



CNY RISING

FROM THE GROUND UP

CAYUGA | CORTLAND | MADISON | ONONDAGA | OSWEGO

CENTRAL NEW YORK
REGIONAL ECONOMIC
DEVELOPMENT COUNCIL

UPSTATE
REVITALIZATION
INITIATIVE



Message from the Council

With a profound sense of shared enthusiasm, we submit Central New York's updated Strategic Plan and Investment Prospectus for the Upstate Revitalization Initiative. These documents have been prepared with our broadest and most expansive level of community engagement yet; an intense, data-driven analysis; and a rigorous screening and prioritization process guided by a singular goal – to drive meaningful, lasting and inclusive improvements in our region's economy.

While it pains us to admit it, our economy is in urgent need of this investment. As the following market assessment shows, our economy lags most of the nation, and by some measures, much of the rest of New York State. Job growth is slow. Wage growth is incremental at best. And the national dialogue around income equality, economic segregation and poverty—particularly among our African-American and Hispanic populations—includes the word Syracuse in its headline.

This is an untenable condition; therefore we embrace this opportunity to turn our region's headline into one of a different sort—to a story of economic reinvention born of a brutal self-honesty about what is broken, and a strategic approach that aligns our region's many assets against local, national and international market opportunities that can make our region globally-relevant once again.

Our submission includes two major elements. First, a rich and **data-centric market analysis and strategic vision** based on our region's previous work with the Brookings Institution and the Battelle Memorial Institute, among others. This analysis highlights the strengths and weaknesses of the region's economy; our incredible economic diversity; and an outward-facing scan of global markets by which to align our region's capabilities. Eleven work groups; more than 120 business, civic and academic leaders; nearly 1,750 civic participants and seven National Advisory Council members collaborated to update our region's strategic plan.

Second, our **Signature Investment Prospectus** represents a further narrowing of our strategy and a direct response to the state's forceful and unambiguous challenge to the regions competing in the Upstate Revitalization Initiative. This Prospectus is focused on solving national and global challenges; it is rooted in our region's natural, business and academic advantages; and it is focused on strategic initiatives with regional, national and international corporate partners that will lead to thousands of new jobs, billions in additional capital investments and a lasting legacy for Central New York that includes not just economic revival, but an *inclusive* economic revival.

This theme of *Economic Inclusion* is one that is woven throughout our Prospectus. We are setting aside a significant portion of our capital request for the purpose of connecting those who need jobs—the un- and under-employed in our urban and rural areas—to the jobs we are creating. We are being intentional about where we are siting certain projects, placing several of our signature initiatives within geographic reach of our region's most impoverished areas, and investing further in the educational, workforce and transit interventions to help those populations—our constituents—access these opportunities and use them as a springboard to a brighter future. In doing so we are stating, unequivocally, that an economic success that does not result in meaningful wage growth, improvement in educational attainment and a decrease in our region's unacceptable rate of poverty is not an economic success.

But we will be successful. And here's how:

- **Global Center for Unmanned Systems and Cross-Connected Platforms**—We will leverage our region's remarkable assets in precision-sensing and data analytics to become the global leader in unmanned systems and information assurance – ensuring that a world full of interconnected devices is both a safe and secure one.
- **New York-Grown, New York-Certified—Safe and Market-Ready**—We will utilize our region's natural assets—a resilient climate, cheap land, abundant water, and deep agricultural expertise—to meet the rapidly rising global demand for food and food safety.

- **Global Manufacturing and Logistics Hub**—Building upon our region’s pioneering work with the Brookings Institution to create a Metropolitan Export Initiative and leveraging our region’s geographic centrality, we will invest in a Global Manufacturing and Logistics Hub that will transform 225 acres of brownfields into a thriving hub for manufacturing, warehousing and distribution that will create accessible jobs and dramatically reduce the costs to Central New York agricultural and manufacturing producers to get goods to international markets.
- **National Veterans Resource Complex**—Our proposal advances and creates new opportunities for Upstate New York as the nation’s center of excellence for thought leadership, education, employment opportunity, research, training, and innovation related to the social, economic, and wellness concerns of New York State’s expanding veteran population of 900,000, our region’s 30,000+ active-duty veterans and 260,000 military-connected family members. Leveraging Syracuse University’s networks, public- and private-sector relationships, and community and industry collaborations—building off \$100 million of previous investment—our efforts will result in hundreds of new high-wage jobs, an influx of hundreds of millions of dollars and will earn our region and New York State the title as the best place in America for veterans.
- **Consensus Commission on Government Modernization**—We will recognize that a critical success factor for our region’s long-term trajectory is our ability and willingness to address difficult issues head on, including the obvious challenge of local municipal fragmentation in New York State. Building on the Consensus initiative in Onondaga County, we intend to pursue a bold, collaborative and modern approach to governance in the heart of our region that will better position Central New York to compete in the 21st century.

We have been challenged to think big. And we have. We have reached out to businesses inside and outside our region, and we have meaningful transactions to bring to the table immediately. But we have also taken to heart the Governor’s message of planning for the future, and we believe that our Strategic Plan and Investment Prospectus represent an incredibly profound opportunity to change the course of the Central New York economy not just today, but into the future.

This document is a vision for the region to which we are unquestionably committed. Win or lose, it represents *the path forward* for our region. It comprises our best thinking about how to build an economy, create community and ensure a greater measure of inclusive economic prosperity for residents across every corner of our region, urban to rural.

We recognize this plan has risks. We accept them. In fact, we embrace them. Those risks are calculated, informed by our self-awareness and deep pool of partners. But that risk is mitigated by our shared vision, shared commitment, and the sheer grit to succeed. As we stand on the edge holding hands, leaping together into the unknown, we invite the state, and our community, to join us. And have faith, because Central New York is rising.

Sincerely,



Kent Syverud, co-chair
Chancellor, Syracuse University



Robert M. Simpson, co-chair
President, CenterState CEO

Endorsements

The following business leaders, community representatives, and elected officials have endorsed the Central New York Regional Economic Development Council's approach to updating its strategic vision for the region..

Steven Aiello, **COR Development Company, LLC**

David Aitken, **Destiny USA**

Mark Allen

Nathan Andrews, **Morse Manufacturing Co., Inc.**

Aminy Audi, **L. & J.G. Stickley, Inc.**

William Magnarelli, **New York State Assembly***

Tony Baird, **Tony Baird Electronics***

Sandy Baker, **Research & Marketing Strategies, Inc. (RMS)**

Jochen Becker, **Marquardt Switches, Inc.**

John Becker, Chairman, **Madison County Board of Supervisors***

Marcus BeVard, **The Eraser Company, Inc.**

David Bottar, **Central New York Regional Planning and Development Board**

Kimberly Boynton, **Crouse Hospital**

Vicki Brackens, **Brackens Financial Solutions Network, LLC**

Eugenia Brieva, **QPK Design**

Michael Brunner, **Bank of America Merrill Lynch**

Stephen Butler, **CNY Arts**

Christina Callahan, **Syracuse Hancock International Airport**

Kathleen Carroll, **Covanta**

Michael Chapman, **Chairman, Cayuga County Legislature***

John Clark, **Cushman & Wakefield/Pyramid Brokerage Company, Inc.**

Janet Clerkin, **Oswego County Department of Community Development, Tourism and Planning**

Amy Collins, **CNY Central Media Group, NBC-3, CBS-5 & CW-6**

Kevin Conley, **Seneca Data**

Casey Crabill, **Onondaga Community College**

Fred Dedrick, **National Fund for Workforce Solutions****

John A. DeFrancisco, **New York State Senate***

Nicholas Dereszynski, **Brown & Brown Empire State**

Gregory Eastwood, **SUNY Upstate Medical University**

William Eberhardt, **Hospitality Concepts, LLC**

Kevin Ellis, **Cayuga Milk Ingredients, LLC**

Nate Fenno, **The New York, Susquehanna and Western Railway Corporation**

Gary Finch, **New York State Assembly**

Andrew Fish, **Cayuga County Chamber of Commerce***

Scott Flaherty, **Madison County Tourism**

Carol Fletcher, **C.R. Fletcher Associates, Inc.**

Stephen Fournier, **KeyBank, N.A.**

Louis Fournier III, **The Sutton Companies**

James Fox, **O'Brien & Gere**

Daniel Gardner, **Rich & Gardner Construction Co., Inc.**

Jonathan Gibraltar, **Wells College**

Joseph Gudenburr IV, **G.A. Braun, Inc.**

Timothy Hardy, **Sunoco Fulton Ethanol**

David Holder, **Visit Syracuse**

Madelyn Hornstein, **Dermody, Burke & Brown, CPAs, LLC**

Gary House, **Postler & Jaeckle Corporation**

Michael Humphrey, **Syracuse Orthopedic Specialists, P.C.**

James Iles, **Suburban Propane, L.P.**

Michael Johnson, **Johnson Brothers Lumber Company***

George Joyce, **Laser Transit**

Andrew Kadah, **ICM Controls**

David Katleski, **Empire Brewing Company**

Zelko Kirincich, **Port of Oswego Authority**

Frank Kobliski, **Central New York Regional Transportation Authority**

Gregory Larioni, **Lockheed Martin IWSS Syracuse New York***

Larry Leatherman, **Milton J. Rubenstein Museum of Science & Technology**

Lou Lemos, **BTI The Travel Consultants**

Linda LeMura, **Le Moyne College***

Melanie Littlejohn, **National Grid**

Gregory Loh, **Eric Mower + Associates**

Orrin MacMurray, **C&S Companies**
 Bill Magee, **New York State Assembly**
 Joanne Mahoney, **County Executive, Onondaga County***
 Peter Maier, **INFICON, Inc.**
 J. Kemper Matt, **Dupli Envelope and Graphics**
 Thomas Maugeri, **Stevens Office Interiors**
 John McAuliffe, **Honeywell International Inc.**
 J. Ryan McMahon, **Chairman, Onondaga County Legislature**
 Michael Meath, **Fallingbrook Associates, LLC**
 Laura Miller, **Darco Manufacturing Inc.**
 David Miller, **JADAK, LLC**
 Stephanie Miner, Mayor, **City of Syracuse***
 Gene Morreale, **Oneida Healthcare**
 Cornelius Murphy, **SUNY College of Environmental Science & Forestry***
 Allen Naples, **M&T Bank**
 David Norcross, **Pioneer Companies**
 Rita Paniagua, **Spanish Action League***
 Timothy Penix, **SUNY Syracuse Educational Opportunity Center***
 David Pida, **Rapid Response Monitoring Services, Inc.**
 Kerry Quaglia, **Home HeadQuarters, Inc.**
 Michael Quill, Mayor, **City of Auburn***
 Judith Repass Cowden, **AmeriCU Credit Union**
 Leola Rodgers, **Syracuse Community Health Center**
 Maryann Roefaro, **Hematology-Oncology Associates of CNY**
 David Rogers, **Morrisville State College**
 Richard Ruch, **Lamar Advertising**
 Kathryn Ruscitto, **St. Joseph's Health***
 Charles Sangster, **CBD Brokerage, LLC**
 David Schneckenburger, **Thompson & Johnson Equipment Co., Inc.**
 David Schneckenburger, **Bobcat of Central New York**
 Thomas Schneider, **Pathfinder Bank**
 Richard Shirtz, **NBT Bank**
 Deborah Stanley, **SUNY Oswego***
 Al Stirpe, Jr., **New York State Assembly**
 Ann Marie Taliercio, **UNITEHERE Local 150 AFL-CIO***
 Donald Taylor, **The Bonadio Group**
 Brian Tobin, Mayor, **City of Cortland***

Michael Toscano, **FAA UAS Center of Excellence Advisory Board****
 Kimberly Townsend, **Loretto**
 L. Michael Treadwell, **Operation Oswego County, Inc.***
 Paul Tremont, **SRC, Inc.**
 Thomas Valenti, **Cameron Group, LLC**
 David Valesky, **New York State Senate**
 Meg Vanek, **Cayuga County Convention and Visitors Bureau**
 Garry VanGorder, **Cortland County Business Development Corp.***
 John Wakefield, **Empower Federal Credit Union**
 Jack Webb, **NBT Bancorp (ret.)***
 Nancy Weber, **Oswego County Farm Bureau***
 Quentin Wheeler, **SUNY College of Environmental Science & Forestry**
 Randall Wolken, **Manufacturers Association of Central New York***

*Central New York Regional Economic Development Council Members

**National Advisory Council Members

Mensaje del Concilio

Con un gran sentido de entusiasmo compartido, sometemos nuestro Plan Estratégico y Prospecto de Inversión actualizado de la región de New York Central para la Iniciativa de Revitalización del Norte del Estado—“Upstate”. Estos documentos se han preparado con nuestro más amplio y expansivo nivel de participación de la comunidad que hayamos tenido; y un proceso de selección y priorización riguroso guiado por un único objetivo—impulsar mejoras significativas, duraderas y de diseño en la economía de nuestra región.

A pesar de que nos duele admitirlo, nuestra economía está en urgente necesidad de esta inversión. Como demuestra la evaluación del mercado a continuación, nuestra economía está detrás de la mayor parte de la nación, y por algunas medidas, gran parte del resto del estado de New York. El desarrollo de empleos está lento. El aumento de salarios lo vemos meramente en incrementos. Y el diálogo nacional alrededor de igualdad de salarios, segregación económica y pobreza—particularmente entre poblaciones Afro-Americanos e Hispánicas—incluyen la palabra Syracuse en su título.

Esto es una condición inadmisibles; por lo tanto acogemos esta oportunidad para cambiar el titular de nuestra región a uno de carácter distinto—una historia de reinversión económica nacida de una total honestidad de lo que está quebrantado, y un enfoque estratégico que alinea los múltiples activos de nuestra región a oportunidades en el mercado local, nacional e internacional que puede hacer nuevamente a nuestra región una relevante-globalmente.

Nuestra propuesta incluye dos elementos mayores. Primero, un abundante **análisis del mercado y visión estratégica centrada en los datos** basados en trabajos hechos previamente con el “Brookings Institution y Battelle Memorial Institute”, entre otros. Estos análisis detallan las fortalezas y debilidades de la economía de nuestra región; nuestra extraordinaria diversidad económica; y una exploración orientada hacia el exterior de los mercados mundiales a través de la cual alineamos las capacidades de nuestra región. Once grupos de trabajo; más de 120 empresas, líderes cívicos y académicos; cerca de 1,750 ciudadanos participantes y siete miembros del Concilio de Consejería Nacional colaboraron para actualizar el plan estratégico de nuestra región.

Segundo, nuestro **prospecto de inversión prioritario** representa un acierto adicional de nuestra estrategia y una respuesta directa al reto del estado categórico e inequívoco a las regiones que compiten en la Iniciativa de Revitalización del Norte del Estado “Upstate”. Nuestro Prospecto se enfoca en soluciones a desafíos nacionales y globales; se fundamenta en las ventajas naturales, empresariales y académicas de nuestra región; y se enfoca en iniciativas estratégicas de socios corporativos a nivel regional, nacional e internacional que dará lugar a miles de nuevos empleos, miles de millones de dólares en inversiones de capital adicionales y un legado perpetuo para New York Central que no solo incluye un renacer económico, pero un renacimiento económico *inclusivo*.

Este tema de *Inclusión Económica* es uno que se entrelaza a través de nuestro Prospecto. Estamos asignando una porción significativa del capital petitionado con el propósito de conectar a aquellos que necesitan trabajo—carecen o tienen trabajos de salario inadecuado en nuestras áreas urbanas y rurales—a los trabajos que estaremos creando. Estamos deliberadamente escogiendo donde localizaremos algunos proyectos, colocando varias de nuestras iniciativas prioritarias en áreas geográficas dentro del alcance de nuestras áreas más empobrecidas e invertiremos más en la educación e intervenciones transitorias de la fuerza laboral para asistir a esta población - nuestros constituyentes—a tener acceso a estas oportunidades y usarlas como trampolín para un futuro más brillante. Al hacerlo estamos afirmando, de manera inequívoca, que un éxito económico que no da lugar a un crecimiento significativo del salario, la mejora de logros educativos y una disminución de la tasa inaceptable de la pobreza en nuestra región, no es un éxito económico.

Seremos exitosos. Y así es como lo haremos:

- **Centro Global para Sistemas No Tripulados y Aseguramiento de Calidad de Información**—Vamos hacer uso de los valiosos recursos de nuestra región en precisión- sensorial y análisis de datos para convertirnos en los líderes globales en sistemas no tripulados y garantía de información - asegurando que un mundo lleno de dispositivos interconectados es a la vez confiable y seguro.

- **Cultivando—New York, Certificado—New York y Listo para el Mercado**—Utilizaremos los activos naturales de nuestra región—un clima resistente, tierra asequible, agua en abundancia y un extenso conocimiento agrícola - para satisfacer la creciente demanda mundial de alimentos y la seguridad alimentaria.
- **Centro Global de Manufactura y Logística**—Edificando en el trabajo pionero de la región con el “Brookings Institution” para crear una iniciativa de Exportación Metropolitana tomando ventaja de la centrada posición geográfica de nuestra región, invertiremos en un centro local de Manufactura y Logística que transformara 225 acres de una zona abandonada en un centro prospero para manufactura, almacenaje y distribución que a su vez creara empleos accesibles y reducirá dramáticamente el costo de la agricultura y productores de manufactura de New York Central para llevar sus productos a mercados internacionales.
- **Complejo Nacional de Recursos para Veteranos**—Nuestra propuesta adelanta y crea nuevas oportunidades para la parte norte del estado de New York “Upstate”, como el centro de excelencia de la nación para un liderazgo diligente, educación, oportunidad de empleos, investigación, entrenamiento, e innovación relacionada a las preocupaciones sociales, económicas, y de bienestar de la creciente población de veteranos en el estado de New York de 900,000, en nuestra región 30,000+veteranos en servicio activo y 260,000 miembros de familias militares. Tomando ventaja de la red de trabajo de la Universidad de Syracuse, relaciones de los sectores privados y públicos y colaboradores de la comunidad e industrias—edificación de \$100 millones en inversiones previas—nuestros esfuerzos resultaran en cientos de trabajos bien asalariados, una afluencia de cientos de millones de dólares y ganaremos para nuestra región y el Estado de New York el título del mejor lugar en América para los veteranos.
- **Consensus Comisión para la Modernización de Gobierno**—Reconocemos un factor crítico de éxito en la trayectoria a largo plazo para nuestra región es nuestra capacidad y voluntad para abordar asuntos difíciles de frente, incluyendo el desafío evidente de fragmentación municipal local en el estado de New York. Edificar en la iniciativa de *Consensus* en el Condado de Onondaga, tenemos la intención de seguir audazmente, un enfoque colaborativo y moderno para la gobernanza en el corazón de nuestra región que pondrá en mejor posición a New York Central para competir en el siglo 21.

Nos retaron a pensar en grande. Y así lo hicimos. Hemos hecho un alcance a los negocios dentro y fuera de nuestra región, y tenemos transacciones significantes que traer a la mesa inmediatamente. Pero también nos hemos llevado a corazón el mensaje del Gobernador de planear para el futuro, y creemos que nuestra Plan Estratégica y Prospecto de Inversión representan una extraordinaria oportunidad para cambiar el curso de la economía de New York Central no solo hoy, pero para el futuro.

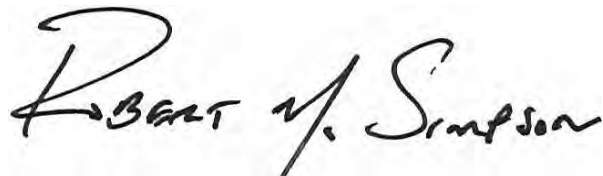
Este documento es una visión para la región a la cual sin duda alguna estamos comprometidos. Ganemos o perdamos, este representa *el camino a seguir* para nuestra región. Este comprende de nuestras mejores ideas de como constituir nuestra economía, crear comunidad y asegurar mejores medidas para la prosperidad económica inclusiva para residentes en todo rincón de nuestra región, urbana y rural.

Reconocemos el plan tiene riesgos. Los aceptamos. Mejor aún, los acogemos. Estos riesgos son calculados, informados, por nuestra auto-conciencia y nuestros numerosos asociados. Este riesgo es mitigado por nuestra visión compartida, compromiso compartido y el puro deseo para tener éxito. Nos encontramos en el borde de la mano, saltando juntos hacia lo desconocido, invitamos al estado y la comunidad a unirse a nosotros. Y tener fe, porque New York Central está prosperando.

Sinceramente,



Kent Syverud, co-chair
Chancellor, Syracuse University



Robert M. Simpson, co-chair
President, CenterState CEO

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Introduction

CENTRAL NEW YORK ON THE RISE

There comes a point in the trajectory of a community when difficult decisions need to be made about its future – when it can choose to continue the status quo or embrace a new model of growth, when it must assess areas of its economic and social fabric that demand intervention or ignore the challenges that seem too daunting to overcome.

Central New York is at this threshold, poised for an upward trajectory into the knowledge economy and committed to providing greater opportunity for its people. With a deep understanding of its regional expertise and assets, and exciting cutting-edge work in leading industries already under way, Central New York is strongly focused on capturing future market growth in areas that align with its strengths, while finding ways to create greater access to wealth and meaningful employment for individuals from every skill level, social background, and neighborhood.

Central New York has been at such a crossroads before. The Erie Canal, dubbed “Clinton’s Ditch” by naysaying politicians and the public alike, became so much more than an infrastructure pipedream. Through vision and risk taking, it cemented New York’s role as an empire around which the country’s early industrial economy grew, connecting the state, and this region, physically and competitively to the rest of the world.

Today, Central New York again has a once-in-a-lifetime opportunity before us, and Governor Cuomo’s Upstate Revitalization Initiative (URI) offers a path for Central New York to successfully navigate this transition. This plan provides a rallying point for our community and an economic north star to focus our sights for the future.

With the possibility for an unprecedented investment in our region, we understand and embrace our challenge to be bold, to be visionary, to make the right decisions, and to be willing to take the risks necessary to truly transform our region.

OUR VISION

This plan, *CNY Rising*, sets a clear path forward for our community. Based on years of rigorous public- and private-sector analysis, engagement and investment, *CNY Rising* offers a blueprint for economic growth for the region. Through its achievement, Central New York will:

Transform our communities by retooling for a modern economy and the intentional pursuit of collective prosperity. This prosperity must be built by including all regional residents in opportunities for economic and social empowerment through processes that are transparent and equitable.

CNY Rising is not just an economic development plan. It is an investment prospectus and a blueprint for implementation. This plan builds on a strong regional commitment to implementation and a track record of success. Central New York is the leading region for leveraging state dollars through the Regional Council process, with the highest average rate of return on state investment. Finally, this plan recognizes that although the Central New York economy is a unique economic system, its sector strengths and growth trajectory are aligned with that of the Mohawk Valley region.

GROWTH PILLARS

To achieve Central New York's vision, *CNY Rising* puts forward three core pillars to take advantage of significant market opportunities and address persistent challenges to our growth and prosperity. The plan recommends substantial investments in:

- **Key Drivers of Growth**, to capitalize on growing global market opportunities in areas that align with the region's expertise, particularly in unmanned systems, precision sensing and data analytics, and agribusiness. By investing in these key drivers of growth, the region will catalyze opportunities in the new and emerging industries of tomorrow, including the Internet of Things – formed by the rapid convergence of information technology, services, energy and manufacturing. The region will also capitalize on its unique geographic and legacy assets to advance modern agribusiness to better respond to the global demand for food. Through this distinct combination of assets, institutions, and knowledge base, the region is particularly well positioned to compete for market share in what is expected to be trillion-dollar market growth over the coming years.

- **Enablers of Prosperity**, to strengthen innovation and entrepreneurship, enhance global logistics and competitiveness, and advance signature projects that create world-class communities across the region.

Through signature projects in our urban cores and beyond, greater local and global connectivity, and fueling the new firm pipeline to launch startups, the Central New York region will enable greater prosperity and create more dynamic, globally relevant communities.

- **An Inclusive Economy**, to connect people to jobs, education, skills training, and enhanced transit to enable meaningful economic opportunity for all.

Through modern training programs and greater access to employment, Central New York will build an inclusive economy and tackle the pernicious effects of concentrated poverty and lack of job prospects spanning urban and rural areas of the region.

While this plan offers a path toward capturing growth in leading-edge global industries, it is firmly based on programs, approaches, and initiatives that have already shown success in the region. The recommended strategies in Part 1 are the culmination of rigorous analysis and years of implementation success.

CENTRAL NEW YORK'S APPROACH: FROM THE GROUND UP

Central New York prides itself on having built this plan from the ground up, with stakeholder input and engagement ranging from the public to business leaders, to national experts, and from every corner of the region. *CNY Rising* is a plan that has been conceived, shaped, and developed for the region by the region. As such, the tools and partners needed for implementation are already embedded and engaged in our work and in our vision for a more prosperous future. We believe that the region that plans together is more likely to stand together through the peaks and valleys of implementation. It is not an end product but rather the beginning of the region's economic transition.

CNY Rising's findings and recommendations also build on a wide-ranging, multi-year evolution of Central New York's economic development efforts. This plan acts as a continuation of the region's Metropolitan Business Plan, the **CenterState Agenda for Economic Opportunity** ("the Agenda"), which was released in 2013 in partnership with the Brookings Institution. Instead of launching an entirely new strategic planning process, the Central New York Regional Economic Development Council (CNYREDC) built *CNY Rising* on the success and framework of the Agenda, which recommended seven strategies and four initiatives to significantly shift the region's economy. Implementation of those four initiatives – develop a regional venture fund, initiate an export plan, accelerate the growth of a transformational technology sector, and examine the region's governance model – is well under way, with several accomplishments. However, the Agenda also uncovered additional challenges that *CNY Rising* aims to address, most notably, the lack of strong and sustained job growth and persistent high rates of underemployment. Analysis found later in this plan addresses those key underlying issues in greater detail.

CNY Rising uses the framework of the Agenda to create an elevated blueprint for investment. It is the product of a consensus-based approach that involved thousands of hours of time contributed by hundreds of volunteers from the business community, labor unions, academia, government officials, and nonprofit groups. **The following planning elements enabled the CNYREDC to achieve its goals of creating the most engaged and transparent economic development planning process the region has ever used.**



CNY Rising brought together members of the public, business and community leaders, and national experts, with a thorough market analysis to craft a comprehensive revitalization plan for the region

Public Engagement

The CNYREDC's Public Participation Work Group coordinated outreach to the public and stakeholders through a series of public engagement meetings, information sessions, and social media. This year, 24 meetings attracted more than 1,490 participants. Additionally, the Public Participation Work Group deployed surveys, intake forms, and project submission forms to collect the opinions of Central New York residents that were unable to attend meetings and events. These methods allowed the CNY REDC to reach and receive input from an additional 454 constituents from around the region. The data collected was then disbursed to work groups and REDC members, allowing them to more fully understand the needs and interests of the Central New York community they represent.



Members of the public learn about the URI opportunity, and provide feedback and ideas on transforming Central New York's.

Big Idea Competition

A "Big Idea Competition" was held to generate and solicit the best and most impactful project ideas from stakeholders inside and out of the region. In total, the competition garnered 207 submissions around a range of concepts from agribusiness to tourism to advanced manufacturing. These ideas have been integrated into the latter sections of this report, the best of which are included in funding recommendations found in the Investment Prospectus.

Social Media

Social engagement began through a series of image-based posts encouraging viewers to take three minutes to improve their community and asking for their ideas and suggestions. The focus was broad and intended to increase general awareness of the REDC initiative while promoting a link to the online submission form.

In mid-June the CNYREDC created a tactical social strategy by focusing on increasing awareness and attendance at events and targeting industry sectors. These events were promoted via Facebook (www.facebook.com/CNYREDC), Twitter, and LinkedIn. The team also created industry-focused images and shared them on the CNYREDC Facebook page, then promoted those posts to Facebook pages with a local focus and established audience base. The owners of those pages then promoted that content on their other social networks. Active industry members in each sector were tagged in posts to increase their awareness and encourage discussion and idea submission.



The CNYREDC utilized a social media strategy with targeted calls to action to solicit “Big Ideas” from the public during the URI process, reaching more than 55,000 people.

Finally, the CNYREDC reached out to subject matter experts to share their insights on how funding would increase their impact on the region. This resulted in additional LinkedIn Pulse posts explaining to readers how funding could impact them, and encouraging readers to follow a link to share their own ideas for projects.

The targeted use of social media on a variety of platforms increased the direct audience to 7,149 potential viewers per post.

CNYREDC’s Facebook likes experienced a 70 percent increase from last year’s numbers. This resulted in an expanded reach to more than 55,000 people, with over 1,100 people engaging with the CNY REDC posts over the duration of the process.

Work Groups

As part of this strategic planning process, the CNYREDC created 11 strategy and analysis work groups around key industries and economic systems:

1. **Access to Economic Opportunity**
2. **Agribusiness**
3. **Entrepreneurship**
4. **Financial Services**
5. **Health & Environment**
6. **Information Security**
7. **Manufacturing**
8. **Tourism**
9. **Transportation & Logistics**
10. **Unmanned Aerial Systems**
11. **Urban Core Revitalization**

These work groups were formed based on the knowledge of key economic priority areas gained during the creation of the Agenda. A total of 120 public and private experts interviewed business people and workers, while analyzing data provided by the Battelle Memorial Institute, the Brookings Institution, and the University of Buffalo Regional Institute.

The CNYREDC convened these work groups, along with 250 other community stakeholders, in a regional strategy summit on July 22, 2015, to review and discuss each focus area’s research findings and recommended strategies. Each strategic recommendation can be found in Appendix A.



Each of the CNYREDC’s 11 work groups presented its key findings at a public CNY Strategy Summit, as part of the URI community engagement process.

National Advisory Council

During this process, the CNYREDC also formed a National Advisory Council composed of recognized leaders in business, philanthropy, and entrepreneurship. These experts were charged with bringing an outside perspective and viewpoint to review the findings from each work group. They also brought a critical eye to the strategic recommendations by advising on the national and global competitive landscape for each focus area. This council included:

- **Diane Bell McKoy, president, Associated Black Charities**
- **Fred Dedrick, executive director, National Fund for Workforce Solutions**

- **Janet LaBar, president, Greater Portland Inc.**
- **Michael Toscano, FAA UAS Center of Excellence Advisory Board**
- **Thomas Stewart, president, National Center for the Middle Market**
- **Peter Kaldes, executive director of global philanthropy, JPMorgan Chase**

During the July 22 strategy summit the National Advisory Council recommended that the region's efforts focus on:

1. **Building an inclusive and equitable economy that is as easy to access by any resident as going to a meeting "in a church basement",**
2. **Elevating the discussion of unmanned aerial systems to think about how technological developments could impact all unmanned systems, be they in the air, on the land, or in the sea;**
3. **Gaining a full understanding of the region's comparative and competitive advantages with the selected market focus areas;**
4. **Demonstrating a willingness to invest in the projects, initiatives, and opportunities at a scale that differentiates Central New York as a national and global leader in our focus areas.**



Members of the CNYREDC's URI National Advisory Council listen to work group presentations at the CNY Strategy Summit.

Implementation Teams

After this stakeholder engagement process, the CNYREDC selected a set of seven focus areas that would act as the framework for this plan. Each focus area was chosen based on its:

- **Ability to leverage private investment and create new jobs;**
- **Connection to the existing assets of the region;**
- **Competitiveness in expanding global markets;**
- **Direct involvement from private-sector job creators;**
- **Potential to have cross-cutting impact on many aspects of the Central New York economy.**

Next, the CNYREDC formed implementation teams around the seven key focus areas and charged them with developing detailed implementation business plans for the next five years. These business plans include estimated economic impact, milestones necessary for successful implementation, funding strategies, and performance metrics.

Ultimately, this plan represents a holistic, comprehensive, and collaborative approach to building a modern economy for Central New York and offers a detailed investment prospectus for the Upstate Revitalization Initiative. *CNY Rising* contains two parts:

- **Part 1—Strategic Plan**—Detailing Central New York's current economic position and highlighting the most significant regional challenges and opportunities.
- **Part 2—Investment Prospectus**—Outlining how the CNYREDC proposes to drive transformational regional change based on the priorities outlined in Part 1.

It is a plan that focuses on investments that will impact the entire region, urban to rural.

It is a plan that ties together a rich and diverse set of assets in a way that connects the economic and social components of our economy and deploys high-level visionary approaches to address our challenges.

It is a plan that reflects our community's vision and is designed to attract private investment and create quality jobs at all skill levels.

The people of Central New York are committed to stand behind and implement the work ahead.



The background features a complex network of thin lines and dots in shades of blue and white, overlaid on a light blue and white geometric pattern. At the bottom, a stylized mountain range is depicted using a low-poly, faceted style with various shades of green and blue.

CNY RISING

PART 1 STRATEGIC PLAN

THE NEXT ECONOMY

In the 21st century, the next economy is innovation-driven, dynamic, and global. With economic growth increasingly reliant on knowledge embedded in people and advanced technologies, sectors such as scientific and technical services, finance, professional, and business services make up nearly 75 percent of economic output in developed economies¹. Moreover, advances in technology and logistics mean that companies and regions are competing globally for markets and talent. As a result, the economy is more dynamic, fast moving, and globally oriented.

In the next economy, a geographic region's unique combination of assets, market dynamics, and institutional environments shapes its economic performance. These interactions create a whole greater than the sum of the parts. As such, and because economic growth is increasingly decentralized and from the bottom up, the leading economic regions of the 21st century are those that invest heavily in and retain concentrated knowledge assets. Doing this requires investing in elements of self-reinforcing growth:

- **Advanced Industries**

Industries that invest heavily in research and development in STEM-related fields are the current and future drivers of significant wealth creation. Though they may employ an estimated 9 percent of total workers in the United States today, they account for an outsized portion of overall economy production. These industries, which include both knowledge-based service sectors and advanced manufacturers, are globally integrated and often pay the best wages to their workers, irrespective of skill level.

- **Human Capital**

In the next economy, people and the new knowledge they generate are the capital of the future. Regions and communities that are successful in the 21st-century economy have positioned themselves to be a magnet for highly sought after talent in STEM and related industries. They have also found a way to efficiently map and align workforce development resources so that individuals of all skill levels have equal opportunities to move between jobs and advance in careers of their choice.

- **Innovation and Entrepreneurship**

Entrepreneurs and venture supporters are a force propelling economic expansion and wealth creation. More so than other businesses, they are the forward thinkers and risk takers who put ideas to work. Cultivating environments that allow individuals to take these kinds of risk both in startup and existing firms can create economic hubs for innovative people, ideas, and companies and offer a platform to launch new businesses.

- **Efficient infrastructure, livable cities, and revitalized, inclusive communities**

Modern and efficient transportation systems can connect workers to jobs, make communities more attractive to visitors, and reduce transportation costs for manufacturers. By contrast, blighted neighborhoods, poorly developed or maintained community assets, and declining property values could greatly reduce the overall attractiveness of a region to business.

To achieve these instruments of self-reinforcing growth, regions must take a new approach, moving away from consumption-driven growth (e.g., retail and housing) and economic boosterism. Instead, regions must shift their focus to creating globally engaged economies that compete by adding value, building on specialized assets and unique strengths and opportunities.

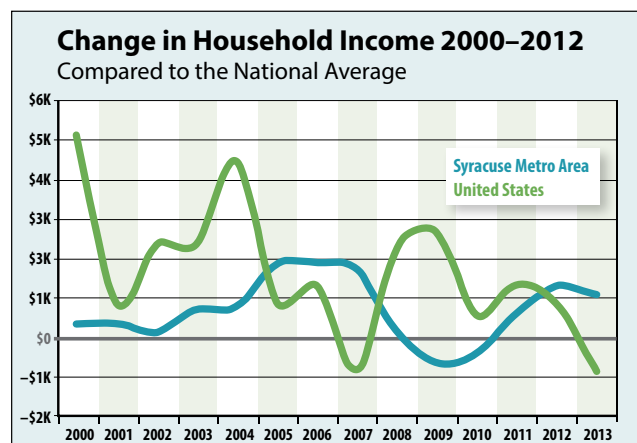
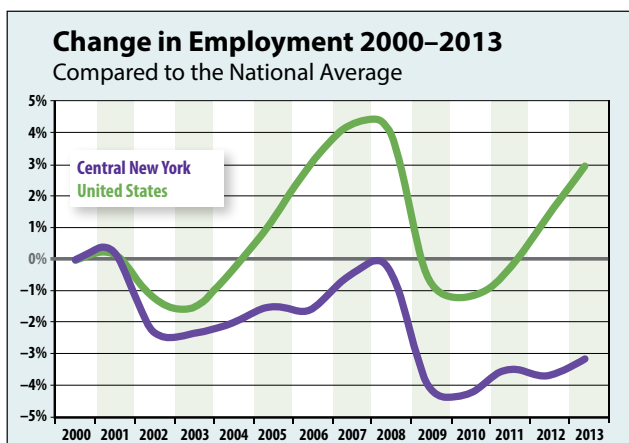
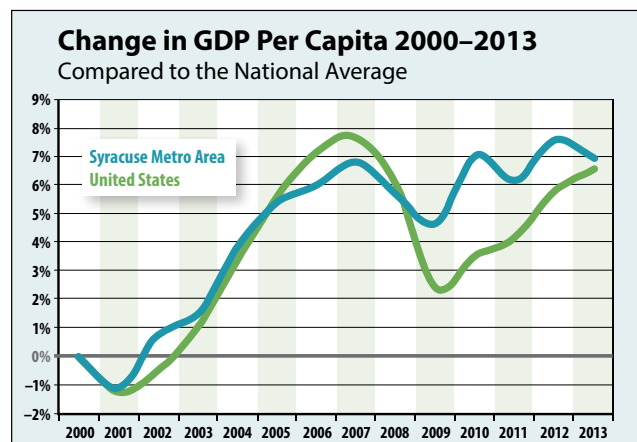
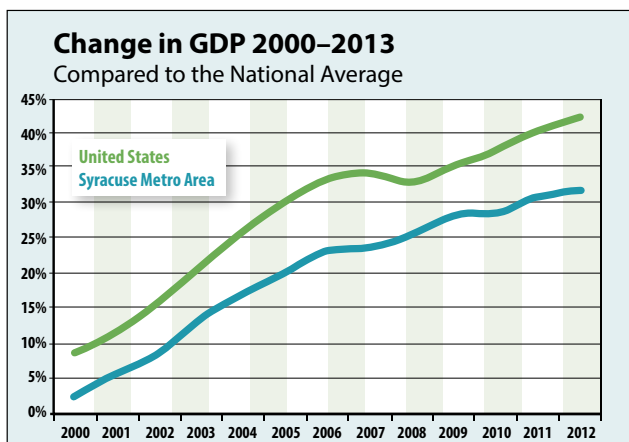
¹ Central New York developed the "Agenda for Economic Opportunity" in 2013 as one of seven metropolitan areas participating in the metropolitan business planning initiative launched by the Brookings Institution and RW Ventures. This section, provided by the initiative, summarizes some of the economics that inform the metropolitan business plan. See Mark Muro and Robert Weissbourd, "Metropolitan Business Plans: A New Approach to Economic Growth" (Brookings Institution, 2011); Gretchen Kosarko and Robert Weissbourd, "Economic Impacts of GO TO 2040" (Chicago Community Trust, 2011); Gretchen Kosarko, Robert Weissbourd, Harold Wolman, Andrea Sarzynski, Alice Levy, and Diana Hincapie, "Implementing Regionalism: Connecting Emerging Theory and Practice to Inform Economic Development" (Surdna Foundation, November 2011); and "A Plan for Economic Growth and Jobs" (World Business Chicago, 2012); and "Partnering for Prosperity" (Cook County, 2013).

THE CENTRAL NEW YORK ECONOMY TODAY

The Central New York region faces stark, serious, and persistent challenges. At 5.6 percent the region’s unemployment rate is higher and its per capita income is lower than the national and Upstate New York averages. The region faces pockets of concentrated poverty in both urban and rural areas that rank among the highest in the nation². More than a quarter of the working-age population is in need of a job or a better-paying job. The number of persons in poverty in the region (66,154) is nearly as great as those near poverty (68,154)³. All of Central New York’s cities have poverty rates that exceed their county’s overall rate⁴. While housing prices are moderate relative to the United States overall, the region’s housing stock is aging, especially in smaller communities. In Madison County, 43 percent of the housing stock was built before 1939. This number rises to 44 percent in the city of Syracuse, 56.8 percent in the city of Cortland, 56.6 percent in the city of Auburn, and 56.2 percent in the city of Oswego.

Since the beginning of this century to 2013, total economic output in the Syracuse metropolitan area increased 41.9 percent, below the national average of 57.4 percent. The region’s productivity – or real output per job – of \$42,860 is rising but registers below the national average of \$52,093.

Despite these troubling indicators, there are signs of hope and promise for the future. Jobs in STEM-intensive industries account for 11 percent of all jobs in the region and wage growth has been robust, led by the computer and software sector. Job losses have slowed and overall economic production is growing⁵. Exports have increased in high-wage sectors such as computers and electronics as well as metals manufacturing⁶. New economic activity is gaining strength both in new emerging technologies areas and in regional firms that arose from legacy sectors such as manufacturing, biomedical, electronics, and agribusiness.



²Paul A. Jargowsky, "Architecture of Segregation: Civil Unrest, the Concentration of Poverty, and Public Policy" (The Century Foundation, 2015).

³"Central Region – A Regional Assessment" (University of Buffalo Regional Institute (UBRI), April, 2015).

⁴Poverty rates by county and primary city: Onondaga: 16.9 percent, City of Syracuse, 27.3 percent; Cortland: 15.5 percent, City of Cortland, 24.5 percent; Oswego: 14 percent, City of Oswego 23 percent; Cayuga: 11.1 percent, City of Auburn, 16.5 percent; Madison: 9.8 percent, City of Oneida, 12.5 percent, Downtown Oneida, 19.3 percent. Source: 2000 Census.

⁵Ibid, page 6.

⁶Ibid, page 6.

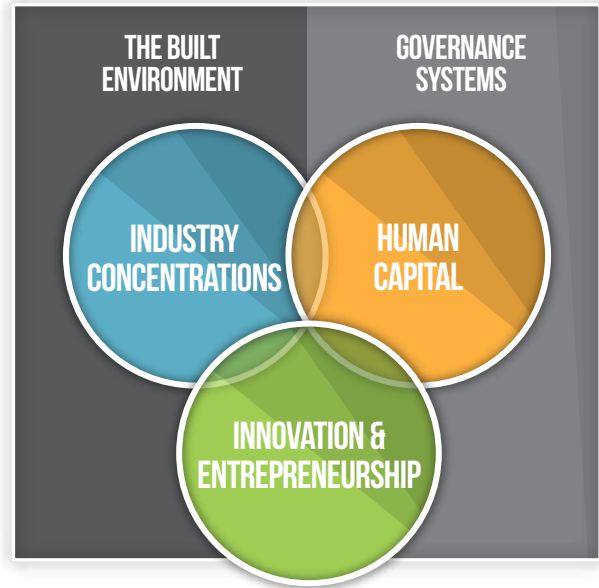
THE FIVE MARKET LEVERS—LEVERAGING THE REGION'S ASSETS TO CATALYZE ADVANCED INDUSTRIES

Extensive market analysis conducted over the last four years has illuminated the historical and future context for Central New York's economic situation. This assessment surveyed the economic sectors representing existing assets, prioritizing those that can be leveraged for integration into the global economy. It is objective, based on rigorous data research, and evaluates the region's strengths and weaknesses along five mutually reinforcing market levers that, when aligned, drive productivity and prosperity. These levers were adopted from a framework introduced by the Brookings Institution. **The levers are (1) Industry Concentrations, (2) Human Capital, (3) Innovation and Entrepreneurship, (4) the Built Environment, and (5) Governance Systems.**

1. Industry Concentrations

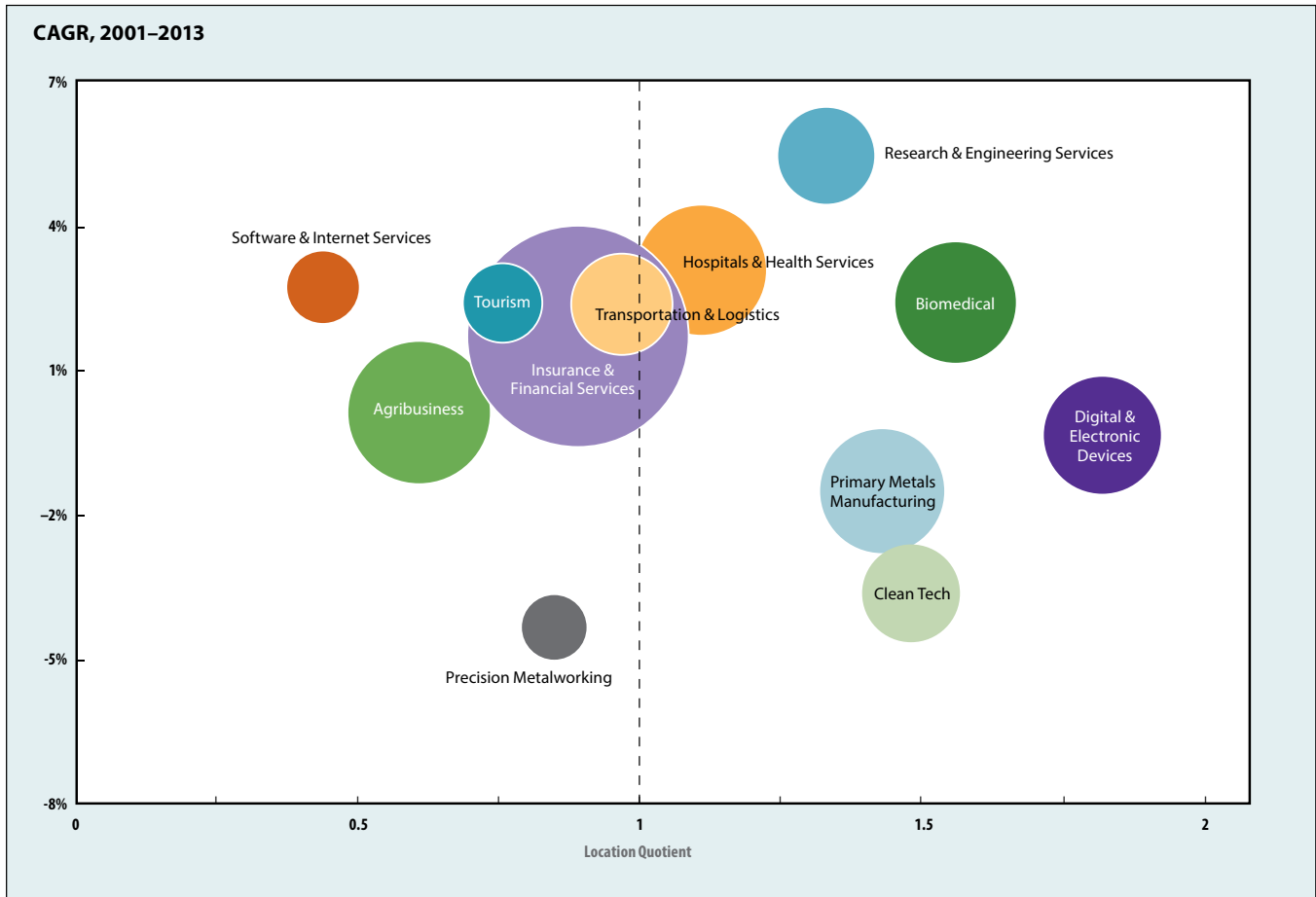
Using a framework of top industries or clusters firmly established by new economic growth theory and practice, this section examines the sectors most critical to the success of Central New York. The industries included are the product of more than a decade of quantitative and qualitative analysis, review, and stakeholder engagement. This analysis builds on a series of Battelle Memorial Institute reports on the region.

Unlike other regions throughout the state and across the country, Central New York's economy, industrial heritage, and growth trajectory has not been dominated by a single overarching industry cluster. However, historic industry strengths in radar manufacturing, advanced manufacturing processes, and electronic engineering can be seen in the diversity of strong, yet smaller advanced industries.



Key Central New York Industry Concentrations

Type of Business	Total Employment (2013)	Total Employment Growth (2001–2013)	National Employment (2013)	National Employment Growth (2001–2013)	Location Quotient (2013)	Output (2013)
Agribusiness	4,361	-22.7%	2,920,241	-0.7%	0.61	\$2.9 Billion
Biomedical	4,726	3.5%	1,233,499	10.9%	1.56	\$2 Billion
Clean Tech	3,633	-53%	1,001,320	-27%	1.48	\$1.4 Billion
Digital & Electronic Devices	4,982	-27.3%	1,116,021	-39.1%	1.82	\$2 Billion
Research & Engineering Services	5,020	51.7%	1,541,020	28.6%	1.33	\$1.4 Billion
Hospitals & Health Services	19,816	12.8%	7,287,181	19.9%	1.11	\$2.5 Billion
Insurance & Financial Services	17,430	-5%	7,995,656	1.9%	0.89	\$6.9 Billion
Precision Metalworking	2,837	-57.3%	1,369,126	-18.2%	0.85	\$615 Million
Primary Metals Manufacturing	4,195	-37.6%	1,199,153	-24.3%	1.43	\$2.2 Billion
Private Higher Education	9,093	182.9%	1,197,967	32.8%	3.1	N/A
Software & Internet Services	2,776	7.7%	2,599,958	23.8%	0.44	\$773 Million
Tourism	6,580	3.3%	3,524,886	3%	0.76	\$852 Million
Transportation & Logistics	8,817	3.1%	3,692,693	16.4%	0.97	\$1.4 Billion



Agribusiness

Agribusiness contributes more than \$53 billion to the economy of New York annually. It has served as a cornerstone of the Central New York economy for over a century, ever since the Erie Canal enabled wide-scale export of agricultural commodities from Central and Western New York. There are more than 3,500 farms and more than 200 food processing companies in Central New York, employing nearly 4,000 people. There is strong convergence with agribusiness and other sectors, including biomedical, transportation and logistics, unmanned systems technology, manufacturing, research, and energy-related businesses. In the past five years the region has benefited from more than \$435 million of investments in agriculture and agribusiness-related projects, which have created a stronger sector and supported the growth of the region's export economy. The global food and beverage industry has witnessed significant growth in the past five years and is expected to continue this momentum, reaching approximately \$1 trillion in 2014 with

a compounded annual growth rate (CAGR) of 1.3 percent in the next five years. Continued investment is required to remain competitive and capture both domestic and international opportunities, as are a modern and functioning transportation system, clean water, and open spaces.

Opportunity Snapshot⁷: *Global Food & Beverage*

\$1 trillion industry

1.3% global CAGR over 5 years

**CAGR: Compound Annual Growth Rate*

⁷ Each Opportunity Snapshot in the market assessment is based on a particular sub-industry that has been identified as an economic strength of the region and that exhibits strong potential global market growth.

EXCELLENCE IN AGRIBUSINESS: Cayuga Milk Ingredients

Cayuga Milk Ingredients, a CNYREDC Round 1 grant recipient, has been operating at full capacity in its new 106,000 square foot milk processing facility since January 2015. The facility has been, and is capable of processing 1,800,000 pounds of whole raw milk per day. The facility's dairy products will be exported to new emerging markets in Europe, Oceania and Asia. As a result of the project, the company has already created 55 new jobs, exceeding its employment commitment.



Biomedical

Biomedical manufacturing represents a significant employer in the region, one that has grown steadily. While not as highly concentrated as other high-tech sectors, medical devices and equipment and research dominate the biomedical sector in this region. The region also maintains a base of pharmaceutical suppliers producing for both human and animal markets, including Bristol-Myers Squibb and Hanford Pharmaceuticals in Syracuse. Additionally, a significant number of startups are gaining traction in this sector. Testing and medical laboratories form an important sub-cluster that has outpaced the nation's growth.

Driven by domestic and global growth in the health services industry, employment growth in biomedical firms in the region has outpaced the national average. The cluster is export-oriented with Welch Allyn-Hill-Rom, in Skaneateles, exporting at least 25 percent of its product and some small manufacturers such as Oswego County-based Design Concepts, exporting at a much higher rate (77 percent).

Opportunity Snapshot: *Biotechnology*

\$288 billion industry

9% global CAGR over 5 years

Clean Tech

The manufacture and development of clean technology products represents one of the region's strongest industrial legacies. As the original home of Carrier Corporation, the region has seen a proliferation of heating, ventilation, and air conditioning companies in the past two decades. While the number of establishments in this sector has grown steadily, the industry faces the continued loss of manufacturing jobs. Employment in the sector dropped by 36 percent between 2001 and 2010, primarily due to the closing of Carrier's manufacturing operations, followed by more recent closings of manufacturing operations of other clean tech companies.

The region has remained a center for R&D in this field despite these losses. Carrier alone employs more than 350 highly skilled engineers and scientists in its global R&D center in Syracuse. Overall demand for clean technology products and services is growing worldwide. The key challenge to this sector is to overcome the loss of regional original equipment manufacturing (OEM) production facilities, such as those that Carrier and Daikin McQuay, in Auburn, operated.

The region retains a core expertise in thermal and environmental control systems (TECS), and if connected to growing global and domestic markets, this industry should grow. However, the future growth of this cluster will also require new institutional infrastructure and business support models, such as that provided by Syracuse University's Center of Excellence.

Opportunity Snapshot: *Indoor Environmental Quality*

\$152 billion industry

2.7% U.S. CAGR over 5 years

EXCELLENCE IN SENSING TECHNOLOGIES: *INFICON Inc.*

INFICON, of East Syracuse, is a leading provider of instrumentation, sensor technologies and advanced process control software for a variety of industries, including the semiconductor and precision-optic sectors, and will expand its manufacturing operations in East Syracuse. With the support from CNYREDC Round 3 funding, the company has undergone a \$13 million, 64,000 square-foot expansion to its existing 140,000 square-foot manufacturing facility. The larger facility allows for more employment opportunities, increased production and greater ability to tap into more markets around the world. New cleanroom facilities will assist in the manufacture of sensor technologies, including semiconductors and other sensitive electronics. Its HAPSITE portable sensor can identify chemical warfare agents and other toxic chemicals in less than 10 minutes.

INFICON employs approximately 260 people, and 40 new high-tech, well-paying jobs are expected as a result of the expansion, ranging from technicians to engineers.



Digital and Electronic Devices

This sector is closely tied to defense spending with substantial increases in employment during the early 2000s. However, since peaking in 2007, the regional digital electronics industry has seen declines from facility closure and staffing cutbacks. From 2009 to 2013, it experienced a 28.9 percent decline in employment, while the sector declined 4.2 percent nationally⁸.

Despite these challenges, certain subsectors show strong growth potential. These include search, detection and navigation instruments, and electrical component manufacturing. The digital electronics sector is also well connected to innovation drivers in the region with more than \$382 million in export value in 2014, an increase of more than 18 percent from the prior year⁹. There is a strong base of industry R&D in the region, with more than \$80 million in engineering and physical sciences research. This is a major focus of talent generators, with nearly 1,200 related bachelor-level and almost 1,000 graduate-level degrees awarded in 2010¹⁰.

Opportunity Snapshot: *Semiconductor & Electronic Parts*

\$688 billion industry

4.7% global CAGR over 5 years

approximately 1,032 establishments and 13,331 workers. There are approximately 10,000 additional workers in this sector in the Mohawk Valley region adjacent to Central New York. Often the same employer will have a significant number of employees in both regions.

Central New York has had success in attracting jobs in this sector's operations due to its relatively low real estate costs; geographic location near major financial and insurance centers such as New York City, Boston, Philadelphia and Hartford; availability of low-cost, high speed telecommunications bandwidth and networks; co-location with defense and aerospace cyber security centers of excellence in the Mohawk Valley; and skilled workforce and competitive wages. The regional wages of \$59,809 in this industry are approximately 30 percent below the pay rate in large metropolitan areas yet are significantly above the average regional wages of \$39,660.

Opportunity Snapshot: *Life and Health Insurance*

\$3.7 trillion industry

3.5 global CAGR over 5 years

Financial Services and Insurance

Financial Services and Insurance is already a strong driver of employment in Central New York. Although employment has declined 2.4 percent since the Great Recession, it still represents

⁸ Central New York Industry Cluster Assessment, 2015.

⁹ Central New York Industry Cluster Assessment, 2015.

¹⁰ Syracuse.com

Health Services

The Central New York region’s hospital and health services cluster is large, specialized, and growing, with nearly 40,000 jobs. Employment in the cluster has expanded by 12 percent since 2001 and grew even throughout the recession. Hospital and health services are more concentrated here than across the nation, with a location quotient of 1.24 and a total output of \$3.9 billion. Employment in this cluster is spread throughout the region, but measures of productivity and wages in this sector are lower than national average.

Until recently, market demand for most hospital and health services was primarily from within the region. This is changing rapidly and in ways that could significantly reshape the nature of hospital and health services cluster. The global growth of the middle class and the attendant demand for health services has created new opportunities for the Central New York region’s health care providers. New efforts to seek and attract patients from other regions such as New York City and eastern Ontario, Canada, are under way—and should be expanded to a global audience.

Merger and consolidation trends are also moving through the health care industry, forced by reductions to Medicaid and Medicare spending, and limiting traditional growth in health services. While certainly not insulated from these trends, this industry will generate substantial demand for new employees. The Central New York region is positioned to capitalize on prevailing global trends and cultivate future growth through cost-advantage and the rise of global “health care tourism.”

Opportunity Snapshot: *Hospitals*

\$1.3 trillion U.S. industry

4% U.S. CAGR over 5 years

Opportunity Snapshot: *Outpatient & Residential Health Services*

\$264 billion U.S. industry

4.1% U.S. CAGR over 5 years

Higher Education

Central New York and its surrounding region’s network of 35 public- and private-sector institutions of higher education represent one of the region’s largest employment sectors. The region’s employment concentration in higher education is more than five times the national average and its schools attract 140,000 students. The private institutions alone offer nearly 27,300 jobs, a figure that doubles when the public institutions are added.

The location quotient for private higher education institutions alone is 5.39, making this one of the largest employment concentrations in the region—more than five times the national average. In 2012, colleges and hospitals accounted for six of the top 10 employers in the region with the most job openings. Higher education is also a source of exports, as it continues to attract foreign students.

The significant presence of colleges and universities dominate the region’s talent pool—and provides an enormous comparative advantage in retaining that talent after graduation. Colleges and universities are magnets for young people actively developing skills that fuel a knowledge-based economy. A large number of graduate students in STEM disciplines come from all over the world to study here. Retaining this talent pool represents a significant growth opportunity to elevate the region’s profile within the global economy.

Opportunity Snapshot: *Higher Education*

\$483 billion industry

2.3% U.S. CAGR over 5 years

Primary Metals Manufacturing and Precision Metalworking

Manufacturing remains a driving force behind the region’s economy, and this long-established industry continues to be an important employer in the region with a total workforce of 26,806 in 2010. However, in the last decade, manufacturing lost nearly 30 percent of its jobs in the Syracuse Metropolitan Area alone. Even with job losses, many of these manufacturing industries remain more concentrated here than in the rest of the nation.

Overall, Central New York manufacturing produces nearly 60 percent of the region’s exports, and the sector still pays some of the highest wages in the region. Efforts to grow manufacturing – and the resurgence of domestic manufacturing in the United States – will help the region meet its export and wage goals. In addition, many of these manufacturing firms are part of the supply chain for some of the region’s strongest growth industries, such as medical devices and digital electronics. Efforts are under way to strengthen manufacturing in the region, such as placing a greater emphasis on exports and the trend to return production to the United States due to cost advantages and higher productivity. These trends provide an opportunity to maintain this sector.

Opportunity Snapshot: *Auto Parts & Accessories*

\$1.6 trillion industry

2.9% global CAGR over 5 years

EXCELLENCE IN MANUFACTURING: Novelis Inc.

Novelis has invested \$400 million in its Oswego plant over the last five years, expanding by 200,000 square feet and leading to 250 new jobs. Nearly 1,200 are now employed at the plant. The expansion enables the company's

innovative closed-loop recycling process to meet the demands of the auto industry and consumers for lighter, more fuel-efficient vehicles. This investment also provides an economic boost to the local community. Local contractors, suppliers and small businesses—including staffing firms, restaurants, real estate agents—benefit from the company's expansion.



Opportunity Snapshot: *Engineering Services*

\$747 billion industry

3.7% global CAGR over 5 years

Research and Engineering Services

Given the region's significant natural resources, specialized higher education programs in environmental sciences, and a notably strong engineering sector, Central New York maintains an especially strong R&D and engineering services cluster. The change in employment for this sector outpaces the nation by nearly four times. From 2007 through 2013, Central New York's change in employment in its R&D and engineering cluster grew by 25.9 percent, compared to 7.3 percent for the United States as a whole. This growth occurred although average annual wages in the field were approximately \$17,000 lower than the national average—indicating a unique level of economic resilience and need in this area.



SUNY Oswego's Advanced Wireless Systems Research Center recently opened a \$3.1 million echo-free chamber (unique to the region) for developing and testing wireless devices, ranging from tiny blood pressure sensors to the antennas on a Humvee. The center's research lab also studies wireless health, mobile, automotive and satellite wireless communications, and commercial and military wireless systems. Photo courtesy of SUNY Oswego.

EXCELLENCE IN SOFTWARE & INTERNET SERVICES: *Terakeet*

Terakeet, a growing employer in downtown Syracuse, has a core focus in software development, marketing, and brand strategy that enables customers to increase brand recognition and expand sales through access to online influencers and publishers.

The company is noted for its commitment to attracting and retaining talent, drawing on the region's robust higher education system to recruit the workforce needed to grow its business. It intends to hire 200 new employees in the next five years, and is planning to construct a new \$3 million corporate headquarters, which would double its employment and increase annual payroll by \$9 million.



Software and Internet Services

The software and Internet services cluster represents an area with limited existing growth prospects for the Central New York region. This is, in part, attributable to the significant disparity in wages in this region versus the United States as a whole. In 2013, the average annual wage for the cluster in Central New York was \$66,202, versus \$105,852 for the United States. Given the fact that higher wages in competing regions typically reflect advanced development and greater knowledge concentrations, additional investment in software and Internet services could lead to both improved wages and a greater concentration of knowledge-based talent.

Tourism

In recent years, growth in tourism across Central New York has been vigorous. In 2011, the industry realized full recovery from the Great Recession, as travel spending eclipsed the 2008 high. Growth is projected at a more sustainable level of 3 percent. There are approximately 10,600 jobs in this sector. However, because of statistical classifications and regional classification, two of the largest tourist attractions are not included in tourism employment (Destiny USA, in Syracuse, and the Turning Stone Resort Casino, just over the border of Madison County in Oneida County), so the actual number of jobs in tourism is higher. Tourism is also a growing source of exports for the region. The sector is also a major source of opportunity for lower-skilled workers lacking advanced degrees and should continue to offer future growth and jobs.

Opportunity Snapshot: *Internet Service Providers*

\$473 billion industry

10.6% U.S. CAGR over 5 years

Opportunity Snapshot: *International Tourism*

\$1.4 trillion industry

5.3% compound annual growth rate over 5 years

Transportation and Logistics

Transportation and logistics has been a growing cluster in the last decade and now employs more than 13,000 people in the region, rising 2 percent in the last decade. The largest sub-sector is general warehousing and storage with more than 3,200 jobs. Average wages are higher for this sector than the regional norm but are lower than national employers in the same industry. Further, the sector also has a higher rate of productivity than its national counterparts.

While employment levels in transportation and logistics are lower than the national average for those sectors, it continues to grow and is regarded as an emerging strength in the region. Transportation and logistics is positioned as a standalone industry sector and also an enabler of growth with its market demand dependent largely on the success of other industries.

Opportunity Snapshot: *Delivery Services*

\$211 billion industry

3.5% global CAGR over 5 years

2. Human Capital

The human capital picture in Central New York is driven by a duality in the prospects of high- and low-skilled individuals. Unemployment in the Central New York region was 5.4 percent in June 2015, just below the national rate of 5.5 percent. With some of the state's leading institutions of higher education, Central New York is a dominant generator of high-skilled talent. Yet, a deeper examination of its underemployed reveals structural weaknesses in its ability to deploy and leverage talent of all skills.

Talent Production

As mentioned, the large presence of colleges and universities fuels the region's talent pool. The larger CenterState region's exceptional concentration of colleges and universities enrolls approximately 140,000 students and awards thousands of degrees each year. These institutions of higher education award nearly 6,000 bachelor's degrees annually in business and STEM fields; 3,500 science, technology and math (STEM) degrees; 1,800 graduate degrees in STEM fields; and more than 1,000 post-graduate degrees in business, management and marketing.

Although the predominant feature of the region is its talent production capabilities, the overall human capital picture is much more nuanced. Among higher degree holders, the region is a net exporter of talent, with many individuals who obtain postgraduate degrees leaving after graduation. Between 2007 and 2010, approximately 1,500 more residents with graduate degrees moved out of the Syracuse metro region than moved in. Furthermore, the overall workforce is aging. Disruptions in the region's labor markets over several decades created long-term unemployment and limited opportunities for many workers. As a result, the regional workforce today is both older than the national average and smaller than it was five years ago, dropping from slightly above 720,000 five years ago to just over 700,000.



Photo courtesy of Syracuse University Photography

Worker and Job Alignment

As the region, and its human capital, shifts from a traditional, manufacturing-based economy, it needs better alignment between the demand for jobs and the pool of workers. In many cases, access to jobs, skills training and public transit are mismatched for lower-income workers across all counties. Lower-income rural and suburban residents often live closer to jobs, but the region's workforce training assets are concentrated around the City of Syracuse, according to an analysis by the University of Buffalo Regional Institute (UBRI)¹¹. Conversely UBRI found that lower-skilled workers in Syracuse are proximate to workforce training but not to job openings that are more abundant outside the city, such as areas to the north that are less accessible by public transit.

The Central New York region confronts significant issues in human capital development and deployment that may impede its ability to redefine its competitive position in the next economy. These are not just confined to challenges faced by lower-skilled workers but also include a significant bubble of workers about to retire. At the same time, employers report difficulty finding and hiring qualified workers along the entire talent spectrum, indicating that the labor market is not functioning effectively. This is especially apparent in advanced manufacturing sectors and with health care and education providers. Businesses face serious challenges filling positions related to engineering, general business functions, technical positions, and nursing positions. At the same time, the region's colleges and universities are producing graduates

with the degrees and skills that these industries demand. These market signals indicate the inverse of a depressed economy: There are employment opportunities that the existing workforce cannot support.

Veterans

Over the next five years nearly 1 million service members are expected to leave the military and join the ranks of the nation's current 22 million veteran population. As was the case with past generations of veterans, the transition from military to civilian life can be daunting. More than 900,000 military veterans call New York State home, and an overwhelmingly high percentage of those veterans live, work, and go to school in Central New York. Upstate New York counts more than 60 percent of the state's military veterans as residents – a percentage that is expected to grow over the next decade.

Many veterans have successfully readjusted to civilian life while others have experienced significant difficulties that include financial, education, training, employment, relationships, legal, homelessness, substance abuse, and health care access. Once they leave the military and become veterans, they must learn to become a civilian again. They are responsible for finding a job, going back to school, obtaining health insurance and child care, and finding a place to live, among other life activities. If veterans are also recovering from their war experiences, it can compound the difficulty they experience in successfully completing their readjustment.



Photo courtesy of Syracuse University Photography

¹¹ Targeted Analysis and Best Practices for the Central Region's Initiatives, UB Regional Institute, July 2015.

3. Entrepreneurship and Innovation

Job and innovation growth stagnated in the last half of the 20th century, due in part to plant closings and the sale of locally controlled manufacturers to owners outside the region. However, over the last three decades the region has built a resource base to support entrepreneurial growth and drive innovation in existing companies.

Research

In basic and applied research, the 35 colleges and universities in Central New York and its surrounding regions play a key role in attracting research funding. These universities also produce graduates in sectors that drive innovation and economic growth such as business management, STEM, and information technologies¹². Based on patent activity and publications in scholarly journals, Central New York universities offer substantial strength in fields directly related to key local sectors, such as biosciences, engineering, physical sciences, and math¹³. Yet, the region is not a comparative magnet for research funding. With just over \$105 million invested in research in 2013, Central New York’s research institutions accounted for only 7 percent of all research dollars spent in Upstate New York.

The Central New York region is becoming more entrepreneurial but struggles in general indicators of dollars spent on research and commercialization success. While these figures may shift as some of the region’s leading institutions refocus on research efforts, they have had a direct impact on university-based startups. Declining rates of productivity in key emerging sectors may indicate that

local firms are not taking advantage of the research that is under way in the region’s colleges and universities. A number of factors could explain this phenomenon, including a mismatch between the R&D being carried out at universities and research centers and the needs of regional industry, or the possibility that regional universities’ R&D is too early stage to be useful for private firms. It is also possible that challenges within firms—such as funding and human capital—may prevent the adoption of valuable R&D produced by local universities and research centers.

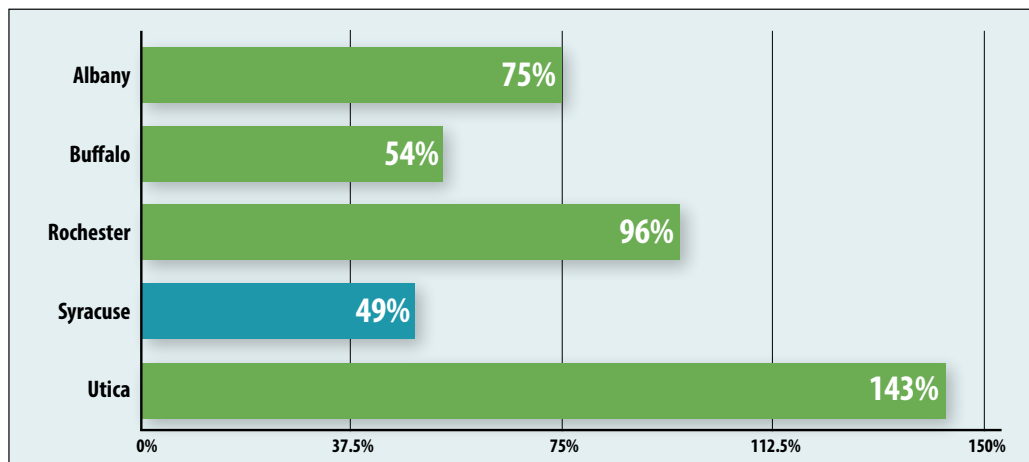
Entrepreneurship Ecosystem

The region’s commitment to building a world-class entrepreneurial support system has generated multiple assets that create an evolving comprehensive, integrated entrepreneurial ecosystem. Success with these assets has leveraged outside investment in the form of New York State’s new GENIUS NY business competition and the Germinator competition. Interest in entrepreneurship programming has exploded in recent years, particularly from students and early-stage companies. With the pool of investment-worthy companies expanding, it has not yet grown strong enough to attract significant attention from potential investors outside the region.

New York State has some of the wealthiest venture capital sources in the country, who invested more than \$5 billion in 2014¹⁴. Upstate venture investment, however, is a sliver of this total¹⁵. Other than some smaller funds such as the Central New York Seed Fund and the Cayuga Venture Fund, the Central New York region has failed to significantly attract venture capital and private equity investment. The Central New York region attracts

0.1 percent of venture capital investments in the State of New York¹⁶, earning the region a description as a venture capital desert. While Armory Square Ventures, a fund launched in the past two years, has started addressing this issue, holes remain at the earlier end of the venture funding spectrum.

Net Metro Job Growth from Young Firms



¹² Brookings, 2012.

¹³ Approximately 10 percent of the precision sensing patents identified from 2009 through 2012, 87 were assigned to Cornell and Syracuse University—73 at Cornell and 14 at Syracuse. As a percentage of these two universities’ total patents held, these precision sensing patents represent approximately 50 percent of all patents generated by these two universities.

¹⁴ Total: \$5.207 billion, Source: PricewaterhouseCoopers/National Venture Capital Association, MoneyTree™ Report, Investments by Region 2014.

¹⁵ NYC Metro total was \$5.168 billion, Upstate total: \$39.3 million, Source: PwC/NVCA MoneyTree™ Report, 2014

¹⁶ Judith J. Albers, Ph.D., and Theresa B. Mazzulo, “Venture Capital & Seed Activity in NYS: Perception, Reality, and Unrealized Potential,” Excell Partners, February 2009.

Ultimately, the true measure of the health of the region's entrepreneurship efforts is its ability to seed and cultivate the growth of high-performing businesses. Central New York has the lowest percentage of its job growth of any Upstate metro attributed to firms that are 5 years or younger. This suggests a weakness for the region in identifying and seeding fast-growing "gazelle" firms that could be the future backbone employers for the region.

4. The Built Environment

Land Use

Central New York is built in a traditional development pattern of cities surrounded by suburbs and linked by large areas of forest and farmland. Its urban cores are home to many of the area's largest employers, as evidenced by the region's rank of sixth in jobs density among the top 100 metropolitan areas¹⁷. The compact development provides the basis for efficient transportation and growing center-city revitalization efforts.

Urban cores also contain some of the region's fastest-growing census tracts. Starting with downtown Syracuse, people are choosing to live in the region's central cities again, reversing trends of the last half-century. Downtown Syracuse has experienced a 47 percent increase in population in the past decade and boasts a 99 percent residential occupancy rate¹⁸. This has been driven, at least in part, by significant investment in job creation in the region's cities by knowledge-based industries – such as higher education and health care services – and professional, technical and creative occupations—such as engineering, finance, and media and marketing. Cities have increased the impact of this investment by working with private developers to transform vacant buildings and underutilized parcels into new residential and commercial spaces, which in turn has driven the demand for local services in the region.

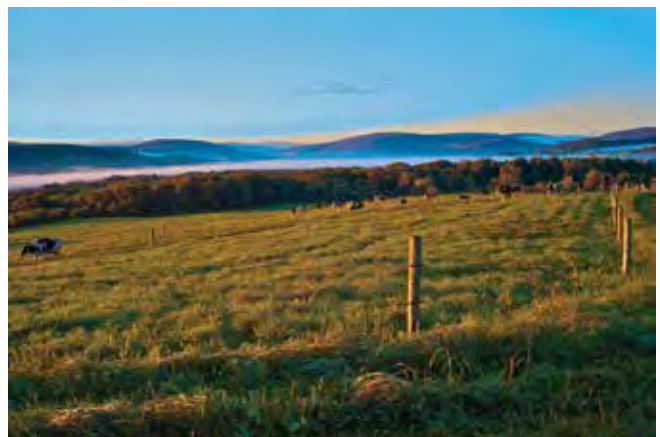


There is evidence in Central New York of people moving back to areas of greater density and featuring more mixed-use development. The census tracts that make up downtown Syracuse and the Syracuse lakefront have experienced some of the greatest increases in population. The trend appears to be expanding into surrounding neighborhoods. There has been an increase in knowledge-based businesses relocating or establishing themselves in the center city. This change in investment and settlement patterns may create a greater concentration of opportunities closer to communities in which unemployment is high. It may also create new development forms, such as innovation districts.

Moving People and Goods

The region also has impressive infrastructure assets that make moving goods to market and business-to-business relationships relatively simple. Extensive transportation networks and facilities support these critical interactions. The region also has the advantage of being within a large northeastern market, and is surrounded by large metropolitan centers in the United States and Canada that are reached easily within six hours. These trends represent a positive step toward transforming Central New York into a globally integrated, knowledge-based economy.

However, some challenges remain. Generally, the region succeeds in moving goods and people efficiently within the region but faces challenges linking low-wage workers to jobs. Central New York also has one of the least congested highway and road networks in the country. In a 2010 analysis of traffic congestion, the Syracuse MSA ranked 62nd out of the top 100 metros in the United States on measures of congestion. However, those workers reliant on public transportation often have great difficulty reaching better paying jobs. The average commute



¹⁷ Brookings, Job Sprawl Revisited (April 2009).

¹⁸ Kevin Tampone, "Downtown Syracuse's residential growth is part of a national trend," Syracuse.com, October 22, 2014.

time for the majority of City of Syracuse residents who use public transportation is more than 30 minutes, despite short distances traveled. Residents outside of Onondaga County fare even worse and lack sufficient public transportation options. While 80 percent of Onondaga County's disadvantaged population is proximate to the Central New York Regional Transportation Authority (Centro) service area, in Cayuga and Oswego counties the proximity drops significantly to 54 percent and 42 percent, respectively. Madison and Cortland counties have limited public transportation choices that are not connected to Centro.

5. Governance

Central New York faces historic challenges to governance. Decades of growth have established unsustainable forms of government that cannot facilitate economic growth. Within the region, even the most densely populated metropolitan areas are still well above the national average in terms of units of local government per 10,000 citizens (Syracuse 1.52/ Ithaca 1.68). As a comparison, Buffalo has 0.58 units of local government for every 10,000 citizens. In another measure of fragmentation, the Central New York region, as a whole, has more special districts (fire, lighting, sewer, etc.) than the U.S. average¹⁹.

Additionally, the Tax Foundation has identified New York State as having one of the worst tax climates of all states in the United States. The state and local tax burden percentage ranks among the nation's highest, currently estimated at 12.1 percent of income (second nationally), compared to the national average of 9.8 percent. Further, property taxes consistently rank among the top 10 in the nation as a proportion of property values. Five of the top 25 counties in the country with the highest property taxes as a percentage of home value are in the Central New York region.

In Onondaga County, the government structure consists of 36 general-purpose local governments serving approximately 468,000 residents—one county government, one city government, 19 towns, and 15 villages. The local cost of doing business thwarts efforts to grow the region's economy. Although spending on public goods is high, quality of the delivery of these goods is inconsistent, causing businesses and residents to feel they are not receiving a good value for their tax dollars. This perception stifles business attraction and leads firms to move operations to lower-cost states.

Despite these challenges, pockets of public leadership offer creative solutions and partnerships particularly in Onondaga County through the recent formation of Consensus, the Commission on Local Government Modernization²⁰. This multi-jurisdiction, multi-stakeholder initiative was launched in 2014 with the goal of shaping a vision for more effective and efficient governance across Onondaga County. The Consensus effort – a first-of-its-kind project in New York State – is enabling the region to define how it wants to be organized and governed locally, with high-quality standards at an affordable price.

Through Consensus, partners have undertaken a multi-step process to better understand how government services are delivered in Onondaga County and to make recommendations, to be put to public referendum, on how to improve service delivery and modernization. In its initial baseline study, the commission outlined some sobering findings: Private-sector employment is down but the cost of local government has increased 34 percent in the past 10 years²¹.

At the same time, Consensus also found that local governments were already actively pursuing collaborations



and shared service arrangements across a range of local government functions to reduce costs, enhance efficiencies, and improve service delivery. Some partnerships between towns and villages in the region have shown promise, and the state's creation of Regional Economic Development Councils has prompted new collaboration to spur economic development.

In addition to the efforts to modernize government, the Central New York region recognizes the need to make critical infrastructure investments. The Central New York region faces significant needs to upgrade infrastructure, including utility systems, electricity transmission, air service, freight capacity, and the extension of broadband in rural areas. Infrastructure, above all, is critical to a 21st-century knowledge-based economy.

¹⁹ The Central New York region has 1.41 special districts per 10,000 citizen compared to the national average of 1.24. U.S. Census Bureau, Census of Governments Integrated Governments Directory, 2007 Edition.

²⁰ Consensus Report, CGR Inc., Local Government in Onondaga County, NY Preliminary Baseline Review: Section I, Who Does What & What It Costs, 2015.

²¹ Consensus Preliminary Baseline Review, pp. 1-12.

GLOBAL MARKET OPPORTUNITIES— CENTRAL NEW YORK'S COMPETITIVE ADVANTAGE

As in the private sector, strong strategic plans consider existing assets and weaknesses only in the context of larger global or industry trends. It is not enough to just have a deep understanding of one's opportunities and challenges. The regions that lead economic growth over the next decades will be the ones that understand how this insight can align with and capture opportunities that others aren't considering. Central New York has identified two of these markets that offer significant opportunity to drive regional growth if captured correctly: the Internet of Things (IoT) and agribusiness.

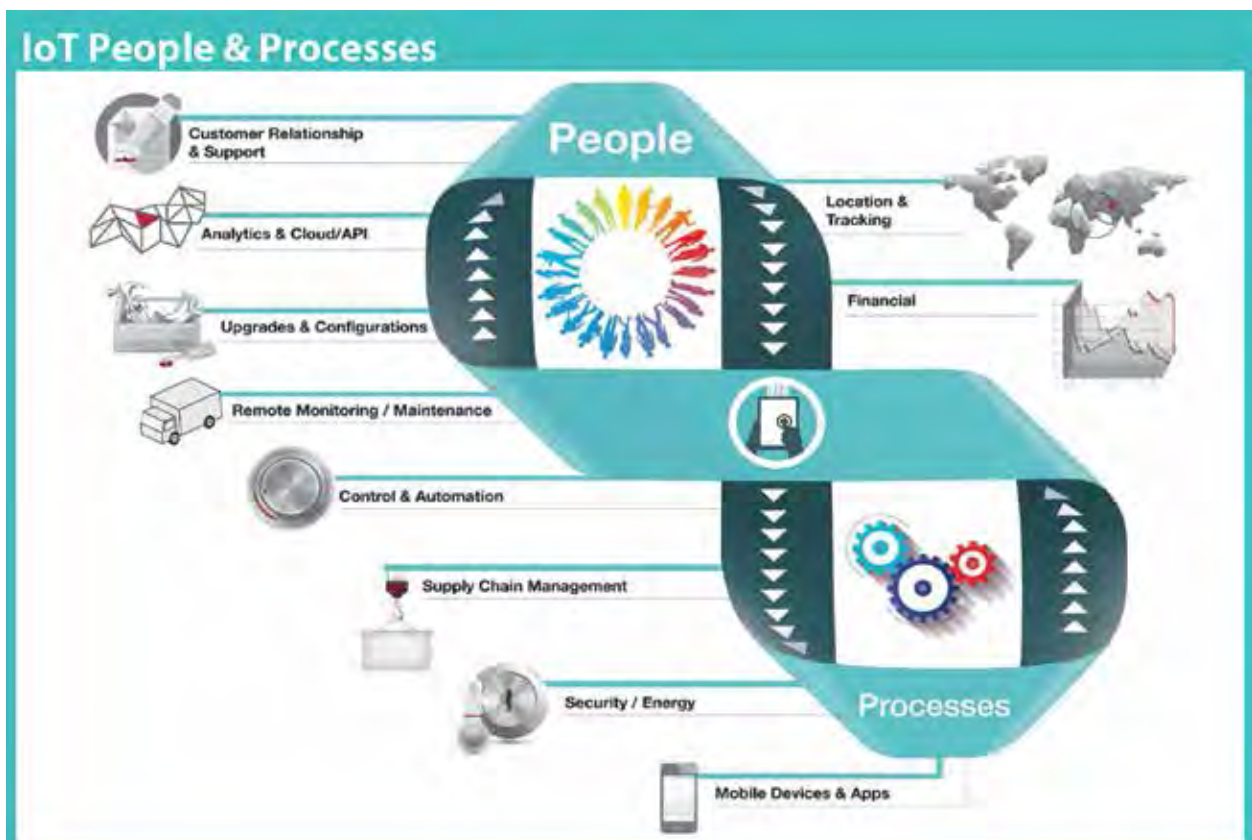
Central New York is focused on these two global markets for a number of reasons:

- They offer *cross-cutting* and *integrative* opportunities for growth. These opportunities leverage existing regional strengths in a way that blends multiple industry strengths around common technology platforms or capabilities.
- They are *broad-based* and *agile*. They allow for the formation of entirely new and unknown future industries as new knowledge is created, technologies converge, and markets shift.
- Finally, they are *inclusive*. Agribusiness and IoT are able to improve economic prospects for a broad spectrum of citizens by providing good paying jobs for low-income workers without four-year degrees as well as workers in advanced STEM fields.

Based on these criteria and trends, as well as more than four years of market analysis and stakeholder engagement, Central New York has identified compelling niches within the Internet of Things and agribusiness. These pockets of comparative advantage opportunity offer massive growth prospects for sustained wealth creation in Central New York.

The Internet of Things (IoT)

The Internet of Things (IoT) is undergoing explosive growth. It is estimated by 2020 that there will be 50 billion smart devices worldwide, including smartphones, PCs, tablets, unmanned aerial systems, smart cars, smart TVs, wearables, and home automation, as well as applications in health, finance, and smart grid technologies. Recent reports estimate that the current ratio of interconnected devices per person will rise from 1.7 per person to 2.4 per person by 2020.



The Internet of Things can combine networked inputs to bi-directional systems that integrate data, people, processes and systems for better decision making. Graphic source: <http://postscapes.com>.

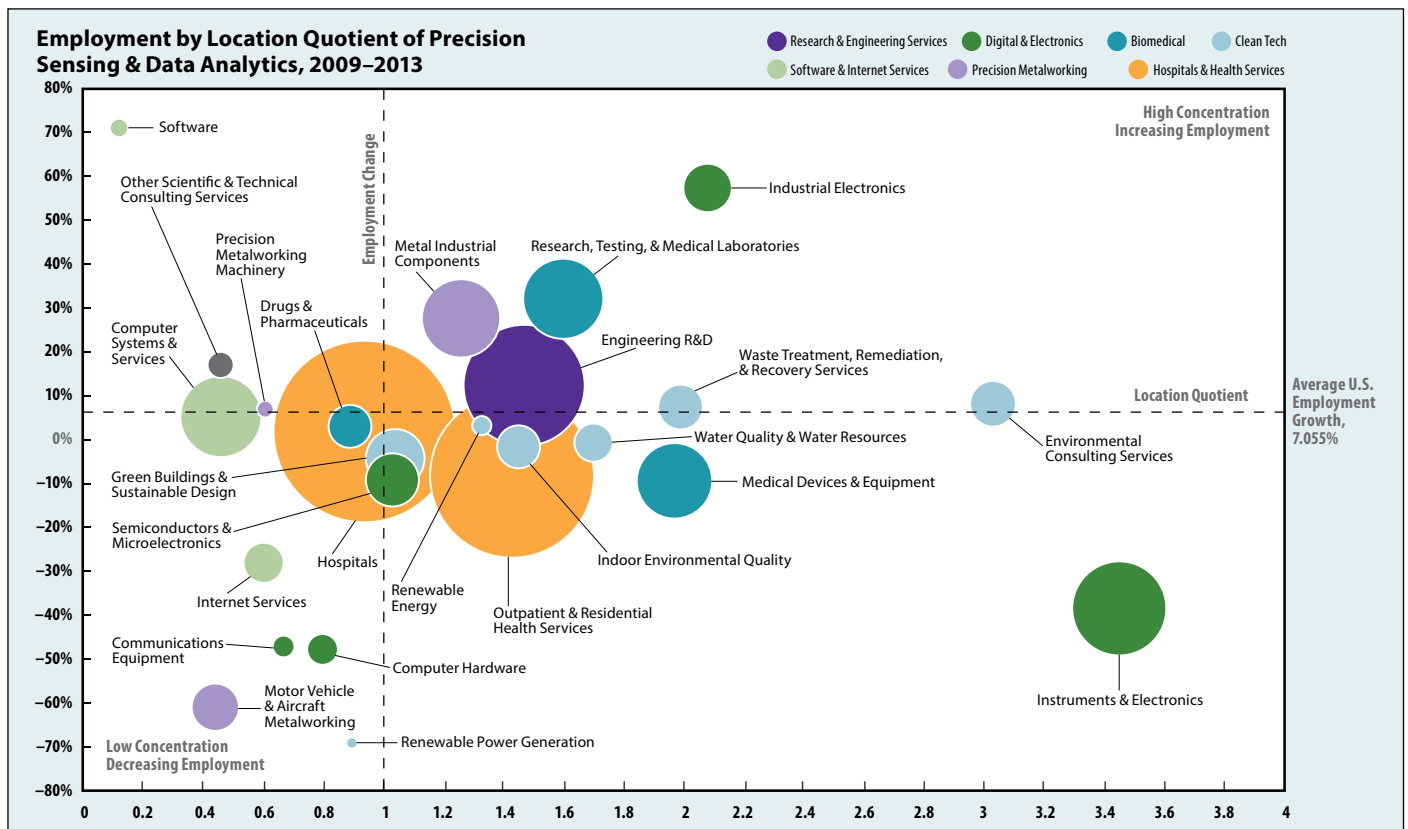
Current estimates place this market at \$655.8 billion with the expectation that it will grow to \$1.7 trillion by 2020²² in applications that include:

- **Factory Automation**—IoT offers enhanced efficiency from process monitoring and supervision, remote management and optimization, and optimal energy management.
- **Precision Agriculture**—Real-time analysis of weather data could drive increased revenues for the industry, and farmers could also increase productivity and revenues by an even larger amount.
- **Utilities**—Smart meters for electricity and water use can lead to better resource management.
- **Health care**—Big data could trigger more timely care interventions, especially in conjunction with smart medical devices that transmit information.
- **Retail**—The use of real-time technology could improve inventory management and lower the cost of goods sold.
- **Insurance**—IoT could drive major changes in business models and profits, as auto insurers increasingly adopt telematics, which combine the use of telecommunications with computers²³.

Central New York's Role

With the potential to integrate almost every electrical device with IoT technologies, the applications and markets are exceedingly vast. Deep analysis of Central New York's technological capabilities reveals regional strengths in a particular component of this larger opportunity: **precision sensing and data analytics**. Analysis conducted in partnership with the Battelle Memorial Institute indicates that many of the region's leading technology firms use systems and platforms that collect, analyze, interpret, and protect data in a variety of industrial applications.

Nearly 50 companies, employing more than 9,000 workers in Central New York and the Mohawk Valley, use these technologies. **As the chart below indicates, many of these companies fit into larger industries that are among the region's strongest and most critical clusters.** Yet, precision sensing and data analytics does not just touch the companies and employees that use this technology platform; it also drives innovations in fields related to some of the region's largest employment sectors, such as health care and manufacturing. All told, an estimated 40,000 workers in Central New York and the Mohawk Valley are in industries ripe for disruption from the Internet of Things and its precision sensing and data analytics applications.



²² Strategy Analytics; Connected World: The Internet of Things and Connected Devices in the Year 2020.

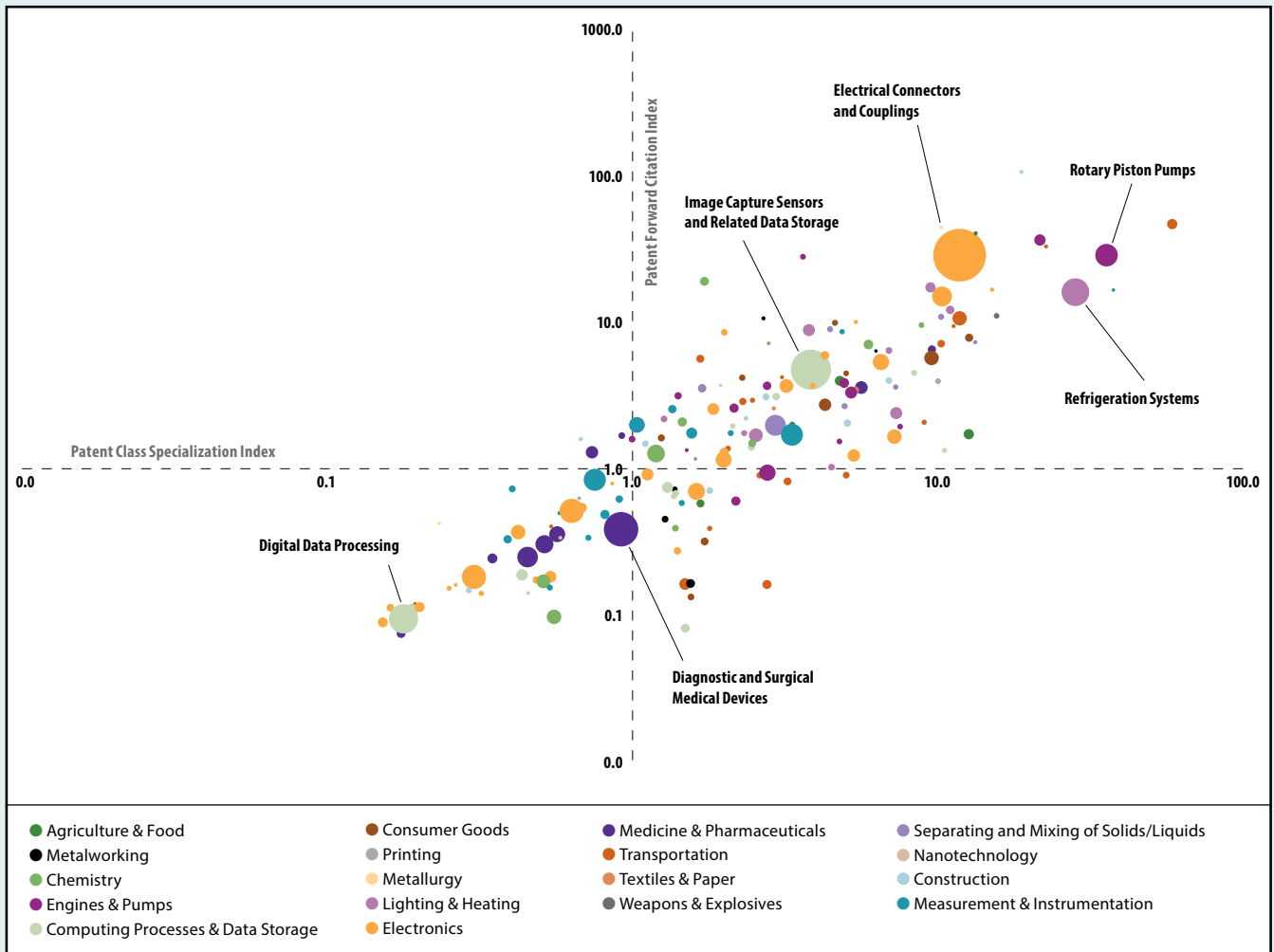
²³ Steven Norton; "Internet of Things Market to Reach \$1.7 trillion by 2020: IDC; Wall Street Journal, June 2, 2015.

In addition to its strong employment across this technology platform, IoT dominates innovation activities among many of the region's stronger private firms and institutions. The vast majority of patents issued to the region are in applications directly related to precision sensing and data analytics, including optical image data sensors, surgical devices, and digital data management. Further, the majority of research institutions in or nearby Central New York—including the CASE Center at Syracuse University, Cornell University's TRUST Center, Clarkson University, the Air Force's Research Laboratory's Information Directorate in Rome, SUNY Polytechnic, and Binghamton University—enjoy significant research focus areas in related applications.

An analysis of the specialization and value of these patents, shown below, indicates a variety of related intellectual property in the region. However, this same analysis shows a potential weakness in digital data processing, which could be a critical item to strengthen in the future.

Based on these strengths, the region has a comparative advantage to integrate its precision sensing and data analytics strengths in the deployment of three applications: unmanned aerial systems, precision medicine, and controlled environments

CNY Patent Specialization & Leading Innovation Themes



Unmanned Aerial Systems

Unmanned aerial systems (UAS) technology is expected to be the next great evolution of civil aviation in the United States and around the world. Proposed applications of this technology include, but are not limited to, delivering mail and freight, transporting people, environmental monitoring, agriculture, media and entertainment, mapping and imagery, disaster management, and law enforcement and public safety. A recent study from the Association of Unmanned Vehicle Systems International study indicates that in the United States alone, the UAS industry will create more than 100,000 jobs and \$82 billion in economic impact by 2025.

Central New York is well positioned and mobilized to play a leading role in the global development of this industry. Major UAS and systems integrators, including Lockheed Martin and Saab Sensis, call the region home, with significant research and manufacturing functions. The Air National

Guard's 174th Fighter Wing is training civilians to operate and maintain various airframes. The Central New York and Mohawk Valley regions have been designated as one of only six certified testing areas in the country. This designation also brings partnership and interest from the Federal Aviation Administration and NASA in developing a regional support infrastructure for growing UAS technologies in the regions.

Related to the growth of unmanned aerial systems has been the similar recent expansion of the unmanned ground systems industry. Expected to hit \$141 billion by 2020, news of autonomous cars and other vehicles have pervaded technology publications in recent years. With the rise of ground and aerial unmanned vehicles, the systems by which these platforms cross connect and 'speak' to each other will be increasingly important. The integration of these systems, and other devices, is a massive market at nearly \$655 billion today.



Aurora Flight Sciences successfully flew unmanned test flights of its Centaur optionally piloted aircraft from Griffiss International Airport in Rome. The successful flights marked the first time a large scale, fixed wing aircraft has flown at any of six FAA-designated unmanned aircraft test sites in the U.S. Photo courtesy of Aurora Flight Sciences.

Personalized and Precision Medicine

Personalized and precision medicine (PPM) is the approach of moving beyond one-size-fits-all medicine by taking into account individual differences in people's genes, microbiomes, environments, and lifestyles. This includes providing preventive care, diagnosis, treatment, and follow-up regimen tailored to a detailed profile of a person. PPM has generated global policy interest in the past few years, including President Obama's \$215 million investment in a precision medicine initiative, due to its enormous potential to target efficient therapies for patients and to identify pre-symptomatic individuals at risk of developing diseases. The socio-economic benefits of PPM by reducing heart disease incidence alone could generate \$607 billion in improved health in 50 years; similar figures are expected for cancer, diabetes, hypertension, lung disease, and stroke.

Within PPM, Central New York has particular opportunity to deploy assets against opportunities in analytics, technology development, personal services, and training.

- **Analytics:** Developing precision sensing approaches in diagnostics, therapies, risk assessment, and health monitoring through big data technologies, predictive analytics, and prescriptive analytics in the health and biomedical sectors.

- **Technology:** Merging its strengths in medical devices and other biomedical technologies with the region's world-class clinical health care services could lead to innovations in cross-analytics of clinical data from electronic health records, images, fine-grained biological data, and lifestyle data.
- **Personal Services:** With a health care sector that is 11 percent more concentrated in the region than the national average, the clinical environment offers an ample test bed for intelligent decision support, medical tourism, and telemedicine.
- **Training:** The region has strong academic programs in health informatics at Onondaga Community College, SUNY Oswego, Syracuse University, and SUNY Upstate Medical University to develop education pipelines to train the diverse workforce required to meet the challenges of a data-driven economy. Among the predicted 181,000 new roles in deep analytics by 2018, specialized workers mastering big data analytics in the context of health care cybersecurity and work ethics will be in high demand.



Controlled Environments

Sensing and processing innovations play a significant role in the advancement of controlled manufacturing, agriculture, health care, and office environments. Applications and uses within these industries vary from controlled plant cultivation to cleanrooms for semiconductor manufacturing. It is estimated that the controlled environment agriculture industry will expand by 13.08 percent in the next five years as climate shifts make it increasingly difficult to grow under normal conditions.

Central New York and its surrounding regions have a significant, yet unaligned group of businesses and research institutions operating in the controlled environment space. Advanced manufacturers are developing instruments and tools used by GlobalFoundries in its cleanroom production of semiconductors. Partners at Syracuse University's Center of Excellence have engaged more than 200 regional businesses in research consortiums around indoor environmental air quality and thermal controls. The Cornell Center for Controlled Environment Agriculture is a world leader in research and development in this field.



SBB Inc., located in E. Syracuse, offers innovative and custom cleanroom designs to serve industries ranging from life sciences to microelectronics. Photo courtesy of SBB Inc.

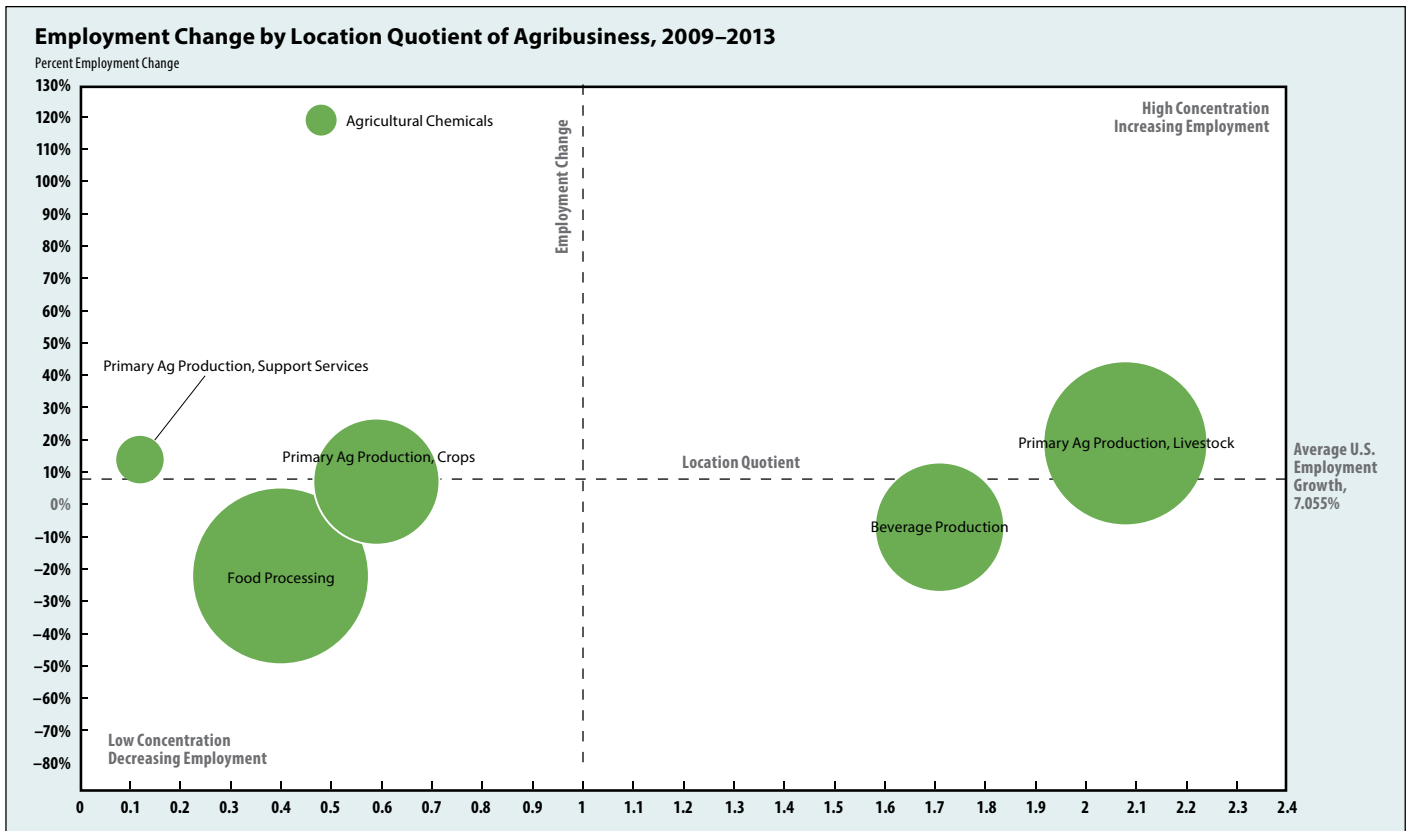
Agribusiness

Meeting the global demand for food will be one of the world's major challenges in the next decades. With population expansions around the world, the global food system will need to produce more in the next 40 years than it has in the past 10,000 years. Further, the global middle class, with its demand for quality, high-protein diets, is expected to more than double by 2030. Compounding this challenge are shifting climates in some of the globe's biggest food production regions and unanswered issues with food safety.

Central New York's Role

As noted above, agribusiness has been a cornerstone of the Central New York economy for nearly 200 years, maintaining the vitality of the region's rural communities, providing food for urban cores, and offering tourism opportunities for visitors.

More than 3,500 farms and more than 200 food-processing companies in Central New York employ nearly 4,000 people. Additional indirect economic impacts from those businesses support the vibrant agriculture and food processing sector (e.g., transportation and logistics, technology, manufacturing, research, and energy-related businesses). Agriculture and food processing contribute more than \$53 billion annually to the economy of New York State.



In the past five years the Central New York region has benefited from more than \$435 million of investments in agriculture and agribusiness related projects. These investments have created a stronger agriculture sector and supported the growth of the region's export economy. The global food and beverage industry has witnessed significant growth in the past five years and is expected to continue this momentum, reaching approximately \$5,776 billion in 2017 with a CAGR of 5 percent in the next five years. Continued investment is required to remain competitive and capture both domestic and international opportunities, as are a modern and functioning transportation system, clean water, and open spaces.

Aseptic Packaging for Dairy

Agriculture's historic prominence in Central New York has largely been driven by its competitive position in dairy production. With Cayuga County, the State's second largest dairy producer, among its counties, one of Central New York's strongest agriculture

sectors is the primary production of dairy and the processing of dairy related goods. Nationwide demand for dairy beverage products is expected to increase by 7 to 9 percent CAGR by 2020. According to a recent analysis by agriculture consultant Informa Economics, a leading trend in the dairy industry is the use of aseptic packaging for dairy products. Aseptic technologies ensure food and packaging materials are free from bacteria.

Aseptically packaged beverages account for the majority of total global demand and are expected to increase to \$17 billion by 2020. Dairy is the largest aseptic beverage category at 54 percent of the total market and accounts for the largest projected value growth between 2010 and 2020 at an expected 7 to 9 percent CAGR. While China is the largest aseptic beverage market, other Southeast Asian and South American markets are expected to experience double-digit market growth by 2020.



Central New York's existing agribusiness assets includes companies such as Byrne Dairy, which, through a recent expansion, is meeting the increasing demand for extended shelf life products on a local and global scale. Photo courtesy of Byrne Dairy.

KEY FINDINGS

From the region's comprehensive market analysis, engagement with outside experts, and input from hundreds of private- and public-sector leaders, Central New York has identified its most compelling challenges and opportunities. These key issues represent the organizing locus and a rallying cry for Central New York:

Finding 1: The region holds strong potential to compete in the emerging Internet of Things market by excelling in precision sensing and data analytics capabilities.

Central New York flexes particular technical and industrial capabilities in precision sensing and data analytics platforms. This technical capability could help distinguish the region as it competes in the massive Internet of Things market. While opportunities abound in almost every industry that uses electronic devices, Central New York is particularly well positioned to drive innovation, grow local companies and attract foreign and domestic companies in the unmanned aerial systems, personalized and precision medicine, and controlled environments industries. By expanding capabilities in these significant areas of market opportunity, Central New York can strengthen the advanced industries that form its backbone: radar and digital devices, biomedical devices, information assurance, and clean technology.

Finding 2: Global demand for high-quality and safe food can boost growth in the region's value-added agribusiness sector.

Growth in Central New York's agricultural sectors offers one of the best opportunities to drive new jobs and growth to almost every city, town, and village throughout the region. With a longstanding history of responding to new demands in the market, Central New York can align its particular market expertise in beverage and dairy production with new technologies and processes to extend shelf life and create safer products. The region can also integrate the logistics needs of its food producers with new investments in its transportation infrastructure to enhance efficiency and reduce time to global markets.

Finding 3: The region must expand access to economic opportunity for all its residents.

One of the most chilling facts identified during this market assessment was that 44 percent of the region's population is at or near poverty. To meet with its stated vision of achieving collective prosperity, Central New York must confront and alter the root causes of these issues that include poor or disconnected access to inclusive industries; challenges within the educational system that prevent equal access to opportunity; barriers in accessing growth capital for minority-, women-, and veteran owned businesses; and a misalignment in skills, the training system, and the businesses that can offer meaningful employment.



Finding 4: A compelling history and recent growth in support services positions the region to become a magnet for veterans and their families.

With the region's close ties to Fort Drum (home to approximately 19,000 active-duty military members and 11,000 military spouses and military-connected children), alignment and support of major employers in the defense and technology sectors, and the emergence of a core research asset at Syracuse University's Institute for Veterans and Military Families, Central New York is well positioned to attract and support veterans.

Finding 5: The 21st-century global economy requires an efficient and modern transportation infrastructure.

To better serve the region's manufacturers that are increasingly interested in accessing global markets, Central New York must make it easier to bring goods to market. The pending expansion of the Panama Canal could overload the already crowded Port of New York and New Jersey with containers that need to be transferred to the country's rail lines. By investing in a series of logistics improvements, Central New York can capture some of this emerging market opportunity while opening the door for its agribusiness and food processors to quickly and cheaply bring goods to the growing global middle class.

Finding 6: Despite recent advancements in the entrepreneurship ecosystem, the region lags its peers in cultivating fast-growing businesses.

In the past decade, Central New York has made significant advancements in developing a comprehensive regional entrepreneurship ecosystem. Early investments in business plan competitions, student-focused accelerators, veterans entrepreneurship boot camps, venture funds, and firm incubators have directly led to a strong and growing entrepreneurial culture. Yet, this ecosystem has not yielded the kind of fast-growing young firms that the region needs to replace the ones that are going out of business, moving out of the region, or being sold to buyers outside the region. Central New York must refocus efforts on significantly increasing the rate of startups forming and moving into the region.

Finding 7: Vibrancy in the region's urban cores is growing yet requires additional investment and connectivity.

While downtown Syracuse has enjoyed a resurgence of private investment and residential growth in past years, this trend has been slow to catch on across the region. Further, the private investment made in downtown Syracuse requires stronger connectivity to better leverage advancements that have been made to the cleanup of Onondaga Lake. In light of this, and to accelerate the vibrancy of the region's communities, changes also need to be made in the basic structures and models used to govern public services and land use.



A PATH FORWARD: STRATEGIC APPROACH

Using the data, market insight and business engagement in the assessment as its framework, *CNY Rising* lays out seven overarching strategies. Each strategy recommends a number of tactical actions or strategic initiatives to advance the overall strategy.

Each strategy offers an approach consistent with principles discussed in the market assessment.

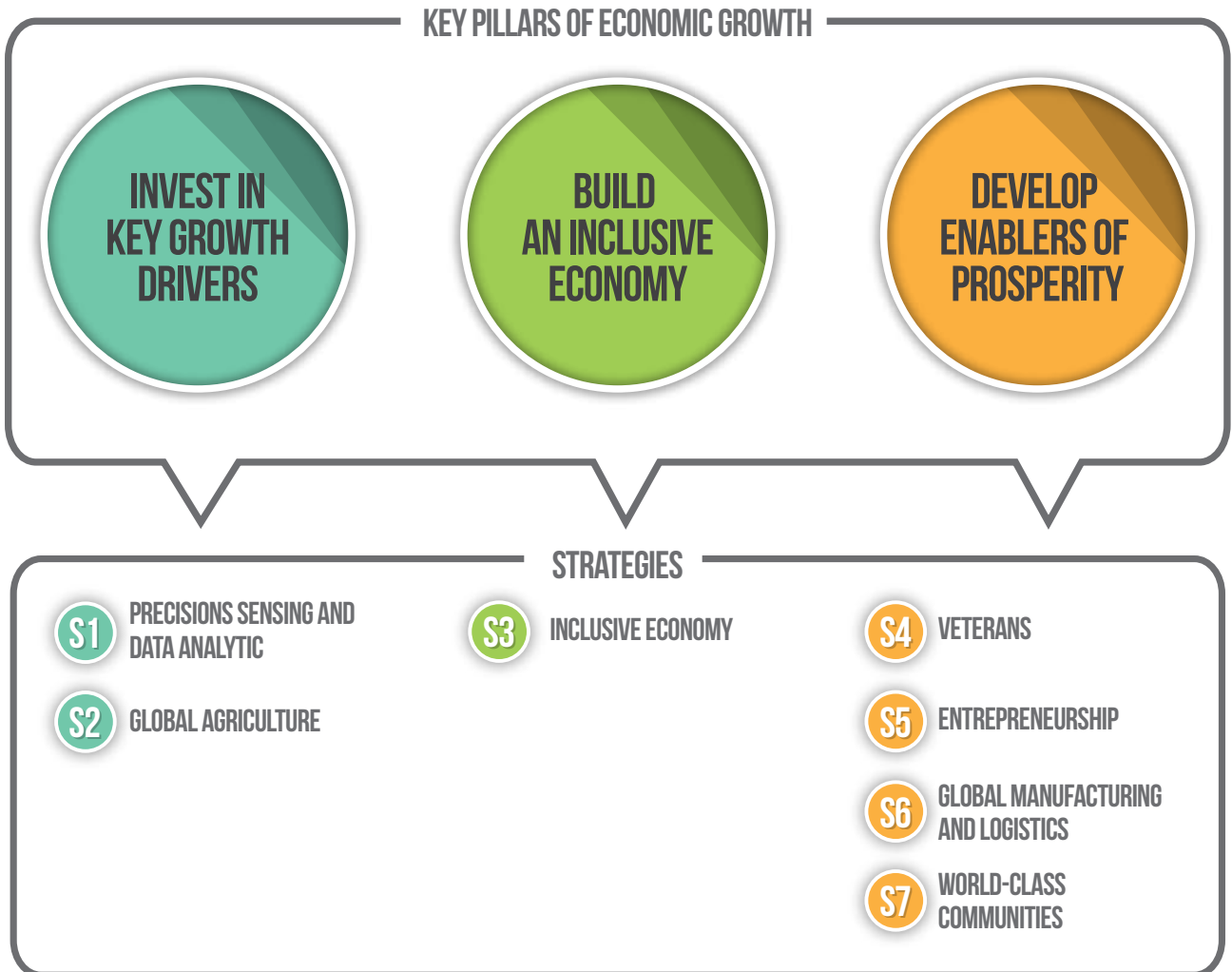
The approach:

- Aligns with the three pillars of economic growth: key drivers, enablers of prosperity, and inclusive economy;
- Leverages the existing assets of the Central New York region to address the challenges and opportunities for integration with the global, knowledge-based economy;
- Is based upon specific areas of significant market opportunity that align with regional strengths;
- Is inclusive and collaborative and leverages the work of stakeholders;

- Is an ongoing enterprise. The strategies are mutually exclusive, and each is intended to stand on its own as a separate line of business for the overall plan. At the same time, the strategies are heavily reliant on success in other areas.

Central New York’s Big Ideas

The CNYREDC received 207 submissions through its Big Idea competition. The most compelling ideas are included throughout this section. These ideas represent priorities that the council will work to make a reality in the coming years.



Strategies

Central New York recommends implementation in the following areas. Each of these strategic recommendations includes detailed tactical approaches and outlines a set of compelling ideas generated during the region's Big Ideas competition.

Strategy 1. Establish the Region as a Global Center for the Research, Development, and Manufacturing of Precision Sensing Technologies and Data Analytics

Tactics:

1. Make Central New York and the Mohawk Valley regions the leading community for unmanned systems with an initial focus on the testing, innovation, and manufacturing of unmanned aerial systems.
2. Build unique information assurance testing facilities to protect devices and equipment produced for the Internet of Things (IoT).
3. Seed the transformation of health care delivery by integrating personalized and precision medicine technologies and processes.

Tactical Approach:

Make Central New York and the Mohawk Valley regions the leading community for unmanned systems with an initial focus on the testing, innovation, and manufacturing of unmanned aerial systems.

Central New York will establish a foothold in the Internet of Things (IoT) market by building a network and supply chain of businesses, institutions, technologists, and start-ups around the unmanned systems industry. The region will employ a network development approach to actively engage, develop and attract leading researchers, thought-leaders and regulators (FAA, NASA, USDOT, DoD) to the table with systems integrators. The region will also build out a supply chain of global firms that target Unmanned Aerial Systems, Unmanned Ground Systems, wearables, and other devices. Finally, Central New York will realign entrepreneurship programming to support start ups in this realm.

Build unique information assurance testing facilities to protect devices and equipment produced for the Internet of Things (IoT).

The region will focus its efforts on developing facilities, capacities and private sector partnerships directed at the testing, certification, design and remediation services for internet edge devices (IoT) with an initial focus on unmanned systems. Capabilities in information assurance will ultimately be developed to work within the precision and personalized medicine / wearables / devices industry.

Seed the transformation of health care delivery by integrating personalized and precision medicine technologies and processes. Advances in data analytics, sensing and instrumentation have the ability to transform health care in one highly integrated, seamless platform. Central New York will capture this market shift by developing a collaborative alliance to innovate within the health care fields of high resolution and distributive data collection; safe data storage and fusion; new hardware; and artificial intelligence data analytics. New technologies, new companies, and research enterprises could emerge in response to the growing demand for jobs and solutions to manage a surge in chronic diseases and an aging citizenry.

Strategy 2. Strengthen the Region's Agribusiness Sector to Meet the Growing Global Demand for Safe and High-Quality Food and Nutrition

Tactics:

1. Invest in controlled environment agriculture projects that leverage regional sensing and thermal control technologies.
2. Create a 'Grown in NY' certification and global brand for New York agricultural products
3. Launch a consortium effort to build an aseptic food packaging facility to extend the shelf life of New York State agricultural products.

Tactical Approach:

Invest in controlled environment agriculture projects that leverage regional sensing and thermal control technologies.

Central New York will build Controlled Environment Agriculture facilities throughout the region. These facilities will consist of greenhouse space with raised beds and precision irrigation and lighting systems to produce a variety of leafy green vegetables. Integrating advancements made by the region's precision sensing sector, these facilities will be able to meet domestic and global food demand by getting goods to market quicker through Central New York's expected improvements in freight infrastructure.

Create a 'Grown in NY' certification and global brand for New York agricultural products.

A key reason for the explosive recent growth in food exports from the United States is the global desire for food proven to be nutritious and safe. Food safety challenges abound in countries with fast-growing middle classes, such as China and India, who are willing to pay a premium for products they know to be healthy to eat. As part of its overall initiative to meet the global demand for food, partners in Central New York will develop a certification system for food made and processed in New York. The certification will use the State's sizable global name recognition to let consumers know that a product grown in New York is not only safe to eat, it's of the highest quality available on the market.

Launch a consortium effort to build an aseptic food packaging facility to extend the shelf life of New York State agricultural products.

Construction of an aseptic dairy plant in Central New York will position the region to serve fast-growing overseas markets in regions such as Africa, the Middle East and South America. Aseptic technologies ensure food and packaging materials are free from bacteria. They provide a sterile environment for the processing and packaging of fluid and powdered dairy products. Central New York is also one of the strongest dairy producing regions in the country yet it currently cannot meet this demand without an aseptic processing facility.

Central New York's Big Ideas

Center for Sustainable Agriculture*

Take advantage of existing Central New York regional skills and infrastructure and recent advances in agricultural practices and technologies to aggressively lift agriculture to new levels of efficiency and productivity with substantially reduced environmental footprint. Establish the Center for Sustainable Agriculture to include accelerated research, rapid prototyping, best-in-class manufacturing, coupled with real-time impact monitoring to realize world-class agribusiness outputs and measured improvement in soil and adjacent water quality.

**OPPORTUNITY FOR FUTURE INVESTMENT*

Strategy 3. Cultivate an Inclusive Regional Economy

Tactics:

1. Expand demand driven workforce-training programs.
2. Strengthen the job and talent pipeline in communities of need.
3. Revitalize strategic urban spaces to remove neighborhood blight and promote homeownership.
4. Invest in the human capital pipeline through educational advancement opportunities.
5. Target geographic location of future industrial investments in communities of distress.

Tactical Approach:

Expand demand driven workforce-training programs.

Central New York will build and scale community initiatives focused on unmet job demand in target industries while providing access to career pathways for un- and underemployed residents of the region. Successful programs, such as Work Train, have already made significant headwind to accomplish this, yet need support and investment to expand to critical industry sectors across the entire

region. Further, new approaches are needed to engage and retain talented college students and recent graduates with internship and fellowship opportunities in the region's strongest sectors. Through positions with business, government, and other professional institutions, paid interns will gain an in-depth understanding of participating industries while also developing professional skills and participating in a seminar series by local leaders from all industries.

Strengthen the job and talent pipeline in communities of need.

Central New York will build wealth and next-generation community leadership by establishing and growing entrepreneurship and business ownership within underserved communities. Through initiatives such as the Upstate Minority Economic Alliance, the region will invest and seed the growth and profile of minority-owned business through a targeted chamber of commerce model of support.

Revitalize strategic urban spaces to remove neighborhood blight and promote homeownership.

The region will develop an investment fund to give financing solutions to urban, suburban and rural communities seeking to catalyze the redevelopment of distressed commercial districts and bring good jobs to communities in need. The fund will provide grants to strategic projects in areas with high concentrations of poverty and/or blight. Eligible projects would demonstrate clear economic impact to blighted and/or low-income mixed-use districts by attracting businesses that offer living wage jobs; facilitating ownership and investment within low-income populations; and/or transforming high vacancy target areas.

Invest in the human capital pipeline through educational advancement opportunities.

Targeting underemployed middle-skill workers, Central New York will develop interventions that provide wraparound educational support programs for adults seeking bachelors or higher degrees. These programs will remove barriers for obtaining secondary education degrees and associated employment opportunities. The region will also invest in guaranteeing a path to college for students in its most distressed communities through the Say Yes to Education program. Post-secondary education, especially for children who grow up in poverty, directly correlates to increase opportunities and wealth creation as well as build a more talented and broadly diverse workforce.

Target geographic location of future industrial investments in communities of distress.

Central New York will prioritize the location of potential economic development projects within communities of distress or extreme poverty. A critical challenge faced by the region is the disconnect between available jobs and residents to fill those jobs. While multiple interventions are needed to solve this challenge, a component of the solution includes geographically locating new jobs in closer proximity to these

neighborhoods. Through this plan and future economic development efforts, regional leaders, the CNYREDC and policymakers will consider distance from a community of distress as part of its selection criteria for investments and facility location.

Central New York’s Big Ideas

Central New York Math Institute*

Le Moyne College proposes a major intervention in the form of a Regional Math Institute to help address the chronic problem of historically low academic performance in math. The institute would reinforce the math and quantitative skills among students already studying at the post-secondary level, but who arrived on campus without the requisite competency in math and quantitative skills to succeed at the college level over the long term. The Institute will also begin to address the problem at the K-12 level by making the institute facilities available to Syracuse City School District students on weekends and especially during the summer to help blunt the “summer learning loss.”

**OPPORTUNITY FOR FUTURE INVESTMENT*

Strategy 4. Make CNY a Magnet for Veterans and Their Families

Tactics:

1. Actively recruit veterans to the region by targeting key transitioning service member population locations at Fort Drum and others.
2. Grow veteran career transition programs.
3. Expand veteran educational opportunities in key workforce sectors through closer industry collaboration.

Tactical Approach:

Actively recruit veterans to the region by targeting key transitioning service member population locations at Fort Drum and others.

Central New York will build a veteran’s resources hub unrivaled by any other region in the United States. Through the alignment of veteran’s focused programs, training classes, events, conferences and initiatives, the region will build on its recent to ease the transition back to civilian life for veterans and their families.

Grow veteran career transition programs.

In an effort to centralize resources around training, skills alignment and educational opportunities, the region will partner with nationally recognized groups and programs, including the SBA’s Boots2Business, Veteran Women Igniting the Spirit of Entrepreneurship, Google’s VetNet program, and the Veteran Vocational Acceleration program supported by WalMart.

Expand veteran educational opportunities in key workforce sectors through closer industry collaboration.

Enhanced veteran’s support resources in Central New York will also be targeting on providing education aligned with the region’s growing workforce sectors. As outlined in Strategy 3, part of the region’s effort to build an inclusive economy will include an intense focus on aligning the current workforce system to better serve the needs of the increasing veterans population. In addition to supporting veteran’s entrepreneurship opportunities, this includes helping to identify how skills developed in the military can be best transitioned to effective private sector uses in civilian life.

Strategy 5. Continue to Grow and Invest in a Globally Competitive Ecosystem for Innovation and Entrepreneurship

Tactics:

1. Grow neighborhoods of entrepreneurship by investing in broadband, entrepreneurship programming, and multi-use building renovations.
2. Enhance the availability of seed capital to regional entrepreneurs.
3. Target entrepreneurship assistance, capital and programming at minority-, women- and veteran-owned startups.

Tactical Approach:

Grow neighborhoods of entrepreneurship by investing in broadband, entrepreneurship programming, and multi-use building renovations.

Redevelop a largely vacant and blighted Warren Street in downtown Syracuse into a neighborhood of entrepreneurship. Central New York will invest in faster broadband and the redevelopment of infill buildings along this corridor. Through expanded programming and use of the Innovation Hot Spot and START-UP NY program, the Tech Garden will build on its role as an entrepreneurship hub to become a magnet and anchor for entrepreneurs and start up businesses in Central New York. This approach will leverage major investments made recently in the Historic Hotel Syracuse. If successful, these approaches could be used throughout urban cores in Central New York to bring entrepreneurs into vacant commercial spaces.

Enhance the availability of seed capital to regional entrepreneurs.

Present a compelling retention and attraction value proposition to startup and emerging innovators considering staying or growing in Central New York by developing an ecosystem-wide, early-stage funding platform. Access to seed capital is one of the most-cited barriers to growth for the expanding pipeline of companies in the region's incubators, accelerators, and coworking spaces. This program will leverage the seed fund programs of CNY Innovation Hot spot, specifically Grants for Growth, The Germinator and GENIUS NY, with new seed fund resources and will develop "rapid response" investment programs so that ad-hoc, rolling funds are available to meet the needs of entrepreneurs.

Target entrepreneurship assistance, capital and programming at minority-, women- and veteran-owned startups.

The region will establish an opportunity fund to provide substantial business growth financing opportunities to underserved entrepreneurs and businesses owners. Through terms and criteria that will enable rather than prohibit their success, the fund will target underserved entrepreneurs, particularly minority, women, veteran and tech entrepreneurs and enterprises.

Central New York's Big Ideas**CenterState ESOP-Based Business Retention Program***

Establish an Employee Stock Ownership Plan (ESOP) funding mechanism to allow firms to study, analyze and possibly underwrite formation costs of ESOPs. These mechanisms can allow aging owners of private businesses to sell their firms to their employees, with the transactions financed through leverage. ESOPs can help keep ownership wealth located in a community after a sale. They have proven to be successful in having greater revenue growth, pay higher wages to their employees, and have increased total employment numbers than conventionally owned companies.

**OPPORTUNITY FOR FUTURE INVESTMENT*

Strategy 6. Develop a Connected and Modern Transportation and Logistics System**Tactics:**

1. Build a hub for global logistics and manufacturing.
2. Expand air service connectivity.
3. Invest in the development of shovel-ready manufacturing sites in proximity to transportation assets and areas of economic distress.

Tactical Approach:**Build a hub for global logistics and manufacturing.**

Through targeted investments, the region will leverage its natural assets, including geographic location, highway and rail systems, access to abundant water and electricity, and geological and geographical environmental stability, to become Upstate New York's leading hub for accessing global markets. Central New York will build a 200-acre logistics facility that will handle manufacture, containerize, warehouse, and ship freight between Central New York and the Port of New York and New Jersey. The hub will be located adjacent to the crossroads of Upstate's two major interstate highways (I-81 and I-90).

Expand air service connectivity.

The region will make the Syracuse Hancock International Airport more competitive in servicing the business and leisure travel needs of its residents and visitors by investing in expanded air service. To do so, Central New York will establish a revenue guarantee incentive program to mitigate the initial risk of an airline adding service connections to the airport. Increased air service at SYR will result in more opportunities for new or existing business and economic opportunities that rely on efficient air travel. The new service will allow businesses to expand into new markets that were otherwise untapped. Moreover, additional passengers traveling into and out of the Central New York region equates to increased economic development activity and investment in the region in terms of jobs and tourism.

Invest in the development of shovel-ready manufacturing sites in proximity to transportation assets and areas of economic distress.

The availability of shovel-ready building locations is an often-cited challenge for regional economic developers looking to attract new jobs and investment to the region. To organize its approach to bringing available sites online, the CNYREDC has identified a handful of business parks from across the region to be included in a strategic shovel-ready infrastructure project. Included in this project are White Pine Commerce Park, Cayuga County Business Park, Finger Lakes East Business Park, Curtin Business Park, and

Oswego County Industrial Park. Through investments in site readiness, utilities, roads, rail and sewer, Central New York could make more than 1,200 acres immediately ready for a relocating or expanding business. Furthermore, Central New York will also target the development of a rail spur off the CSX main-line in the City of Oneida and will establish a fund for local economic development partners to help build out facilities and buildings for businesses interested in growing in rural communities.

Strategy 7. Build Welcoming and Connected World-Class Communities

Tactics:

1. Develop environments to make arts and cultural institutions more competitive and sustainable.
2. Build government systems that serve the need of a 21st-century economy and population.
3. Catalyze adaptive reuse of historic, vacant and underutilized properties.
4. Support anchor institution investment in urban communities.
5. Grow and support destination tourism assets.

Tactical Approach:

Develop environments to make arts and cultural institutions more competitive and sustainable.

The CNYREDC will work with local government and key stakeholders to establish five Arts and Entertainment Districts in Auburn, Cortland, Oswego, Syracuse, and Hamilton. These districts will harness the combined strength of the arts, culture, entertainment, hospitality, and retail industries to provide more intentional and collaborative management of each district's unique cultural brand. The districts will include collaborative marketing and branding, affinity cards and rewards programs, guidelines for facade improvement and stimulating public art and wayfinding signage.

Build government systems that serve the need of a 21st-century economy and population.

Central New York will execute on the recommendations set forward by the Consensus Commission. At full implementation, the Commission's plan will drive service efficiencies, generate tax savings, produce regional incentives to collaborate, and create the structural governance capacity required to address regional policy matters in truly regional ways, while preserving local decision-making on local issues.

Catalyze adaptive reuse of historic, vacant and underutilized properties.

Historic preservation projects face a number of hurdles in Central New York. Many projects are too small to attract investment from the national equity market and fail to attract outside investors because of comparatively small returns on investment. To address these challenges, the region will establish a historic rehabilitation fund to return historic assets to productive use. With a capacity to fund small projects in distressed urban neighborhoods and small towns and villages throughout the region, the fund will provide the investment dollars needed to restore these properties.

Support anchor institution investment in urban communities.

The region's urban anchor institutions will develop a collaborative, similar to those in Minneapolis and Chicago, for the purpose of developing strategies that improve the region's urban cores and the strength and resiliency of their institutions. This collaborative will serve as a forum for institutions to jointly develop and deploy strategies around neighborhood revitalization, shared talent needs, procurement opportunities, and transportation issues.

Grow and support destination tourism assets.

The region will launch a collaborative tourism destination program to strategically manage, develop and market its key visitor assets in a collaborative and inclusive fashion. Destination development will be accomplished through new tourism policy, new product development, expanded marketing, enriched cultural and heritage providers, and enhanced events.



The region's unique historic assets and cultural amenities, such as the Harriet Tubman National Historical Park in Cayuga County, make the region a tourism destination. Photo by Kristian Reynolds; courtesy Cayuga County Office of Tourism.

Central New York's Big Ideas

CNY Geo Renewable Hub*

Make Central New York a home for the adoption of geothermal technologies into the use and production of traditional HVAC systems. Use the region as a test bed for new processes in integrating these systems into individual homes and neighborhoods. Central New York can build this capability locally through partnerships with traditional HVAC researchers, scientists and technologies at some of the region's leading thermal controls firms and research institutions.

Harriet Tubman National Historic Park and Visitor's Center*

The Harriet Tubman National Historical Park was designated by President Obama in late 2014. Since 2008 the National Park Service has worked with the Harriet Tubman Home, Inc. and the A.M.E. Zion Church on the development of a management plan for the operation and development of the country's newest National Park. It will be located in the City of Auburn and Town of Fleming in Cayuga County. The project includes the continued restoration of the historic Harriet Tubman related buildings and sites and the construction of a new visitor and educational center.

Institute for Urban Infrastructure Assessment and Innovation*

The Institute for Urban Infrastructure Assessment and Innovation will integrate the engineering programs at SUNY ESF, Syracuse University and local engineering firms to coordinate and address the planning, design, and development of integrated water systems. These systems maintain and enhance Central New York's subsurface infrastructure system responsible for the delivery of water to municipal and industrial users. The Institute will train students, engage faculty, host industrial sabbaticals and scholars in residence, and engage national experts to work with local, regional, state, and federal managers in addressing cost-effective methods to address Central New York water infrastructure requirements.

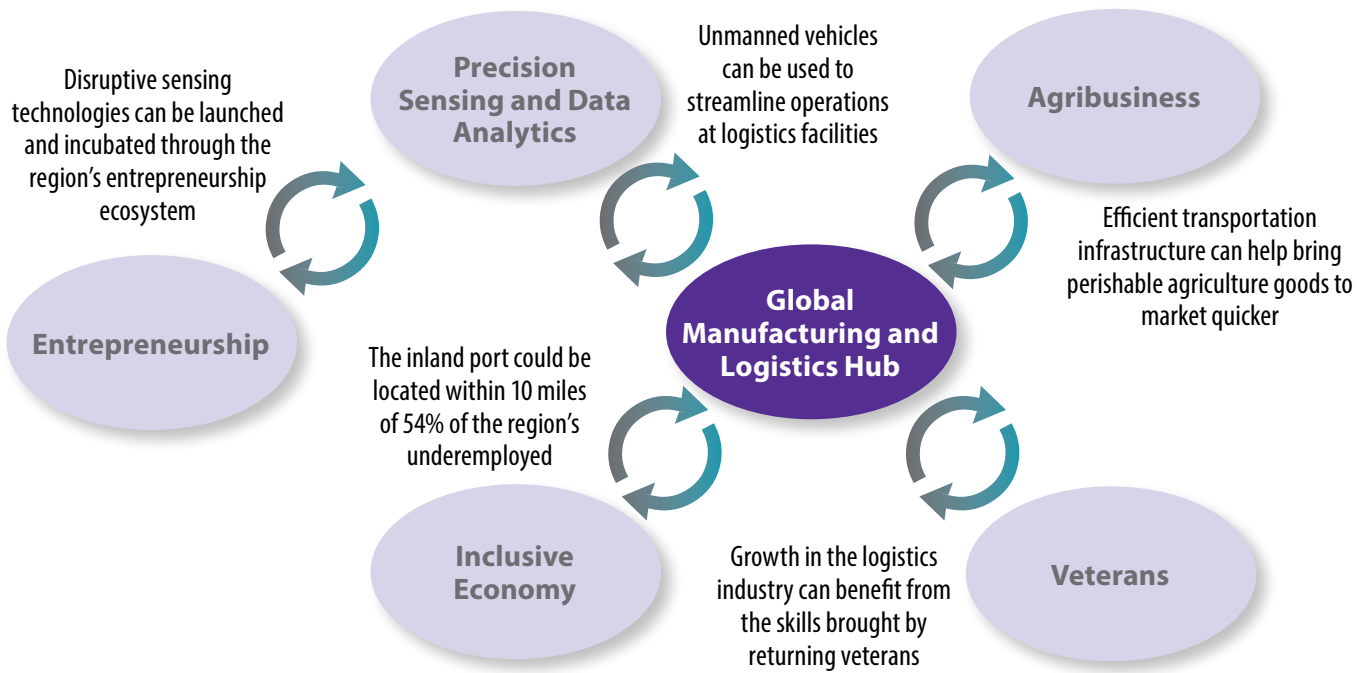
Southeastern Lake Ontario National Marine Sanctuary*

Oswego, Cayuga, Wayne and Jefferson counties are seeking a National Marine Sanctuary (NMS) designation for the southeastern shore of Lake Ontario. The designation of an NMS will result in a coordinated effort to protect, preserve and promote the extraordinary historic and cultural resources that lie beneath its waters. It is estimated that there could be as many as 160 shipwrecks in this area and a few planes as well, which are popular sites for divers.

**OPPORTUNITIES FOR FUTURE INVESTMENT*

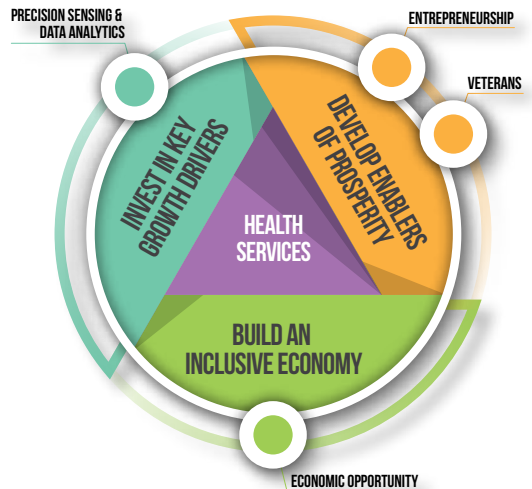
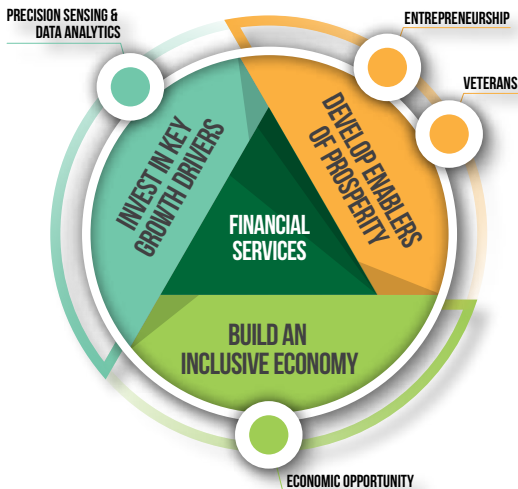
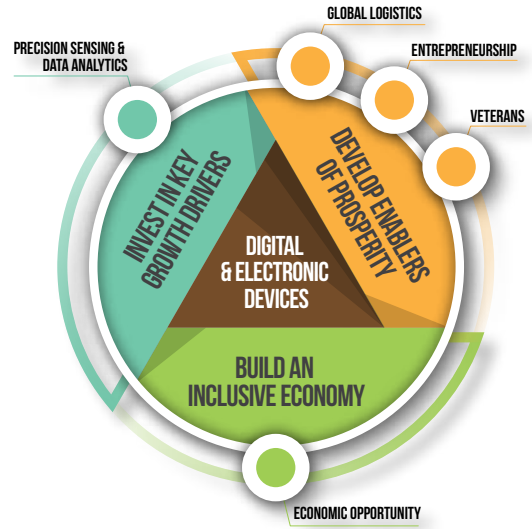
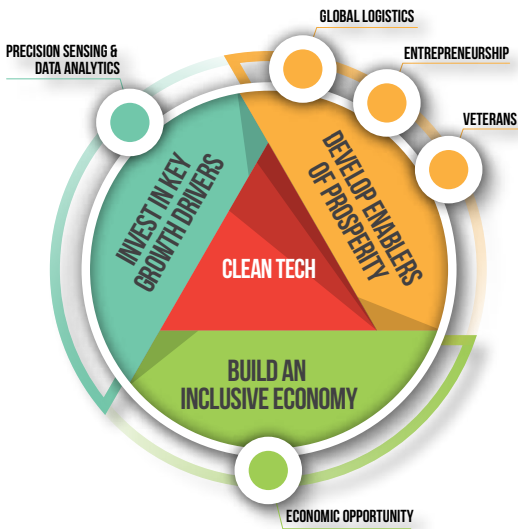
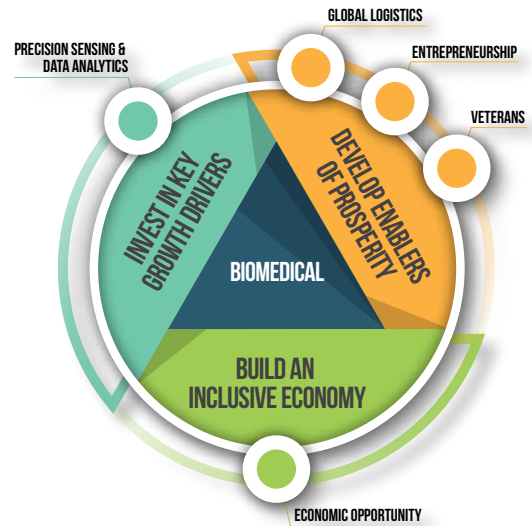
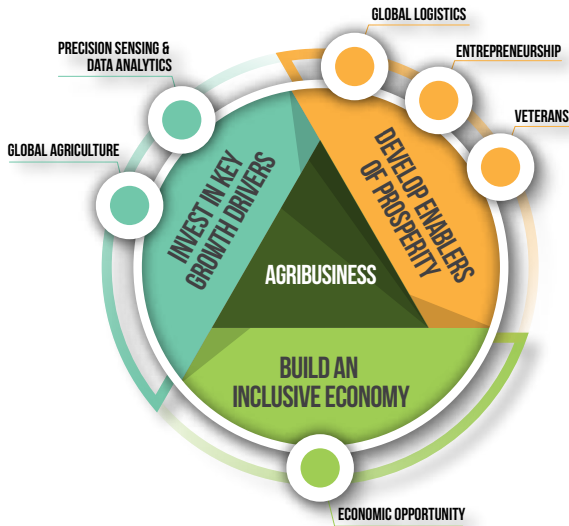
ALIGNMENT OF STRATEGIES

Each of the proposed seven strategies has been designed to foster economic growth if pursued individually. However, these strategies were selected and built around their ability to meet each of the region’s three overarching goals: investing in drivers of growth, strengthening enablers of shared prosperity, and building an inclusive economy. The visual below shows how one strategy, the development of a global manufacturing and logistics hub, relates and could accelerate growth throughout many of the region’s key sectors and areas of focus.



Alignment with Key Industry Concentrations

Each strategy also drives investments and innovation that can directly impact the region's key industry concentrations:



KEY:



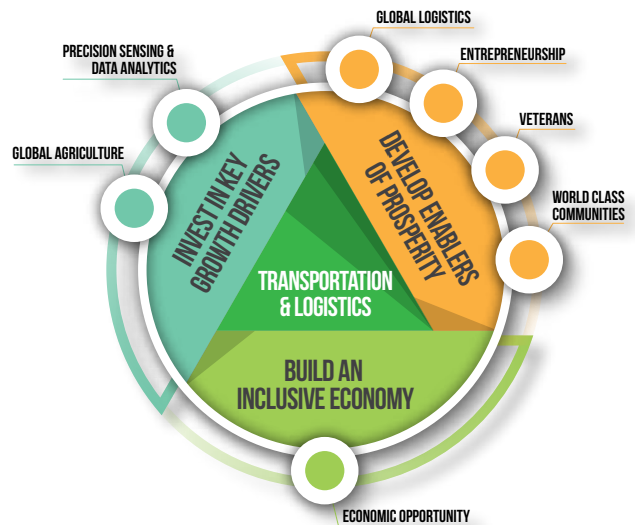
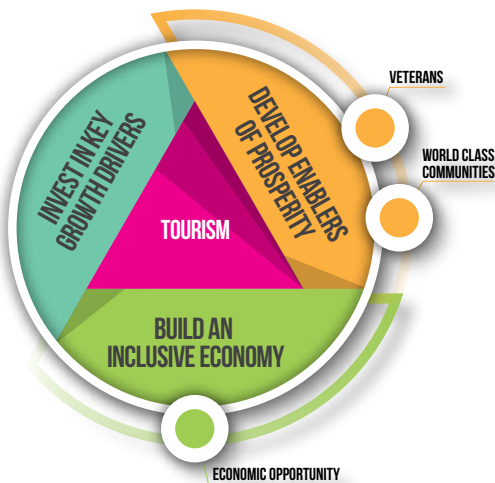
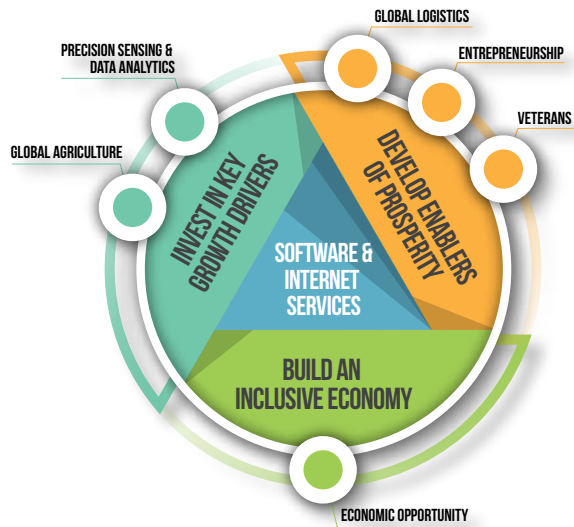
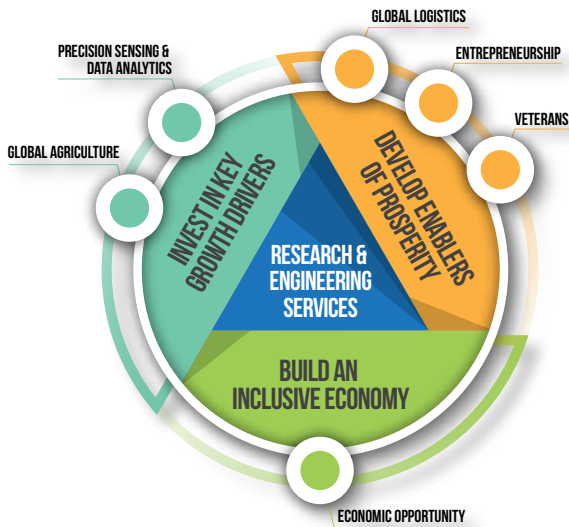
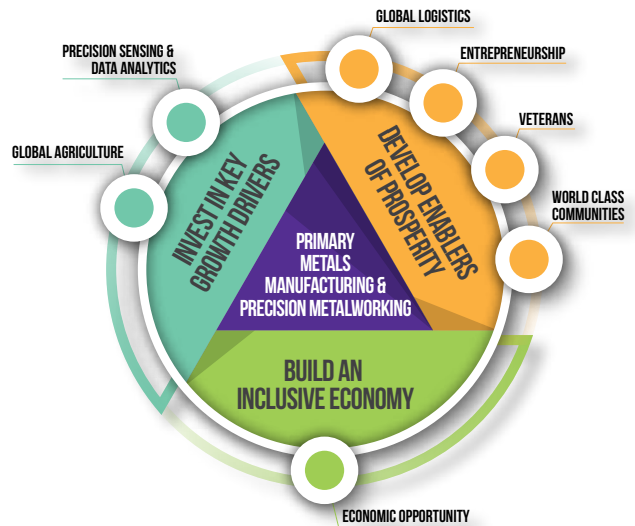
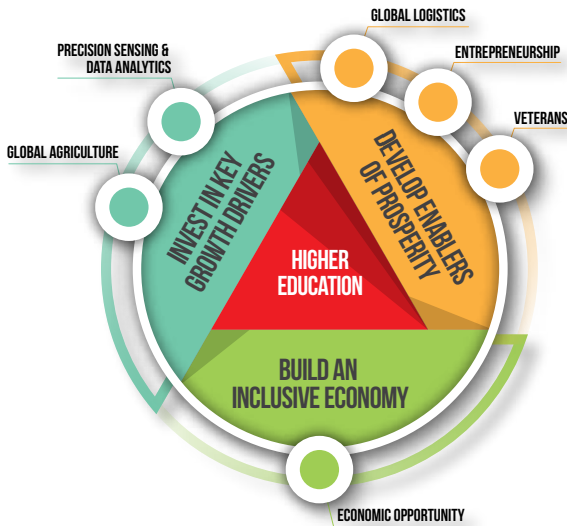
INDUSTRY



KEY PILLARS OF ECONOMIC GROWTH



STRATEGY





The background features a complex network of thin lines and dots in various shades of blue and white, overlaid on a light blue gradient. Below this, there are large, low-poly geometric shapes in shades of green and blue, suggesting a landscape or terrain. The overall aesthetic is modern and technological.

CNY RISING

PART 2 INVESTMENT PROSPECTUS

INVESTMENT PROSPECTUS: INTRODUCTION

This Investment Prospectus recommends a series of Signature Investments the Central New York Regional Economic Development Council (CNYREDC) believes will significantly improve the economic trajectory of the region. They have been selected from more than 800 ideas, concepts, and projects submitted by business leaders, academic partners, and the public at-large over more than four months of intensive outreach and engagement.

Each initiative has been carefully vetted by the CNYREDC, its Upstate Revitalization Initiative (URI) work groups, economic development professionals, and national experts, and has been prioritized for investment because they:

- Align with demonstrated regional assets, expertise, and capabilities;
- Clearly connect to significant regional, national, and international market opportunities;
- Offer transformative impact in the form of new jobs, private-sector investment, improved economic competitiveness, and enhanced economic inclusion;
- Include tangible commitments from partners inside and outside of Central New York to assist with implementation through significant investments of human and financial capital;
- Advance multiple regional strategies articulated in Part 1;
- Have resounding support from the CNYREDC, local elected officials, and the region as a whole;
- Leverage or align with other New York State programs, investments and growth strategies already underway.

Central New York's Signature Investments:



1. Global Center for Unmanned Systems and Cross-Connected Platforms



2. New York-Grown, New York-Certified—Safe and Market-Ready



3. Global Manufacturing and Logistics Hub



4. National Veterans Resource Complex



5. Consensus Commission on Government Modernization



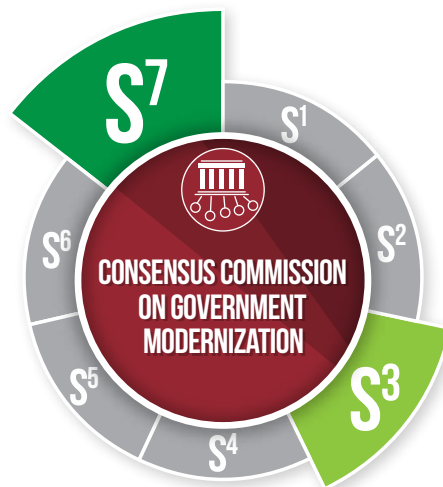
6. Alliance for Economic Inclusion

Strategies Key

The chart at right indicates how strategies are linked to the recommended Signature Investments.

- S1** ESTABLISH THE REGION AS A GLOBAL CENTER FOR THE RESEARCH, DEVELOPMENT, AND MANUFACTURING OF **PRECISION SENSING TECHNOLOGIES AND DATA ANALYTICS**
- S2** STRENGTHEN THE REGION'S **AGRIBUSINESS** SECTOR TO MEET THE GROWING GLOBAL DEMAND FOR SAFE AND HIGH-QUALITY FOOD AND NUTRITION
- S3** CULTIVATE AN **INCLUSIVE REGIONAL ECONOMY**
- S4** MAKE CNY A **MAGNET FOR VETERANS** AND THEIR FAMILIES
- S5** CONTINUE TO GROW AND INVEST IN A **GLOBALLY COMPETITIVE ECOSYSTEM FOR INNOVATION AND ENTREPRENEURSHIP**
- S6** DEVELOP A CONNECTED AND **MODERN TRANSPORTATION AND LOGISTICS SYSTEM**
- S7** BUILD WELCOMING AND CONNECTED **WORLD-CLASS COMMUNITIES**

Signature Investments and Strategies



- DIRECTLY LINKED TO SIGNATURE INVESTMENTS
- INDIRECTLY LINKED TO SIGNATURE INVESTMENTS



SIGNATURE INVESTMENT #1 — GLOBAL CENTER FOR UNMANNED SYSTEMS AND CROSS-CONNECTED PLATFORMS

Vision

Position Central New York as a global center for the development of Unmanned Aerial Systems (UAS) and their safe integration into commercial airspace by creating the first certified traffic management system in five years for managing drones and these systems. Become the driving force behind the UAS industry by partnering with NASA and the FAA, and by leveraging the FAA's designated UAS test site in New York State, the high-tech corridor from Buffalo to Albany, and Central New York's expertise in precision sensing and data analytics.

Successful execution of these industry-leading UAS programs will position Central New York to pursue other emerging growth markets focused on the totality of the unmanned systems market and cross-connected platforms for the Internet of Things (IoT), which are the systems and processes by which these devices communicate with each other.

Investing for Success

Over five years, the CNYREDC expects to invest an estimated **\$250 million** in making the region a global center for Unmanned Systems and Cross-Connected Platforms.

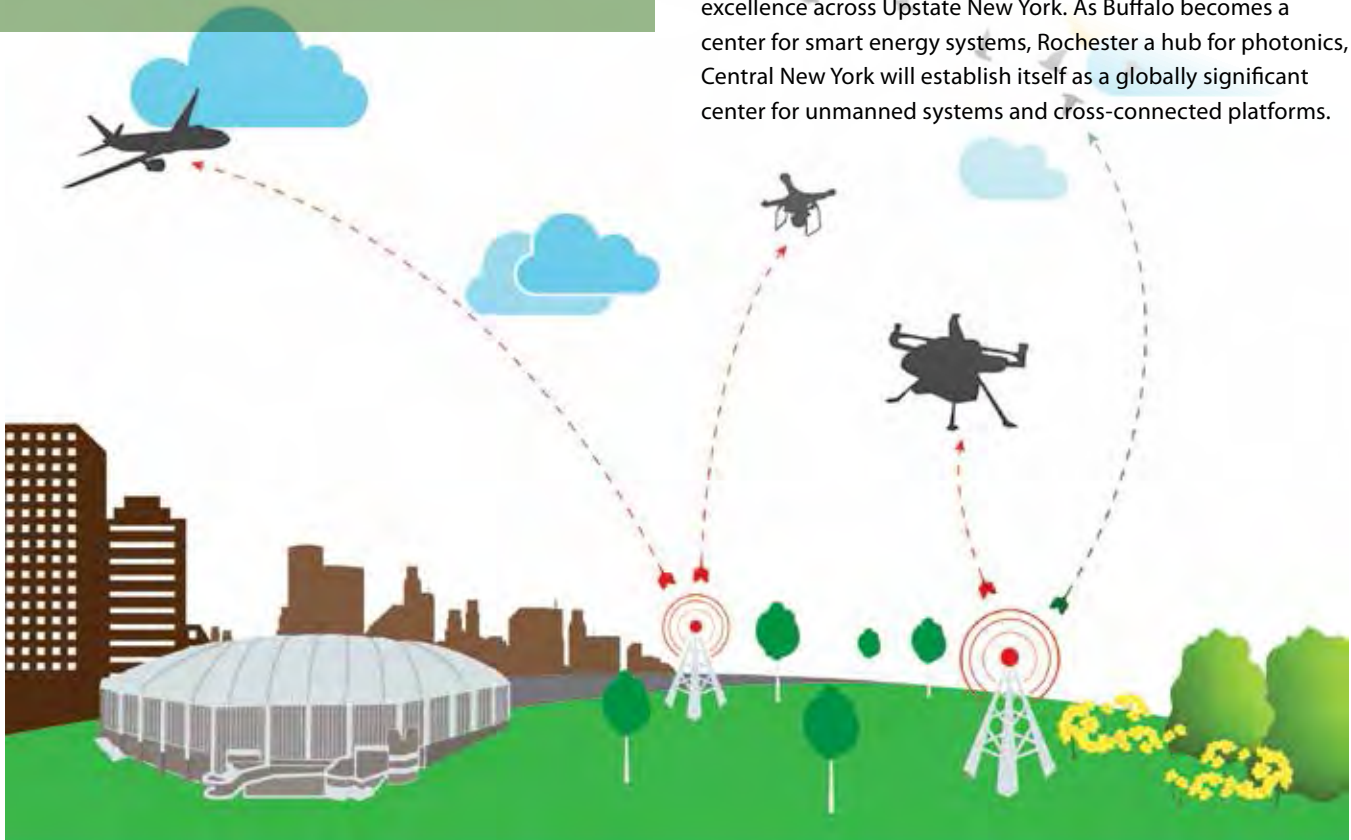
Central New York's Opportunity

Two converging factors led to the council's identification of this transformational opportunity for Central New York and the Mohawk Valley. First, deep analysis of the region's technology strengths uncovered strong capabilities in sensing and autonomous decision making, referred to as "data to decisions." Second, a set of regional industries in the unmanned systems sector collectively applied for and won an FAA designation to form a UAS R&D test site in the region (one of only six in the nation). The nexus of these opportunities positions the region to compete successfully for market leadership in larger unmanned systems and cross-connected platforms.

As the visual on page 57 indicates, unmanned systems and cross-connected platforms are elements of the larger IoT.

Estimated to reach a market size of \$10 trillion in the next 10 years, the IoT is one of the most disruptive forces in the technological landscape today.

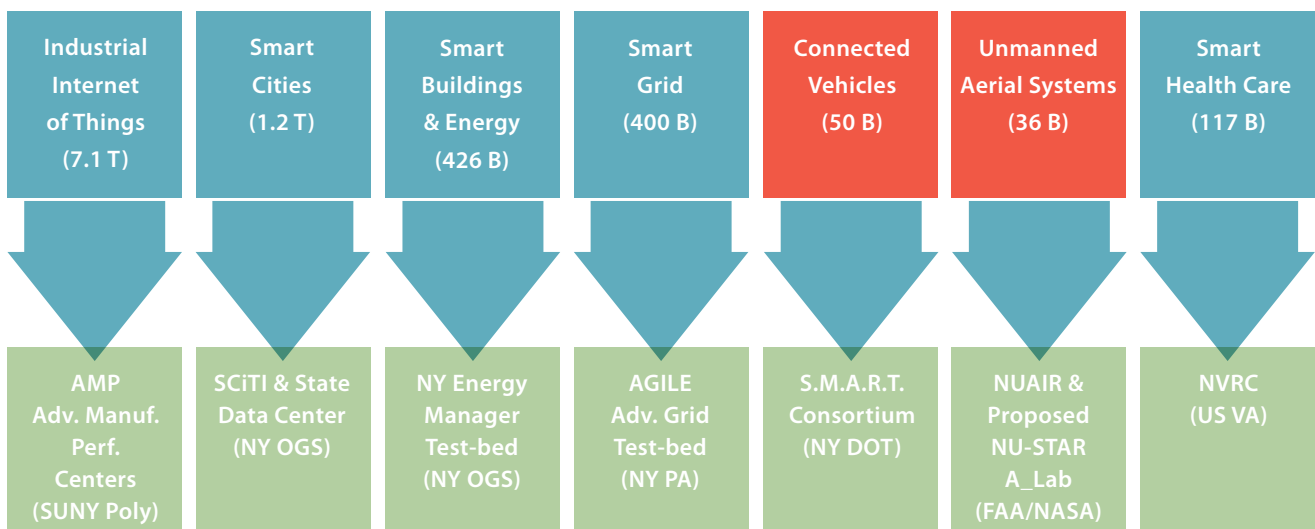
Importantly, competing in the IoT has become a statewide economic development blueprint for New York State, as SUNY Polytechnic and other leading research institutions are establishing regionally specific technological centers of excellence across Upstate New York. As Buffalo becomes a center for smart energy systems, Rochester a hub for photonics, Central New York will establish itself as a globally significant center for unmanned systems and cross-connected platforms.



CORE CAPABILITIES

- Experienced Consortia Management (SUNY Poly-EMATECH)
- Device Fabrication (SUNY Poly STC, AIM Photonics, NY-PEMC, PVMC, AMS)
- Data Analytics (Buffalo Information Tech Innovation & Commercialization Hub)
- Cyber Security (Rome Lab Trusted Cyber-Nano Consortium)
- Standards & Certifications: Underwriters Laboratory & SEMATECH

Internet of Things (IoT): A \$10 Trillion Cross-Platform Market Opportunity



NYS Public-Private Partnerships



Unmanned Systems

Often referred to as unmanned vehicles, the larger unmanned systems industry encompasses the full set of needs required to safely and effectively operate a vehicle, including control systems, sensor platforms, communications techniques, and telemetry technologies, etc. Applications of these technologies could ultimately touch fields as diverse as precision medicine space exploration, but are most immediately expected to address:

Several regions in the United States are positioning themselves to be leaders in the UAS field. Some, like Central New York, are home to FAA test sites, and others have a rich heritage in aviation. Regions within Texas, North Dakota, and Ohio, for example, have received some state and/or private funding. However, to date, no region has secured the level of funding, coordination and strategic partnerships required to solve this national and international challenge and unlock the large-scale economic benefits of unmanned aerial systems, until now.

Unmanned Ground Systems	Unmanned Air Systems	Unmanned Maritime Systems
<ul style="list-style-type: none"> • Autonomous Cars • Snow Removal • Garbage Collection • Search And Rescue • Ambulatory • Warehousing • Road Maintenance 	<ul style="list-style-type: none"> • Precision Agriculture • Critical Infrastructure Inspection and Protection • News and Journalism • Firefighting • Search and Rescue • Construction and Landscaping • Delivery and Logistics 	<ul style="list-style-type: none"> • Port and Harbor Management • Science and Exploration • Search and Rescue • Environmental Monitoring • Shipping

• Unmanned Aerial Systems (UAS)

UAS technology is widely expected to be the next revolution in worldwide civil aviation. It is estimated that the industry will create 103,776 new jobs and nearly \$100 billion in new economic activity by 2025. UAS will transform how businesses and government agencies perform their daily missions. By excelling in a rapidly emerging industry, New York State, specifically led by the Central New York and Mohawk Valley regions, is poised to take the lead and drive the national economy.

However, the industry currently lacks standards, regulations and a traffic management system that will allow safe integration of multiple vehicles in the same airspace Beyond Visual Line of Sight (BVLOS). BVLOS operation will enable the industry to recognize the full economic benefit for most applications (such as: product delivery, precision agriculture, pipeline inspection, etc.). There currently is no clear path or funded program to solve the challenge of safely integrating UAS into the national airspace system (NAS) for BVLOS operations. A key aspect of safe integration of UAS is a system that can protect critical infrastructure from rogue drones/UAS and ensure that privacy of citizens is guarded.



An LSTAR radar at the NUAIR UAS test site, in Rome, part of the site’s range instrumentation system providing real-time position data for inbound and outbound UAS, will aid in conducting Beyond Visual Line of Site UAS flights. Photo courtesy of the NUAIR Alliance.

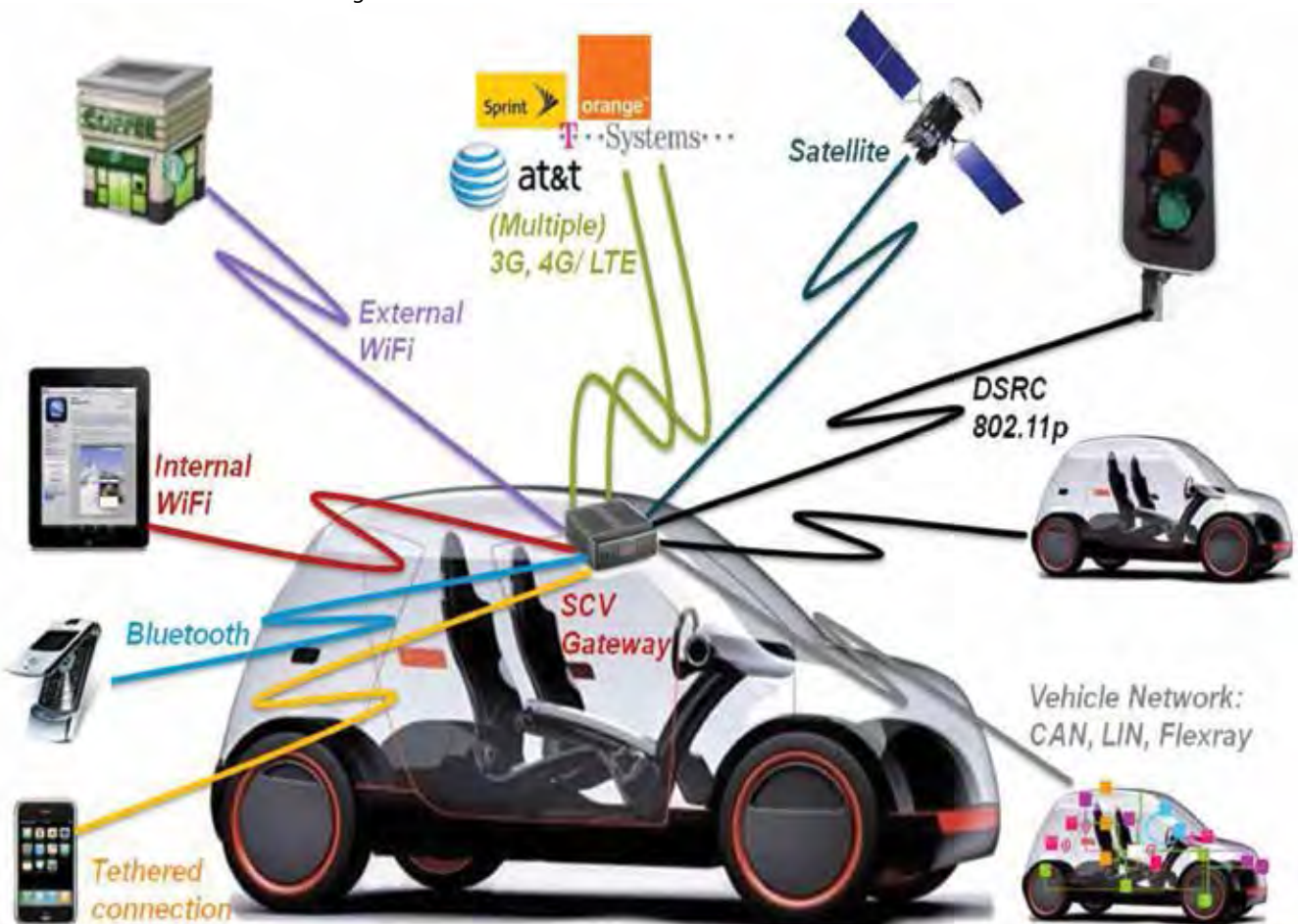
• **Unmanned Ground Systems (UGS)**

The global connected car market is forecasted to reach \$141 billion by 2020, growing at a compound annual growth rate (CAGR) of more than 32 percent. The integrated connectivity solutions segment of this market is expected to emerge as a preferred connectivity solution for connected cars, surpassing the embedded connectivity solutions segment in 2016. Within the connected car market are autonomous cars.

The National Highway Traffic Safety Administration defines vehicle automation as having five levels:

- No-Automation (Level 0): The driver is in complete and sole control of the primary vehicle controls at all times.
- Function-specific Automation (Level 1): Automation involves one or more specific control functions. Examples include electronic stability control or pre-charged brakes.
- Combined Function Automation (Level 2): Involves automation of at least two primary control functions designed to work in unison to relieve the driver of control of those functions. An example of combined functions enabling a Level 2 system is adaptive cruise control in combination with lane centering.

- Limited Self-Driving Automation (Level 3): Vehicles at this level of automation enable the driver to cede full control of all safety-critical functions under certain traffic or environmental conditions and in those conditions to rely heavily on the vehicle to monitor for changes in those conditions requiring transition back to driver control. The driver is expected to be available for occasional control, but with sufficiently comfortable transition time. Google’s self-driving car is an example of limited self-driving automation.
- Full Self-Driving Automation (Level 4): The vehicle is designed to perform all safety-critical driving functions and monitor roadway conditions for an entire trip. Such a design anticipates that the driver will provide destination or navigation input, but is not expected to be available for control at any time during the trip. This includes both occupied and unoccupied vehicles.



Unmanned Ground Systems are increasing in their capabilities and complexities. Soon, cars will be able to drive themselves, offer their passengers Wi-Fi and communicate with traffic systems. Graphic source: <http://postscapes.com>.

- **Unmanned Marine Systems (UMS)**

Underwater unmanned vehicles have occupied the public imagination ever since their pivotal role in discovering the wreck of the Titanic. Since then, they have been used for scientific purposes to study, map, and explore the world's oceans. Major future uses of these vehicles are expected in seabed mapping and oceanographic environmental study. Advances in miniaturization have made these systems increasingly attractive for deep-water exploration, anti-submarine warfare and surveillance activities.

Cross-Connected Platforms

Central New York can establish a foothold in the IoT market by building a network and supply chain of businesses, institutions, technologists, and startups around the unmanned systems and connected platforms industries.

While UAS and UGS offer specific and immediate application-based opportunities for integrating IoT innovations, Central New York recognizes the larger opportunity present in cross-connected platforms. All industries touched by IoT disruptions will have to solve the problem of the standards these systems use to cross connect and communicate with each other. For example, UAS and UGS vehicles will need to be able to interact with their control systems, other vehicles in the sky and on the ground, and other obstacles they meet.

Equally important, each platform must be able to operate in a manner secure from cyber attacks. The number of connected devices alone is estimated to be between 20 and 50 billion by 2020, with a market value estimated to grow from \$655 billion today to \$1.7 trillion in 2020. Yet, the challenge is that in many cases, the IoT has not been designed with adequate security. Not a day goes by without reports of security vulnerabilities and active hacks making data assurance a prime area for innovation and investment. The explosive growth created by the IoT offers a massive market opportunity for any region looking to reposition its economy, especially one with the technological and analytic capabilities of Central New York.

Approach

Today, Central New York and the Mohawk Valley are best positioned to successfully execute and lead world-class innovations for UAS by **building a corridor of activity, assets, businesses, and researches between the two regions**. These regions are home to regional UAS assets and world-leading avionics/UAS expertise, including:

- **NUAIR**—one of only six FAA-approved research and development test sites for the integration of UAS into the NAS.
- **Industry**—Companies such as Gryphon Sensors, SRC, Lockheed Martin, Saab-Sensis, and C&S Companies have a history of building sophisticated sensor systems for the detection and tracking of small aerial vehicles and longstanding successful relationships with the FAA and NASA.
- **Academia**—First rate institutions that can contribute significantly to the many UAS aligned areas of research required, including Syracuse University, SUNY Polytechnic, Cornell University, Massachusetts Institute of Technology, Clarkson University, SUNY College of Environmental Science and Forestry, SUNY Oswego, Onondaga Community College, and Rochester Institute of Technology.
- **U.S. Air Force 174th Attack Wing**—The wing has been flying MQ-9 reapers since 2009 and conducts training for the Air Force for UAS pilots from all over the world (surpassed 30,000 hours of Platform Academics in 2014).
- **Environment and climate**—New York State offers a diverse geographical and climate conditions to prove safety under all conditions.
- **Regional expertise that spans:**
 - Airborne and ground sensors
 - Critical detect and avoid algorithms and solutions to solve the BVLOS challenge
 - Certified surveillance and Air Traffic Management (ATM) systems
 - World-class manufacturing facilities and capabilities
 - Cyber security
 - UAV platforms
 - Spectrum management for UAS communication and control networks.

Central New York is prepared to invest in the pursuit of market dominance in UAS, yet will do so in a manner that positions it for the larger unmanned systems and cross-connected platforms industries. These investments should be further leveraged with New York State's emerging technology corridor from Buffalo to Albany to pursue additional opportunities for the IoT.

1. Unmanned Aerial Systems

Project UAS Secure Autonomous Flight Environment (U-SAFE) will accelerate the integration of small UAS, operating at low altitude (below 500 feet), into the national airspace system. This five-year program will bring key government stakeholders, academia and industry partners to Central New York for the development and eventual fielding of the first certified, low-altitude UAS Traffic Management (UTM) system beyond the visual line of sight.

- **UTM**

UTM is a nation-wide initiative being researched and led by NASA. Working alongside NASA and supported by the FAA are more than 125 collaborators providing expertise in a variety of technologies and capabilities necessary to develop a UTM system. Central New York will work closely with the FAA, NASA and a local and national industry team to develop the critical safety cases that will lead to certification of these systems. The UTM system developed, certified and deployed in Central New York, will be a highly sought-after model for the nation and the world.

- **National Unmanned Aerial System Standardized Testing and Rating (NU-STAR) facility**

Another key component of Project U-SAFE is the capability to perform UAS airworthiness and cyber security certification testing. In such a young industry, standards are lacking for UAS airworthiness and certification. NASA will be engaged in the design and development of the NU-STAR facility.

NU-STAR will be a world-leading, state-of-the-art UAS test facility that will have a lasting presence in Central New York for decades. Any UAS provider that desires to fly its vehicle in the NAS will come to NU-STAR for certification testing, attracting entire industries to locate in close proximity to the facility. NU-STAR will also service customers' needs, such as testing model scale wind turbines, airplanes, industrial complexes, individual buildings, transmission lines, and cyber certifications, among others.



Photo courtesy of the NUAIR Alliance

2. Unmanned Ground Systems

- **Autonomous Ground Vehicle Test Bed**

The autonomous ground vehicle test bed will be one of the few facilities in the nation, and the only one built in alignment with Unmanned Aerial Vehicle testing needs, to enable the design and testing of heavy and light autonomous ground vehicles in real world controlled settings to overcome numerous existing challenging environments. These challenging environments include work zones and low visibility conditions caused by bad weather (snow, rain, fog, etc.). Currently, Level 3 and Level 4 autonomous ground vehicles are unable to function in these dynamic conditions because Global Navigation Satellite System (GNSS) is often unreliable to enable applications that require lane level accuracy.

- **Next Generation Physical and Digital Infrastructure**

The autonomous ground vehicle test bed's unique value will include establishing the next generation physical and digital infrastructure to enable a fully cooperative system of ground autonomous vehicles and physical infrastructure elements necessary to overcome challenging environments. This will include the design and testing of cutting edge sensors to enhance existing physical infrastructure. SUNY Poly is developing next generation Lidar and automotive MEMS sensors that will be integrated into the physical infrastructure of the autonomous ground vehicle test bed which provides an immediate new market for this emerging technology.

3. Cross Connected Platforms

- **Assurance Lab (A-Lab)**

Developed in tandem with the NU-STAR facility, the A-Lab will focus on testing, certification, design, and remediation services for IoT, with an initial focus on unmanned systems. Capabilities at the A-Lab will be developed to work within the precision and personalized medicine, wearables, and devices industry.

The core activity of A-Lab will be the test and certification of IoT devices for compliance to various levels of standards for security, privacy and availability. A-Lab certification will become a respected brand to convey trust in the products which bear its seal. Since there are no widely accepted standards or testing protocols, the A-Lab will participate in their development with leading standards bodies and will develop proprietary testing protocols for its own use. Testing approach will be tailored to the risk level for the products intended use as well as its design maturity. Basic levels of testing services may include Web interface and network security, authentication/authorization, transport encryption, privacy protection, Cloud interface security, wireless interface security, side channel vulnerability, security configurability, Software/Firmware update security and physical security, including anti-tamper and data at rest.

4. Additional Assets Leading Industry Innovation and Policy

Central New York will invest in and build a Drone Innovation Zone to seed and accelerate the growth of unmanned systems-focused business startups. Further, the region will establish a law and policy institute with Syracuse University that will be dedicated to developing unmanned systems regulation and policy. Finally, investments will be made in an autonomy school that will focus on research, development, testing, and deployment of autonomous aviation systems and eventually expand to include autonomous marine and ground systems.

Anticipated Outcomes: Project U-SAFE (first five years of operation)

Startups created	100
Estimated total jobs created by firms attracted to the region	479
Total firms attracted to the region	49
Estimated private investment leveraged	\$758,000,000

POTENTIAL COLLABORATORS

Federal

ASSURE FAA Center of Excellence

NASA

Department of Commerce

Department of Defense

Department of Energy

Department of Homeland Security

Department of the Interior

Department of Justice

Department of Transportation

Defense Advanced Research Projects Agency

Corporate

3DR

Aerovionment

Airmap

Airware

Airways Corp New Zealand

AT&T

Boeing Insitu

C&S Companies

Cicso

CNN

Consumer Electronics Association

DJI

Drone Deploy

Gryphon Sensors

Higher Ground

Intel

Lockheed Martin

Matternet

Measure32

Motorola

National Grid

Nokia

Precision Hawk

Pyramid Networks

Qualcomm

Saab-Sensis

Simulyze

Smart C2

SRC Inc.

Travelers Insurance

Yamaha

Verizon

Universities and Regional Partners

CenterState CEO

Clarkson University

Cornell University

Massachusetts Institute of Technology

NUAIR Alliance

Onondaga Community College

Rochester Institute of Technology

SUNY College of Environmental Science and Forestry

SUNY Oswego

SUNY Polytechnic Institute

Syracuse University

University of Oklahoma



SIGNATURE INVESTMENT #2 — NEW YORK-GROWN, NEW YORK-CERTIFIED—SAFE AND MARKET-READY

Vision

Establish a strong consumer preference for Central New York agricultural products grown locally and certified as safe and nutritious to respond to growing domestic and international demands for nutrition and food safety. Build a powerful brand identity—within the region to around the globe—utilizing the region’s natural resources and innovative technology to strengthen the state’s dairy, fruit and vegetable industries and enhance the region’s overall rural economy. These efforts will result in increased food production and processing, rapid sales growth and job creation.

Investing for Success

Over the next five years, the CNYREDC expects to invest an estimated **\$50 million** in New York-Grown, New York-Certified projects.

Central New York’s Opportunity

Agriculture has been a cornerstone of the Central New York and Upstate economy for more than 200 years. It has maintained the vitality of the region’s rural communities, provided food for urban and metropolitan areas, and offered tourism opportunities for visitors. Within Central New York are more than 3,500 farms and over than 200 food processing companies employing nearly 4,000 people. Statewide, production agriculture and food processing contributes more than \$53 billion annually to New York’s economy. From a transactional viewpoint, the scope and scale of agribusiness projects in the region has been significant in the past five years with more than \$350 million in capital investments. These investments have created a stronger agriculture sector and supported the growth of the region’s export economy.

On a global scale, the food and beverage industry has also witnessed significant growth over the past five years. This trend is expected to continue, reaching approximately \$5.8 trillion in 2017 with a CAGR of 5 percent in the next five years. Many experts consider the challenge of feeding the world’s population as one of the most critical in the 21st century and estimate that **humans will need to produce more food in the next 40 years than has been produced in the previous 10,000 years put together.**

With its natural resources, proximity to the world’s largest consumer markets, new investments in logistics and transportation assets, education and research base, and supportive technology and industry sectors, agribusiness within Central New York is positioned to build off its historic strengths by investing in major agricultural growth opportunities through Controlled Environment Agriculture (CEA) and aseptic/extended shelf life products. These opportunities are driven by compelling factors such as:

- The rise of the global middle class and increasing demand for protein-rich, nutritious and safe U.S.-produced food. The lack of widespread refrigeration in emerging markets means that most of these food products have to be processed, packaged and delivered in a way that keeps them fresh and safe. This can be accomplished through aseptic packaging processes;
- New York State’s position as a national dairy center and a leading producer of fluid milk in the United States. Dairy is the largest category (54 percent) for aseptic beverages and is expected to increase by 7 to 9 percent CAGR from 2010 to 2020;
- The persistent and ongoing drought in California is severely limiting outdoor production of leafy greens and creating new markets for indoor production in closer proximity to northeast U.S. CEA consumer markets; and
- The average greenhouse operation in New York has 26,000 square feet in a controlled environment, compared to the U.S. average of 48,000 square feet.
- The nexus between regional technology and industry strengths such as sensors, data analytics, unmanned systems and agriculture.



Approach

Central New York will **capture the global demand for safe and nutritious food** by investing in three main pillars. These pillars support and align with investments that have been made in the industry and are a direct reflection of the growth needs of private partners. They also align directly with another Signature Investment, the Global Manufacturing and Logistics Hub:



1. Extending the Growing Season: Controlled Environment Agriculture Facilities

Central New York will build multiple CEA facilities throughout the region, which could cover hundreds of acres. CEA is the science of computerized precision agriculture in controlled environments. CEA facilities combine industry-standard greenhouse technology with computer controls and automated cultivation, harvest and processing systems. A major component of these CEA facilities will be sensing technology to measure and control variables such as temperature, light, humidity, air pressure, nutrients, water and carbon dioxide. Included in the facility are areas for plant propagation, process, packing, refrigeration, shipping and receiving. Associated facilities would also be needed for waste stream receiving and separation and potentially installation of renewable alternative energy systems. This initiative will also include the construction of adjacent processing plants that will take a portion of the production and add value by packaging the inputs into high demand consumer products such as ready-to-eat salads for retail and restaurant customers.

Successful Model:

Central New York bases this approach on successful facilities in the Province of Ontario, Canada, which has already leveraged CEA to produce fruits and vegetables. Ontario has 17,300 employees working in these facilities that represent \$2 billion in structure costs. This industry produces \$125 billion in products that reach consumers through restaurants, farmers’ markets, and supermarkets.

2. Extending Shelf Life: Aseptic Packaging Plant

Given ever-increasing demand for safe, extended-shelf life products, the U.S. Dairy Export Council has identified seven new plant projects across the globe—primarily in Australia, New Zealand, Ireland, and Germany—but noted that these plants’ combined output is still insufficient to meet projected demand. Aseptic technologies ensure food and packaging materials are free from bacteria. They require commercial sterility.



Photo courtesy of Byrne Dairy

Construction of an aseptic dairy plant in Central New York will position the region to serve fast-growing overseas markets in regions such as Africa, the Middle East and South America. The plant will be designed and built to accommodate non-dairy aseptic products such as fruits, vegetables, and juices. The packaging plant will be able to bring goods to global markets efficiently and cost effectively through the buildout of the Central New York Global Manufacturing and Logistics Hub.



3. Building a Brand Identity: Grown in NY Certification

A key reason for the explosive recent growth in food exports from the United States is the global desire for food proven to be nutritious and safe. Food safety challenges abound in countries with fast-growing middle classes, such as China and India, that are willing to pay a premium for products they know to be healthy and safe. As part of its overall initiative to meet the global demand for food, our government and agriculture partners in Central New York will collaborate to develop a certification system for food made and processed in New York. The certification will use the state’s sizable global name recognition to let consumers know that a product grown in New York is not only safe to eat, but is also of the highest quality available on the market. Central New York will partner with leading food safety experts from Morrisville State College and Cornell University to build and launch this brand.

POTENTIAL PARTNERS

- Advanced Food Products
- CEA Fresh Farms
- Cornell University
- Dairy Farmers of America
- Georgia Tech Research Institute
- Morrisville State College
- Ohio Agricultural Research and Development Center of The Ohio State University
- Tetra Pak
- University of Akron

Anticipated Outcomes: Controlled Environment Agriculture (first five years of operation)

Total jobs created in facilities	339
Total acres of controlled environment farmland	150
Estimated value of goods produced per year	\$233,350,000
Total pounds of leafy greens produced per year	5,000,000
Total pounds of tomatoes, peppers, and cucumbers produced per year	32,500,000



SIGNATURE INVESTMENT #3 — GLOBAL MANUFACTURING AND LOGISTICS HUB

Vision

Central New York will become Upstate New York’s leading logistics hub for accessing global markets, dramatically reduce the cost to New York State exporters of getting goods to international destinations, and create and support thousands of good-paying jobs in the transportation, warehousing, manufacturing, and agricultural sectors.

Investing for Success

Over five years, the CNYREDC expects to invest an estimated **\$40 million** in establishing a Global Manufacturing and Logistics Hub.

Central New York’s Opportunity

As the global middle-class emerges, accessing growing overseas markets has been a major priority for Central New York. In recent years, the region has partnered with the Mohawk Valley and the Brookings Institution to develop a Metropolitan Export Initiative. A major recommendation of this report was the development of an inter-modal transportation system that would position the region to capitalize on the significant expansion of the Panama Canal, which is slated to be completed in 2016.

This expansion creates significant challenges for New York State, as evidenced by increased congestion at The Port of New York and New Jersey. A recent Journal of Commerce story noted that “the

biggest impact by far in terms of congestion is being felt in the two largest port complexes, Los Angeles-Long Beach and New York/New Jersey.” On average, The Port of New York and New Jersey lifts 4,295 containers on and off mega-ships per vessel, which chokes the port’s ability to move containers from ships to trucks.

One solution that has been effectively demonstrated in other states is to use rail rather than truck to move the containers to a remote yard—or inland port—where they can be processed.

On-dock rail operations can move cargo on and off container terminals 50 percent faster than equivalent movements from a ship to a truck. An opportunity exists to develop an inland port in Central New York.

Located within 500 miles of more than 100 million people, Central New York is already home to more than 13,000 transportation jobs and has experienced sustained growth in recent years despite the impacts of the recession. These jobs pay wages that are higher than the regional average and workers are more productive than national averages for logistics jobs. Importantly, these positions have a relatively low barrier to entry, providing greater access to economic opportunity for residents from across Central New York.



However, one of the central challenges for the region’s agricultural producers and manufacturers is the need to move goods to global markets in an efficient and cost-effective manner.



An inland port offers significant opportunity to provide faster and more efficient freight movement between Central New York and the Port of New York and New Jersey by using rail, rather than trucks. Rendering courtesy of the Port of Oswego.

Through targeted investments, the region will leverage its natural assets, including geographic location, highway and rail systems, access to abundant water and electricity, and geological and geographical environmental stability. These investments will serve to create jobs in Central New York, improve the economic competitiveness of Upstate New York’s exporters, relieve congestion at The Port of New York and New Jersey, and provide significant environmental benefits in the form of emissions reductions to help New York State achieve its ecological goals.

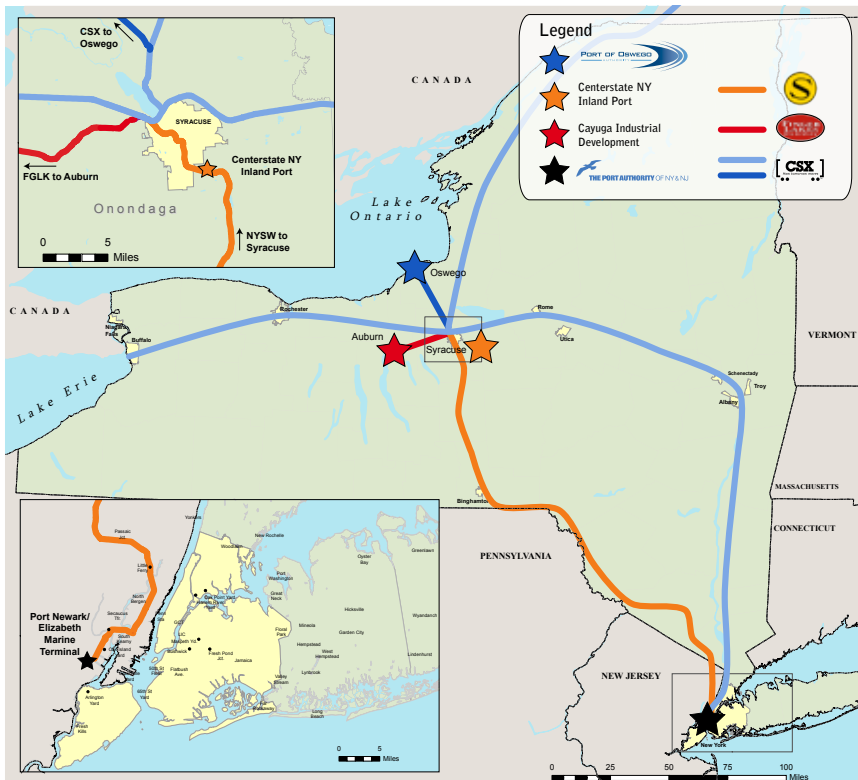
Approach

The Global Manufacturing and Logistics Hub will leverage underutilized regional assets including a 345-mile short-haul rail line and a 225-acre mining facility in need of site reclamation to **provide faster, safer, more economical, and more ecological freight movement between Central New York and The Port of New York and New Jersey.**

By integrating a new, strategically located inland rail port with a warehousing, distribution, and manufacturing hub, Central New York will provide centralized freight transportation capabilities and offer value-added logistics capabilities, with the capacity to greatly enhance manufacturers’ storage and inventory management capabilities.

Syracuse is strategically located to solve this congestion challenge as it is served directly by the New York, Susquehanna and Western Railway line from The Port of New York and New Jersey. The proposed location of the hub near the intersections of Interstate 81, Interstate 481 and the New York State Thruway makes for easy access to the region’s main road infrastructure. The key component of the global manufacturing and logistics hub is the expansion of a 200-acre logistics facility that will offer a site to manufacture, containerize, warehouse, and ship freight between Central New York and The Port of New York and New Jersey. Expansion of the hub is expected to create 300 new jobs and 1,644 new jobs in surrounding manufacturing facilities.

Further, this project is expected to reduce shipping costs for regional manufacturers by 40 percent, thereby allowing for the provision of long-term jobs and career building, company and industry growth, and increases in exports in accordance with the CenterState New York Metro Export Initiative and Global NY strategy. It is estimated that this facility will divert up to 20,700 trucks to rail, which will significantly reduce carbon emissions and the wear and tear of roads and bridges. It has the added potential to enable the region’s deep-water port—the Port of Oswego—to serve as an emergency alternative port in the event of a New York City-area service disruption that disables The Port of New York and New Jersey and/or road access to it.

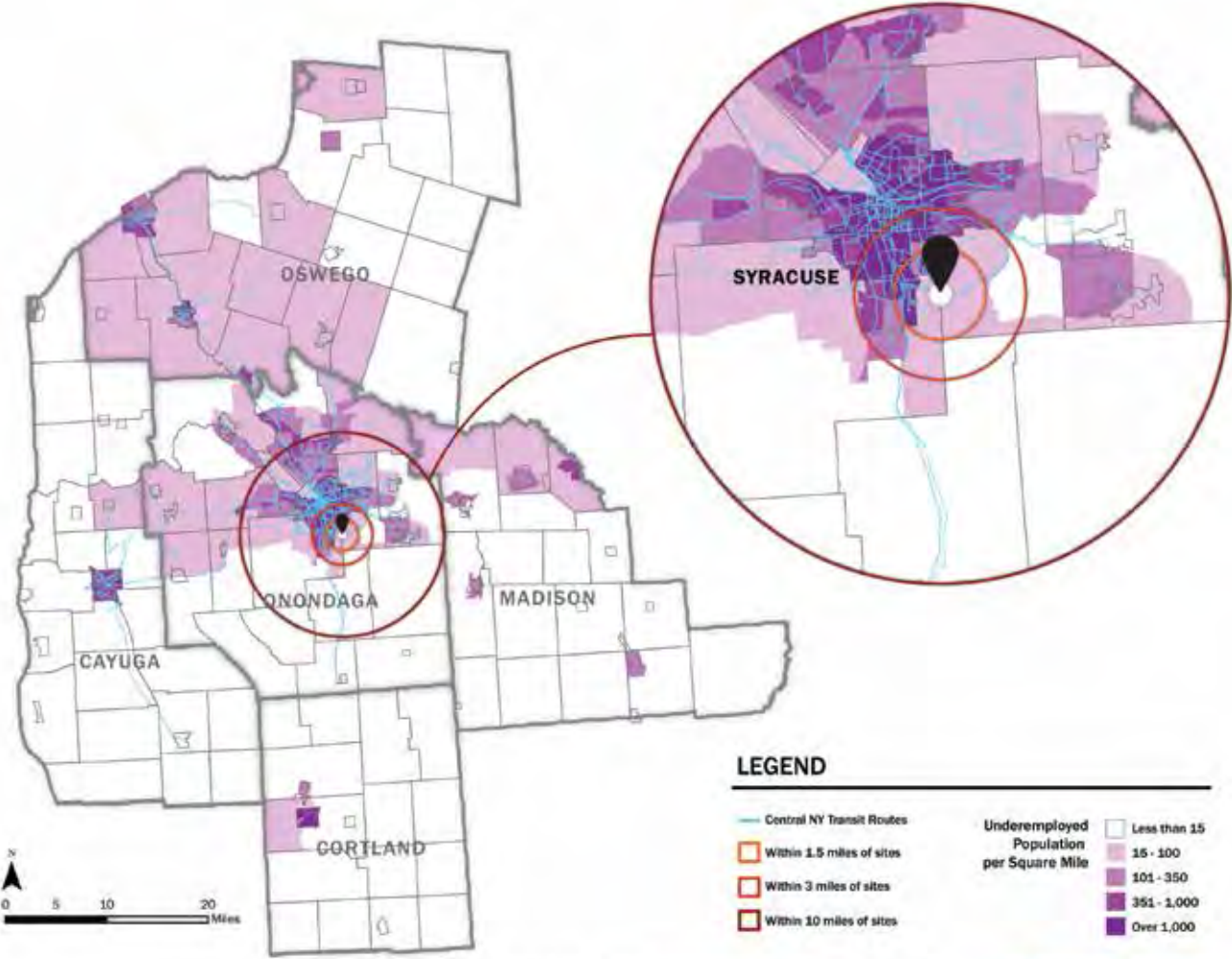


Anticipated Outcomes: CNY Global Manufacturing and Logistics Hub (first five years of operation)	
Total jobs created in the inland port facility	300
Total indirect jobs at surrounding warehouse and distribution space	1,644
Total square footage of warehousing and distribution space	2,000,000
Total number of trucks diverted to rail per year	20,700
Reduction in average shipping cost	40%

PARTNERS

- Hanson Aggregates
- Le Moyne College
- New York, Susquehanna and Western Railway
- Port of New York and New Jersey
- SUNY Oswego
- Work Train

- ### Potential Customers
- Dairy farmers
 - Mohawk Global Logistics
 - Perdue Agribusiness
 - Romark Logistics



Source: U.S. Census Bureau, American Community Survey, 5-year estimates (2009-2013).

UB Regional Institute

The positioning of the Global Manufacturing and Logistics Hub is critical to the region's goals to build an inclusive economy as it is within 10 miles of 54 percent of the region's underemployed individuals and less than three miles from the majority of distressed neighborhoods. The project is engaged with the Work Train program, which will provide training to underemployed individuals for new jobs in logistics and warehousing. Further, the hub can benefit from world-class logistics programs at SUNY Oswego, Le Moyne College, and Syracuse University.



SIGNATURE INVESTMENT #4 — NATIONAL VETERANS RESOURCE COMPLEX

Vision

Create the conditions to advance and solidify Central New York's standing as the nation's center of excellence for thought leadership, employment opportunity, research, training, and innovation related to the social, economic, and wellness concerns of America's service members, veterans and their families.

Investing for Success

Over five years, the CNYREDC expects to invest an estimated **\$12.5 million** to create Syracuse University's National Veteran's Resources Complex.

Central New York's Opportunity

More than 900,000 military veterans call New York State home, and an overwhelming percentage of those veterans live, work, and go to school in Central New York.

Upstate New York counts more than 60 percent of the state's military veterans as residents, a percentage that is expected to grow in the next decade

as more than 1.5 million service members make the transition from military to civilian life. It is clear that as a result of the region's close ties to Fort Drum (home to approximately 19,000 active-duty military members and 11,000 military spouses and military-connected children) and to major employers in the defense and technology sectors, Central and Upstate New York can emerge over the next decade as one of the most military-connected regions in the United States.

Importantly, this positioning represents a burgeoning opportunity for economic development, job growth, and inward investment in the region. Specifically, the proposed National Veterans Resource Complex (NVRC) will create the conditions necessary to build upon and solidify Syracuse University's ongoing effort to position Central New York as the nation's hub of research, programming, education, training, and entrepreneurship connected to the veteran and military sectors. The NVRC will also seed the conditions for future growth and employment opportunities for the region and the more than 206,000 veterans and military-connected families who call Central New York home.



Photo courtesy of Syracuse University Photography



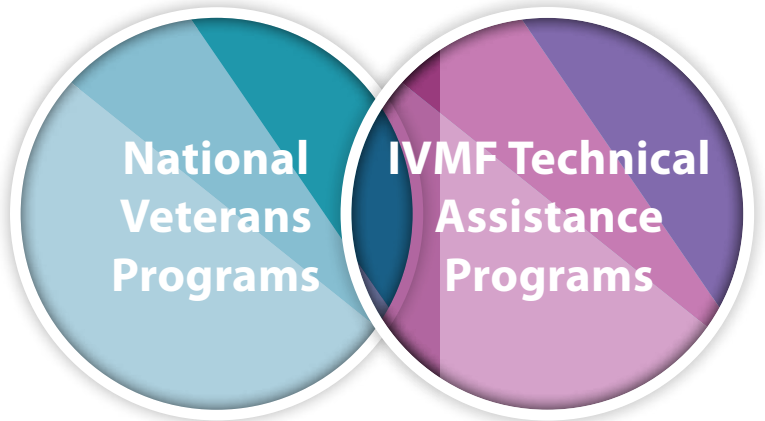
Syracuse University's veteran support programs and resources have gained significant attention at the federal level. At right, United States Secretary of the Army John McHugh meets with leadership from Syracuse University's Institute for Veterans and Military Families (IVMF). At left, IVMF hosts a roundtable discussion with United States Secretary of Defense Ashton Carter. Photos courtesy of Syracuse University Photography.

Veteran-focused research is one of the fastest growing elements of Syracuse University's research portfolio. Since 2010, the University has invested more than \$75 million in research and programming through its Institute for Veterans and Military Families (IVMF). This immense opportunity has also pervaded other research lines within the University and has resulted in \$19 million in new research awards in 2015 (accounting for 40 percent of all research activity at the University). Similarly, the vocational and skills training programs operated by IVMF have provided workforce-connected skills training to more than 30,000 service members and their families since 2014.

Approach

The NVRC will serve to anchor the IVMF as a Central New York institution. It will ensure that the jobs and federal/private-industry funding currently directed to the IVMF and Syracuse University's other military- and veteran-connected programs continue to support the economic engine of the Syracuse community and the region. The NVRC will be a University-community-regional collaboration, linking programs and initiatives to impact veterans and their families on the campus of Syracuse University, across Central New York, and in the United States. The facility itself will be purposefully designed as a community-convening hub and will be accessible to community organizations, as well as local and state government partners, to **facilitate programs, trainings, events, conferences, and initiatives to advance the social, educational, and economic situation of America's veterans and military families.**

At full deployment, the NVRC will consolidate a robust portfolio of the nation's premier military- and veteran-focused educational, vocational, and workforce skills training programs with the IVMF's current technical and community engagement programs.



- Veteran Career Transition Program
- Veteran Vocational Acceleration Program
- Entrepreneurship Bootcamp for veterans with Disabilities
- Veteran Women Igniting the Spirit of Entrepreneurship
- Boots2Business
- Entrepreneurship Transition Program
- VetNet Skills Training Program
- Partnership with the Robin Hood Foundation
- VA Support Services for Veterans and Families
- AmericaServes Community Network
- Get Skills to Work
- Veteran Advanced Management Degrees and Certificates

Finally, the NVRC will seed, nurture, and coordinate academic research and technology commercialization—across the full breadth of Syracuse University and the region’s research enterprise – in a coordinated, synergistic, and strategic program. These research areas and technology commercialization opportunities include:

- Clinical Psychology and Social Work
- Disability and Law
- Public Health
- Exercise Science
- Speech and Hearing
- Child and Family Studies
- Biomedical Engineering and Devices
- Computer Science
- Nano-technology and Data-Fusion
- Human Performance
- Prosthetics
- Sensors
- Nutrition
- Regenerative Medicine
- Aging and Demography
- Data Science
- Public Administration and Public Policy
- Tele-Health and Tele-Medicine

Overall, this initiative will result in hundreds of new high-wage jobs and an influx of hundreds of millions of dollars, and will earn the region and New York State the title as the best place in America for veterans.

Anticipated Outcomes: Syracuse University’s National Veteran’s Resource Complex (first five years of operation)	
Total jobs created in facility	300
Total indirect and induced jobs supported / created	7,000
Total veterans served	48,000+ (nation-wide)
Additional hotel nights sold to servicemembers, veterans and their families	5,000

PARTNERS

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- BNY Mellon Foundation
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SIGNATURE INVESTMENT #5 — CONSENSUS COMMISSION ON GOVERNMENT MODERNIZATION

Vision

Consensus – the Commission on Local Government Modernization for Syracuse and Onondaga County – is shaping a plan for more effective and efficient local government in the Central New York region’s hub. Through extensive information gathering, public engagement, data analysis, and model design, the Commission is designing solutions that will yield a more streamlined, responsive, fiscally sustainable and economically sound local government framework for the 21st century and beyond. At full implementation, the Commission’s plan will drive service efficiencies, generate tax savings, produce regional incentives to collaborate, and create the structural governance capacity required to address regional policy matters in truly regional ways, while preserving local decision making on truly local issues. In so doing, the plan positions Central New York to make greatest and most targeted use of URI resources by investing them not in a century-old status quo municipal structure, but in a new framework that takes its place among the nation’s most innovative and pioneering.

Investing for Success

Over five years, the CNYREDC expects to invest an estimated **\$25 million** to ensure the success of Consensus, the Commission on Government Modernization.

Central New York’s Opportunity

Fifteen years ago, the board of Syracuse 20/20 created a Government Modernization Task Force to evaluate alternative models of governance in peer communities—models that offered enhanced efficiency, improved responsiveness and heightened regional competitiveness. That effort, supported by work from the Onondaga Citizens League and the *CenterState Agenda for Economic Opportunity*, the region’s metropolitan business plan developed in partnership with the Brookings Institution in 2013, positioned government modernization as a critical issue priority for Central New York.

In 2014, the City of Syracuse, Onondaga County, and six major organizations partnered to commit to Central New York’s health, competitiveness and well-being, and the Commission on Local Government Modernization, known as Consensus, was established.

Consensus’ 19 members are broadly representative of major stakeholder groups involved in government modernization, including the city, the county, towns and villages, business leaders, higher education, K-12 education, nonprofits, planners, and the labor council.

Evidencing their strong commitment to the modernization process, both the county and city passed supporting resolutions in favor of Consensus (by 17-0 and 8-1 votes, respectively). With support of a \$250,000 grant from State Sen. John DeFrancisco and State Sen. David Valesky, the Commission engaged Rochester-based CGR to provide data analysis and plan design assistance. CGR’s portfolio includes some of the Northeast’s most significant and impactful local government modernizations in the past decade.



Dr. Joseph Stefko, president and CEO of CGR, speaks to community members about the firm’s in-depth data analysis of the county’s government structures as part of its Consensus baseline review process.

The Commission established a two-phase (and public engagement-intensive) process to evaluate the region's current local government capacity, identify resource and/or "governance capacity" gaps, and design solutions for Central New York that build on the best practices of the nation's most successful metropolitan areas.

- **Phase 1**, completed in early 2015, an existing-conditions review documented the size, structure, and services of Onondaga County's 36 general-purpose local governments, whose collective \$1.7 billion in annual spending accounts for more than 6 percent of the region's GDP. The municipal structure in Onondaga County effectively splits residents among 37 different local government combinations spanning the city, villages within towns, and towns outside of villages. This segmentation yields three-dozen separate and distinct municipal jurisdictions, each with its own governance structure, personnel, portfolio of policy-making authority, services, equipment and tax base capacity. With some notable exceptions, services are delivered, tracked, and resourced separately by each municipality. The boundaries that render this segmentation—and serve as the basis for the current governance and service delivery structure—were designed more than a century ago.
- **Phase 2**, to conclude in late 2015, defines the opportunities and options for improvement through restructuring. The Commission appointed committees to perform deeper analysis in five key areas:
 - **Public safety (police, fire, and emergency medical services);**
 - **Infrastructure (public works, highways, water, and wastewater);**
 - **Municipal operations (general administrative functions and back-office services);**
 - **Economic development (regional competitiveness, fiscal sustainability and land use);**
 - **Governance (regional policy-making structures and broad service and government consolidation).**

Phase 2 has also focused on defining the context for local government modernization in Central New York. Among the most fundamental findings:

- **Onondaga County's employment base has continued to contract since 1990, in both the city and the suburban communities outside of Syracuse;**
- **More than half – 19 of 35 – of the county's municipal jurisdictions lost population from 2000 to 2010;**
- **Alongside the city's population decline has been a 17 percent reduction in real taxable value since 1997, reducing its share of countywide assessed valuation to less than 17 percent;**

- **The presence of radical scale differences in fiscal capacity among the county's individual communities, with tax bases ranging from \$12 million to \$27 billion, create dichotomous pockets of wealth and need and split the general tax base into smaller segments that are less able to fund key investments on their own;**
- **Consistent indirect relationships between the size of municipal service areas and the unit costs of those services, such that larger communities exhibit lower unit costs than smaller communities;**
- **Notoriously high property tax rates which, ranked as a percentage of median home value, place the region 18th in the nation;**
- **An already remarkably connected economic region, with more than 70 percent of the employed labor force working in a municipal jurisdiction different from the one in which they reside; and**
- **An onerous mandate burden that limits local governments' ability to fully address their governance and service delivery challenges in more cost-effective ways.**

The impetus and urgency for modernization, however, is most powerfully illustrated by the fiscal unsustainability of the current structure. Municipal governments face increasing pressure to sustain essential services in an environment characterized by slow growth in population, high taxes, recurring cost growth, and a property tax cap constraining their ability to generate additional revenues. Under one hypothetical analysis prepared by the Commission, wherein the mean annual rate of spending growth for each municipality from 2004-13 was projected against an assumed 2 percent "capped" growth in revenues, 20 of 35 Onondaga County municipalities fall into deficit situations over the next decade.



Members of the public provide input after seeing a presentation on "Who Does What & What It Costs," from the Consensus Baseline Review.

Approach

From its launch in early 2014, **Consensus has been a solution-oriented community engagement effort designed for action.**

The support of the mayor of Syracuse and the county executive has been steadfast and unwavering. Their appointees on the Commission—along with members of the County Legislature, the Common Council, the Town Supervisors Association, the Village Mayors Association, business and civic leaders, neighborhood representatives, and organized labor—have worked tirelessly to ensure Consensus' work reflects the community's diversity of opinion and shared aspiration to position the region's economy and all of its residents for prosperity in the 21st century and beyond.

The Commission will release its draft recommendations for public comment and review in the fourth quarter of 2015. These recommendations are based on extensive data-analysis, public input and a review of best practices from around the nation, including Louisville, Indianapolis, Nashville and Minneapolis.

At the *service level*, recommendations focus on leveraging service similarities across municipal boundaries, delivering common technical/specialized functions at a regional level, enhancing service responsiveness, deriving economies of scale, investing in information technology and data, and bridging the boundaries that fragment our regional tax base in ways that render critical investments cost prohibitive today.

At the *governance level*, recommendations focus on creating capacity to address regional issues in coordinated rather than fragmented ways; establishing fiscal incentives to drive mutually beneficial development instead of zero-sum fiscal growth; and capitalizing on regional service similarities in ways that yield more streamlined, cost-effective local government functions.

While much work remains, Consensus' *Baseline Analysis* makes it abundantly clear that the current system of highly fragmented service delivery is both inefficient and less than

optimally effective at enabling the community to achieve its goals of economic growth and shared prosperity articulated in this Upstate Revitalization Initiative submission.

Since the inception of the Commission, the mayor of Syracuse and the Onondaga County Executive have been supportive of the Commission's commitment to government modernization. That support continues as the Commission works toward the goal of presenting to the voters of the city and the county a public referendum in November 2016 that reflects more effective and efficient municipal governance and establishes an environment that will support economic opportunities for all our residents.

Support from the Upstate Revitalization Initiative, along with support from the New York State Department of State's \$150 million government modernization initiative that is expected in early 2016, will be used to assist Central New York in undertaking these bold, difficult, but necessary reforms. By presenting Consensus' independent recommendations to the voters of the city of Syracuse and Onondaga County, residents will be empowered to chart a bold new vision for Syracuse and Onondaga County as the second largest municipality in New York State and position Central New York for the future as a unified, strong, and innovative place for business to thrive and people to prosper.





SIGNATURE INVESTMENT #6 — ALLIANCE FOR ECONOMIC INCLUSION

Vision

Create economic prosperity by utilizing the region's human and physical assets to ensure that economic growth translates into economic opportunity, increased wealth, and improved quality of life within our distressed communities.

Investing for Success

Over five years, the CNYREDC expects to invest an estimated **\$50 million** in the Alliance for Economic Inclusion.

Central New York's Challenge

Poverty rates and social inequality prevent the region from realizing its full economic potential. Residents of inner-city neighborhoods, rural communities, and, increasingly, inner-ring suburbs struggle to access jobs and build wealth. This is evidenced by the chilling statistic that **44 percent of Central New York's population is living at or near the poverty line**. Region-wide there are immense challenges related to building economic opportunity, yet these issues are compounded in Central New York's urban environments. A recent report ranked Syracuse as the worst out of the top 100 largest cities for concentrations of extreme poverty among African Americans and Hispanics. Furthermore, these statistics appear to be going in the wrong direction, as concentrated poverty among African Americans has grown to 65.2 percent in 2013 from 43.4 percent in 2000.

Central New York must confront and alter the root causes of these issues that include poor or disconnected access and connectivity to inclusive industries; challenges within the educational system that prevent equal access to opportunity; barriers in accessing growth capital for minority-, women-, and veteran-owned businesses; blight, homelessness, and residential vacancies in inner city neighborhoods; and a misalignment in skills, training systems, and businesses that can offer meaningful employment.

Approach

There is no silver bullet for eradicating poverty. The task requires multiple innovative strategies, spearheaded by a diverse array of leaders from across the region. **The CNYREDC will assemble this leadership by establishing the Alliance for Economic Inclusion, comprised of ethnically and geographically diverse representatives from the private, public, and non-profit sectors.** The Alliance will be responsible for implementing strategies and administering funds to:

- Develop access to economic opportunity and wealth by intentionally attracting and growing good jobs in low-income and distressed communities and connecting these communities to employment hubs.
- Create career pathways for adults and youth from distressed communities by establishing workforce and education strategies that align with employer needs in key industry sectors.
- Build wealth and next-generation community leadership by establishing and growing entrepreneurship and business ownership within underserved communities.
- Create tools and incentives for educational attainment within low-income communities, making higher education accessible and affordable for all.

The Alliance will meet these objectives by enhancing and scaling existing best practice initiatives, as well as catalyzing new innovations. The Alliance, in partnership with Empire State Development, will coordinate investments; collect data and oversee evaluation; maintain accountability and transparency around funds; and glean from key projects to make future policy and funding recommendations.

The Alliance will initially target these interrelated and mutually reinforcing programs:

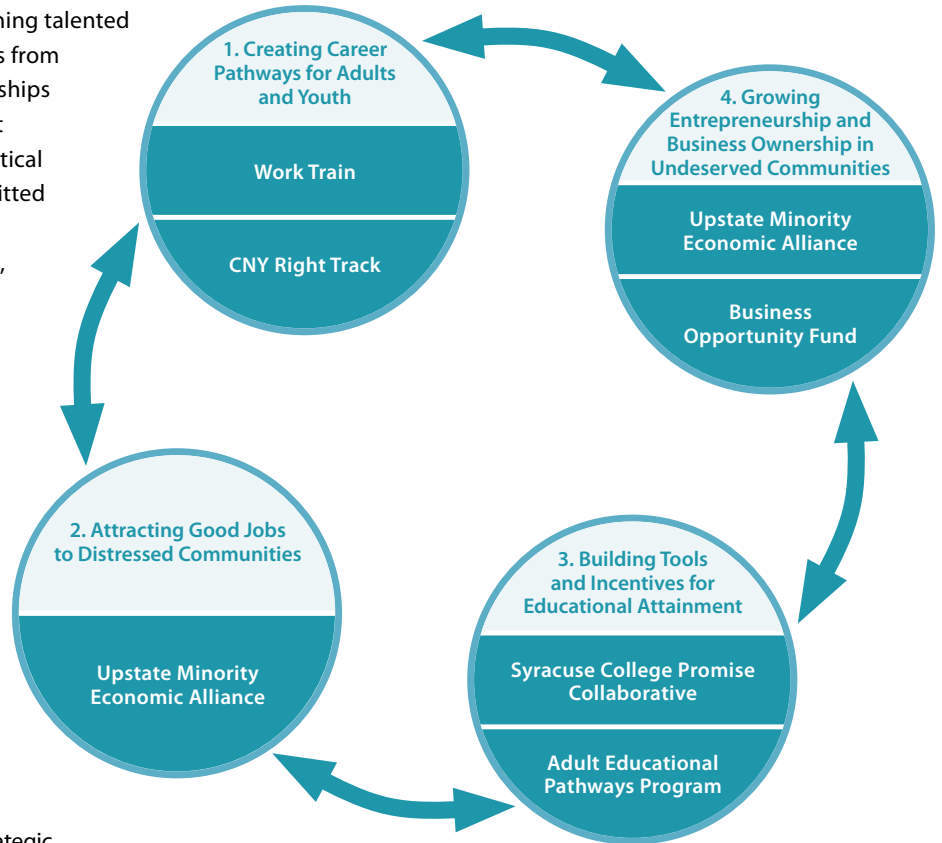
1. Career Pathways for Adults and Youth

- **Work Train:** A community-wide initiative that addresses workforce misalignment, meeting unmet job demand in target industries while providing access to career pathways for un- and under-employed residents. In the short term, Work Train will implement workforce solutions within critical industry sectors, expanding into five counties. Over the long term, Work Train will proactively develop talent pipelines for emerging industries within the URI. As key sectors begin to create jobs, the Work Train platform can develop the appropriate training and human resource development strategies.

- **CNY Right Track:** Engaging and retaining talented college students and recent graduates from targeted communities through internships aligned with career opportunities that emerge from the REDC and URI are critical to ensuring a skilled workforce committed to living and working in Central New York. Through positions with business, government, and other professional institutions, paid interns will gain an in-depth understanding of how the hosting business works, while also developing professional skills and participating in a seminar series by local leaders from all industries.

2. Attracting Good Jobs to Distressed Communities

- **Opportunity Investment Fund (OIF):** OIF will provide solutions to catalyze distressed commercial districts and bring good jobs to urban, suburban, and rural communities in need. OIF is a capital grant fund, dedicated to revitalizing strategic properties in distressed communities. The fund will provide grants to strategic projects in areas with high concentrations of poverty and/or blight. Business, developers, nonprofit organizations, and municipalities can propose projects to receive grant funding that would otherwise not have market-based solutions. Eligible projects would demonstrate clear economic impact to blighted and/or low-income mixed-use districts by attracting businesses that offer living wage jobs, facilitating ownership and investment within low-income populations, and/or transforming high vacancy target areas.



3. Building Tools and Incentives for Educational Attainment

- **Syracuse College Promise Collaborative:** This initiative will guarantee a path for college for every student in the Syracuse City School District, regardless of income. Post-secondary education, especially for children who grow up in poverty, directly correlates to increased opportunities and wealth creation as well as builds a more talented and broadly diverse workforce. Additionally, partners in the effort for stronger educational attainment could include the Thurgood Marshall College Fund.
- **Adult Educational Pathways Program (AEPP):** Targeting underemployed middle-skill workers, this program provides wraparound educational support programs for adults seeking bachelors or higher degrees. This program will remove barriers for obtaining secondary education degrees and associated employment opportunities. Upon graduation from college, program participants could access homeowner programs in targeted areas that assist in community redevelopment.



4. Growing Entrepreneurship and Business Ownership in Underserved Communities

- **The Upstate Minority Economic Alliance (UMEA):** UMEA was recently established as a minority chamber of commerce for the Upstate and Central New York regions. It seeks to launch a CNY Minority Owned Ventures and Enterprises for Sustainability (CNY MOVES) effort to create jobs, reach untapped talent within diverse populations, increase minority access and connection to local and national business services, and support diverse communities through a replicable model.
- **The Business Opportunity Fund:** This fund will provide substantial financing opportunities to underserved entrepreneurs and business owners through terms and criteria that will enable, rather than prohibit, their success. It will be administered by Cooperative Federal, Central New York’s sole community development financial institution microlender. The fund will target underserved entrepreneurs, particularly minority, women, veteran and tech entrepreneurs and enterprises; however, the driving criteria for accessing the fund will be a lack of business capital and financing.

Anticipated Outcomes: Alliance for Economic Inclusion (first five years of operation)	
Un- and underemployed residents placed in jobs	5,000
Minority-owned and community based businesses created	150
Minority-owned and community-based businesses expanded	200
New jobs created in underserved communities	2,000
Percent reduction in vacancy rates within key commercial districts	15%
Students matriculated from Syracuse City School District to higher education	2,500
College students completed internships	300
Low-income adults graduating from college	150



The Syracuse College Promise Collaborative will guarantee a path for college for every student in the Syracuse City School District, regardless of income. Photo courtesy of Syracuse University.

PARTNERS

CNY Right Track

CenterState CEO
 COR Development Co. LLC
 Jubilee Homes
 Marriott Downtown Syracuse
 On Point for College
 Onondaga Community College
 Say Yes to Education
 Southwest Community Center
 Syracuse Model Neighborhood Corp.
 Upstate Minority Economic Alliance
 YouthBuild

Adult Educational Pathways Program

On Point for College
 Onondaga Community College
 Southwest Community Center
 St. Joseph's College of Nursing
 Syracuse College Promise Collaborative
 Syracuse Model Neighborhood Corp.
 Work Train

Work Train

CenterState CEO
 Central New York Community Foundation
 City of Syracuse - CDBG
 CNY Works
 Loretto
 MACNY
 National Fund for Workforce Solutions
 New York State

New York State Department of Labor
 Onondaga Civic Development Corporation
 Onondaga Community College
 Private Foundations
 Southwest Community Center
 St. Joseph's Health
 Syracuse City School District Adult Education
 Syracuse SUNY Educational Opportunity Center
 United Way

Syracuse College Promise Collaborative

Central New York Community Foundation
 City of Syracuse and Onondaga County
 Syracuse City School District
 Large Donors (Allyn Foundation, KeyBank Foundation, Lockheed Martin, Raymour & Flanagan, Reisman Foundation, Say Yes to Education Foundation, SRC Inc.)

Upstate Minority Economic Alliance

AXA Equitable
 CenterState CEO
 New York State Department of Labor
 Pathfinder Bank
 Prudential Advisors
 Southwest Community Center
 Syracuse University

Business Opportunity Fund

City of Syracuse
 Cooperative Federal Credit Union
 Home HeadQuarters
 The Tech Garden

YEAR 1 INVESTMENTS

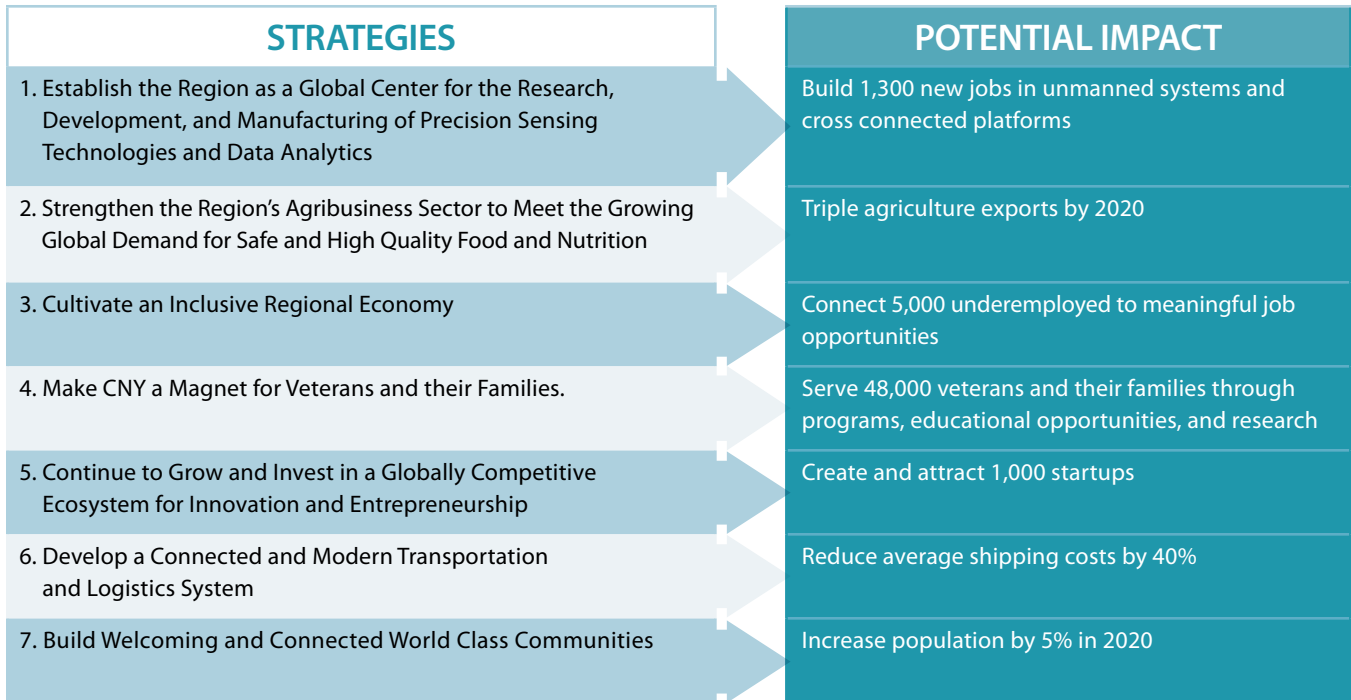
In 2016, the CNYREDC expects to invest in projects that advance its strategic priorities and the investment areas outlined above. With a total cost of more than **\$889.9 million**, these projects will leverage over **\$784.7 million** in outside investment. They are expected to create **5,909 direct jobs** and will result in a total five-year payroll of more than **\$765.8 million**. These investments represent a return on state investment of **16.05**.

Signature Investment Area	Project Name / Type	Estimated Year 1 Project Cost	Year 1 Request	Direct TOTAL Jobs	Five-year Payroll	Year 1 ROI
Global Manufacturing and Logistics Hub		\$42,539,400		1,944	\$162,000,000	
New York Grown, New York Certified -- Safe and Market-Ready	CEA Cayuga	\$75,000,000	\$7,500,000	80	\$9,000,000	11.20
	CEA Onondaga	\$70,000,000	\$7,500,000	259	\$28,800,000	13.17
Unmanned Systems and Cross-Connected Platforms		\$81,200,000	\$50,000,000	1,364	\$361,474,000	8.85
Alliance for Economic Inclusion		\$52,400,000	\$2,500,000	*5,000		20.96
National Veteran's Resources Complex		\$12,500,000	\$12,500,000	300	\$110,000,000	9.80
Strategic Transactions	Expansion / Retained	\$76,000,000	\$7,750,000	1,248	\$122,784,895	25.65
	Expansion	\$41,845,000	\$8,424,000	394	\$59,307,000	12.01
	Out of State Recruitment	\$480,000,000	\$6,000,000	320	\$74,450,800	92.41
	Implementation	\$1,000,000	\$1,000,000			1.00
		\$889,945,000	\$103,174,000	5,909	\$765,816,695	16.05

* Underemployed Residents Placed in Jobs

POTENTIAL IMPACT

In addition to the total jobs, leveraged private investment, and return on state investment, each proposed investment is expected to significantly alter the trajectory of a key component of Central New York’s regional economy. The CNYREDC will continue to monitor high-level economic indicators throughout the implementation of CNY Rising and expects to directly impact the following areas through these strategies:



IMPLEMENTATION

The commitment to successful implementation started on day one of the development of CNY Rising. With the belief that a region that plans together is best positioned to seamlessly transition to implementation, Central New York created its entire planning process to lead toward a solid implementation structure to maintain oversight of the plan and ensure its success.

Implementation Approach

Initiatives will be implemented through a coordinated, phased approach:

- **Phase I: Ready in 2016**—Includes action and implementation of recommended initiatives ready to commence in year 1. Work to advance the remaining initiatives will continue in 2016.
- **Phase II: Expected to launch 2017-2019**—Includes initiatives and projects identified during the planning for CNY Rising that offer significant potential impact and opportunity, and are expected to launch or break ground between 2017 and 2019.

- **Phase III: Expected to launch 2020 or later**—Includes significant opportunities identified during the planning and market assessment process that require a multi-year planning effort. These initiatives are still conceptual in nature and will develop with future planning work.

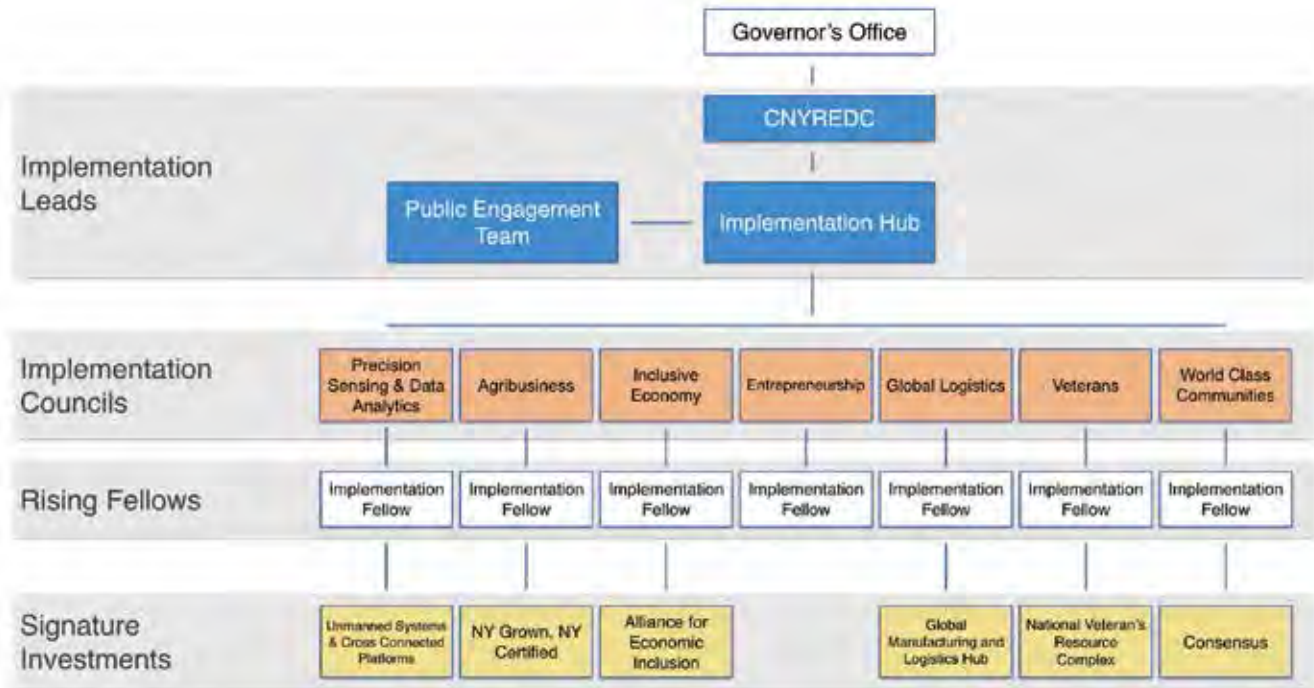
Rising Fellowship Program

The CNYREDC will establish the Rising Fellowship program as a core component of its implementation strategy. Modeled off of a similar program in Chicago, the Rising Fellowship program will offer six or 12 month engagements to middle level executives and managers from the region’s businesses, institutions, and non-profit organizations. Selected through a competitive application process, Rising Fellows will support program deployment, metric evaluation, and public engagement in the plan’s strategies.

The Rising Fellowship program also offers a critical link to the business and non-profit community to maintain public buy-in and support for the plan, and train tomorrow’s leaders in future planning and Regional Council activities. Rising Fellows will also benefit from economic development, public engagement, strategic planning, monitoring, and program management experience.

Implementation Teams

The key investment priorities described in this plan are intended to redirect Central New York’s economic trajectory for the good of its people. The projects to be funded by these investments will require continued assistance and oversight before and after groundbreaking. Further, the larger strategies that align with these investment priorities will need persistent management, evaluation, and support so that the plan can reach its full impact in the next five years. The CNYREDC recommends the following implementation structure for this plan:



• Implementation Leads

- **Implementation Hub**—The Implementation Hub will serve as the group charged with ensuring project and initiative success. Reporting directly on progress to the CNYREDC, the Implementation Hub will project manage the entire plan implementation by serving as a coordinating mechanism for the strategy specific Implementation Councils. The hub will also act as the primary team deployed to solve problems, close partnership deals, and report to the public on progress related to the plan. The hub will also manage cross strategy alignment between initiatives.
- **Public Engagement Team**—Continued public engagement and support for the plan is critical to implementation success. While the implementation hub will act as the primary reporting mechanism on plan progress, the public engagement team will ensure a two-way flow of data, feedback and information between the hub and the public.

- **Strategy-Specific Implementation Councils**—The CNYREDC will transition its implementation planning teams as the key bridge between the Implementation Hub and each strategy. These expert stakeholders will be re-engaged to advise, assist, guide and launch new initiatives out of their strategic portfolio. The Implementation Councils will provide meaningful insight and guidance towards the accomplishment of each of their recommended tactics, while the Implementation Hub will be responsible for project managing the success of each strategic initiative.
- **Rising Fellows**—One or more Rising Fellows will be deployed to each of the Implementation Councils. The Fellows will assist the implementation hub in managing the councils by staffing meetings, performing strategy-specific research and program evaluation, and helping to deploy and launch new initiatives.
- **URI Signature Investments**—The CNYREDC expects each initiative selected as an investment priority to have an implementation structure best suited for its success. This could mean acting as a free-standing organization or becoming a priority in the work plan for an existing organization. While the Implementation Councils and Implementation Hub will provide guidance, support, and development support to each initiative, it will be the initiative’s responsibility to ultimately deliver project impact, leveraged investment, and job creation.

Index of Plan Concepts Related to State Goals

Innovation

- An assessment of the region's innovation ecosystem is on page 29
- Recommendations for how best to grow innovation region is on page 45

Leveraging Private Sector Investment

- A chart tracking the outside private sector leverage is on page 80
- Private sector partners for the region's signature investments are on pages 63, 66, 69, 72 and 79

Connectivity

- An assessment of the region's connectivity is on page 30
- Recommendations for how best to grow connectivity in the region are on pages 46 and 47

Sustainability

- An assessment of the region's clean tech industry, a key industry driven by sustainability, is on page 22
- Recommendations for how best to grow sustainability in the region is on page 47

Workforce Development

- An assessment of the region's workforce alignment ecosystem is on page 27
- Recommendations for how best to conduct workforce development is on page 44

Hard-to-Place Workers

- An assessment of the region's underemployed workers is on page 28
- Recommendations for how best to address underemployed workers is on page 44

- A signature investment focused just on underemployed workers is outlined on pages 76–78

Community Reinvestment

- Discussions and recommendations on community reinvestment are on page 47 (anchor institutions in world-class communities) and 44 (inclusive economy strategy)

Global Economy

- An assessment of globally-relevant market opportunities for Central New York starts on page 32
- Recommendations for how to best address these global market opportunities are on page 43
- Signature investments designed to position the region to compete in the global economy are on page 56, 64 and 67

Collaboration

- An outline of the collaborative process used to develop the plan is on 11
- Discussions of Central New York's collaboration with other regions are on page 60

Readiness

- An outline of the status of each signature investment can be found in the appendices

Implementation and Reporting

- The recommended implementations structure and reporting mechanisms are on page 82

Leveraging Other State Initiatives

- A chart outlining how other state initiatives could be leveraged in support of this plan is in Appendix F.

Acknowledgements

National Advisory Council

Diane Bell McKoy, **Associated Black Charities**
Fred Dedrick, **National Fund for Workforce Solutions**
Janet LaBar, **Greater Portland Inc.**
Michael Toscano, **FAA UAS Center of Excellence Advisory Board**
Thomas Stewart, **National Center for the Middle Market**
Peter Kaldes, **JPMorgan Chase**

Research Work Group Members

Agribusiness

Tom Blanchard, **CenterState CEO**
Brian Anderson, **National Grid**
Keven Bucklin, **Cayuga Milk Ingredients**
Mike Chamberlin
Maureen Fellows, **SUNY College of Environmental Science and Forestry**
Brad Keating, **Dairy Farmers of America**
David Rogers, **Morrisville State College**
Tom Shephard, **Dairy Farmers of America**
Anastasia Urtz, **Onondaga Community College**

Access to Economic Opportunity

Meg O'Connell, **Allyn Foundation (Co-chair)**
Tim Penix, **SUNY Syracuse Educational Opportunity Center (Co-chair)**
Carla DeShaw, **Cayuga Community College**
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John Halleron
Mike Haynie, **Institute for Veterans and Military Families**

Mike Metzgar, **Onondaga Community College**
Sharon Owens, **Southwest Community Center**
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James Schmeling, **Institute for Veterans and Military Families**
Lenore Sealy, **CNY Works**
Chris Todd

Entrepreneurship

Seth Mulligan, **CenterState CEO (Chair)**
Dave Bulger, **tuzag, inc.**
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Adam McGivern, **Downtown Cortland Partnership**
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David Aitken, **Destiny USA**

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Dr. Joan Johnson, **Morrisville State College**

Larry Leatherman, **MOST**

Steve McClintic, **SUNY Upstate Medical University**

Kathryn Ruscitto, **St. Joseph's Health**

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Paul Tremont, **SRC Inc.**

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Vito Sciscioli

Stephen Selvek, **City of Auburn**

Bill Simmons, **Syracuse Housing Authority**

Alden Max Smith, **City of Oneida**

Merike Treier, **Downtown Committee of Syracuse**

Katelyn Wright, **Syracuse Land Bank**

Implementation Work Group Members

Innovation

Dave Bulger, **tuzag, inc.**
 Nicole Camarre, **Armory Square Ventures**
 Jim Carrick, **LPA Software Solutions**
 Somak Chattopadhyay, **Armory Square Ventures**
 Braden Croy, **Syracuse University**
 Troy Evans, **Common Space**
 Chedy Hampson, **TCG player.com**
 Liz Liddy, **Syracuse University**
 John Liddy, **The Tech Garden**
 Adam McGivern, **Cortland Downtown Partnership**
 Alex McKelvie, **Syracuse University**
 Jake Mulcahy
 Seth Mulligan, **CenterState CEO**
 John Spatola, **Lake Effect Applications**
 Sean Stamper, **Salt City Actor's Group**
 Austin Wheelock, **Operation Oswego County**

Opportunity

Carla DeShaw, **Cayuga Community College**
 Peter Dunn, **CNY Community Foundation**
 Ron Ehrenreich, **Cooperative Federal**
 Jeffrey Grimshaw, **SUNY Oswego (ret.)**
 John Halleron, **SUNY Oswego SBDC**
 J. Mike Haynie, **Syracuse University**
 Mike Metzgar, **SUNY Onondaga Community College**
 Meg O'Connell, **The Allyn Foundation**
 Sharon Owens, **Syracuse Model Neighborhood Facility, Inc.**
 Tim Penix, **SUNY Syracuse Education Opportunity Center**
 Dominic Robinson, **CenterState CEO**
 James Schmeling, **Syracuse University**
 Lenore Sealy, **CNY Works**
 Chris Todd

Precision Sensing

David Amberg, **Upstate Medical University**
 Col. John Balbierer, **174th Attack Wing**
 Ed Bogucz, **Syracuse Center of Excellence**
 Larry Brinker, **NUAIR Alliance**
 Terry Brown, **Syracuse University**
 Pam Caricolli, **SUNY Oswego**
 Chris Carrick, **CNY Regional Planning & Development Board**
 Robert Corona, **Upstate Medical University**
 Bill Fisher, **Onondaga County**
 Ellen Furnari, **Upstate Medical University**
 Mark Glauser, **Syracuse University**
 Kristen Heath, **St. Joseph's Health**
 Gregory Larioni, **Lockheed Martin**
 Orrin MacMurray, **The C&S Companies**
 David Mankiewicz, **CenterState CEO**
 Craig Marcinkowski, **Gryphon Sensors, LLC**
 Matt Massiano, **Saab Sensis Corporation**
 Ellen McCloskey, **SUNY Oswego**
 John Mosack, **Bristol-Myers Squibb**
 NASA
 Joah Sapphire, **Global Dynamic Group LLC (contributor)**
 Steri Pharma
 Shu-Kai Shin, **Syracuse University**
 Deborah Stanley, **SUNY Oswego**
 Michael Toscano, **FAA UAS Center of Excellence Advisory Board (contributor)**
 Joanne Thompson, **Welch Allyn**
 Paul Tremont, **SRC Inc.**
 Mark Viggiano, **Niteopark, LLC**
 Crystal Wayman, **SUNY Oswego**
 Ashley Wilson, **Welch Allyn**

Transportation & Infrastructure

Nate Fenno, **New York, Susquehanna & Western Railway**
 Kendra L. Hems, **New York State Motor Truck Association**
 George Joyce, **Laser Transit, Ltd.**
 Zelko Kirincich, **Port of Oswego**
 David Schneckenburger, **Thompson & Johnson Equipment Co., Inc.**
 Kevin Schwab, **CenterState CEO**

Urban Core

David Aitken, **Destiny USA**
 Amy Birdsall, **City of Oswego**
 Kimberly Boynton, **Crouse Hospital**
 Shane Broadwell, **Oswego County Legislature**
 Stephen Butler, **CNY Arts**
 Richard Cunningham, **Thoma Development Consultants**
 Walter Dixie, **Jubilee Homes**
 Marilyn Higgins, **Syracuse University**
 David Holder, **Visit Syracuse**
 Scott Ingmire, **Madison County Planning Department**
 Dr. Joan Johnson, **SUNY Morrisville**
 Larry Leatherman, **The MOST**
 Andrew Maxwell, **City of Syracuse**
 Steve McClintic, **SUNY Upstate Medical University**
 Ryan McMahan, **Onondaga County Legislature**
 Kathryn Ruscitto, **St. Joseph's Health**
 Vito Sciocioli
 Stephen Selvek, Sr., **City of Auburn Planning Board**
 Bill Simmons, **Syracuse Housing Authority**
 Alden Max Smith, **City of Oneida**
 Ann Marie Taliercio, **UNITEHERE Local 150, AFL-CIO**
 Merike Treier, **Downtown Committee of Syracuse**
 David Turner, **Oswego County**
 Troy Wafner, **NYS Department of Agriculture**
 Ben Walsh, **City of Syracuse**
 Katelyn Wright, **Greater Syracuse Land Bank**

Value Added Agriculture

Brian Anderson, **National Grid**
 Tom Blanchard, **CenterState CEO**
 Keven Bucklin, **Cayuga Milk Ingredients**
 Mike Chamberlin, **Development Services**
 Maureen Fellows, **SUNY College of Environmental Science and Forestry**
 Brad Keating, **Dairy Farmers of America**
 David Rogers, **Morrisville State College**
 Tom Shephard
 Anastasia Urtz, **SUNY Onondaga Community College**

Public Participation Work Group Members

Andrew Fish, **Cayuga County Chamber of Commerce (Chair)**
 Bob Allen, **Crouse Hospital**
 Alyssa Balzina, **BizHub CNY**
 John Becker, **Madison County Board of Supervisors**
 Carla DeShaw, **Cayuga Community College**
 William Fisher, **Onondaga County**
 Kipp Hicks, **Madison County IDA**
 Michael Johnson, **Johnson Brothers Lumber Company**
 Steve Kulick, **Le Moyne College**
 Lindsay Ott Wilcox, **iHeartMedia**
 Rita Paniagua, **Spanish Action League**
 Garry VanGorder, **Cortland County Business Development Corp.**
 Kris Waelder, **Crouse Hospital**
 Randall Wolken, **Manufacturers Association of Central New York**

Writing Team

Arch Street LLC
 George Bain, **Syracuse University**
 Jason Chiesa, **Empire State Development**
 Timothy Drumm, **Syracuse University**
 Jim Fayle, **Empire State Development**
 Andrew Fish, **Cayuga County Chamber of Commerce**
 Christa Glazier, **Center State CEO**
 Rita Paniagua, **Spanish Action League**
 Eric Persons, **Syracuse University**
 Ben Sio, **Center State CEO**
 Honora Spillane, **Onondaga County Office of Economic Development**
 Melanie A. Mahoney Stopyra, **Syracuse University**

Design & Publication Team

Ansun Graphics
 Eric Mower + Associates
 Joye Morrisseau Graphic Design
 Such Chaos



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