further sustained growth in high demand global exports could spur new employment opportunities.

RECENT ECONOMIC TRENDS, 2009-2013

	NORTH COUNTRY	UPSTATE	NYS	US
Private Sector Employment Growth	-0.3%	2.3%	6.2%	5.6%
Private Sector Total Wage Growth (inflation-adjusted)	-3.9%	1.0%	6.3%	6.7%
Private Sector Average Annual Wage Growth (inflation-adjusted)	-3.6%	-1.2%	0.1%	1.0%
Growth in Private Sector Establishments	-0.7%	1.8%	5.7%	2.3%
Employment Growth in STEM-intensive Industries	-18.4%	-3.7%	4.0%	6.7%
Export Growth (2009-2012)	17.7%	15.6%	14.8%	25.9%

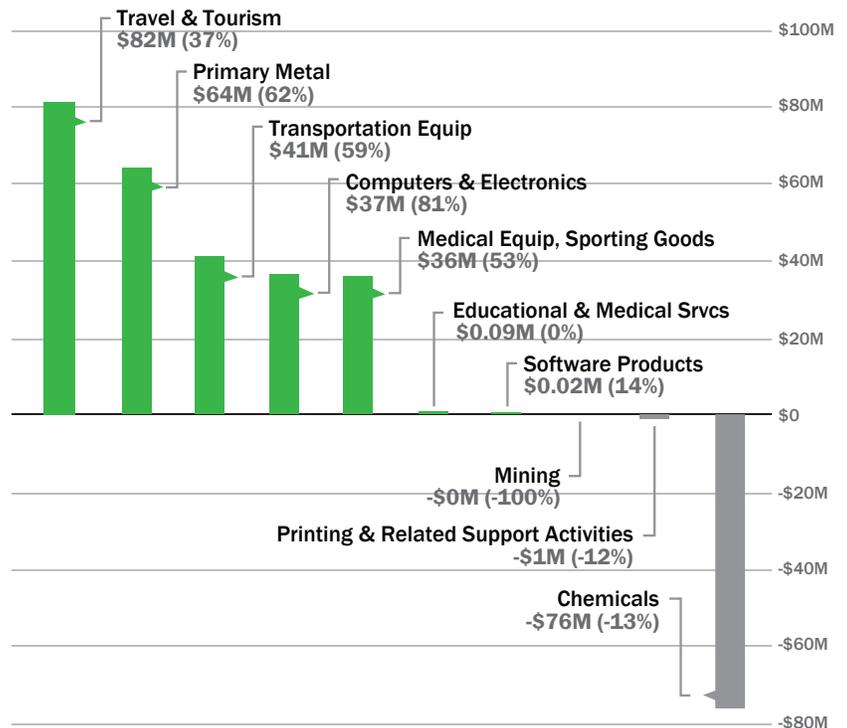
Source: NYS Department of Labor; U.S. Bureau of Labor Statistics; Brookings Institution. All wage analysis is performed in 2013 Dollars.

## In which industries are exports growing?

**Travel & Tourism exports grew more than any other category of global exports—by \$82 million between 2009 and 2012.**

The second top growing export industry was Primary Metal, which saw its global exports grow by \$64 million. Top growing export industries are regional goods and service producers that have growing global demand—pointing to industries where the region may have a competitive advantage. Across the nation's largest metros, export growth has been driving the post recession economic recovery, adding disproportionately to the creation of new jobs. Like the nation, Travel & Tourism and Medical Equip, Sporting Goods were top growing export industries in North Country. But nationally, Primary Metals exports were not among the top growing, suggesting a unique export niche in the region.

TOP 5 AND BOTTOM 5 EXPORT INDUSTRIES BY REAL EXPORT VALUE GROWTH, 2009-2012



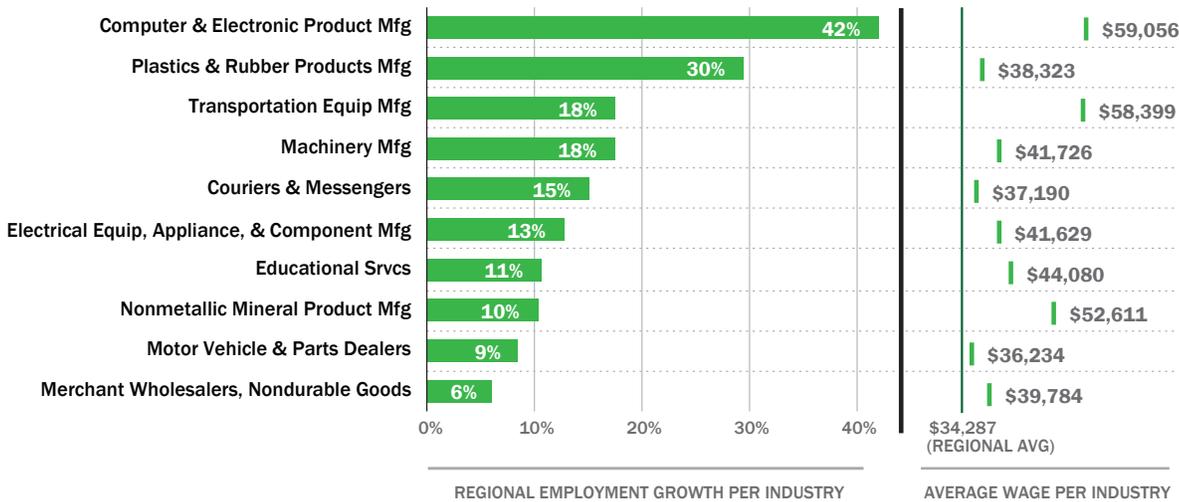
Source: Brookings Institution.

## Which higher wage industries are growing the fastest?

Mostly goods producing industries are among the fastest growing and higher wage industries, with Computers & Electronics Mfg and Plastics & Rubber Mfg expanding the most.

Between 2009 and 2013, these industries grew by 42% (90 jobs) and 30% (188 jobs), respectively. The average wage in the Computer & Electronic Mfg industry is more than \$24,000 higher than the regional average, and average wage in the Plastics & Rubber Mfg industry is \$5,000 higher than the regional average. Overall, jobs in higher wage industries fell 5% between 2009 and 2013, while jobs in lower wage industries grew by 4%. This suggests that spurring more growth in higher wage industries could help to reverse recent trends of wage stagnation in the region and foster a more economically self-sufficient population.

HIGH GROWTH, HIGH WAGE INDUSTRIES, 2009-2013



Source: NYS Department of Labor.

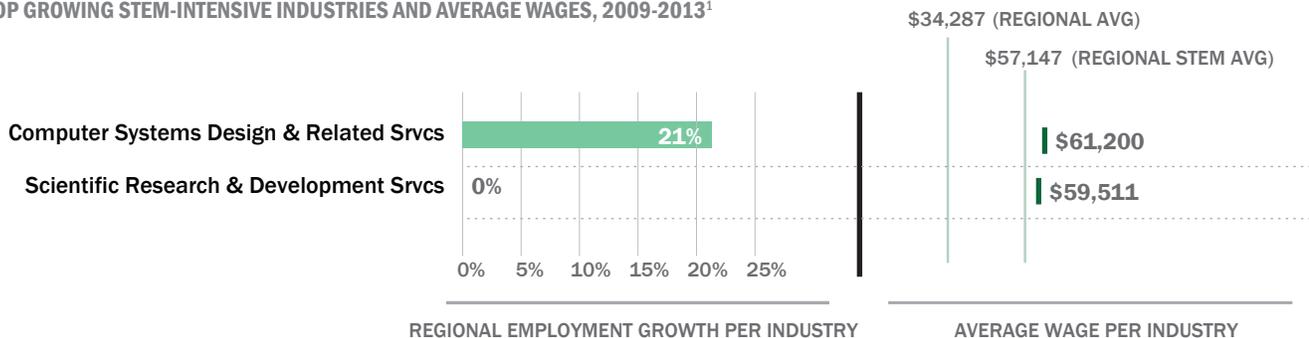
## Which STEM-intensive industries are growing the fastest?

**STEM-Intensive industries** reflect 50 industry groups (four-digit NAICS code) that employ higher proportions of workers in science, technology, engineering and math (STEM) fields and invest greater proportions in research and development.

Higher wage jobs in Computers & Systems Design & Related Svcs grew by 21%, adding 29 jobs; Scientific Research & Development Svcs remained stable.

In North Country's economy, STEM-intensive industries' share of jobs is 4% of all employment, the lowest of all Upstate regions. Employment across all STEM-intensive industries declined by 18.4%, losing 980 jobs between 2009 and 2013. Although the region does not have a strong base of STEM-intensive jobs, the average annual wage of \$57,147 in these industries remains high compared to the regional average wage of \$34,287.

TOP GROWING STEM-INTENSIVE INDUSTRIES AND AVERAGE WAGES, 2009-2013<sup>1</sup>



<sup>1</sup>Certain industry groups' contributions to STEM-intensive employment may be omitted since some employment and wage data is held confidential by NYS Department of Labor to protect proprietary information. These industry groups' contributions are **not omitted** from the regional figures on pages 4 and 6.

Source: NYS Department of Labor; Brookings Institution.

## What are the region's industry specializations?

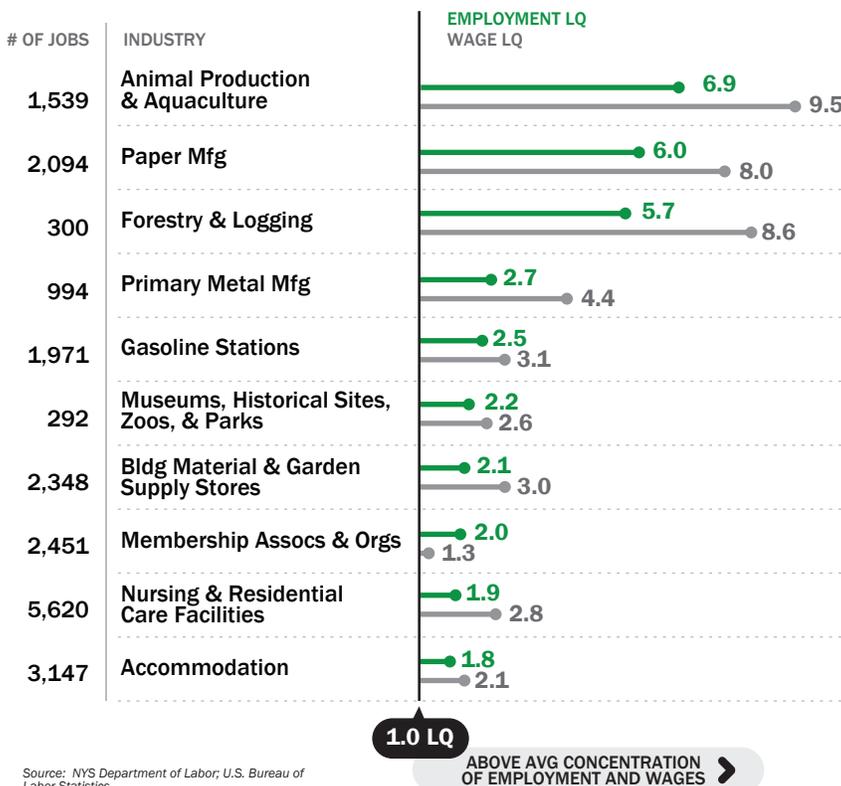
**Animal Products & Aquaculture, Paper Mfg, and Forestry & Logging top the list of North Country's highly specialized industries.**

These are industries where the region's share of employment is at least 5.7 times the national average and the region's share of wages exceeds national proportions by a factor of 8.0 or more. The North Country Region has some of the most specialized industries in Upstate New York, especially Animal Products & Aquaculture, which ranks second in employment and wage location quotients across all Upstate Regions' industries. Larger industries such as Nursing & Residential Care Facilities and Accommodation also have above average employment and wage location quotients and were responsible for adding 205 and 630 jobs between 2009 and 2013, respectively.

**The Location Quotient (LQ)** is a number that measures the relative concentration of an industry's employment or total wages in the region, as compared to the nation.

Figures above one indicate an above average concentration, or a **regional specialization**; the greater the number, the greater the specialization.

### INDUSTRIES WHERE NORTH COUNTRY'S CONCENTRATION OF EMPLOYMENT AND WAGES IS HIGHEST, 2013



## Where could we target investments?

**Growing or stable industries with varying degrees of competitiveness offer potential for targeted investment.**

Already growing or stable industries across the North Country are classified based on their degree of specialization and ability to generate income. Specialization is determined by the regional concentration of employment or wages in an industry (see industry location quotients in the previous section) and income generation is determined by an industry's ability to generate more dollars per worker when compared to other regions across the country. Together, these two measures can be thought of as "competitiveness." Industries with varying degrees of competitiveness fall into the three categories listed below.

### Highly Competitive

Highly specialized and above average income generating industries represent areas where the region currently has a strong competitive advantage. Investments in these highest performers, like Animal Production & Aquaculture, Plastics & Rubber Product Mfg and Nonmetallic Mineral Product Mfg could focus on expanding the market for their goods. All of the industries in this class produce tradable goods or services and all are aligned with the priorities of the North Country REDC. Additionally, four out of ten pay above average wages and offer potential for STEM employment.

### Opportunity for Specialization

Industries in this category exhibit an above average ability to generate income—when compared to other regions across the nation—but lack specialization in the region. The Admin & Support Svcs industry stands out since it is potentially aligned with a REDC priority (Tourism) and associated with three industry clusters. Investment in these industries could focus on increasing their regional specialization by growing employment and average wages.

### Specialized with Potential

These industries are specializations in the region, but do not capture their fair share of wages per employee when compared to other regions across the country. This indicates a potential to increase productivity and pay higher wages. The Electrical Equip & Appliance Mfg industry stands out in this list since it produces tradable goods with global demand, pays above average wages, has potential for STEM employment, and is aligned with a REDC priority (Mfg). Investment in these industries could focus on technology, workforce development, or capturing higher end segments of the industry such as headquarters or front office operations.

# POTENTIAL TARGETS

## GROWING AND COMPETITIVE INDUSTRIES

Industries with potential to expand exports to other regions or countries:

	JOBS	FIRMS	Potential Alignment with REDC Priorities	COMPETITIVENESS			OTHER CONSIDERATIONS	
				Specialization	Income Generation	STEM Employment Potential	Above average Wages	
<b>Highly Competitive</b>								
Food Svcs & Drinking Places	11,299	921	Tourism	✓	✓	✓		
Hospitals	7,422	11	Healthcare, Biotech	✓	✓	✓	✓	✓
Accommodation	3,147	250	Tourism	✓	✓	✓		
Educational Svcs	2,944	74	Education	✓	✓	✓	✓	✓
Animal Production & Aquaculture	1,539	116	Agriculture	✓	✓	✓		
Plastics & Rubber Products Mfg	826	13	Mfg	✓	✓	✓	✓	✓
Nonmetallic Mineral Product Mfg	544	31	Mfg	✓	✓	✓	✓	✓
Wood Product Mfg	344	31	Mfg; Forest Products	✓	✓	✓	✓	
Museums, Historical Sites, Zoos, & Parks	292	35	Tourism, Sports	✓	✓	✓		
Scenic & Sightseeing Transportation	45	4	Tourism	✓	✓	✓		

Industries with potential to increase employment and wage concentrations:

Opportunity for Specialization								
Admin & Support Svcs	3,205	320	Tourism			✓		
Truck Transportation	1,029	154	N/A			✓		✓
Transportation Equip Mfg	984	9	Transportation Equip			✓	✓	✓
Warehousing & Storage	264	21	N/A			✓		

Industries with potential to do more with current employment:

Specialized with Potential								
Electrical Equip & Appliance Mfg	520	9	Mfg	✓	✓		✓	✓
Beverage & Tobacco Product Mfg	190	11	Tourism & Arts	✓			✓	

- NYS DEFINED CLUSTERS**
- Back Office & Outsourcing
  - Distribution
  - Food Processing
  - Forest Products
  - Front Office & Producer Services
  - Industrial Machinery & Services
  - Materials Processing
  - Transportation Equipment
  - Travel & Tourism

Being part of a cluster of interconnected industries strengthens industries through efficiencies and productivity. Clusters also tend to be export oriented, attracting new dollars to a region and creating wealth.

Industries that are specialized have a higher than average concentration of employment or total wages, when compared to the nation. They contribute to each regional economy's uniqueness and strengths.

With the ability to generate more dollars per worker than the national average, industries that excel in income generation can pay higher wages, accumulating greater wealth for the region.

Industries that have STEM employment potential tend to be more innovative, pay higher wages and produce goods and services that are in demand globally.

Industries that on average pay higher wages create more income and have larger economic impacts per worker. They contribute to higher standards of living and regional wealth.

Source: NYS Department of Labor.

# Tourism

The North Country offers an array of natural attractions and recreational venues that enhance quality of life for residents and attract visitors from near and far, bringing new dollars into the regional economy and, in recent years, driving economic growth. The region's location along the Canadian border and its mix of specialized tourism supporting industries offer opportunity for continued growth of lower wage jobs.

## TOURISM EMPLOYMENT, GROWTH AND COUNTY LEVEL SPENDING BENCHMARKED

	NORTH COUNTRY	UPSTATE NY	NYS
TOURISM AS % TOTAL EMPLOYMENT, 2013	7.8%	5.1%	5.3%
TOURISM EMPLOYMENT GROWTH, 2009-13	12%	6%	11%
COUNTY GOVERNMENT CULTURE & RECREATION EXPENDITURES PER CAPITA, 2013	\$4.10	\$26.31	N/A

Source: NYS Department of Labor; NYS Office of the NYS Comptroller; U.S. Census Bureau. Tourism employment reflects private sector employment only.

## How does tourism employment, growth and county spending compare?

**Tourism accounts for proportionally more employment in the North Country, as compared to Upstate and New York State; it's also growing much faster here, even with comparatively lower levels of county spending on culture and recreation.**

Travel and tourism accounts for 7.8% of private sector employment in the region, notably more than the proportion of jobs attributable to this sector across Upstate and New York State (5.1% and 5.3%, respectively). Between 2009 and 2013, regional jobs in travel and tourism grew 12%, double the growth rate reported for Upstate and even higher than New York State's 11% rate of growth. In recent years, the tourism industry grew a larger percentage of jobs here than in any other Upstate region.

## What do trends over time in tourism employment look like?

**Tourism has been driving economic growth in the North Country in recent years, adding jobs and new establishments, but the industry's average annual wage is notably lower than the private sector average.**

An estimated 900 new jobs were created in the region's tourism industry between 2009 and 2013. This represented a 12% increase, far greater and more positive than the 0.3% decline in private sector employment reported overall (see Economy section). Over this period, tourism grew as a share of all jobs, from 6.9% to 7.8% in 2013. Yet the average annual wage is 38% lower than the regional private sector average. While wages grew 5% as the industry expanded, adjusted for inflation, wages declined 3%, a notable hit for workers in the industry who already earn less than average.

### TOURISM TRENDS, 2009-2013

#### TOURISM JOBS

2009 → 2013

# TOURISM JOBS 7,300 8,200

AVERAGE ANNUAL WAGE \$20,200 \$21,300

% OF ALL JOBS 6.9% 7.8%

#### TOURISM FIRMS

2009 → 2013

# TOURISM FIRMS 1,786 1,860

Source: NYS Department of Labor.

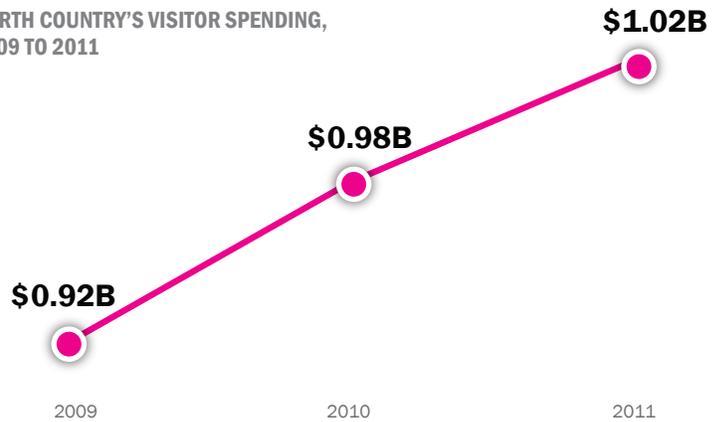
## How has visitor spending changed over time?

Visitor spending in the North Country grew 11% between 2009 and 2011, nearly on par with Upstate's 12% increase.

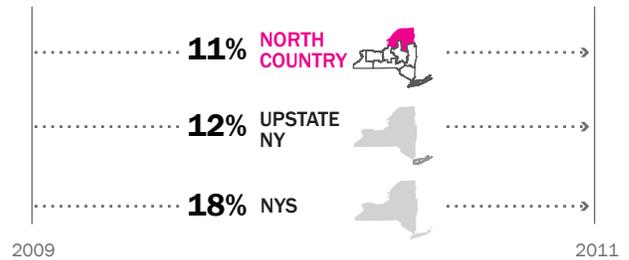
Visitors to the North Country spent \$1.02 billion on lodging, food services, transportation, recreation and retail. This represents 7% of total visitor spending across Upstate and 2% of statewide visitor spending. To the extent visitors come from outside the region, they bring new dollars into the region, supporting area establishments and jobs, in addition to the local tax base. Residents benefit through increased livability and quality of life, which can make it easier for local companies and colleges to attract new people to the region.

**\$1.02 Billion** in visitor spending in North Country is...  
 ...**7% of Upstate NY** visitor spending.  
 ...**2% of NYS** visitor spending.

NORTH COUNTRY'S VISITOR SPENDING, 2009 TO 2011



% GROWTH IN VISITOR SPENDING



Source: Tourism Economics.

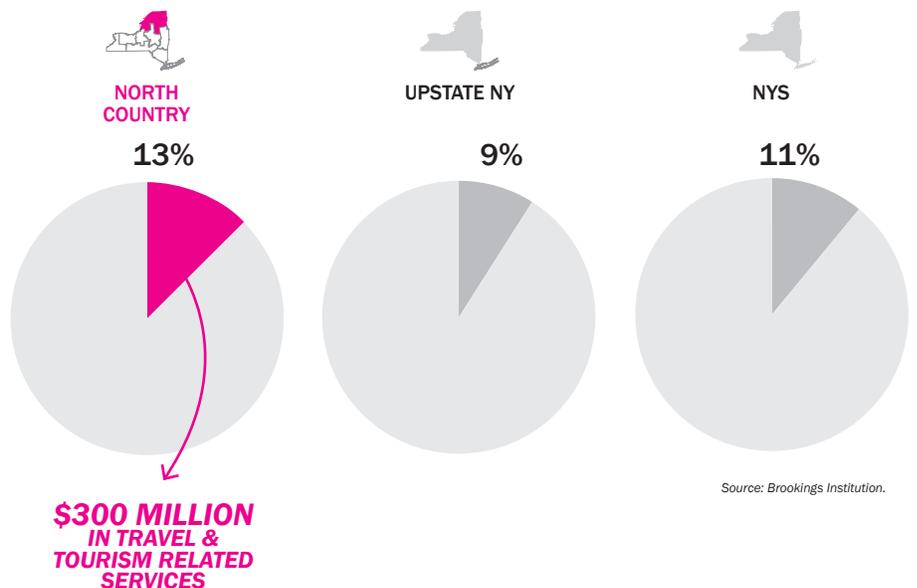
## How do our tourism global exports compare?

Travel and tourism is the region's largest export industry, accounting for a larger percentage of total exports in the region, compared to Upstate and New York State.

Global visitors to the North Country consumed \$300 million in travel and tourism related services in 2012. International visitors are important because they tend to stay longer and spend more than those traveling shorter distances to the region. According to the U.S. Travel Association, overseas visitors spend \$4,455 per person when they visit the U.S. and stay 18 nights, on average. Tourism related exports from the North Country grew 37% between 2009 and 2012, nearly double the 17.7% increase in exports from the region overall. This industry is North Country's fastest growing export industry (see Economy section). Travel & Tourism accounted for 13% of total exports from the region in 2012, greater than Upstate and statewide proportions (9% and 11%, respectively). The region's position along the Canadian border offers a strong competitive advantage to capture international visitors from Canada and leverage tourism for economic development.

Global Exports refer to tourism related goods and services that are consumed by international visitors.

TOURISM AS A % OF EXPORTS, 2012

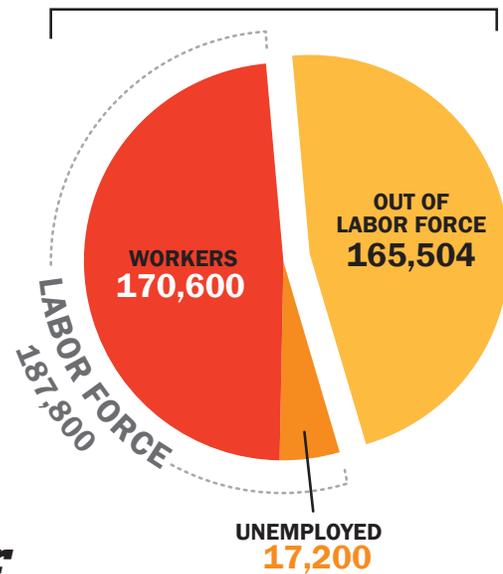


Source: Brookings Institution.

# Demographics & Workforce

The North Country's relatively small, slowly declining labor force presents challenges for future economic growth. Opportunities arise for growing the workforce and economic productivity by attracting and training more young workers; alleviating barriers to employment for hard-to-place workers; and matching worker skills with evolving employer needs, especially in STEM-intensive industries.

**POPULATION 16+  
353,304**



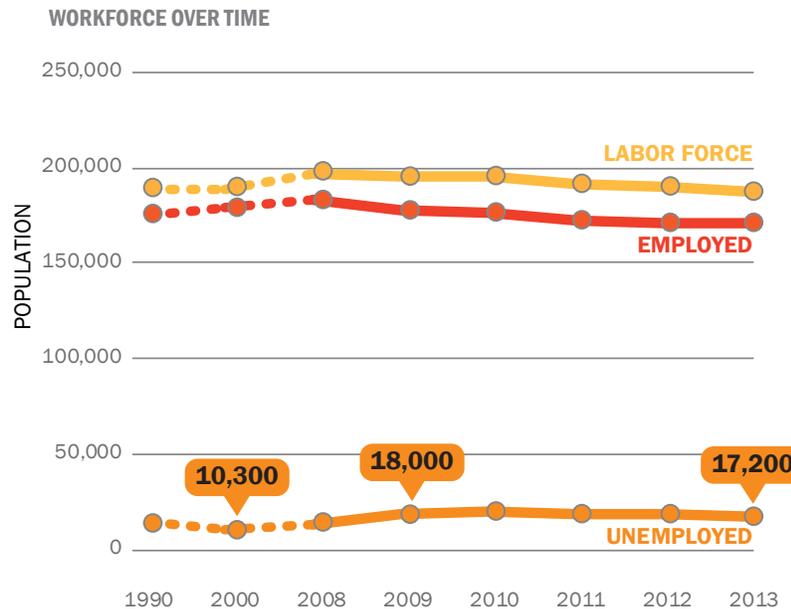
## How large is our labor force?

Source: U.S. Census Bureau, American Community Survey, 2013; NYS Department of Labor, 2013. The region's labor force reflects the number of residents available for work, a metric that is different from the number of private and public sector jobs in the region.

**The North Country has a comparatively small labor market which is limited by high unemployment and relatively low labor force participation rates.**

With a labor force of nearly 188,000, the region has the smallest labor market in Upstate. 17,200 (9%) of these people were without jobs in 2013. Over 165,000 people in the region (over age 16) are out of the labor force—giving North Country the lowest labor force rate (57%) of any Upstate region. This includes those who have retired, go to school full time, or have stopped seeking work. Bringing more of these potential workers back to the labor force is key to growing the region's economy.

## How has employment changed over time?



Source: NYS Department of Labor.

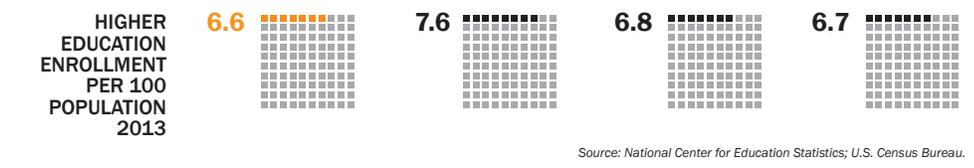
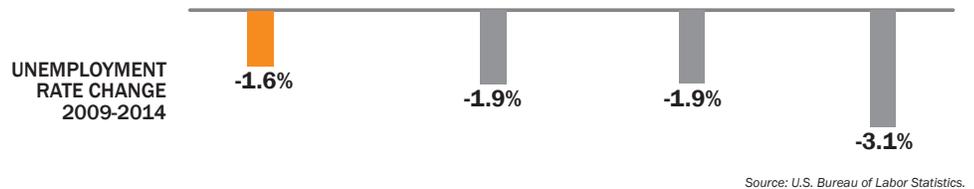
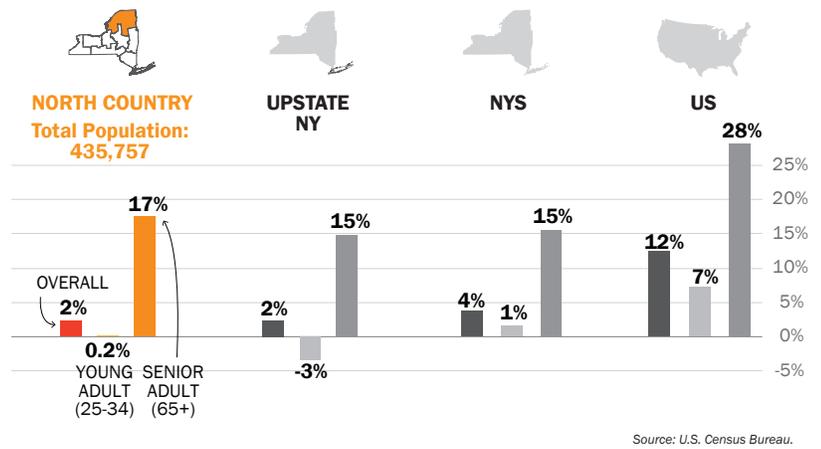
**High unemployment rates remain stagnant, while the number of workers in the labor force continues to decline.**

The region lost a small share (0.6%) of its labor force from 2000 to 2013, despite a coinciding increase in population (2%). Meanwhile, the number of unemployed workers grew by 67% (6,900) over the same span. The recovery from the 2008 economic downturn had a delayed impact on the region's economy as unemployment rates in 2013 were the same as those in 2009 (9.2%). The region lost jobs and workers each year since 2008; and the number of unemployed workers declined from a 2010 peak.

# How is our population changing?

The region's population is growing slightly, but the senior population is increasing far more than younger cohorts.

Since 2000 the region's population has grown by 2%, on par with Upstate trends. The North Country's senior population has risen sharply—up by 17% since 2000 which exceeds statewide (15%). The region's young adult population (age 25-34), however, has remained more intact—a comparative advantage for the region. Enhancing the region's ability to retain, attract, and train these young adults should be a key focus as this population cohort fuels the workforce pipeline.



# Are our residents self-sufficient?

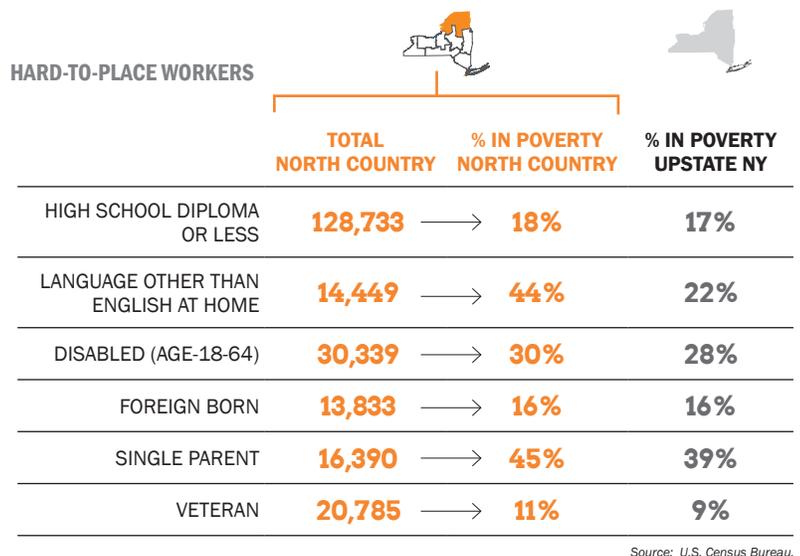
With high unemployment, high poverty and relatively low wages, the region could become more self-sufficient by attracting more jobs with better pay.

Unemployment in the North Country remains higher than any other Upstate region, reflecting a mismatch between worker skills and employer needs. Strategies that promote higher paying industries and train workers while connecting them with local employers could make the region more self-sufficient.

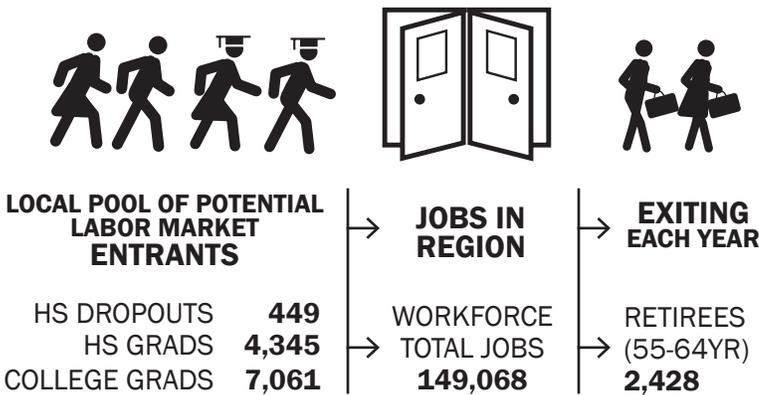
# Who are the hard-to-place workers?

Language barriers, disabilities, and lack of access to affordable child care create severe work related barriers.

Hard-to-place workers experience greater hardship here than Upstate overall. For instance, poverty rates for non-English speakers in the region double Upstate rates. Strategies that aim to overcome these barriers and expand job prospects are needed to alleviate the hardship felt by these groups.



POTENTIAL WORKFORCE ENTRANTS AND EXITS, 2012



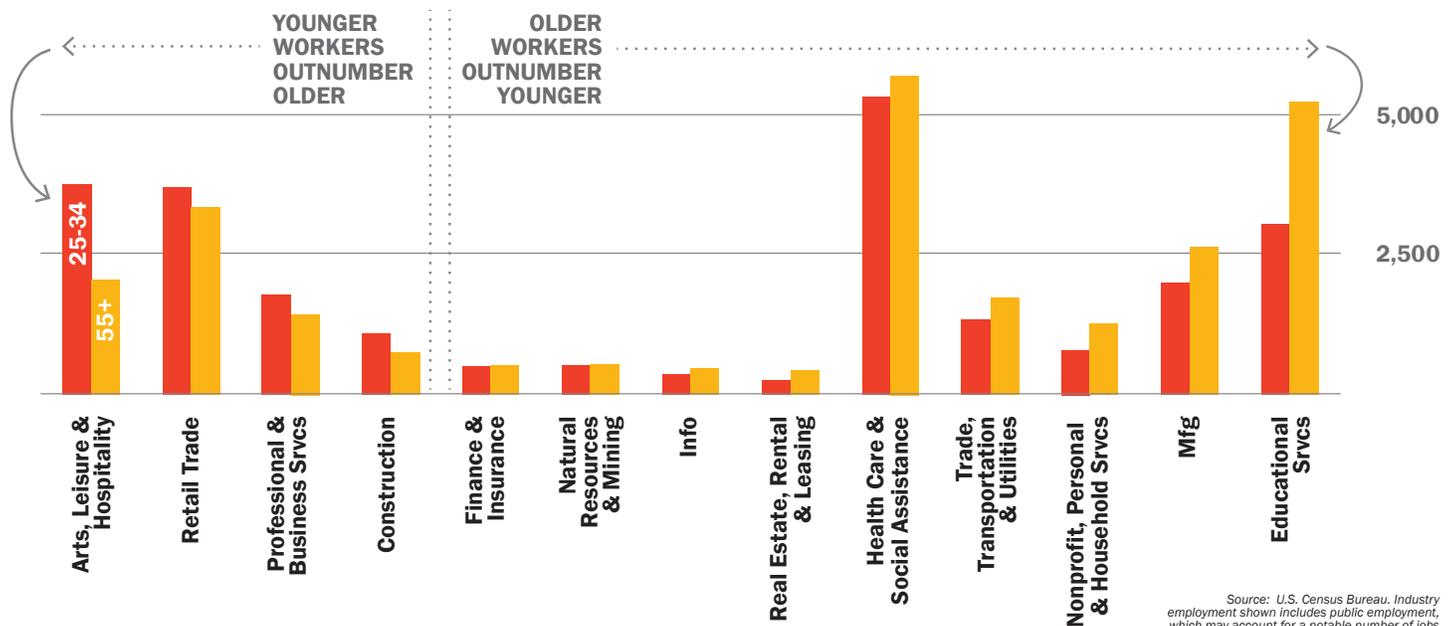
Source: NYS Education Department; National Center for Education Statistics; U.S. Census Bureau; NYS Department of Labor. The number of jobs in the region reflects public and private sector jobs.

## Is there potential for growing the supply of labor?

**Retaining larger numbers of graduates from the region's high schools and colleges offers opportunities to fill job vacancies and grow the regional economy.**

While the North Country's population of young adults has remained relatively stagnant since 2000, the region's high schools and colleges produce thousands of new graduates each year, notably more than the 2,428 workers between the ages of 55 and 64 projected to retire annually over the next 10 years. This includes over 7,000 graduates from area colleges—a ready source of new labor for higher paying, degree requiring jobs. Regional employers also seek to fill jobs requiring skilled labor but not requiring a college degree. This demand for labor is important for the region to understand especially considering that approximately three-quarters of high school seniors in the region have plans to enroll in college, and the hundreds who drop out of high school may not have the basic skills that these regional employers require. Capturing greater numbers of young new entrants to fill vacancies and grow the regional economy will depend on the region's capacity to match the skills and education of new graduates with employer needs.

JOB BY INDUSTRY AND AGE OF WORKER, NORTH COUNTRY REGION, 2014



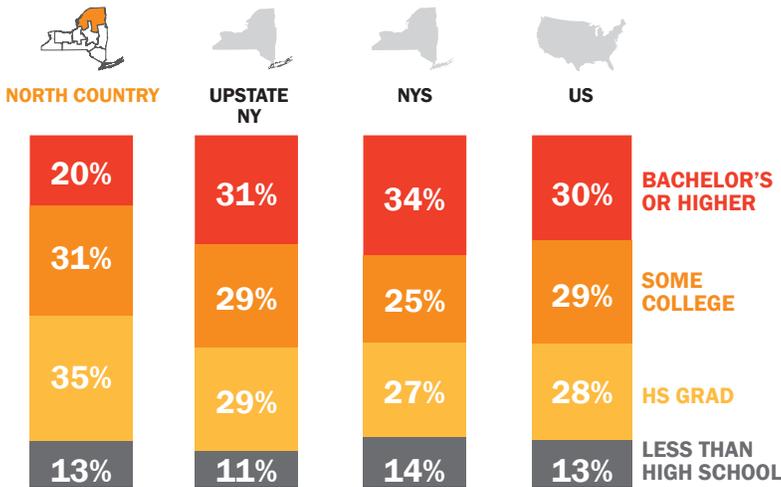
Source: U.S. Census Bureau. Industry employment shown includes public employment, which may account for a notable number of jobs in industries such as Educational Svcs.

## Which industries rely on younger and older workers?

**Older workers outnumber young workers across most economic sectors, especially in Educational Svcs and Manufacturing; while younger workers exceed older workers only in a few industries, most notably Arts, Leisure & Hospitality, Retail Trade, and Professional & Business Svcs.**

Almost a quarter of the region's jobs are held by workers age 55 or older. Older workers are more concentrated in many industries, like Educational Svcs, and Mfg where there are over 4,400, and 1,200 more older than younger (age 25-34) workers, respectively. Without strong career pipelines, employers may struggle to fill vacancies, as younger workers are finding work more readily in other sectors— Arts, Leisure & Hospitality, Retail, Professional & Business Svcs and Construction.

EDUCATIONAL ATTAINMENT, POPULATION AGE 25+, 2013



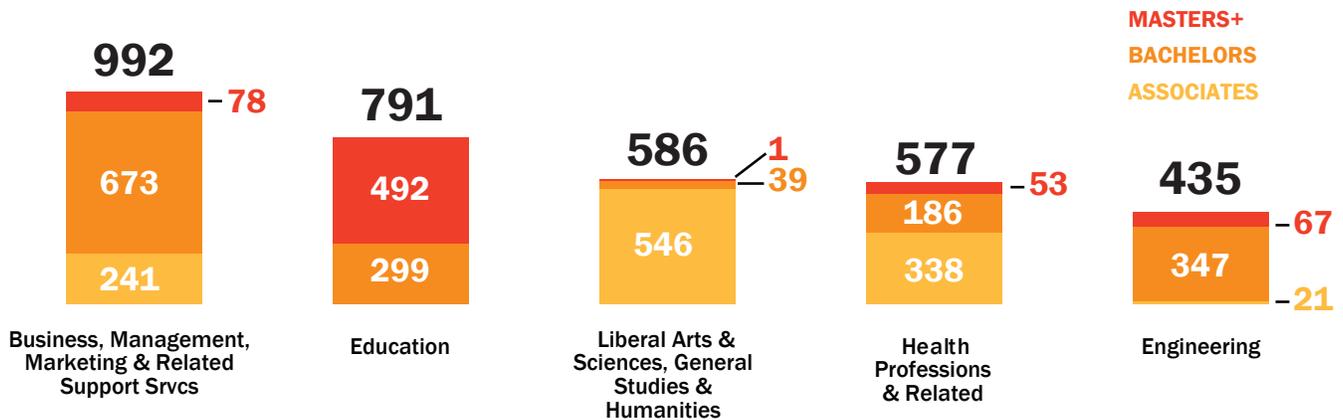
Source: U.S. Census Bureau.

## How educated is our population?

Adults age 25 and older in the North Country Region have less education than their counterparts in Upstate, New York State and across the nation.

Slightly over half (51%) of adults in the region have at least some college education which is the lowest share of any Upstate region. Only 20% of North Country residents earned a bachelor's degree or higher which is about two-thirds of the shares found across the state and nation (34% and 30%, respectively). Those without a high school diploma typically face greater workforce barriers than their more educated counterparts. In addition to a smaller share of adults having a higher education, the North Country has a slightly higher percentage of high school drop outs (13%) than Upstate overall (11%).

COLLEGE DEGREES GRANTED BY NORTH COUNTRY REGION'S 10 HIGHER EDUCATION INSTITUTIONS, TOP FIVE FIELDS OF STUDY, BY DEGREE TYPE, 2013



Source: National Center for Education Statistics.

## Which kinds of degrees are college graduates earning?

Of the 6,700 college degrees granted in 2013, half were in five broad disciplines.

Almost 3,400 degrees were granted in business, education, liberal arts, health and engineering. These college graduates fuel the workforce pipeline for many of the region's top industries which are related to health, administration and education. Local college graduates can also help fuel industries with higher shares of aging workers, especially Educational Svcs. The region has a relatively high share of engineering graduates which arises as a comparative strength. Retaining these graduates could fuel advanced manufacturing and other STEM-intensive industries in the region, like Computer & Electronic Product Mfg which grew by 42% in terms of jobs from 2009 to 2013. However, as employment across STEM-intensive sectors declined by 18% from 2009 to 2013 (see Economy section), more graduates in science, technology, engineering and mathematics are needed to better position the region for future growth in these high paying industries. Attracting more STEM-graduates and retaining this young talent is key to the region's future prosperity.

# Innovation

Innovative activity in the North Country is limited due in part to this rural region's smaller size and industrial composition, with a small and declining percentage of jobs in STEM-intensive industries. Leveraging existing innovative assets, such as research at Clarkson University, and a comparably strong entrepreneurial culture for businesses, could expand innovative capacity for economic development and competitiveness, particularly in targeted industries.

## How much does the region contribute to innovation in Upstate?

*While North Country contributes to relatively high shares of new firms and STEM degrees across Upstate, it generates less than 1% of Upstate's R&D, patents and doctorate degrees.*

A robust landscape for entrepreneurship is indicated by the region's share of new firms and jobs at young firms which match or exceed the region's 4% share of all Upstate jobs and firms (see Economy section). Considering the region's small number of colleges and universities, a fairly high number of STEM degrees are awarded here. Still, R&D spending and doctoral degrees are a comparatively low share of Upstate totals.

BY THE NUMBERS	NORTH COUNTRY	AS % OF UPSTATE TOTAL
PATENTS 2009-2013	170	0.7%
NUMBER OF NEW FIRMS, 2014	1,146	6%
EMPLOYMENT AT YOUNG FIRMS (0-5), 2013	8,208	4%
DOCTORATES, 2013	46	0.9%
STEM DEGREES, 2013	1,250	6%
R&D EXPENDITURES, 2013	\$12.6M	0.8%

Source: U.S. Patent and Trademark Office; U.S. Census Bureau; National Center for Education Statistics; Reference USA.

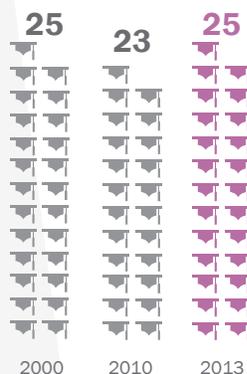
## How has innovation in the region changed over time?

TRENDS IN R&D EXPENDITURES, STEM DEGREES AND PATENTS, 2000-13

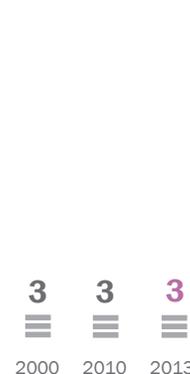
R&D EXPENDITURES PER CAPITA



STEM DEGREES PER 100 DEGREES



PATENTS PER 10,000 WORKERS



*While R&D spending has grown, patents and STEM degrees are at the same levels they were in 2000.*

A quarter of degrees issued in the region are in STEM fields—one of the highest percentages reported across Upstate. Yet the number of graduates in STEM fields remained unchanged since 2000 even though jobs in STEM-intensive industries declined. This suggests the region remains well positioned to grow target industries requiring STEM workers (see Economy section). While R&D spending is 70% higher than in 2000, an increase in patents has not followed.

Source: National Center for Education Statistics; U.S. Patent Office; U.S. Census Bureau.

# How innovative are we compared to others?

While the North Country is a comparatively strong generator of college graduates in STEM fields of study, and the number of new firms is comparatively high, innovative performance on other indicators lags behind.

Entrepreneurial activity in the region is strong, with a higher percentage of new firms in the North Country than in benchmark geographies. The region also produces a higher percentage of STEM degrees than across Upstate, NYS or the nation. Yet the region's innovative capacity is comparably limited in other areas, such as R&D spending, patents, and STEM occupations as a percentage of all jobs. For instance, R&D spending per capita in the North Country is about one-sixth that of Upstate. Patents—a byproduct of innovation and a precursor to commercialization—are a similarly small fraction of levels reported for Upstate. In these ways, innovative capacity may not be supporting regional competitiveness and economic growth. At the same time, innovative activity may be influenced by the region's industrial composition and agricultural related specializations, which may be less actively involved in R&D and patenting than STEM-intensive industries.

Measures a region's capacity for innovation, relative to the nation. Higher values indicate strong capacity. The index takes into consideration 22 variables across five broad topics including human capital, employment, economic dynamics, economic well-being and productivity.



**NORTH COUNTRY**



**UPSTATE NY**



**NYS**



**US**

**PATENTS PER 10,000 WORKERS 2013**

3

19

11

12

Source: U.S. Patent and Trademark Office; NYS Department of Labor; U.S. Bureau of Labor Statistics.

**STEM JOBS AS % OF TOTAL JOBS<sup>1</sup> 2014, Q1**



9%



12%



12%



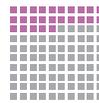
13%

<sup>1</sup> STEM occupations reflect 184 different jobs in science, technology, engineering and mathematics. These jobs typically require a college degree, are higher-paying and concentrated in STEM-intensive industries.

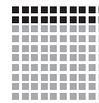
Source: NYS Department of Labor; U.S. Bureau of Labor Statistics.

**STEM DEGREES PER 100 DEGREES 2013**

25



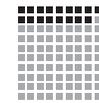
20



16



18



Source: National Center of Educational Statistics; U.S. Bureau of Labor Statistics.

**R&D EXPENDITURES PER CAPITA 2013**

\$29



\$182



\$220

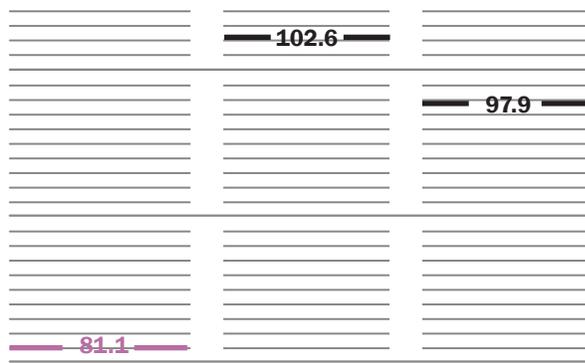


\$170



Source: National Center of Educational Statistics.

**INNOVATION INDEX**



MORE INNOVATIVE THAN US  
↑  
**100 (US INDEX)**  
↓  
LESS INNOVATIVE THAN US

Source: Innovation in American Regions.

**NEW FIRMS PER 100 FIRMS 2014**

12



9



8



9



Source: Reference USA; NYS Department of Labor.

# Smart Growth & Development

The principles of smart growth offer a strong foundation for economic development and industry growth in a region as vast and resource rich as North Country. When land is used more efficiently, employment centers can be revitalized, higher paying job opportunities are more accessible to workers, and nature dependent industries can continue to grow.

## Do we make efficient use of land?

**Most development in the North Country occurred near existing centers, but the area of developed land increased nearly twice as much as the region's population.**

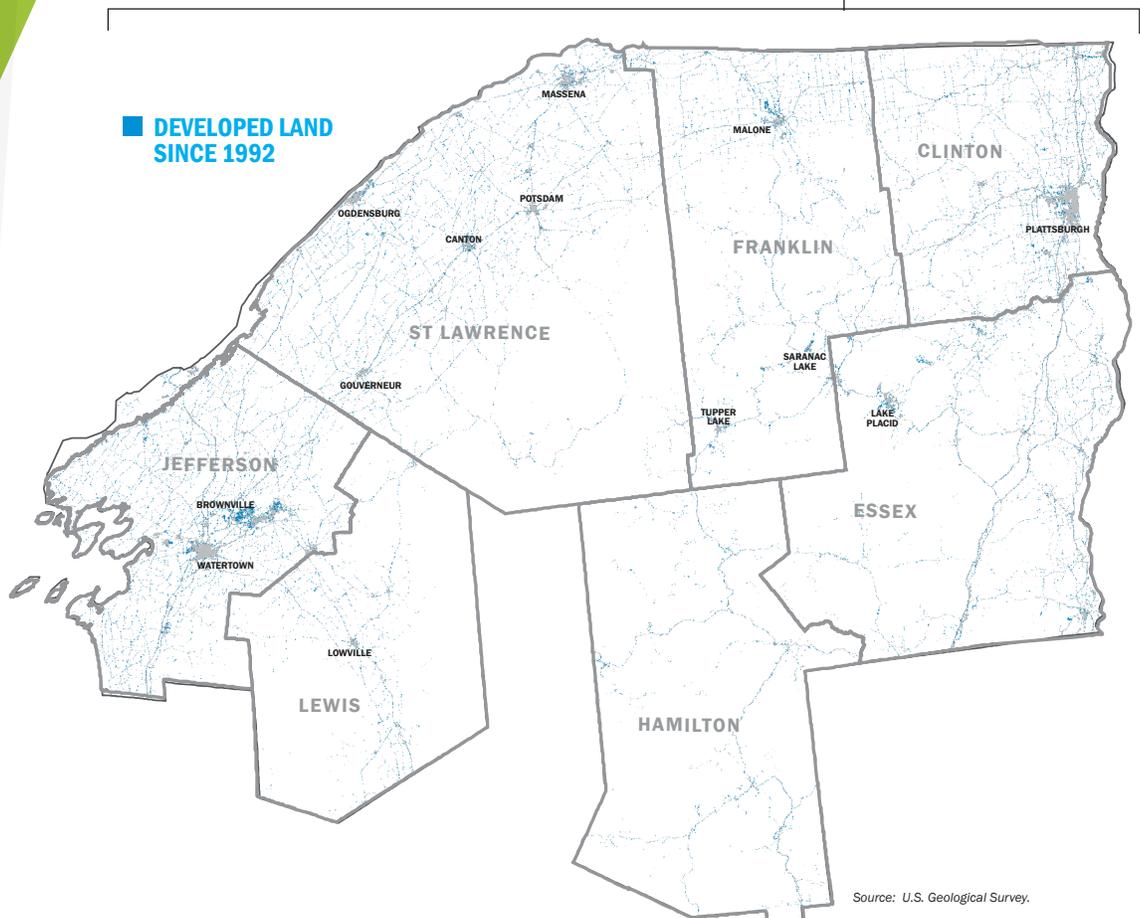
The North Country saw a 4.5% increase in developed land from 1992 to 2012, while its population grew by 2.3%. A sizable portion of this development took place in Fort Drum. Other growth occurred close to urban and village centers where infrastructure already exists - in places like Ogdensburg, Massena and Plattsburgh. As a result,

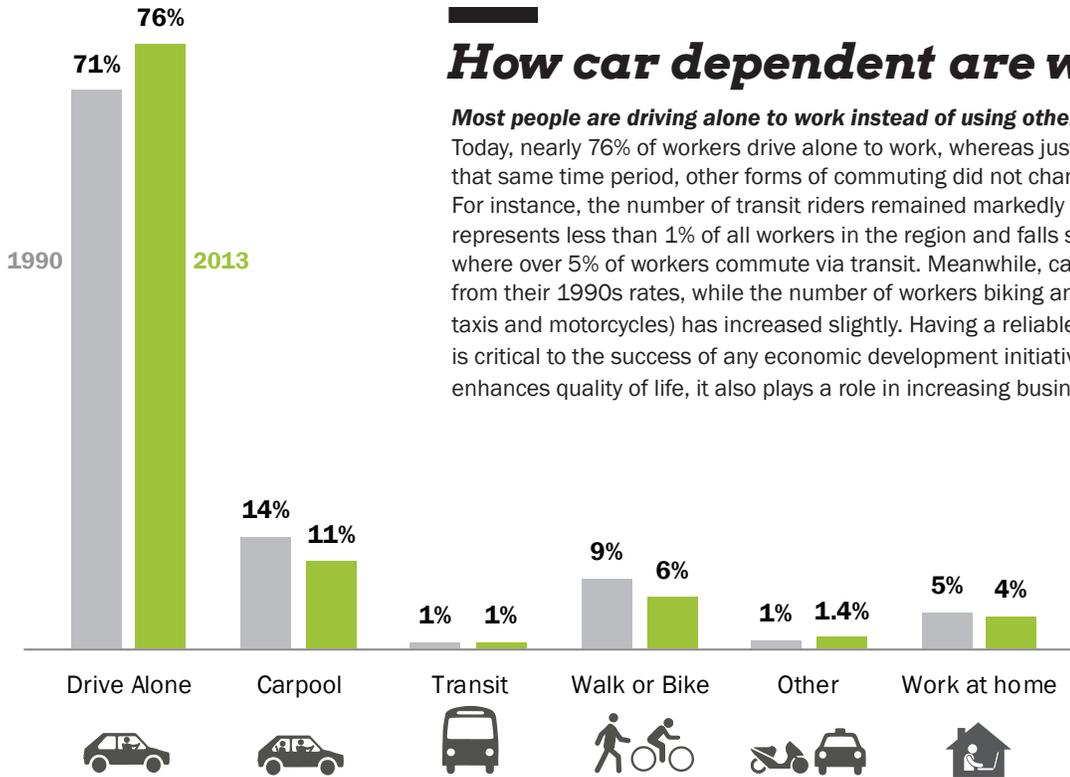
development in the North Country Region has not been as expansive as in other Upstate regions. However, due to a smaller increase in population, the region is now consuming more land per person. Promoting infill development and adaptive reuse over outward growth could further limit the costs of sprawl, and better serve important industries such as agriculture, forestry, and tourism.

% CHANGE POPULATION AND DEVELOPED LAND, 1992-2011



Source: U.S. Geological Survey; U.S. Census Bureau.





Source: U.S. Census Bureau.

## How car dependent are we?

**Most people are driving alone to work instead of using other forms of travel.**

Today, nearly 76% of workers drive alone to work, whereas just a few decades ago 71% did. Over that same time period, other forms of commuting did not change or became less common. For instance, the number of transit riders remained markedly low at about 1,500 workers. This represents less than 1% of all workers in the region and falls short of the average for Upstate, where over 5% of workers commute via transit. Meanwhile, carpooling and walking are down from their 1990s rates, while the number of workers biking and commuting by other means (like taxis and motorcycles) has increased slightly. Having a reliable variety of transportation options is critical to the success of any economic development initiative. It not only saves money and enhances quality of life, it also plays a role in increasing business sales and property values.

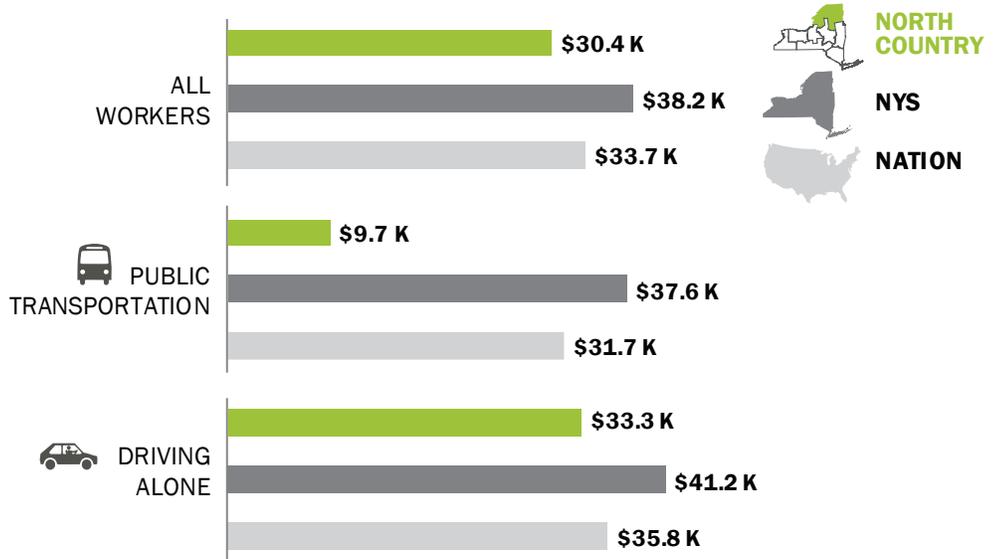
## Is auto dependency creating barriers to work?

**Jobs that pay higher wages may be inaccessible to those without a car.**

Having a car may be a prerequisite for earning a higher wage in North Country. The average annual wage of those who take public transit to work is \$9,700. This is less than a third of the average worker's annual income (\$30,400).

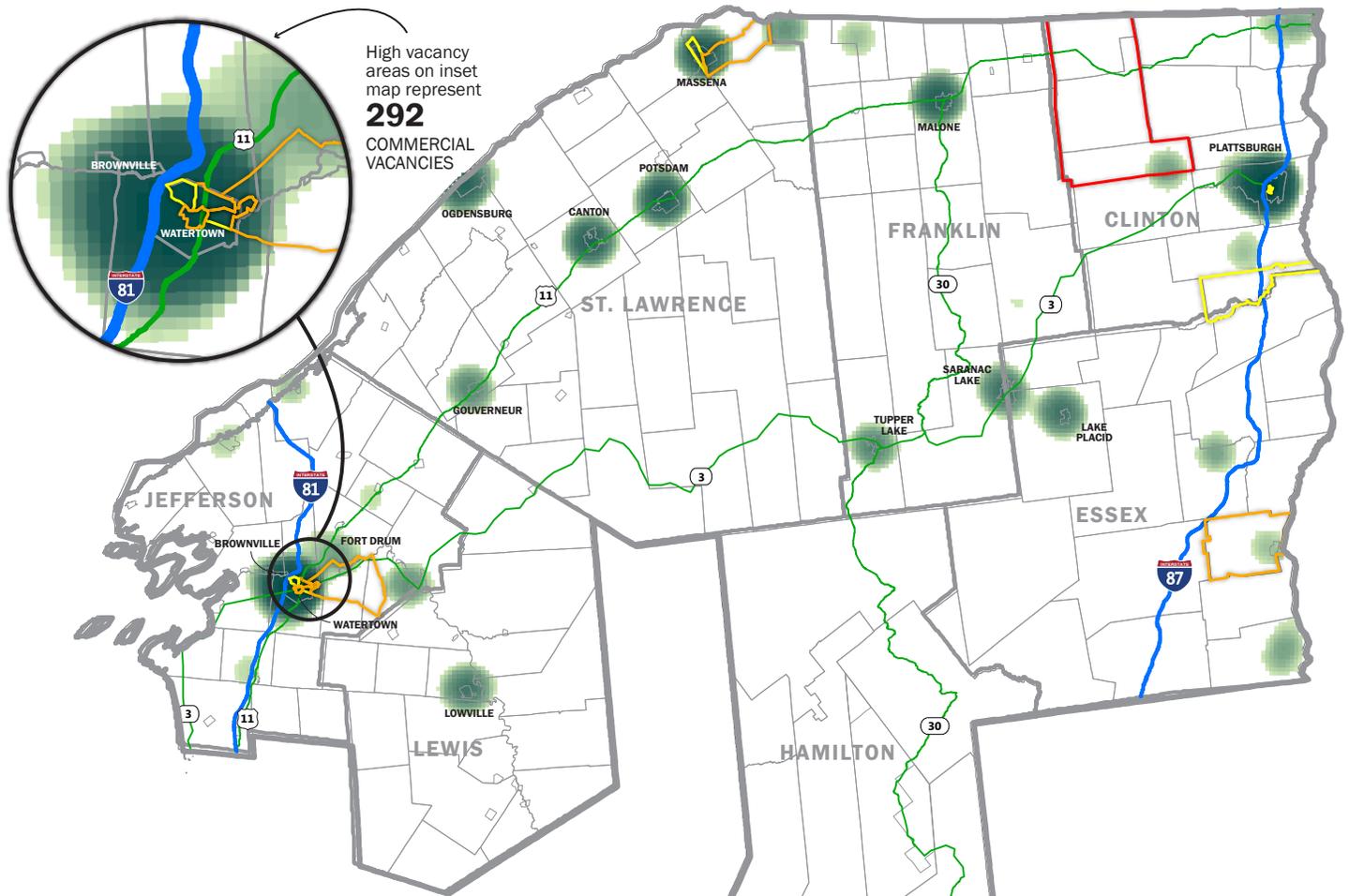
Workers who commute by other alternative modes also earn far less than the average worker. Public transit users across the state and the country, however, earn about the same as the average worker. Locating job opportunities near communities and promoting multi-modal transportation could create more opportunities for workers across the region and help the economy grow equitably.

### MEDIAN INCOME BY COMMUTING MODE, 2013



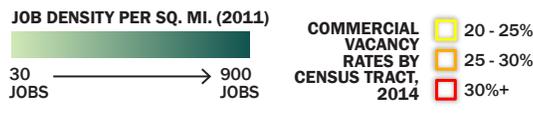
Source: U.S. Census Bureau.

Note: North Country had an unusually high std of error for its public transit commuting cohort



High vacancy areas on inset map represent **292** COMMERCIAL VACANCIES

**COMMERCIAL VACANCY RATES VS JOB DENSITY**



Areas of greatest opportunity exist where **job density** and **vacancy** overlap

Source: U.S. Census Bureau; U.S. Department of Housing and Urban Development.

## Are there development opportunities in existing employment centers?

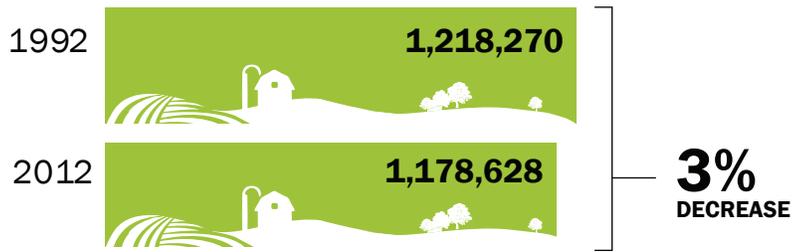
**Vacant commercial spaces in job-dense areas offer opportunities for growth.** Concentrating jobs and reinvesting in places where there are vacant commercial spaces is not only cost efficient, but expands opportunities to more workers and tends to spur additional economic activity. The map above shows where such opportunities would be greatest based on commercial vacancy rates. Just in the high vacancy areas (the census tracts with vacancy rates of 20% or more outlined in yellow, orange, or red), there are 292 vacant commercial addresses. Several other regional employment centers also have a number of unused commercial spaces, though they are not highlighted on the map since they fall short of the 20% vacancy rate threshold. This network of unused commercial units, some of which have been vacant for three years or more, can be put back to use by new businesses to help revitalize urban, town and village centers across the region.

## Are we preserving farmland to support the agricultural economy and regional food systems?

*The region has been losing farmland, but not as quickly as Upstate as a whole.*

North Country contains 16% of Upstate's farmland and is the second leading agricultural region in the state by acreage. Between 1992 and 2012, the region lost nearly 62 square miles of farmland, the equivalent of an area over nine times the size of the City of Plattsburgh. This marks a 3% drop in farmland acreage which is actually one percentage point less than the coinciding drop in farmland across Upstate (-4%). Loss of agricultural land could be detrimental to North Country's economy. As mentioned in the Economy section, Food Processing and Animal Production & Aquaculture were among the region's top growing industries and clusters in recent years.

ACRES OF LAND IN NORTH COUNTRY FARMS, 1992 AND 2012



Source: U.S. Department of Agriculture.

FARMLAND IN THE NORTH COUNTRY AS A PERCENTAGE OF UPSTATE'S TOTAL ACREAGE

**16%**  
OF ALL FARMLAND IN UPSTATE NY IS IN THE NORTH COUNTRY REGION



Source: U.S. Department of Agriculture.

## Is there an age cliff facing the agricultural industry?

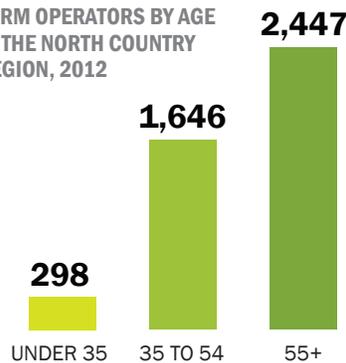
*For every eight farm operators age 55 and older, there is only one under the age of 35.*

Building work preparation pipelines into careers in farming will be important for maintaining farmland and some of the top growing industries it supports in the region. Fifty-six is the average age of farm operators in the North Country, slightly under the Upstate average. At the same time over half of farm operators could retire over the next decade, but a comparatively small percentage of younger people are entering the industry as farm operators: just 7% of farm operators are under age 35. The industry, however, reports larger proportions of younger workers, with those under age 35 comprising nearly 40% of all employment in Crop Production and Animal Production & Aquaculture. Cultivating the skills of this younger pool of workers could be important to growing the supply of labor for careers in farm operations. Industry connections with area colleges such as Jefferson Community College and others with agricultural programs may offer additional opportunities to strengthen workforce development.

WORKERS IN AGRICULTURE & FOOD MFG	ASA % OF WORKERS IN NORTH COUNTRY <sup>1</sup>
<b>3,322</b>	<b>3%</b>

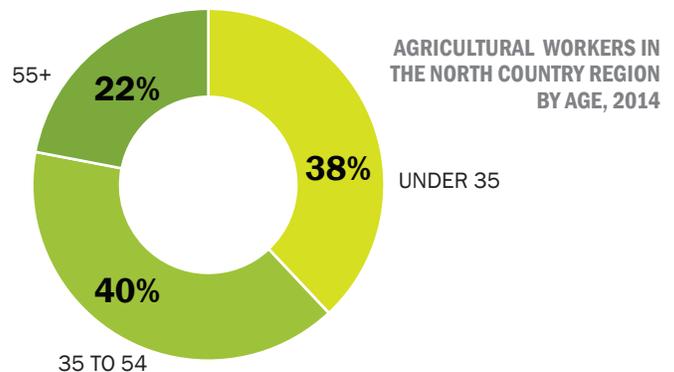
<sup>1</sup>Percentage is calculated based on 2013 private employment total.

FARM OPERATORS BY AGE IN THE NORTH COUNTRY REGION, 2012



**56**  
AVERAGE AGE OF FARM OPERATORS IN THE NORTH COUNTRY REGION

Source: U.S. Department of Agriculture, 2012.



Source: NYS Dept. of Labor, 2013 and U.S. Census, Quarterly Workforce Indicators, 2014, Quarter 1.

# Data Sources & Notes

## ECONOMY & INDUSTRY

### **Economy & Industry by the Numbers**

NYS Department of Labor, "Quarterly Census of Employment and Wages: (3-digit NAICS)," 2013.

U.S. Bureau of Economic Analysis (BEA), "GDP-by-Metropolitan-Area Statistics," 2013.

Brookings Institution, "Export Nation 2013."

All inflation-adjusted metrics are benchmarked to Bureau of Labor Statistic's Consumer Price Index (CPI) and measured in 2013 US dollars.

### **Top 10 Industries**

NYS Department of Labor, "Quarterly Census of Employment and Wages: (3-digit NAICS)," 2013.

### **Top 5 Growth and Loss Industries**

NYS Department of Labor, "Quarterly Census of Employment and Wages: (3-digit NAICS)," 2009-13.

### **Top 5 Growth and Loss Clusters**

Empire State Development, "Industry Clusters, New York State and Labor Market Regions," 2011-13. Clusters, composed of several industry sectors, are defined by Empire State Development. Data provided by NYS Department of Labor.

### **Recent Economic Trends**

NYS Department of Labor, "Quarterly Census of Employment and Wages (3-digit NAICS)," 2009-13.

U.S. Bureau of Labor Statistics, "Quarterly Census of Employment and Wages," 2009-13.

Brookings Institution, "Export Nation 2013."

All inflation-adjusted metrics are benchmarked to Bureau of Labor Statistic's Consumer Price Index (CPI) and measured in 2013 US dollars.

### **Top 5 Export Growth and Loss Export Industries**

Brookings Institution, "Export Nation 2013," 2009-12. County-level export data were aggregated to regional values. Export industry categories reflect major industry data. Real export values were used to calculate change over time.

### **High Growth, High Wage Industries**

NYS Department of Labor, "Quarterly Census of Employment and Wages: (3-digit NAICS)," 2009-13. Average regional wage (2013) is calculated on a regional basis, by industry. Industry average wage = industry total wage/industry annual average employment.

### **Top Growing STEM-Intensive Industries**

NYS Department of Labor, "Quarterly Census of Employment and Wages: (4-digit NAICS)," 2009-13.

Brookings Institute, "Advanced Industry Series." "STEM-intensive industries" or "Advanced Industries" are defined by Brookings Institute as industry groups (4-digit NAICS classifications) that are R&D and STEM-worker intensive. More information available at <http://www.brookings.edu/about/programs/metro/advanced-industries>.

### **Employment and Total Wage Location Quotients (LQs)**

NYS Department of Labor, "Quarterly Census of Employment and Wages: (3-digit NAICS)," 2013.

U.S. Bureau of Labor Statistics, "Quarterly Census of Employment and Wages," 2013. Location quotients are benchmarked to U.S. employment and wages totals.

## TOURISM

### **Tourism Employment, Growth and County Spending**

Empire State Development, "Industry Clusters, New York State and Labor Market Regions," 2009-13. Travel & Tourism represents one of 16 industry clusters defined by Empire State Development. It's comprised of 70 industry subsectors (six-digit NAICS).

NYS Office of the State Comptroller, "Open Book New York, Local Government Spending," 2013. County-level expenditures in the

"Culture and Recreation" category were aggregated to calculate regional totals. Per capita figures were calculated using population data from the U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)."

### **Tourism Trends**

Empire State Development, "Industry Clusters, New York State and Labor Market Regions," 2009-13. Employment and wage data are from the NYS DOL, "Quarterly Census of Employment and Wages," 2013 and provide total private sector employment used to calculate tourism as a percentage of all jobs.

### **Visitor Spending**

Tourism Economics, "The Economic Impact of Tourism in New York State: Adirondacks," 2011; "The Economic Impact of Tourism in New York State: Thousand Islands," 2011. County-level data were aggregated to create regional totals for visitor spending.

### **Global Exports**

Brookings Institution, "Export Nation 2013." Global exports reflect those categorized under the major industry title of "Travel and Tourism." Percentages are calculated using real 2012 export values.

## DEMOGRAPHICS & WORKFORCE

### **Labor Force**

NYS Department of Labor, "Local Area Unemployment Statistics," 2013, providing labor force and unemployed workers by region.

U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)," providing the population age 16+.

### **Workforce Trends Over Time**

NYS Department of Labor, "Local Area Unemployment Statistics," 1990, 2000, 2008-2013.

### **Population Growth Since 2000**

U.S. Census Bureau, "2000 Census."

U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)."

### **Unemployment Rate and Rate Change**

NYS Department of Labor, "Local Area Unemployment Statistics," 2009, 2014.

U.S. Bureau of Labor Statistics, "Unemployment Rate," 2009, 2014. Data is from the Current Population Survey (CPS).

### **Per capita Income and Poverty Rate**

U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)." Poverty rates reflect individuals of all ages living in households with an income under the federal poverty level in 2013.

### **Higher Education Enrollment**

National Center for Education Statistics (NCES), "Integrated Postsecondary Education Data System (IPEDS)," 2013. Enrollment reflects degree-granting institutions in the region.

U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)," providing population totals.

### **Hard-to-Place Workers**

U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)."

### **Workforce Entrants and Exits**

NYS Education Department, "Report Card database," 2012. High school dropouts reflect the number of non-completers, graduates are completers earning a diploma from a public or charter school. National Center for Education Statistics (NCES), "Integrated Postsecondary Education Data System (IPEDS)," 2013. U.S. Census Bureau, Center of Economic Studies, "LEHD, Quarterly Workforce Indicators," 2012. Retiree numbers are estimated by dividing the number of workers ages 55 to 64 years by 10, estimating that all will retire over the next 10 years.

### **Jobs by Industry and Age of Worker**

U.S. Census Bureau, Center of Economic Studies, "LEHD, Quarterly Workforce Indicators," 2013. Job counts by industry reflect an average from the first and second quarter of 2013. The chart excludes Public Administration and aggregates counts for selected industries into those shown.

### **Educational Attainment**

U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)."

### **College Degrees**

National Center for Education Statistics (NCES), "Integrated Postsecondary Education Data System," 2013. Degrees reflect those issued for the academic year beginning July 1, 2012 and ending June 30, 2013. Degrees are categorized by Classification of Instructional Programs (CIP), as provided by NCES.

## **INNOVATION**

### **Innovation by the Numbers**

U.S. Patent and Trademark Office, "Utility Patent Grants," 2009-13.

Reference USA, "U.S. New Businesses," 2014. New business filing reflect new trade names and DBA's.

U.S. Census Bureau, "Quarterly Workforce Explorer," 2013. Reflects private sector firms only.

National Center for Education Statistics (NCES), "Integrated Postsecondary Education Data System (IPEDS)," 2013. STEM degrees were classified using U.S. Immigration and Customs Enforcement methodology classifying CIP codes as STEM. Degree counts were derived from all degrees bachelors or higher. R&D expenditures reflect academic-based expenditures, as provided by the NCES.

### **Trends in R&D Expenditures, Stem Degrees and Patents**

R&D spending, STEM Degrees and Patents use the sources described above in *Innovation by the Numbers*. The following sources supplied population, total degree and workforce data to calculate the metrics in this section:

U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)."

U.S. Census Bureau, "Quarterly Workforce Indicators (QWI)," 2000, 2010, and 2013.

### **Innovation Compared to Others**

Data for R&D Expenditures, Patents, STEM Degrees and New Firms are described above in *Innovation by the Numbers*. Additional data sources for this section include:

NYS Department of Labor, "Occupational Employment and Wages," Q1 2014. Data come from the Occupational Employment Statistics (OES) survey, collected between 2010 and 2013. Jobs by occupation are presented by NYSDOL by labor market and for the entire state. Comparable national data are from the U.S. Bureau of Labor Statistics. The U.S. Bureau of Labor Statistics' definition of STEM was used to classify STEM occupations by 2010 Standard Occupational Classification (SOC) codes. See "2010 SOC Crosswalks: Attachment C: Detailed 2010 SOC occupations included in STEM, August 2012.

Purdue Center for Regional Development and the Indiana Business Research Center, "Innovation in American Regions: Innovation Index." The index is calculated from 4 component indexes weighted at varying levels - Human Capital (30%), Economic Dynamics (30%), Productivity and Employment (30%) and Economic Well-Being (10%). Each component index is composed of a series of indicators which are weighted individually.

Human Capital: Average High-tech Employment Share (20%), Ages 25-64 with Some College or an Associate's Degree (20%), Ages 25-64 with a Bachelor's Degree (20%), Young Adult Population Growth Rate (20%), Technology-Based Knowledge Occupations (20%). Economic Dynamics: Average Small Establishments (12.5%), Average Venture Capital Investment per \$10,000 GDP (25%), Average Employment Churn (25%), Broadband Connections per Household (12.5%), Change in Broadband Density (12.5%), Average Large Establishments (12.5%).

Productivity and Employment: Average Annual Rate of Worker Change in GDP per Worker (12.5%), Job Growth to Population Growth Ratio (25%), Change in High-Tech Employment Share (25%), Average Patents per 1,000 Workers (25%), Gross Domestic Product per Worker (12.5%). Economic Well-Being: Change in Income Proprietors Income per Proprietor (10%), Average Poverty Rate (20%), Average Unemployment Rate (20%) Average Net Internal Migration Rate (20%) Change in Per Capita Personal Income (20%) Change in Wage and Salary Compensation per Worker (10%).

## **SUSTAINABILITY, SMART GROWTH & DEVELOPMENT**

### **Change in Population and Developed Land**

U.S. Geological Survey, "National Land Cover Database (NLCD)," 1992-2001 Land Cover Change Retrofit Product; USGS, "NLCD," 2011. All areas classified from satellite imagery as developed open space, low-, mid-, and high-intensity development are included in the calculation of developed land area for respective years.

U.S. Census Bureau, "1990 Census"; "Population Estimates Program," 2011, providing population for 1990 and 2011.

### **Workers by Travel Mode**

U.S. Census Bureau, American Community Survey, "1-year estimates (2013)," "3-year estimates (2011-13)" and "5-year estimates (2009-13)."

### **Median Income by Travel Mode**

U.S. Census Bureau, American Community Survey, "5-Year estimates (2009-2013)."

### **Commercial Vacancy Rates and Job Density**

U.S. Department of Housing and Urban Development, "U.S. Postal Service Vacant Address Data," Q4, 2014.

U.S. Census Bureau, "Longitudinal Employer-Household Dynamics, 2011." Job density is derived from LEHD census block data on worker location using spatial analyst tools of ESRI ArcGIS software.

### **Acres of Farm Land, Farmland as a Percentage of Upstate's Total**

U.S. Department of Agriculture, "Census of Agriculture," 1992, 2012.

### **Farm Operators by Age, Agricultural Workers by Age and Workers in Agriculture & Food Manufacturing**

U.S. Department of Agriculture, "Census of Agriculture," 2012. Includes principal operators, or those "primarily responsible for the day-to-day operation of the farm," not assistant operators.

U.S. Census Bureau, Center of Economic Studies, "LEHD, Quarterly Workforce Indicators," 2014. Job counts by industry reflect employment from the first quarter of 2014. The chart aggregates the number of stable workers in the Crop Production (NAICS code 111) and Animal Production (NAICS code 112) industries.

*Workers in Agriculture and Food Mfg* includes workers in Food Manufacturing industries (NAICS codes 311 and 312) and Support Activities for Agriculture and Forestry (NAICS code 115) in addition to Crop and Animal Production. NYS DOL, "QCEW" (2013) provides total private sector employment used to calculate agriculture and food manufacturing as a percentage of all jobs.

# NORTH COUNTRY

## A REGIONAL ASSESSMENT

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