



Southern Tier Region

STRATEGIES

FOR

UPSTATE NY

Upstate Revitalization Initiative Strategies



NEW YORK
STATE OF
OPPORTUNITY.

Empire State
Development



Overview

In January 2015, Governor Andrew Cuomo announced the **Upstate Revitalization Initiative (URI)**—a competition backed by a **\$1.5B commitment to help continue to restore economic opportunity** to regions across Upstate New York. Seven regions (Mid-Hudson, Capital Region, Mohawk Valley, Central New York, North Country, Southern Tier and Finger Lakes) were eligible to compete for one of three \$500M prizes.

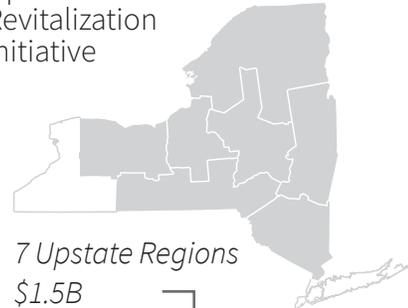


The URI is part of Governor Cuomo's broader Regional Economic Development Council program. Regional Economic Development Councils (REDCs) were established in 10 NYS regions by Governor Cuomo in 2011 to develop local, long-term strategic plans for economic growth. The REDCs redefined the way NYS invests state resources through the formation of a community-based, bottom-up approach designed to meet the needs of each region. Made up of local experts and stakeholders from business, academia, local government, non-profits, and New York State legislators, the REDCs are public-private partnerships supported by various state agencies serving each region. Through the Consolidated Funding Application (CFA) – a competitive process for state resources—the REDCs foster projects and initiatives that support their local strategies while attracting private investment and creating jobs. The URI combines the expertise and structure of the REDCs, and builds on the sound research, collaboration, and investment the regions have been engaged in for several years.

The seven regions included in the URI each submitted a plan in October 2015 that proposed a grand vision for their long-term revitalization that identified existing assets, highlighted needs and recommended areas of opportunity for proposed investment. The plans described how they would invest and strategically leverage \$500M in state funding on concentrated enterprises that create and maintain well-paying net new permanent private sector jobs, attract and retain private sector investments, and contribute to the growth of widespread wealth. In their plans, regions identified a suite of projects and actions that would be transformative for the region.

Central New York, the Finger Lakes, and the Southern Tier regions were announced as winners of the URI in December 2015. Each winning region was awarded \$500M in funding, allocated over five years in \$100M increments.

Upstate Revitalization Initiative



Compete for one of three \$500M prizes

Strategic Plans for URI



URI regions work to create jobs, attract private-sector investments and grow regional economies in Upstate NY.





Upstate Revitalization Initiative (URI) Application Process

Each applicable REDC has created a URI workgroup made up of REDC members representing the majority of the region. This group is tasked with both identifying URI projects that fit within the Region's URI strategy, and reviewing project Intents to Propose as they come in to the council.

In order to be considered for funding, a potential candidate seeking URI funding must submit a URI Intent to Propose (URI-IP) via the Consolidated Funding Application (CFA). The URI-IP is initially reviewed by staff in the Empire State Development Regional Office (RO). Any URI-IPs that do not fit within the scope of the region's URI strategy will not be reviewed by the URI workgroup.

Each URI workgroup will utilize statewide endorsement standards when reviewing a URI-IP submitted to their region. URI Workgroups will take into account the degree to which the application helps implement the strategies of the URI plan, demonstrate transformative elements, and provide lasting economic impact in the region. REDC URI Workgroups will meet on an as-needed basis to review and discuss URI-IPs.

Any URI-IPs that do fit within the scope of the region's URI strategy will be asked to move forward by filling out a "Phase 2" application via the CFA, or if there is not enough information in their initial URI-IP, they will be asked to submit more information, also through the CFA.

If an application moves to the "Phase 2" stage, the project is then reviewed by the appropriate agency or agencies, based on the scope of the project. (For example, a traditional economic development project will be reviewed by Empire State Development, while a transit-oriented project may be reviewed by the Department of Transportation.) Recommendations will then be made about which projects will move forward into the contract phase and will be issued an Incentive Proposal after the necessary approvals have been received.

New York State's existing requirements in relation to the prevailing wage, minority and women owned businesses (MWBE), workforce participation, apprenticeship programs and other normal requirements of contracting with the state applies to all URI funding.



Strategies that guide economic development in NYS

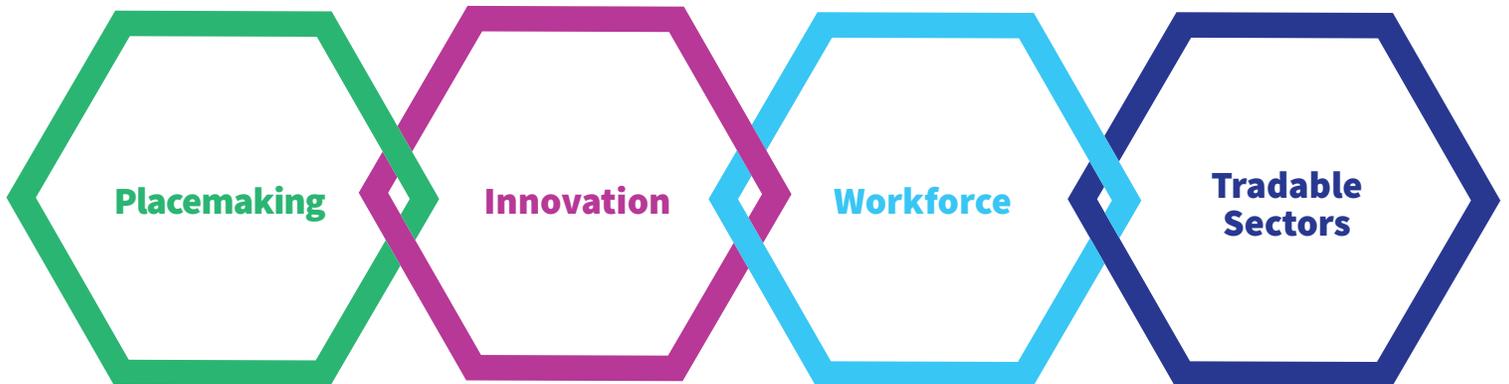
New York State (NYS) drives economic growth by making investments that enforce four interconnecting strategies. **Placemaking** is the notion that where investment occurs matters. In

order to attract a talented workforce, our built environment must emphasize creating accessible job centers, sustainable infrastructure and livable communities. **Workforce** is the belief that people drive the economy. Targeted job training and education ensures that jobs in high-paying, in-demand, tradable sectors are filled in an equitable way.

Tradable Sectors describes which industries NYS is targeting to increase export based employment opportunities. They are the industry sectors that are part of a global market like manufacturing, agricultural products, and energy. Investing in tradable sectors (both products and services)—those subject to the demand of a global economy—creates greater output and higher-paying jobs. Finally, **Innovation** is the strategy of investing in creating synergies between research and commercialization to drive the economy forward.



**Empire State
Development**



Economic development means investing in placemaking, innovation, workforce and tradable sectors.

PLACEMAKING

Where We Invest Matters

There is a connection between land use and economic stagnation. Divesting from urban centers while building homes and adding infrastructure farther out adds costs for municipalities and separates people from jobs. The growing housing surplus and spread of vacant homes reveals the extent of sprawl, especially in Upstate NY. This sprawling development increases infrastructure costs, like road maintenance, and makes it difficult for workers to access jobs without a car.

Placemaking limits these costs and drives economic growth by investing in job centers, existing assets, public transit and sustainable infrastructure. Amenities like affordable housing, walkability, technology infrastructure, and transportation options create competitive advantages for cities looking to attract firms and a young, dynamic workforce. Reinvesting in walkable communities decreases infrastructure costs, lowers energy consumption and creates attractive places to live. Concentrating development and economic growth helps NYS become more sustainable, livable and prosperous.

PLACE-BASED INVESTMENTS

Historic Preservation & Adaptive Reuse

Waterfront Redevelopment & Water Quality

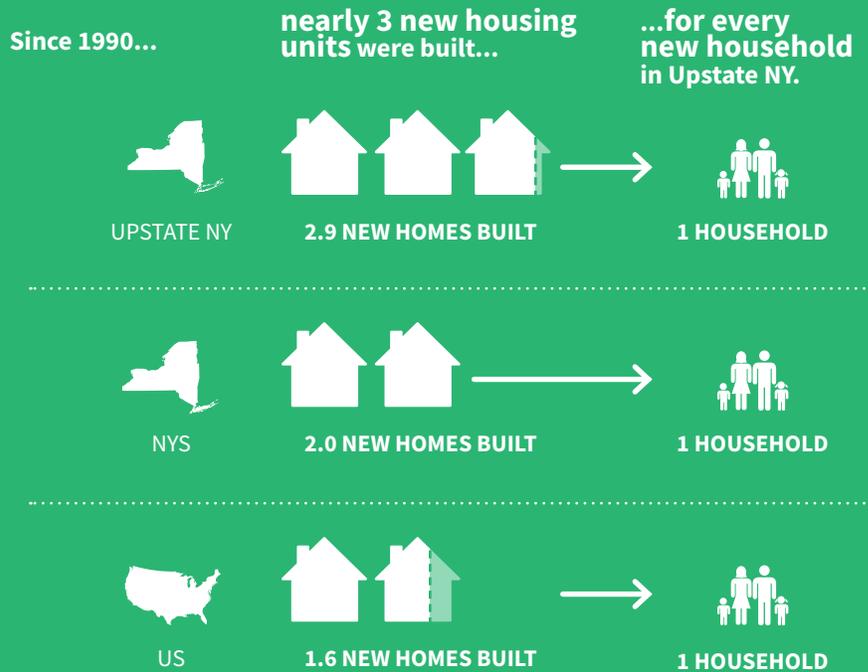
Smart Infrastructure & Transit-Oriented Development

START-UP NY and Place-based Collaborative Spaces

Infrastructure and Anchor Institutions

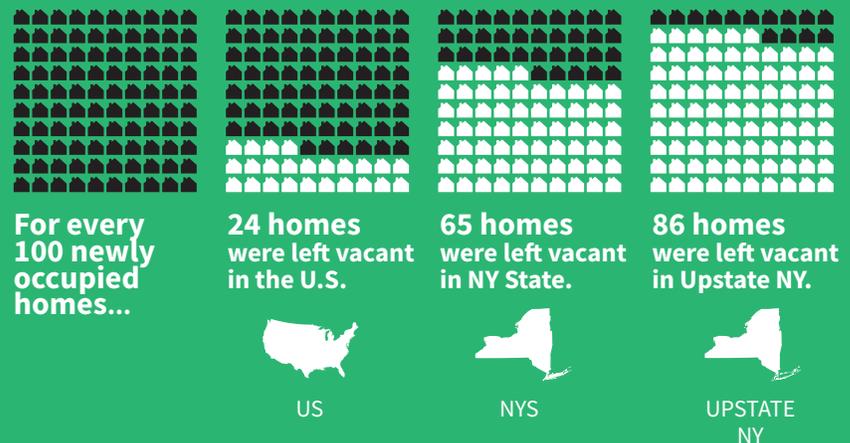
Brownfield Redevelopment

We are building a housing surplus in New York State, especially in Upstate NY.



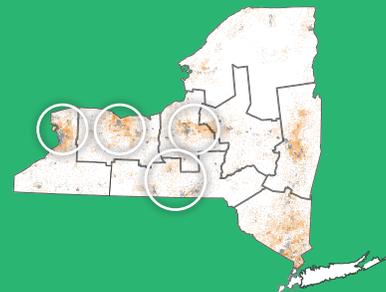
Source: U.S. Census, 1990; American Community Survey, 1-year estimates, 2015.

Since 1990, vacant homes increased nearly as much as occupied homes in Upstate NY.

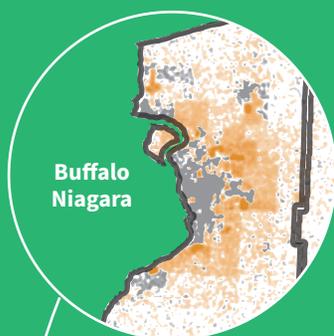


Source: U.S. Census, 1990; American Community Survey, 1-year estimates, 2015.

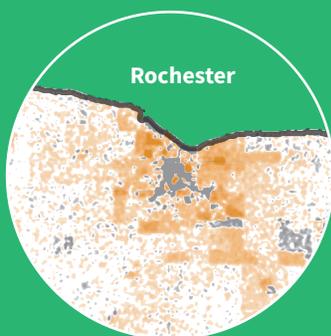
Since 1990, **vacant homes increased** across Upstate NY's major cities while most **new homes** were built in suburbs.



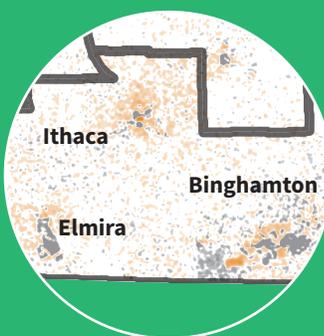
CHANGE IN NUMBER OF OCCUPIED HOUSING UNITS ACROSS UPSTATE NY, 1990-2015



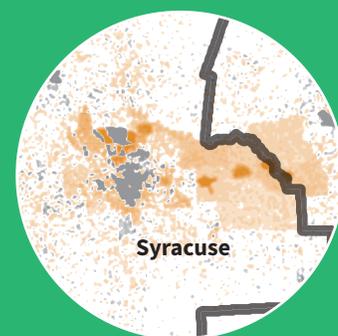
Western NY



Finger Lakes



Southern Tier



Central NY

And **sprawl comes with major costs** - like the cost to build and maintain the infrastructure needed to support sprawling development.

In **Buffalo Niagara** for instance...

In just the past twenty years, **525 miles** of new roads have been built...

...costing **\$26 million** per year to maintain.

Source: U.S. Census, 1990; American Community Survey, 1-year estimates, 2015. NOTE: New roads built and maintenance costs are from a UBRI analysis using data from the U.S. Census Bureau (1990 and 2010), and the NYS Office of the State Comptroller (2011).

COMMUTING MODES, 2015

Nearly 80% of workers in Upstate NY **drive alone** to work ...



...while only 10% **walk, bike or take transit.**



Source: U.S. Census Bureau, American Community Survey, 1-year estimates, 2015.

Young adults are **attracted to places** with...

- affordable housing
- walkable neighborhoods
- high-speed internet
- transportation options
- diversity
- a strong educational system

INNOVATION

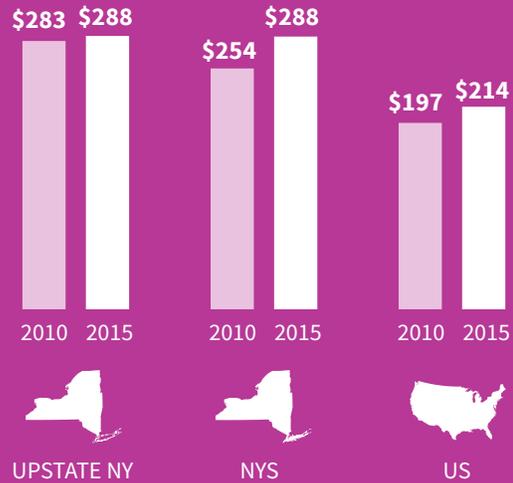
Driving the Economy

Innovation drives the economy by cultivating ideas and inventions through research to generate new products and processes. The innovation pipeline typically starts at colleges and universities that conduct research and prepare young talent for a diverse range of Science, Technology, Engineering and Math (STEM)-intensive industries that drive innovation and pay higher wages than the average industry. This research and talent generates patents, and start-up firms that create jobs and enhance the economy as they move products up the innovation-commercialization pipeline.

NYS, including Upstate NY, has a strong base of human capital for innovation. NYS ranks among the highest states in the nation for the number of STEM degrees produced at colleges and universities and outperforms the nation in terms of R&D investments and patent production on a per-worker basis. When compared with the nation, new firms make up a smaller share of the NYS economy. However, job creation at new firms in NYS increased at twice the national rate since 2010. Meanwhile, increases in patent production in NYS lagged behind the U.S., revealing an opportunity for the educational institutions to translate the substantial research dollars they attract into innovations that spur economic activity.

Colleges and universities across NYS attract significant R&D funding.

R&D SPENDING PER CAPITA, 2015



Source: National Science Foundation, Higher Education Research and Development (HERD) Survey, 2015; U.S. Census, 2010; American Community Survey, 5-year estimates, 2014, and 1-year estimates, 2015. Figures are not adjusted for inflation.

Patent production in Upstate NY exceeds state and U.S. benchmarks.



PATENTS PER 10,000 WORKERS, 2010 VS 2015

2010	14.99	8.62	8.43
2015	17.12	9.55	10.1

% CHANGE



UPSTATE NY: 14%
NYS: 11%
US: 20%

Source: U.S. Patent and Trademark Office, Patent Technology Monitoring Team, 2010 and 2015; NYS Department of Labor, Quarterly Census of Employment and Wages, 2010 and 2015.

New firms create more new jobs in NYS than nationwide.



UPSTATE NY MSAs: 8.9%
NYS: 10.8%
US: 13.2%



New firms as a % of all firms, 2014

8.9% 10.8% 13.2%



% of new jobs these firms create

34.6% 35.3% 32.9%

Source: U.S. Census Bureau, Business Dynamics Statistics, 2014.

NYS is a national leader
in **STEM degrees**.

NYS

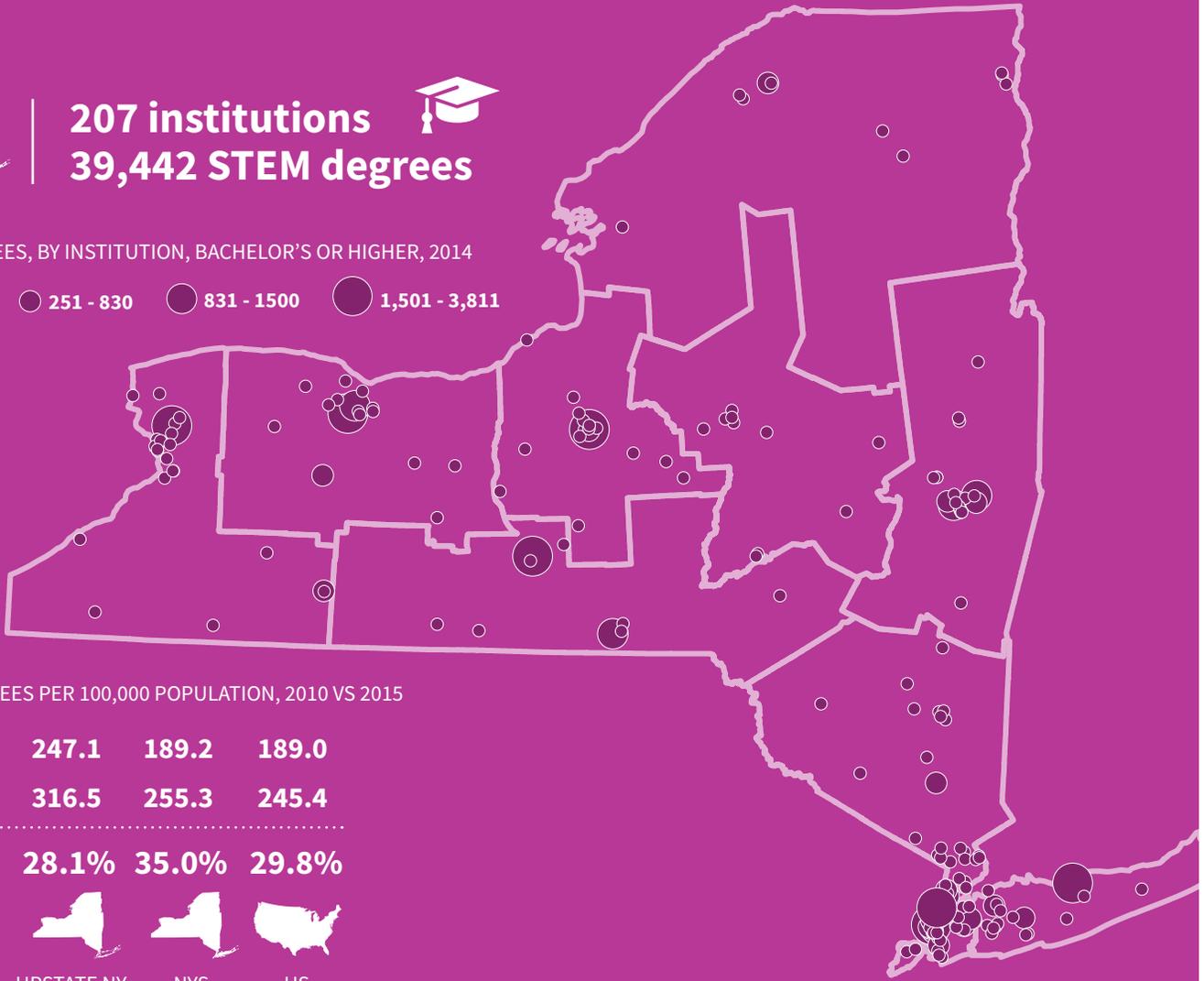


207 institutions
39,442 STEM degrees



STEM DEGREES, BY INSTITUTION, BACHELOR'S OR HIGHER, 2014

○ 0 - 250 ● 251 - 830 ● 831 - 1500 ● 1,501 - 3,811



STEM DEGREES PER 100,000 POPULATION, 2010 VS 2015

2010	247.1	189.2	189.0
2015	316.5	255.3	245.4
% CHANGE	28.1%	35.0%	29.8%



UPSTATE NY



NYS



US

Sources: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2014; U.S. Census, 2010; American Community Survey, 2014 (5-year estimates), 2015 (1-year estimates).

AVERAGE ANNUAL WAGES, 2015 (2015 DOLLARS)

STEM-intensive industries pay
higher wages on average.

	STEM-Intensive Industries	All Industries
 UPSTATE NY	\$74,117	\$50,713
 NYS	\$87,526	\$67,507
 US	\$79,551	\$52,942

Source: NYS Department of Labor, Quarterly Census of Employment and Wages, 2015; Brookings Institution.

WORKFORCE

Connecting People and Jobs

Workforce development expands and enhances the pool of labor that supports businesses across NYS by providing educational opportunities, workforce training and collaborations between education and industry.

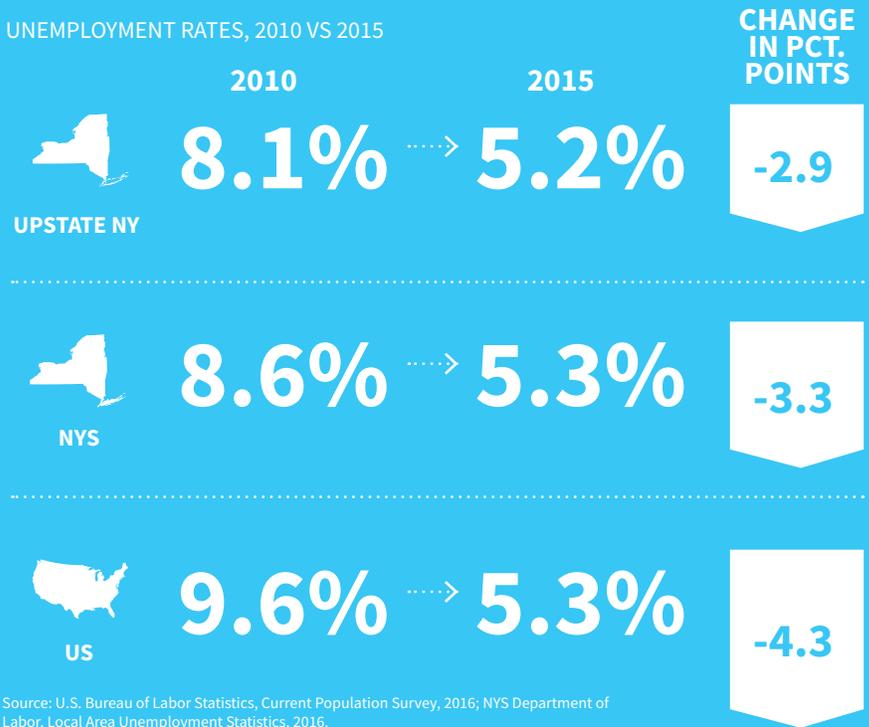
Upstate NY has low and declining unemployment rates. But further workforce development can expand the labor pool. One way to grow the labor pool is through higher education, as workers with more education are more likely to participate in the labor force. The working age population of NYS and Upstate NY have slightly more education than across the nation.

Other workforce development and training programs can help align worker skills with industry needs. For example, training programs can be targeted to prepare young workers for industries challenged by approaching retirement cliffs, like Health, Education and Manufacturing where older workers outnumber younger workers by 30,000 or more across NYS.

College experience prepares workers for more competitive, higher-wage positions that will need to be filled, though many more openings will be available each year for those with lower levels of education. By focusing on key opportunities and challenges, NYS can extend access to training and enhance employment opportunities for workers of skill levels across a wide range of industries.

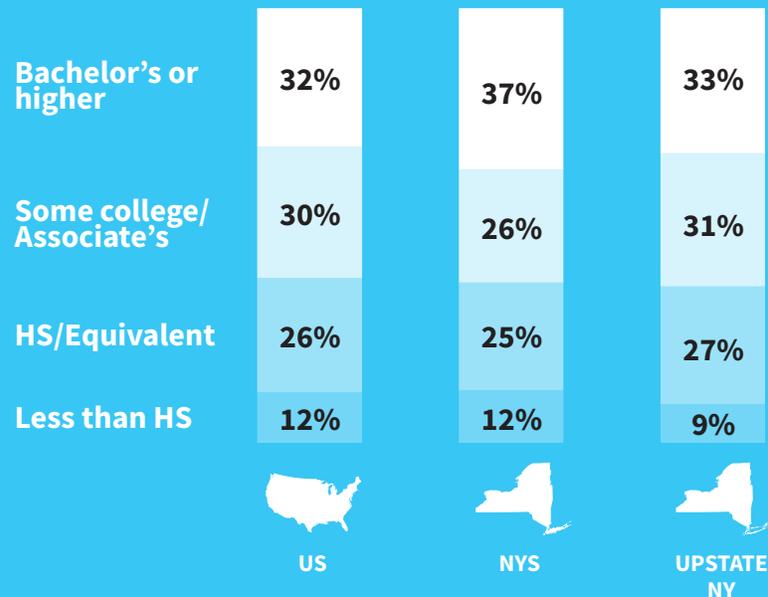
Unemployment rates in Upstate NY remain lower than the state and nation.

UNEMPLOYMENT RATES, 2010 VS 2015

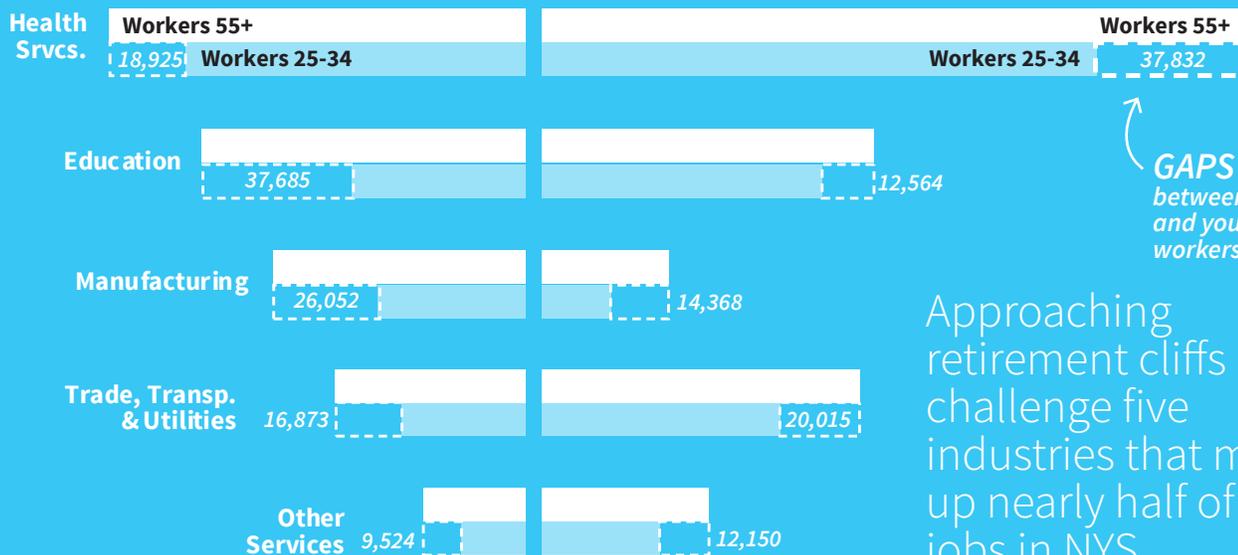


People in NYS and Upstate NY are slightly better educated than the U.S. population.

EDUCATIONAL ATTAINMENT, POPULATION AGE 25-64, 2015



JOBS BY INDUSTRY AND AGE OF WORKER, 2015



GAPS between older and younger workers

Approaching retirement cliffs challenge five industries that make up nearly half of all jobs in NYS.

Source: U.S. Census Bureau: Local Employment Dynamics, Quarterly Workforce Indicators, 2015.

Most job openings do not require higher education, but higher wage positions tend to require some college experience.

PROJECTED ANNUAL OPENINGS BY EDUCATIONAL ATTAINMENT

AVERAGE ENTRY-LEVEL WAGES, 2015 (2015 DOLLARS)

Attainment Level	UPSTATE NY	NYS
Less than HS	117,267	\$20,176
	41,750	\$20,093
HS diploma or equivalent	108,064	\$30,005
	40,760	\$29,112
Some college or Associate's	32,951	\$30,111
	13,640	\$34,118
Bachelor's or higher	99,138	\$56,982
	23,810	\$52,757

Source: NYS Department of Labor, Long-Term Occupational Projections through 2022, 2014.

Workers with more education are more likely to participate in the workforce.

LABOR FORCE PARTICIPATION RATE BY EDUCATIONAL ATTAINMENT AMONG 25-64 YR OLDS

	Less than HS	HS/ Equivalent	Some college/ Associate's	Bachelor's or higher
UPSTATE NY	55%	71%	79%	87%
NYS	60%	72%	79%	87%
US	60%	72%	79%	86%

Source: U.S. Census Bureau, American Community Survey, 1-year estimates, 2015.

TRADABLE SECTORS

Bringing NY to the World

Tradable sectors are those industries with the capacity to export globally. Reaching global markets with goods and services demanded by international residents is important to economic growth. Markets outside the U.S. make up the majority of the world's consumers, purchasing power, and economic growth. 10 countries that represent some of the world's largest, fastest-growing economies account for 72% of all NYS exports. Exporting businesses report higher sales, employment and wages than other firms.

Exports include goods such as lumber, automobiles, and food that can be moved out of state for consumption around the world. Exports also include services like tourism and education which are consumed in NYS by visitors from outside the country, as well as business and technical services used in foreign markets.

Exports are important throughout the state, but the export market of Upstate NY is unique. While exports in Downstate NY are dominated by service exports, most notably from the financial sector, Upstate NY's exports are mostly in goods and manufacturing. By providing targeted financial assistance, marketing and partnerships to a broad base of exporters, NYS will increase its presence throughout the globe, thereby bringing economic growth and prosperity to communities across NYS.

Exporters **outperform** other firms.



Source: J Bradford Jensen, "Global Trade in Services: Fear, Facts, and Offshoring," Peterson Institute for Institutional Economics, 2011.

The majority of the **world's purchasing power** lies outside of the U.S.

Markets outside the US represent...

80% of the world's purchasing power,

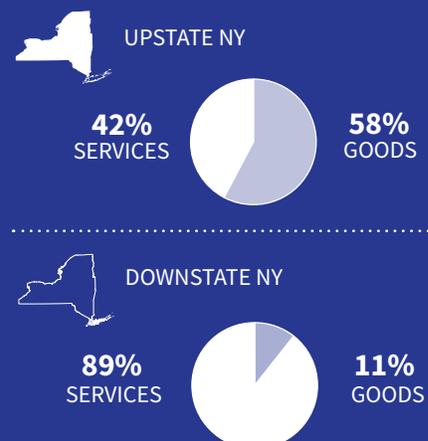
92% of the world's economic growth,

95% of the world's consumers.

Source: U.S. Chamber of Commerce, 2012.

While services dominate downstate's exports, **Upstate NY's exports are mostly goods.**

EXPORT COMPOSITION, 2015



Source: Brookings Export Nation, 2015.

Tradable sectors in **Upstate NY** exported over **\$44B in goods and services**, and supported nearly **277,000 jobs**.



UPSTATE NY

Tradable sectors in **Downstate NY** exported over **\$85B in goods and services**, and supported over **658,000 jobs**.

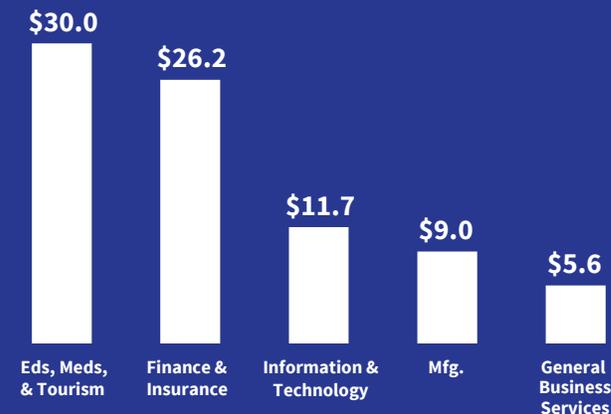


DOWNSTATE NY

TOP 5 EXPORT INDUSTRIES IN UPSTATE NY, 2015 (IN BILLION \$)



TOP 5 EXPORT INDUSTRIES IN DOWNSTATE NY, 2015 (IN BILLION \$)



Over 95% of all exports come from these five industry sectors.

Over 96% of all exports come from these five industry sectors.

Source: Brookings Export Nation, 2015. Export values are in 2015 dollars.

The top 10 NYS export markets

72% of exported goods valued at \$57.4B



2015 TOP 10 NYS EXPORT MARKETS

#1 Canada	\$12.4B
#2 Hong Kong	\$9.5B
#3 Switzerland	\$8.3B
#4 United Kingdom	\$5.9B
#5 Israel	\$5.4B
#6 Belgium	\$4.0B
#7 China	\$3.7B
#8 Mexico	\$3.1B
#9 India	\$2.9B
#10 Germany	\$2.2B

Source: U.S. Census, International Trade Data, State Data Series, 2015. Export values are in 2015 dollars.

SOUTHERN TIER'S ADVANCED ECONOMY OF THE FUTURE



**SOUTHERN TIER
Upstate
Revitalization
Initiative Plan**





The Southern Tier Region in Context



What the data tells us

The Southern Tier has many remarkable assets that create opportunities for regional growth and prosperity. For example, the region has a strong foundation for innovation in its world-renowned research universities, strong patent production and relatively high number of new firms. The Southern Tier also has abundant natural resources and tightly knit communities with low costs of living. However, the region is challenged by the loss of major firms and a declining population. These challenges are intensified by sprawling land use patterns that grew infrastructure, and the costs to maintain it, while the region's tax base declined. The Southern Tier's workforce is smaller and has slightly less education than other parts of NYS. Tradable sectors are not growing as much as they are across NYS. The region will confront these challenges by taking a collaborative approach that leverages its competitive advantages to attract talent and investment in key industries, grow the region's economy and ensure strong, healthy communities.

BY THE NUMBERS

Population	655,997
Jobs	209,628
Firms	13,891
Total Wages	\$9.4B
Exports	\$3.9B
GDP	\$17.6B

Source: See Data Sources & Notes.

PLACEMAKING

% CHANGE POPULATION AND DEVELOPED LAND, 1992-2011

The Southern Tier has **less people but uses more land.**

-2.1%



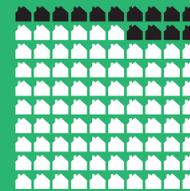
2.4%

Source: U.S. Geological Survey, 1992 and 2011; U.S. Census Bureau, 1990 and 2011.

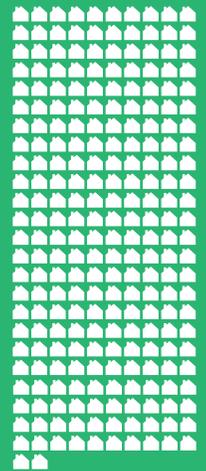
Vacant homes increased much faster than newly occupied homes since 1990.



For every 100 newly occupied homes...



86 homes were left vacant in Upstate NY.



242 homes were left vacant in Southern Tier

Source: U.S. Census, 1990; American Community Survey, 1-year estimates, 2015 and 5-year estimates, 2014.

WORKFORCE

EDUCATIONAL ATTAINMENT, AGES 25-64, 2015

LABORFORCE PARTICIPATION RATES

Bachelor's or higher 97,926> **84%**



Associate's degree or some college 101,084> **79%**



HS diploma 100,974> **70%**



Less than HS 25,578> **51%**



Most of the working age population has at least some college experience.

Source: U.S. Census Bureau, American Community Survey, 1-year estimates, 2015 and 5-year estimates, 2014.

INNOVATION

The Southern Tier outperforms NYS and the US in **research spending, patents and STEM degrees.**

	SOUTHERN TIER		UPSTATE NY	NYS	US
	% change 2010-2015	2015	2015		
 R&D per capita	↑ 26%	\$1,578	\$288	\$288	\$214
 STEM degrees per 100K population	↑ 25%	852	316	255	245
 Patents per 10K workers	↑ 24%	20	17	10	10
 New firms as a % of all firms, 2014	↑ 0.5 PERCENTAGE POINTS	8%	9%	11%	13%
 % of new jobs created by new firms, 2014	↑ 5.2	36%	35%	35%	33%

Sources: National Science Foundation, Higher Education Research and Development Survey, 2015; U.S. Census, 2010; American Community Survey, 2014 (5-year estimates), 2015 (1-year Estimates); National Center for Education Statistics, Integrated Postsecondary Education Data System, 2015; U.S. Department of Immigration and Customs Enforcement; U.S. Patent and Trademark Office, Patent Technology Monitoring Team, 2015; NYS Department of Labor, Quarterly Census of Employment and Wages, 2015; U.S. Census Bureau, Business Dynamics Statistics, 2015.

TRADABLE SECTORS

Tradable sectors are industry sectors with global export capacity.

Tradable sectors make up a sizable share of the Southern Tier's economy, but these **sectors have not grown since 2010.**

Tradable sector...		AS A % OF REGION	% change, 2010-2015
...jobs	206,188	79%	0%
...firms	13,182	88%	0%
...total wages	\$9.2B	79%	2%

Source: NYS Department of Labor, Quarterly Census of Employment and Wages, 2010 and 2015.

The Vision for the Southern Tier Region



The Upstate Revitalization Initiative (URI) award will help reinvent the Southern Tier as a center of **innovation**, vigorous business growth, while expanding the local **workforce**, building **healthy communities**, protecting natural resources and attracting the nation’s best and brightest talent. By implementing this plan, the region will aggressively create ideal conditions for economic growth. Building on a strong foundation of existing businesses and higher education institutions, the Southern Tier uses a collaborative approach to leverage its globally competitive advantages to propel **strategic industry clusters**.



Southern Tier's four strategies support economic development through placemaking, innovation, workforce and tradable sectors.



Build the Greater Binghamton Innovation Ecosystem

Greater Binghamton will be a destination for talent, new business development and partnerships for commercialization of emerging technologies. Revitalized urban centers in Binghamton, Johnson City and Endicott will maintain the area's legacy, and position it as a major gateway, with strengths in advanced manufacturing, healthcare, culture and high technology development. Innovation Districts will capitalize on public-private collaborations and the growing presence of Binghamton University.

WHAT NEEDS TO BE DONE

To capitalize on higher education, healthcare and advanced manufacturing assets, create three Innovation Districts (the City of Binghamton iDistrict, the Johnson City Health and Cultural iDistrict and the Endicott Advanced Manufacturing iDistrict) where leading-edge anchor institutions and companies can cluster and connect with start-ups, business incubators and accelerators to become drivers of a new advanced economy.

Leverage and support the R&D capabilities of academia and industry in the region, giving Southern Tier companies a competitive edge, attracting new jobs and creating opportunities for a reinvigorated workforce.

Through the Transform Greater Binghamton Fund, support high-density development in Greater Binghamton's urban communities with a focus on mixed-use development, housing options, space for start-ups, and adaptive reuse of brownfield sites and vacant industrial land to attract private investment.

Build on regional strengths in advanced manufacturing and health care to drive innovation and job growth. Prepare a workforce with a focus on STEM education to build a strong employment pipeline for these industries.



WHY IT'S IMPORTANT

Once known as the “Valley of Opportunity,” the region has a rich history of innovation and global business development. But, the loss of Endicott-Johnson and IBM left Greater Binghamton with high unemployment and blighted industrial properties.

Greater Binghamton has three unique, physically compact and transit-accessible downtown districts—Endicott, Johnson City and Binghamton—that are united by common waterways, transportation networks, and anchor institutions.

The region suffers from outmigration, an aging population and a shrinking labor force. Capitalizing on the more than 60,000 students annually who are educated at the region’s colleges and universities represents an opportunity for business and workforce growth.

The region’s population is highly educated, with more than half of the region’s population with at least some college experience.

The region’s colleges and universities represent a powerful research, teaching, training and networking engine that can accelerate the Southern Tier’s innovation economy.

34% of graduates in the region are awarded STEM degrees—a number that grew in recent years.

The region has world-class research universities such as Cornell and Binghamton, as well as private sector businesses with strong R&D activity such as Corning Incorporated and Lockheed Martin. R&D spending and patent production is significant and grew in recent years.

Greater Binghamton has a growing, specialized healthcare sector.

Though still the third largest employment sector, the manufacturing sector lost 35% of its employment since 2000. To remain competitive in the global market, the region is working to grow manufacturing that focuses on high-tech materials and high-value electronics for the commercial, defense and aerospace industry.

A recent increase in the number of small firms in the region is an indicator of the presence of new start-ups.



ALIGNING WITH STATE PRIORITIES

The Greater Binghamton Innovation Ecosystem will support and develop start-up firms, research facilities, academic institutions and organizations that emphasize creative ideas and technologies in line with the state's **innovation** strategy. The Southern Tier will make strategic investments in emerging technology centers and projects to provide firms of all sizes with access to technology commercialize emerging research and technology. By teaming academic researchers with industry partners, the Greater Binghamton Innovation Ecosystem will ensure that industries in the Southern Tier are able to modernize and compete in a changing landscape. It will also develop human capital to fuel target industries by growing, retaining, and nurturing students with STEM degrees.



The Southern Tier acknowledges the important role of **placemaking** in promoting innovation and economic development. The Southern Tier is focused on vibrant urban cores to improve perceptions of the region and attract private investment, new residents, innovation and entrepreneurship. The Greater Binghamton Innovation Ecosystem will be supported by sustainable infrastructure that celebrates the region's unique heritage and natural resources and creates mixed-use neighborhoods, walkable communities, and diverse housing choices. The region will embrace downtown spaces by redeveloping former industrial land and working to curb the "geography of nowhere" that comes from suburban sprawl.







Southern Tier Strategies: Tradable Sectors

Invest in the Advanced Manufacturing Industry

A focus on advanced manufacturing and the transportation sector will result in the Southern Tier being recognized as a destination for manufacturing business development, distinguished by its concentration of multi-national anchor companies, advanced infrastructure to support innovation and technology, rich education and research resources, specialized skilled workforce and vibrant communities.

WHAT NEEDS TO BE DONE

Create a supportive ecosystem, ranging from basic infrastructure, to state-of-the-art equipment, to the community support systems essential to attracting and retaining young talent that will stimulate private investment.

Commit to sustaining the Southern Tier's competitive edge in advanced manufacturing by fostering relationships with internal corporate R&D and research universities to commercialize new innovations.

Create a highly skilled workforce by anticipating and meeting future workforce needs; increase engagement between students and industry that inspires and prepares the next generation for careers in advanced manufacturing; transform the role of the schools in high-poverty areas to contribute to a culture shift in perceptions about manufacturing; and train adult incumbent and unemployed workers in workforce readiness.



TRADABLE SECTORS

WHY IT'S IMPORTANT

Although the overall manufacturing industry saw a decline in the past decade, manufacturing remains the third largest employment sector in the Southern Tier economy.

The Southern Tier continues to have significant strength and specialization in manufacturing. This is even more pronounced in the Advanced Transportation Equipment Manufacturing cluster.

Manufacturing is the largest export industry in the region representing nearly a third of all the region's exports.

Manufacturing has one of the highest average wages in the Southern Tier and it is even higher in the Advanced Transportation Equipment Manufacturing cluster.

The Southern Tier is home to three of the leading rail design and manufacturing companies in the world, and a number of small to medium-sized companies that developed a niche in national and regional global supply chains. As national trends toward public transit, high speed passenger rail and energy efficiency in large vehicles increase over the next decade, the Southern Tier's Advanced Transportation Equipment Manufacturing cluster has the potential to grow as demand for advanced transportation manufacturing increases.

The region has the highest concentration of advanced manufacturing and transportation equipment manufacturing companies in the Southern Tier. Due to expansions and new companies, there are a projected 600+ jobs in the region in the next five years. But, the Southern Tier's manufacturing towns, including Elmira, Corning, Hornell and Norwich, suffer from pockets of poverty, older housing stocks, run-down commercial districts, and outdated infrastructure.

The region's manufacturing sector is experiencing a rapidly aging workforce; but the region has several effective training institutions that can educate a new generation of workers as well as up-skill the existing workforce to meet technological changes.

The exodus of college graduates is among the region's most pressing economic problems. The Southern Tier is challenged by its inability to recruit and retain sufficient numbers of college graduates, particularly in STEM fields, to grow the manufacturing sector.



ALIGNING WITH STATE PRIORITIES

Manufacturing is an important **tradable sector** for the Southern Tier because of its historical legacy, institutional capacity, and high employment numbers. It also offers some of the greatest potential for growth in terms of supply-chain, commercialization of technology for business expansion, employee recruitment, foreign investment and exports. Even with a decline in recent years, manufacturing continues to make significant contributions in exports, productivity, R&D and wages. The Southern Tier excels in the design, manufacturing and assembly of products for industries ranging from auto-making, to high-speed rail, to aerospace. Focusing on the Advanced Transportation Equipment Manufacturing cluster provides a unique specialization in an increasingly global market, and an opportunity to increase jobs, private-sector investment, foreign investment and global exports.



The Southern Tier recognizes that a strong **workforce** is one of the key components of sustainability and growth in the manufacturing sector. The Southern Tier will focus on attracting more qualified workers with different and more technical skill sets to ensure the future competitiveness of the sector. Steps will be taken to expose young people to career opportunities, engage the existing workforce in technical skills training, and aggressively recruit new talent at all levels ranging from scientists and engineers to machine operators.





Southern Tier Strategies: Tradable Sectors

Transform the Food and Agriculture Industry

The Southern Tier will be a world-recognized leader in agriculture technology and serve as a key food supplier for the East Coast of the U.S. A strategic mix of projects will transform and increase food production, processing and distribution, while strengthening links to growing tourism and manufacturing industries.

WHAT NEEDS TO BE DONE

Develop and deploy new technologies to transition the Southern Tier from being a highly seasonal, occasional provider of food products to a reliable source of supply for the East Coast.

Promote and leverage existing and new support structures for growers and producers in the region to help expand farms and increase their profitability; and support this growth with workforce development programs to educate future farmers and renew an aging farmer population, targeted at young, veteran, immigrant and low-income workers.

Increase the diversity of and access to food processing facilities around the region.

Leverage the location at the crossroads of Upstate New York via the creation of a “food hub” network that facilitates market connections and distribution of food products to serve as production centers in regions across the state.



TRADABLE SECTORS

WHY IT'S IMPORTANT

The agriculture and food system (including food service) make up 11.5% of total regional employment and produce \$5.2B in output for the Southern Tier (9.5% of the region's total economy).

Selling more than \$165M in crops in 2012, Southern Tier counties regularly rank in the top 10 counties statewide for crop production.

The region has more than 5,600 farms (representing the cultivation of just over 1.1M acres), and more than 9,000 full- and part-time farm operators. But, the Southern Tier faces an aging workforce—the average age of a farm operator was 58 in 2012.

As traditional centers of agricultural production lose market share due to weather and natural resource scarcity, the Southern Tier has an opportunity to scale up production to meet demand for food products both within the state and throughout the Northeast in the areas of produce and vegetables, beef and cattle, and organics.

The Southern Tier is home to the College of Agriculture and Life Sciences at Cornell University, ranked first in the world in plant sciences. While a key inhibitor of agricultural growth in the Southern Tier is its short growing season, the region's strength in agricultural innovation provides an opportunity to increase volume and continuity in production with advances in plant science technology, controlled environment agriculture and renewable energy.

The region benefits from an abundance of fresh water, which will become increasingly important as other regions of the country continue to struggle with drought.

The food processing cluster has seen a rise in employment. The strong agricultural base feeds into the Southern Tier's other key food and agriculture industries including dairy, organics, premium beverage processing and value-added food processing which grew in firms, jobs and/or output in recent years. The Southern Tier has particular opportunities to support processing capacity in these sectors as well as in slaughter and meat packing and aseptic processing and packaging.

10% of Upstate NY food product sales are attributed to downstate, about 22% to other states and about 2% exported. With increased capacity, Southern Tier food processors could expand market share within the state, nationally and internationally.

The Southern Tier sits at the crossroads of rail lines and major interstates, giving the region access to distribution within 500 miles and more than 115M consumers.

Given its proximity to key East Coast markets, the Southern Tier's expertise in advanced transportation manufacturing positions it well to take advantage of innovation in cost-effective transportation of food products and serves as a key aggregation and distribution center.



ALIGNING WITH STATE PRIORITIES

Agriculture and food are significant **tradable sectors** in NYS generating high output and job creation compared to other industries. In the Southern Tier, agriculture and food sectors play a diverse and critical role in the economy, with key sub-industries ranging from traditional crop production to organic production and from winemaking to world-class yogurt production. As the U.S. faces food production challenges due to drought in certain food-producing regions like California, the Southern Tier has a unique opportunity to leverage its location and world-class agricultural research facilities, and improve its processing and distribution capacity to supply agricultural and food products statewide, nationally and internationally.



Workforce development and training are essential in order to capitalize on the Southern Tier's unique opportunities to increase food production, processing and distribution. Workforce development is important as farm operators get older. In addition to supporting farmer education and training programs, the Southern Tier has acknowledged the importance of increased workforce training in critical support areas of production, including veterinary programs, animal care programs, controlled environment agriculture technicians and processing technicians. There is an opportunity for the region to take advantage of existing training capacity and expertise at Cornell, Corning Community College, SUNY Broome, SUNY Delhi and the burgeoning Groundswell Farmer Incubator program targeting immigrants, veterans and vulnerable workers.





Southern Tier Strategies: Tradable Sectors

Promote the Southern Tier's Innovation Culture

The Southern Tier will be a well-recognized and highly desirable place to learn, visit, live and grow a business because the region's distinct combination of educational strength, culture, innovation, leisure-related industries and natural resources create a lifestyle that couples the convenience of larger cities with opportunities to lead a healthy lifestyle surrounded by natural beauty.

WHAT NEEDS TO BE DONE

Strengthen the region's tourism and community assets and use them as effective tools to promote the region to visitors, prospective talent and investors.

Attract young talent via college towns and small towns. This includes strengthening the college town corridor that winds through the region and leveraging the region's world-class academic institutions.

Advance commercialization of technology by maximizing innovation and intellectual capital among the private sector and academic institutions.

Attract and nurture a critical mass of entrepreneurs by promoting the commercialization of research from the region's sources of innovation; retaining the brightest college graduates; and providing an entrepreneurial ecosystem including incubators, seed capital, support services and attractive communities.



INNOVATION

WHY IT'S IMPORTANT

The Southern Tier has a wide range of tourism assets including agri-tourism, wine and beer trails, waterfalls, world-class auto racing, museums, and outdoor recreational activities like gliding and fishing.

Corning Museum of Glass is the most visited art museum in NYS outside of Manhattan and is among NYS' most popular destinations for international travelers.

There is opportunity for tourism growth in the Southern Tier. In the tourism sector, employment grew by 8% between 2009 and 2013; however, tourism represents only a small portion of overall jobs in the region and jobs pay less than the regional average.

Visitor spending in the Southern Tier grew 18% between 2009 and 2011; but still represents a relatively small proportion of total visitor spending across Upstate.

The region's location—a four-hour drive from two of North America's most important metroplexes, Boston-Washington and Toronto-Montreal—offers opportunities for tourism.

The college towns of the Southern Tier—Greater Binghamton, Elmira-Corning and Ithaca—represent key attraction points for talented potential future residents and their families. Binghamton and Ithaca recently received recognition on “best college towns” lists.

The region's colleges and universities educate more than 60,000 students annually and attract large numbers of prospective students and their families, corporate recruiters, academic visitors and alumni to the Southern Tier each year.

The research, testing and product development resources of private companies, together with the research capacity of Cornell University and Binghamton University with commercialization potential, collectively represent a powerful engine that can accelerate the region's innovation economy.

The Southern Tier has invested in a number of entrepreneurial assets, incubators, and supports in recent years that are helping to nurture a vibrant start-up community.

There is a lack of private investors willing to make the “first money in” equity investments. Between 2005-2015, the Southern Tier received less than 0.5% of the state's total private venture capital and angel funding. However, from 2008-2013, the Southern Tier received \$77M in competitive funding from federal Small Business Innovation Research program grants to support high-tech, high-growth companies. The region needs to make the leap from federal grant funding to private venture capital.

The number of prime working-age individuals (ages 25-54) in the Southern Tier decreased by 11.2%, between 2000 and 2013. In contrast, the number of individuals ages 55 or older increased 25.4% over the same period.

The Southern Tier needs to overcome a past reputation of economic weakness that encouraged young people to leave the region rather than growing their talents and their economic impact locally.

ALIGNING WITH STATE PRIORITIES

The Southern Tier region has outstanding sources of **innovation** and industry that have the capacity to reshape of the Southern Tier's economy, with the potential to generate jobs, introduce new products and services and promote greater upstream and downstream value-chain activities. The region will nurture innovation by attracting entrepreneurs to start and locate their careers and businesses within the community. Attracting new business will work in concert with other entrepreneurial enablers—such as incubators, broadband infrastructure, financing, peer groups and mentors—to create a thriving entrepreneurial ecosystem.



Tourism is a **tradable sector** in the Southern Tier poised for growth. Visitor spending represents net new dollars to the regional economy that support and grow jobs, firms and the local tax base, and add to residents' quality of life. While the region realizes that among the most valuable resources missing are talented professionals, entrepreneurs and private investors, the Southern Tier sees tourism as an effective tool to promote the region's highly desirable quality of life in an effort to attract talent, build a large pool of entrepreneurs, attract investment (particularly foreign direct investment) and build local pride. Entrepreneurs are likely to be influenced by a community's quality of life, which can be exemplified by their tourism experience. Young professionals favor locations offering diverse activities and amenities when deciding where to start their careers. By drawing together destination communities and local cultures and experiences into one brand, the Southern Tier will reach residents the same way they reach short-term visitors and vacationers - through an effective tourism promotion program based on a strong tourism infrastructure.



Data Sources and Notes

A Note on Geographic Scope

Upstate NY includes all parts of NYS outside of New York City and Long Island. Unless otherwise noted, figures for Upstate NY are calculated by subtracting totals for the seven downstate counties (Bronx, Kings, Nassau, New York, Queens, Richmond, and Suffolk) from the NYS total.

Placemaking

Housing Units Built per New Household

U.S. Census, 1990; American Community Survey (ACS), 1-year estimates, 2015. NOTE: The ratio of homes built for every new household is calculated by dividing the number of housing units constructed from 1990-2015 (from the ACS, 2015) by the difference in number of households from the 2015 ACS and 1990 Census.

Homes left vacant per 100 newly occupied homes

U.S. Census, 1990; American Community Survey (ACS), 1-year estimates, 2015. NOTE: This ratio is found by dividing the change in the total number of vacant housing units by the change in the total number of occupied units from 1990 to 2015 for each geography.

Change in Number of Occupied Housing Units Across Upstate NY, 1990-2015

U.S. Census, 1990; American Community Survey, 1-year estimates, 2015. NOTE: Census data is used to calculate the change in the number of occupied homes at the census tract level. As tract boundaries change over time, 1990 tract data is transformed to match the 2010 census tract boundaries using the Longitudinal Tract Database from Brown University (2014). ArcGIS software is used to produce a heat map of this calculated change in the number of occupied housing units per square mile from 1990 to 2015.

Sprawl comes with major costs ...

U.S. Census Bureau. (1990; 2010). TIGER/Line Shapefile, New York, Roads. NOTE: Analysis uses roads data in geographic information systems (GIS) format. Roads that existed in 1990 were removed from the 2010 roads layer using GIS methods to estimate the extent of new roads built since 1990. The feature class codes assigned to each road segment by the U.S. Census Bureau were used to estimate the number of lanes in each new road segment by making assumptions based on the descriptions assigned to each feature class code. The NYS Comptroller's Office (2011) provided the average annual maintenance cost per lane-mile for each county in NYS according to local government expenditure data for the 2009 fiscal year. These maintenance costs include physical maintenance of the road surfaces, as well as costs related to snow plowing, street sweeping, street lighting, etc...

Commuting Modes

U.S. Census, American Community Survey, 1-year estimates, 2015.

Young adults are attracted to places with...

American Planning Association. "Investing in Place for Economic Growth and Competitiveness: A Research Summary," 2014.

Innovation

R&D Spending per Capita

National Science Foundation, Higher Education Research and Development (HERD) Survey, 2015; U.S. Census, 2010; American Community Survey, 5-year estimates, 2014, and 1-year estimates, 2015. NOTE: R&D figures represent research spending at higher education institutions with at least \$150,000 of R&D expenditures in the fiscal year. As academic R&D expenditures have various uses with indeterminable inflation rates, the NSF does not adjust figures for inflation.

Patents per 10,000 workers

U.S. Patent and Trademark Office, Patent Technology Monitoring Team, 2010 and 2015; NYS Department of Labor, Quarterly Census of Employment and Wages, 2010 and 2015.

New firms as % of all firms and % of new jobs created

U.S. Census Bureau, Business Dynamics Statistics, 2010 and 2014. NOTE: "New firms" are establishments born within the data year. Business Dynamics Statistics are only available at the Metropolitan Statistical Area (MSA) level. Therefore, only firms within a MSA are counted in this data. Upstate NY data sums all MSA's in NYS outside of the NYC MSA.

STEM Degrees by Institution, Bachelor's or Higher

National Center for Education Statistics, Integrated Postsecondary Education Data System, 2014. NOTE: Map depicts STEM degrees, bachelor's or higher, conferred in 2014 per institution.

STEM Degrees per 100,000 Population

National Center for Education Statistics, Integrated Postsecondary Education Data System, 2014; U.S. Census, 2010; American Community Survey, 2014 (5-year estimates), 2015 (1-year estimates). NOTE: STEM Degrees are defined by the Immigration and Customs Enforcement list of degrees eligible for STEM worker visas. STEM degrees do not include degrees granted at institution that have 100% online enrollment.

Average Annual Wages in STEM-Intensive Industries

NYS Department of Labor, Quarterly Census of Employment and Wages, 2015. NOTE: "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.

Workforce

Unemployment Rates, 2010 vs. 2015

U.S. Bureau of Labor Statistics, Current Population Survey, 2016; NYS Department of Labor, Local Area Unemployment Statistics, 2016.

Educational Attainment, Population Age 25-64

U.S. Census, American Community Survey, 1-year estimates, 2015.

Jobs by Industry and Age of Worker

U.S. Census Bureau: Local Employment Dynamics, Quarterly Workforce Indicators, 2015.

Projected Annual Openings by Educational Attainment

NYS Department of Labor, "Long-Term Occupational Projections through 2022," 2014. Total average annual openings include job openings expected in an occupation due to growth and replacement need. Average entry-level wages are the average of the bottom third of wages in an occupation, and are weighted by the total projected annual openings in each occupation for each education level.

Labor Force Participation by Educational Attainment

U.S. Census, American Community Survey, 1-year estimates, 2015.

Tradable Sectors

Exporters outperform other firms.

J Bradford Jensen, "Global Trade in Services: Fear, Facts, and Offshoring," Peterson Institute for Institutional Economics, 2011.

The majority of the world's purchasing power...

U.S. Chamber of Commerce, "95% of the World's Consumers Live Outside of the United States," 2012. Accessed December 12, 2016 at https://www.uschamber.com/sites/default/files/documents/files/Trade_May2012%25281%2529.pdf

Export Composition

Brookings Export Nation, 2015. Upstate NY figures are calculated by subtracting totals for the seven downstate counties (Bronx, Kings, Nassau, New York, Queens, Richmond, and Suffolk) from state totals.

Top 5 Export Industries in Upstate and Downstate NY

Brookings Export Nation, 2015. NOTE: Jobs supported reflect the total job impacts of exports. It includes export-production jobs; jobs with suppliers of intermediate inputs; and related jobs in transportation and wholesale. Some supported jobs may lie outside of NYS.

Top 10 NYS Export Markets

U.S. Census, International Trade Data, State Data Series, 2015. Export values are in 2015 dollars.

The Region in Context

By the Numbers

Population: U.S. Census Bureau, American Community Survey, 2014 (5-year estimates), and 2015 (1-year estimates). NOTE: ACS 1-year estimates are only available for areas with populations over 65,000, and 5-year estimates are not available in 2015. For accurate population totals, a mix of 2014 and 2015 ACS population was used depending on data availability. **Jobs, Firms and Wages:** NYS Department of Labor, Quarterly Census of Employment and Wages, 2015. **Exports:** Brookings Export Nation, 2015. **GDP:** U.S. Bureau of Economic Analysis, "Gross Domestic Product by Metropolitan Area," 2015. NOTE: Data are only available at the Metropolitan Statistical Area (MSA) level, so only counties within an MSA are counted in GDP.

Placemaking

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.

U.S. Census, 1990; American Community Survey (ACS), 1-year estimates, 2015. NOTE: This ratio is found by dividing the change in the total number of vacant housing units by the change in the total number of occupied housing units for each geography shown.

Workforce

U.S. Census Bureau, American Community Survey, 2014 (5-year estimates), and 2015 (1-year estimates).

Innovation

See sources and notes for each metric in the Innovation section.

Tradable Sectors

NYS Department of Labor, Quarterly Census of Employment and Wages, 2010 and 2015. NOTE: Tradable sectors include any industry with export potential, or all industries other than government and construction. Total wages in 2010 are adjusted for inflation to 2015 dollars using the U.S. Bureau of Labor Statistics' "CPI Inflation Calculator" before calculating the percentage change in wages from 2010 to 2015.

Regional Strategies

See the region's Upstate Revitalization Initiative plan at <https://www.ny.gov/upstate-revitalization-initiative/upstate-revitalization-initiative-plans>

Upstate Revitalization Initiative Strategies

