FLX

FINGER LAKES *FORWARD*

United for Success

NEW YORK STATE OF OPPORTUNITY.

Finger Lakes Regional Economic Development Council

Upstate Revitalization Initiative Plan

October 2015

Wegmans Organic Farm in Canandaigua

Photo by: Matt Wittmeyer

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A Letter from the co-chairs

The Finger Lakes region is at a decisive moment in its history.

The region, and its urban core, Rochester, was once a major manufacturing hub whose products and talent helped transform American lives and whose population for much of the 20th century placed it among the top 25 most populous cities in the nation. Over the last three decades, the region's major employers – the same major corporations that provided generations of stability and prosperity – have lost tens of thousands of jobs and their decline has profoundly impacted our region.

Today, the Finger Lakes region is confronted by some of the greatest challenges and greatest opportunities of any region in New York State or our nation. The region has begun a fundamental economic transformation that provides the basis for it to evolve into a highly successful and diverse 21st century economy. But at the same time, it remains hampered by chronic poverty that ranks among the worst in the U.S. and afflicts our most vulnerable.

Thanks to Governor Andrew Cuomo's leadership and unprecedented focus on economic development and poverty, we are making progress. Continued progress requires decisive strategic investment, fundamental change, and a united community. With the Upstate Revitalization Initiative and the Rochester-Monroe Anti-Poverty Initiative, we have created unparalleled regional collaboration and optimism about our future.

The plan we present here represents a shared vision to realize a once-in-a-lifetime opportunity, build upon our recent progress, transcend our significant challenges, and extend economic opportunity to all of our region's residents. Utilizing rigorous quantitative and qualitative analysis, comprehensive community engagement, international best practices, and innovative approaches, we have developed a bold and ambitious plan for the future of our region.

Our plan has identified the optimal targets for investment: three industry clusters and three economic enablers that form the foundation for sustainable economic development.

The plan we present here represents a shared vision to realize a once-in-a-lifetime opportunity, build upon our recent progress, transcend our significant challenges, and extend economic opportunity to all of our region's residents.

The three industry clusters are unique strengths for the Finger Lakes region:

- **Optics, Photonics, and Imaging**
- **Agriculture and Food Production**
- **Next Generation Manufacturing and Technology**

Three economic enablers will facilitate the long-term development of these industry clusters and the region more broadly:

- **Pathways to Prosperity (addressing workforce development and poverty reduction)**
- **Entrepreneurship and Development**
- **Higher Education and Research**

This plan builds off the region's high quality of life and provides detailed strategies for each of these areas, and we are confident that this comprehensive plan will catalyze transformation in the Finger Lakes region.

We take pride in the fact that every vote of the FLREDC for five consecutive years has been unanimous. We are a united community. We are united for success.

Let us especially thank Governor Cuomo, Lieutenant Governor Kathy Hochul, and our state delegation for their support and this historic opportunity. We assume responsibility for developing the best possible plan and its implementation. To you, goes our gratitude for giving us the opportunity to dramatically accelerate the progress of our region. We also particularly thank the FLREDC, the Upstate Revitalization Initiative Steering Committee, more than 450 indefatigable Work Group members, and the thousands of regional stakeholders and members of the public who participated in this record process. This plan is a tribute to strong community engagement and a united Finger Lakes region.

And we are deeply grateful to The Boston Consulting Group, the University at Buffalo Regional Institute, and the contributions of our staff for helping us take regional strategic planning to the next level.

Danny Wegman

Danny Wegman

CEO, Wegmans Food Markets

Joel Seligman

Joel Seligman

President & CEO, University of Rochester

Introduction 1

Photo by: Matt Wittmeyer

The Finger Lakes region is at a crossroads and the URI is essential for realizing its potential

This is a decisive moment for the Finger Lakes region and its urban core, Rochester. The region is at a crossroads between realizing its full potential and losing its hard-fought progress. The Upstate Revitalization Initiative (URI) will be pivotal for the Finger Lakes region to capitalize on its strengths and overcome barriers to growth.

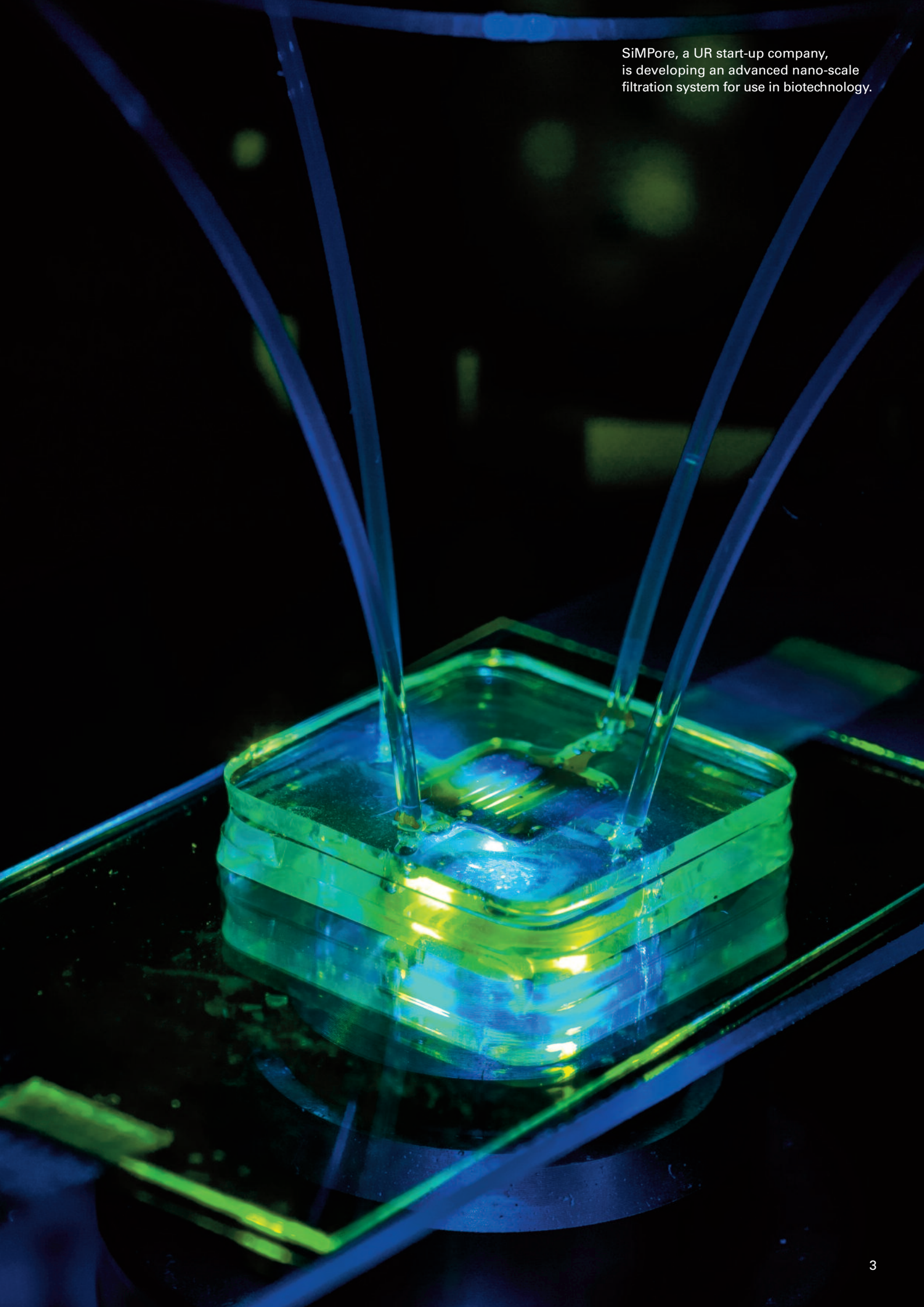
After decades of industrial decline, progress is evident in the Finger Lakes. Recent investments, including more than $300 million in state support through the Finger Lakes Regional Economic Development Council (FLREDC), have helped to build upon the region's strengths and create 25,000 new jobs since 2011.[1] Unemployment is the lowest in eight years and private sector job creation over the last three months is the highest year-over-year growth since 1990. The City of Rochester is recouping its potential through investments in real estate and restoration of historic properties and a gradual increase in jobs as more companies and residents return to the City. Confidence in the region's promise is on the rise, as Rochester was recently announced as the headquarters of a new federally-designated institute for Integrated Photonics, which will bring at least $115 million in state investment to the region. The region's outstanding higher education and healthcare systems and an increasingly diverse economy are emblematic of the progress the Finger Lakes has accomplished to date.

While progress is evident, the region continues to struggle with fundamental challenges. For the last five years, private sector employment and wage growth have lagged behind state and national averages.[2] Rochester is a city of sharp contrasts: vibrant neighborhoods and business districts are juxtaposed with high concentrations of poverty, unemployment, and substandard housing. A total of 66,000 residents live below the federal poverty line in Rochester,[3] and the City has the highest rate of extreme poverty and childhood poverty of any comparably sized city in the U.S.[4] More than half of Rochester children live in households in poverty[5] and nearly two-thirds receive public assistance.[6] The Rochester City School District is the lowest performing public school district in upstate New York[7] and has the lowest graduation rate among large districts in the state, with only 45.5 percent of high school students graduating in 2015.[8]

URI support is critical to take recent progress to the next level and create a stronger and more prosperous community for all the region's citizens, build regional wealth by propelling long-term industry growth, create diverse job opportunities, and further develop a dynamically skilled workforce that will transform the region and reduce poverty – a key priority for both Governor Cuomo and the Finger Lakes Regional Economic Development Council. The region possesses a unique set of opportunities to develop, but there is fierce competition. A more connected world provides businesses with ever expanding options for investment, and URI support is essential to attract these investments to the Finger Lakes region. If successful with its URI plan, the Finger Lakes region will attract private leverage up to $6.4 billion over the course of the next five years in innovative industries that will build on core regional strengths and benefit all of New York State.

The Finger Lakes region's aspiration is to achieve job creation and increased regional wealth by galvanizing private investment to benefit the entire community.

> "URI support is critical to take recent progress to the next level and create a stronger and more prosperous community for all the region's citizens."



SiMPore, a UR start-up company, is developing an advanced nano-scale filtration system for use in biotechnology.

Region's strategy builds on strengths & competitive advantages

The Finger Lakes' URI plan addresses four overarching objectives:

- **Grow Jobs**
- **Increase Regional Wealth**
- **Drive Private Investment**
- **Reduce Poverty**

In order to develop a holistic URI regional strategy in which the Finger Lakes region realizes its transformative potential, the plan employs the three goals required by the URI and adds a fourth – Reduce Poverty – inspired by the Rochester-Monroe Anti-Poverty Initiative which seeks to address poverty by transforming systems, programs, and policies in a coordinated, sustainable manner. Guided by the four goals, the region's URI strategy is focused on building on strengths and competitive advantages that will be further bolstered by URI investment.

The URI plan emphasizes the capabilities that make the Finger Lakes unique within New York State and enable the region to compete nationally and globally. In areas where the region is building on existing comparative advantages, URI funding will help position the Finger Lakes as a national and global leader. In other areas, where the region is entering new fields, URI funding will enable the Finger Lakes to further develop expertise and establish itself for future growth.

> "URI funding will help position the Finger Lakes as a national and global leader."

The URI plan consists of three industry clusters, or pillars, that will act as the core drivers of job and output growth (Fig.1). The three pillars are:

1 **Optics, Photonics, and Imaging (OPI)**
With more than 100 small- and medium- sized businesses driving new technologies and growth,[9] advanced research at the University of Rochester and Rochester Institute of Technology (RIT), and SUNY Polytechnic, and specialized programs at Monroe Community College, the OPI sector is a leading source of innovation. As the headquarters of the American Institute for Manufacturing Integrated Photonics or AIM Photonics, the winning consortium in the Department of Defense's competition for a National Network for Manufacturing Innovation in Integrated Photonics, Rochester and the Finger Lakes region will be the recipient of significant investment. In addition to the substantial federal and New York State financial commitments to photonics, URI strategies primarily focus on strengthening other specific areas of optics, imaging, and laser technology, in which the region historically has been the global leader.

2 **Agriculture and Food Production**
The sector has been an area of strength for the region with the Finger Lakes producing approximately a quarter of New York State's total agricultural output.[10] The region possesses a robust ecosystem encompassing all aspects of the food value chain, from agricultural research, to diverse farms and crops, to healthy food production, to sustainable waste management. The ongoing transformation in the industry to focus on healthy, natural, sustainably grown and produced foods will enable the region, with URI support, to amplify its strengths and become a national center for innovative agriculture and food production.

3 **Next Generation Manufacturing and Technology**
Significant recent progress has been achieved in three key next-generation manufacturing and technology hubs which are reinvigorating Rochester and the Finger Lakes region: Eastman Business Park (EBP), the Rochester Downtown Innovation Zone, and the Western New York Science & Technology Advanced Manufacturing Park (STAMP) in Genesee County. Within each hub, there is both existing activity and new, cutting-edge companies ready to move in. The URI will accelerate growth and help these hubs diversify into adjacent industries: energy storage, biomaterials, agriculture and food production, and functional films at EBP; IT, photonics, and new media in the Downtown Innovation Zone; and semiconductors, nanoscale, and advanced manufacturing at STAMP. While initially focused on these three locations, with the right combination of private and public investment, URI funding will support other emerging hubs over the next five years. URI Investment in next generation manufacturing and technology will accelerate the progress of the Finger Lakes in developing its next generation of industrial growth.

Fig. 1

Strategic framework

The URI plan for the Finger Lakes economy is supported by a strategic framework reflecting the region's objectives, priority pillars, and key enablers

GOALS

Grow jobs | Increase regional wealth | Drive private investment | Reduce poverty

Pillars

1 Optics, Photonics & Imaging

- Optics
- Integrated Photonics
- Lasers
- Imaging (e.g. biomedical)
- Sensors / Displays

2 Agriculture & Food Production

- Food production
- Agriculture / Ag-tech
- Wineries & craft beverage
- Agri-tourism
- Controlled environment agriculture
- Healthy, natural foods
- Sustainable farming

3 Next Generation Manufacturing & Technology

- Eastman Business Park
  Photonics, Biomaterials, Ag. & Food Prod., Energy storage, Functional films
- Downtown Innovation Zone
  IT, Photonics, New media
- STAMP
  Semiconductors, Nanoscale & Advanced manufacturing
- Emerging advanced manufacturing technology

Enablers

A Pathways to Prosperity: Workforce Development

- Supporting Rochester-Monroe Anti-Poverty Initiative
- Improving high school graduation rates
- Increasing college readiness
- Targeting hard-to-place workers
- Reducing unemployment

B Entrepreneurship & Development

- Increasing access to capital
- Expanding incubators & accelerators
- Promoting commercialization & technology transfer

C Higher Education & Research

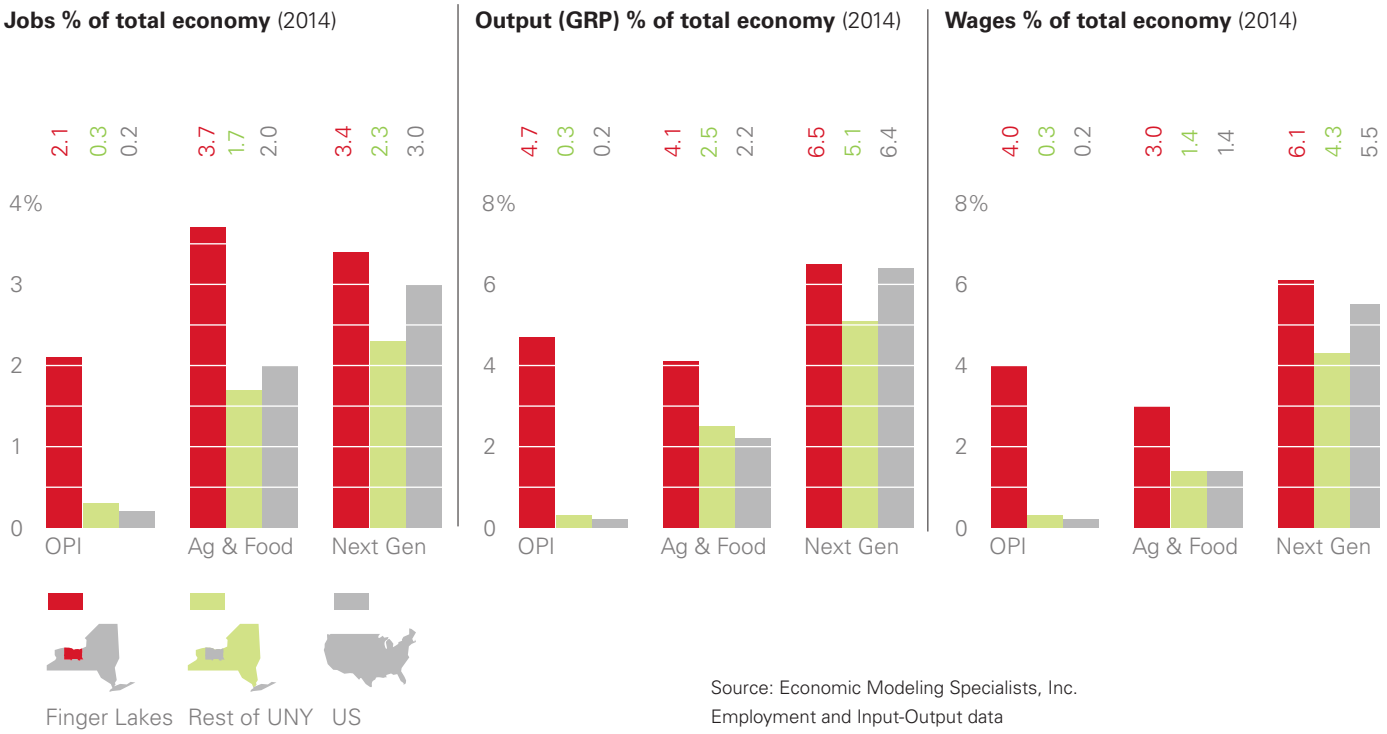
- Expanding research & enrollment
- Biomedical research & applications
- Data science
- Software development
- Additive & sustainable manufacturing

FOUNDATION

Quality of Life: Education, Healthcare, Skilled Workforce, Diverse Economy, Cost of Living, Arts & Culture

Fig. 2

Comparative performance of the Finger Lakes region



Source: Economic Modeling Specialists, Inc.
Employment and Input-Output data

In order to assess whether these areas are optimal targets for state investment, the Council focused on three primary criteria: output, jobs, and wages. The Council compared the Finger Lakes' performance and competitive advantage in these metrics against other upstate regions and the U.S. (Fig.2).

For each metric, the focus was both historic and forward looking. The identified industry clusters are those that make the Finger Lakes unique and represent areas in which the region outcompetes the other regions in upstate New York based on economic data. They also are industries in which the Finger Lakes is positioned to succeed against emerging competitors both domestically and abroad. The clusters were evaluated in terms of the ability to help reduce poverty.

The process to identify these areas of focus included quantitative and qualitative components (Fig.3).

These inputs were used to narrow a substantial breadth of potential industries to highlight. Starting from over 1,000 industries assessed from a quantitative standpoint, the Council combined quantitative and qualitative insight to identify the areas of focus (Fig.4).

The specific filters and analyses employed by the Council are described in more detail in Appendix 9.3.

The URI plan is also comprised of three core enablers that will facilitate economic growth within the key pillar industries. These enablers are essential to achieve the four URI objectives and were selected through the same rigorous quantitative and qualitative analysis employed to select the pillars (Fig.1). The three enablers are:

A. Pathways to Prosperity: Workforce Development

The Finger Lakes region will strengthen its commitment to reducing poverty through coordination with the Rochester-Monroe Anti-Poverty Initiative and provide opportunities for success through targeted education and training efforts that ultimately link to job placement for workers of all skill levels.

B. Entrepreneurship and Development

The region will strengthen its entrepreneurship ecosystem through the incubation and acceleration of new start-ups, increasing access to capital, and growing urban and regional wealth through support for small businesses.

C. Higher Education and Research

With 19 institutions of higher education that have received more than $2.5 billion in research funding over the past five years,[11] the Finger Lakes region will amplify its ability to attract world class talent and drive cutting-edge research in the selected URI key pillar industries, as well as additional regional institutional strengths, including data science, biomedical research, applications and software development, and additive and sustainable manufacturing.

These three pillars and three enablers, along with the foundation provided by the region's rich quality of life, form the framework for dynamic, transformative long-term economic development in the Finger Lakes region. Together, they form the optimal portfolio for investment by directly complementing each other and creating far-reaching synergies. The selected industry clusters promote sustainable growth by placing the region at the forefront of innovation in well-established regional strengths, and preparing for future leadership in emerging fields of technology. This collection of industries also creates a robust regional strategy that draws on strengths in both the urban core of Rochester and throughout the nine counties of the Finger Lakes region.

The three enablers will support focused industry growth and develop the capabilities of the region more broadly by meeting the evolving demand for people, capital, and technology. Targeted training and education for hard-to-place workers will provide the nimble and skilled workforce necessary to support the expansion of growing industries, while fostering entrepreneurship will support the creation of new businesses, and investing in higher education and research will drive industry innovation and provide a pipeline of highly skilled workers.

Fig. 3

Quantitative & qualitative data were distilled into the plan

A few examples:

Quantitative analysis

State data

UB Regional Institute analysis

Outside-in data

Local data

Qualitative insights

120+
Interviews

110+
Public input submissions

Work Group meetings

Outside benchmarks

Fig. 4

Evaluated 1,000+ industries to identify core clusters

Evaluated a broad set of 1,000+ sub-industries that included:

Consumer

Energy

Financial Institutions

Healthcare

Industrial Goods

Insurance

Tourism & Arts

Retail

Technology, Media & Telecom

Filters

Job growth →

Output growth →

Regional focus →

Regional fit →

Interviews →

+ many others

Focusing on a set of strong growth industry clusters

Optics, Photonics, and Imaging

Agriculture and Food Production

Next-Generation Manufacturing and Technology

Plan was developed through community engagement

Throughout the development of the Finger Lakes region's URI plan, the Council actively built consensus by soliciting and receiving public input from the community through a comprehensive process of stakeholder and public engagement. (Fig.5)

In order to collect a diversity of input from across the region, the Council facilitated interviews with more than 120 community stakeholders from all nine Finger Lakes counties, representing a wide breadth of organizations, industries, and perspectives. In addition, FLREDC members and staff spoke to more than 1,600 stakeholders, business leaders, and citizens about the region's URI efforts at events and meetings throughout the Finger Lakes.

Fourteen sets of FLREDC Public Meetings provided detail about the 2015 CFA and URI processes, and attracted more than 1,500 attendees. Four URI Public Forums held across the region offering stakeholders and interested citizens the opportunity to learn more about the development of the URI plan and provide input into the process. The Council also held a special workshop for the more than 450 Work Group members that provided an interactive briefing on the competition. Dozens of FLREDC Work Group members directly supported the URI plan process by providing topic expertise and identifying potential projects for the plan's pillars and enablers.

The Council established a Steering Committee that met on fourteen occasions to help formally guide the creation of the Finger Lakes region's URI plan. A dedicated URI Working Team consisting of additional leaders from business, government, and academia met more than 20 times during the URI process. The FLREDC co-chairs also facilitated dozens of weekly meetings specifically dedicated to the URI plan process.

The Council engaged the public through a variety of media channels, including meetings with the editorial boards of key regional newspapers, including the *Finger Lakes Times, Batavia Daily News,* and the *Rochester Democrat & Chronicle.* Council members participated in live call-in shows on the area's leading news radio stations. The extensive media coverage of the development of the URI plan enhanced public understanding of the process by reaching tens of thousands of area residents.

Thousands more were engaged through the Council's social media efforts. The Council and its members drove public input through increasing use of Twitter, Facebook, and the FLREDC website. To reach those without internet access, the Council also made drafts of the report available to the public at City of Rochester library branches.

The Council employed two public input forms that were accessible on the FLREDC website and solicited ideas for areas of focus in the strategic planning process and specific transformative initiatives. In addition, the Council asked the public to name the URI plan. Nearly 200 title ideas were submitted, with "Finger Lakes Forward" the overwhelming favorite (Fig.6). At the same time, the Council released its draft plan to the public for comment – more than a month before final submission – encouraging review and input that resulted in more than 700 downloads and comments.

In an important collaborative effort, Council members and state agency staff coordinated closely with the Rochester-Monroe Anti-Poverty Initiative (RMAPI), attending meetings and public events, and conferring regularly with RMAPI leaders. RMAPI's outreach to thousands of citizens and stakeholders informed the Finger Lakes URI plan to an extensive degree.

Throughout the URI process, the FLREDC built community-wide consensus, gathered input and garnered support from elected officials, business leaders, and other members of the public. Thousands of community members and stakeholders confirmed their support for the Finger Lakes URI plan by signing on to a support statement, clearly demonstrating that the community has united behind this effort. Key letters of support from the Rochester Business Alliance, Greater Rochester Enterprise, the Rochester Building and Construction Trades Council, the region's Assembly and Senate delegation, and other organizations and community leaders can be found in Appendix 9.1 of this document.

Fig. 5

Key elements of community engagement efforts

Media exposure & Public Input

15+
Media engagements (e.g., live call-in show, editorials, etc.)

700+
Online draft downloads and public comments

Social media exposure through Twitter, Facebook, FLREDC website

FLREDC and Work Group collaboration

1,500+
Participants in FLREDC public meetings

450+
Work Group participants at URI Workshop

14
URI Public meetings and forums

Stakeholder engagement

120+
Interviews with community stakeholders

34+
Steering Committee and Working Team Meetings

2,400+
Letters of support

Fig. 6

Public choice for the plan title

United for Success

FLX
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"I saw [in Rochester] examples of successful partnerships: business working together with government and academic institutions to train and grow the workforce."

– Joe Biden, Vice President, 27 July 2015

URI Concepts addressed in this chapter

- **Collaboration**
- **Community Reinvestment**
- **Connectivity**
- **Innovation**
- **Private Leverage**
- **Workforce Development**

Photo by: Adam Fenster

United for Success

Leverage 2

Keuka Lakefront
Development

Photo by: Matt Wittmeyer

Leverage
Significant Private Investment Will Exceed State Goals

Over the next five years, with the support of URI funding from New York State, the region has identified up to $6.4 billion in private investment through companies relocating or increasing their operations in the Finger Lakes region, and create approximately 8,200 direct jobs and 9,000 indirect and induced jobs in New York State.

Projects have been identified with associated private investment in all nine counties of the Finger Lakes region, with approximately half of the dollars and half of the projects outside Monroe County, aligning these investments with the population split between the urban core and outlying counties (Fig.8).

These leverage estimates are based on a conservative bottom-up assessment of key industries and projects identified in the Finger Lakes URI plan. Local leaders for each industry, working in close collaboration with the Council, collected direct input from Work Group members, companies, regional business leaders, and other stakeholders about investments most likely to materialize over the next five years, if the region receives URI support. Potential private investment was included in this plan only if it was a credible prospective investment from an identified company, was a defensible project with private investment based on past FLREDC experience, and was aligned with URI leverage guidelines. The Council employed several approaches to validate the potential investments as strong cases for URI support and confirm the project list:

- While compiling each list, a dedicated URI team industry leader assessed every project in order to validate credibility and high likelihood of the investment occurring, if URI support is awarded;
- The Council gathered letters of support from many of the companies to confirm the seriousness of the potential investment;
- Companies with near-term investment were asked to submit detailed project plans (including anticipated investments to be made by line item, operational spending, jobs created, etc.) to confirm the status of a project in planning phase.

To most accurately capture total leverage, the Council organized identified projects into three categories to help clarify the strength and suitability of leverage estimates:

- Future URI-eligible investments in potential projects at specific companies: The strongest form of leverage identified, these investments represent projects ready for URI investment with immediate impact private leverage. Projects in this category total $3.8 billion of private investment and are expected to create 5,200 direct jobs.
- URI-eligible investments with specifics in development: These projects are proposed by specific companies or entities, but some funding sources for the leverage are not yet finalized. For example, some projects at academic institutions include anticipated research funding in adherence to the URI guidelines, but since these dollars are not yet confirmed, these investments are categorized as "in development." When applicable, the Council has conducted a discounted probability analysis for these projects, multiplying the likelihood of funding by the range of probable funding, resulting in conservative estimates for probable funding. Projects in this category total $2.6 billion of private investment, creating an expected 3,017 direct jobs.
- Non URI-eligible future spending: The Council identified several projects with future investments to be made in key Finger Lakes URI sectors, but ultimately excluded these from leverage totals because the projects are already committed to moving forward without the need for URI investment. Many of these include priority projects previously identified by the FLREDC and incentivized by the state. Projects identified in this category totaled $2.1 billion of future investment and will have a significant positive impact on the Finger Lakes economy.

Using this level of rigor, the Council was able to verify leverage in excess of the 5:1 ratio prescribed by the URI guidelines. (Fig. 7)

Fig. 7

Included in leverage:

$6.4B total

in private investment (more than 12:1 ratio)

8,200 direct jobs

and more than 9,000 indirect and induced jobs

50% **investment identified outside Monroe County**

$3.8B

URI-eligible projects identified

- Projects with known companies, investments
- Potentially eligible for URI support

$2.6B

URI-eligible projects in development

- Projects with unknown companies or non-specific source of funding
- Potentially eligible for URI support

Fig. 8

Geographic spread of anticipated leverage across the region

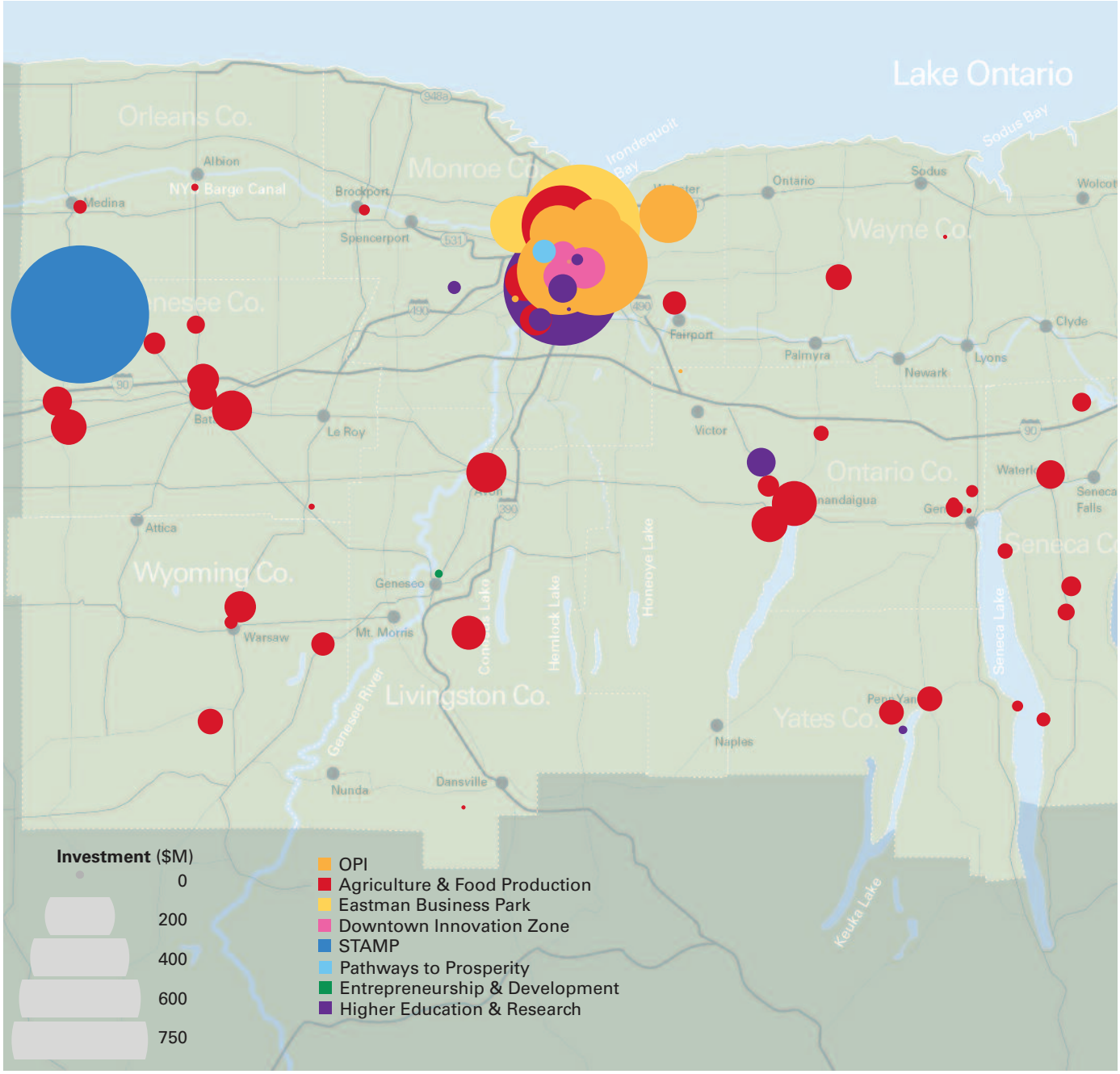


Fig. 9

URI-eligible private investment

	URI-eligible projects identified			URI-eligible projects in development		
Industry	**Invest. ($M)**	**Direct jobs**	**Project count**	**Invest. ($M)**	**Direct jobs**	**Project count**
OPI	1,054	900	6	285	354	2
Ag & Food Production	1,246	1,905	56	38	73	1
Next-Gen: EBP	562	520	16	148	215	3
Next-Gen: Downtown	138	682	4	45	300	3
Next-Gen: STAMP	705	1,000	1	1,460	1,550	4
Pathways to Prosperity	20	25	1	TBD	TBD	4
Entrepreneurship and Development	2	4	1	121	255	2
Higher Education and Research	43	161	7	579	270	3
Total	**$3,771**	**5,197**	**92**	**$2,631**	**3,017**	**22**

$6.4B **Total Leverage**

These potential leverage investments are substantial, highlighting the strong progress the Finger Lakes region has made toward transforming and revitalizing its economy. However, the URI award is critical to leveraging this spending, as companies seek funding, a strong workforce, and a growing region. Without URI funding, the region likely will not realize this opportunity for transformational growth.

Leverage is defined through a conservative approach and only considers private investment, including capital expansions for production lines, new facility construction, and new products that cut across the region's URI growth industry clusters:

- In **Optics, Photonics, and Imaging,** approximately $1.3 billion of potential investment from large industry players and small businesses, in addition to investments awarded from the AIM Photonics will result in 900 direct jobs.
- In **Agriculture and Food Production,** approximately $1.3 billion of potential investment from large companies, including LiDestri Foods and Wegmans Food Markets, and many small businesses in the region will result in 2,000 direct jobs.
- At **Eastman Business Park,** $700 million in investment from companies currently at the Park and other companies considering moving in will result in more than 700 direct jobs.
- In **the Downtown Innovation Zone,** approximately $140 million in new investment will result in an estimated 1,000 direct jobs.
- At **STAMP,** more than $700 million of potential investment represented by Project Eagle, a nanoscale manufacturing facility, and an additional $1.5 billion of expected future investment from other specific projects in the pipeline will result in approximately 2,500 direct jobs.

In addition, projects to enhance and grow the supporting enablers of the Finger Lakes economy will attract private investment and leverage. Projects identified in enablers are primarily focused on supporting growth within the pillars, so anticipated leverage is lower than in the industry pillars. However, the Council is still focused on identifying private leverage where possible to ensure capability development within the enablers is strengthened by significant economic tailwinds:

- In **Pathways to Prosperity,** approximately $20 million of capital leverage from private partners has been identified. In addition, the region anticipates making substantial investments across several programs that directly address workforce development and poverty mitigation. These programs will help ensure a robust, well-qualified workforce is available to industries that grow due to URI investment, while also ensuring the benefits of economic growth are extended to everyone in the community. Investments in Pathways to Prosperity are critical to making the region attractive for private investment. Because workers placed through the Pathways to Prosperity programs will be employed in specific industries, investments in creating new jobs is included only within industry leverage calculations in order to avoid double-counting.
- Within **Entrepreneurship and Development,** approximately $120 million of private capital is projected to be invested in support of start-ups based on the past performance of Rochester venture capital funds. These funds are expected to create approximately 250 direct jobs.
- Within **Higher Education,** more than $600 million of additional investment will occur in the region, including approximately $50 million of incremental capital spending by regional colleges and universities, and $550 million of additional research funding received as a result of specific new R&D centers created through URI funding. These investments will create more than 600 new direct jobs.

In total, the region anticipates attracting $6.4 billion of URI-eligible private investment across the pillars and enablers, between specific company and in development leverage (Fig.9) – with a total of $8.5 billion in potential future spending identified in the strategic areas of focus in the URI plan.

URI Concepts addressed in this chapter

Collaboration **Readiness** **Private Leverage** **Sustainability**

Readiness 3

Intrinsiq Materials, a printed electronics company located Eastman Business Park

Photo by: Matt Wittmeyer

The Finger Lakes region is ready for transformative progress

Record of Success

After the decline of 63,000 jobs from major employers since the early 1990s,[12] the Finger Lakes region is now poised for growth. Over the last four years, the region has created more than 25,000 jobs.[13]

Since the creation of the FLREDC in 2011, New York State has awarded the region more than $300 million in REDC funding, including last year's award of $80 million and selection as a "Top Performer." The state has supported 372 projects covering industries such as agriculture, tourism, transportation, and manufacturing, providing capital and other support to local businesses.

Illustrative examples of these projects include:

- **Eastman Business Park,** identified by the Council as the top, unanimous priority project every year since 2011, is a success story in large part due to the state support recommended by the FLREDC. Thanks to early state support to address utility system and environmental liability issues, the Park is a focal point for economic revitalization, with Kodak determined to carry its redevolpment forward. The Park is now home to 60 businesses representing diverse industries, including energy storage, biomaterials, functional films, and agriculture and food production. Today, non-Kodak businesses employ approximately 4,800 staff and are projected to grow to approximately 70 companies by 2017. (Fig. 10)[14]
- **College Town** is a 14-acre project which has transformed a parking lot into a center for shopping, dining, business, and residential activity on the University of Rochester campus. College Town has brought more than 900 construction jobs and more than 320 permanent service and retail positions to Rochester.
- **The Genesee Valley Agri-Business Park,** a 250-acre shovel ready site in Batavia, is now home to two major yogurt manufacturing facilities that located in the region with support from New York State. Thanks in large part to the concerted, strategic efforts of Governor Cuomo, New York State has become the number one yogurt producer in the nation and Genesee County has become the yogurt capital of the state. In 2012, Müller Quaker Dairy constructed a $208 million, 350,000 square foot manufacturing plant, one of the largest in the country, which will add more than 200 jobs. After a national site search, Alpina Foods constructed a $20 million, 40,000 square foot facility, its first North American manufacturing facility, in the region.

> "Rochester possesses a unique set of assets that are key to a successful economic reinvention, including a highly skilled workforce."
>
> – William Dudley, president and CEO of the Federal Reserve Bank of New York, 12 August 2015

Fig. 10

Cumulative non-Kodak jobs created at EBP

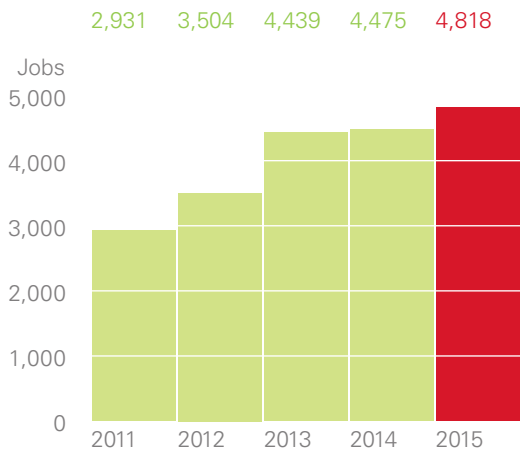
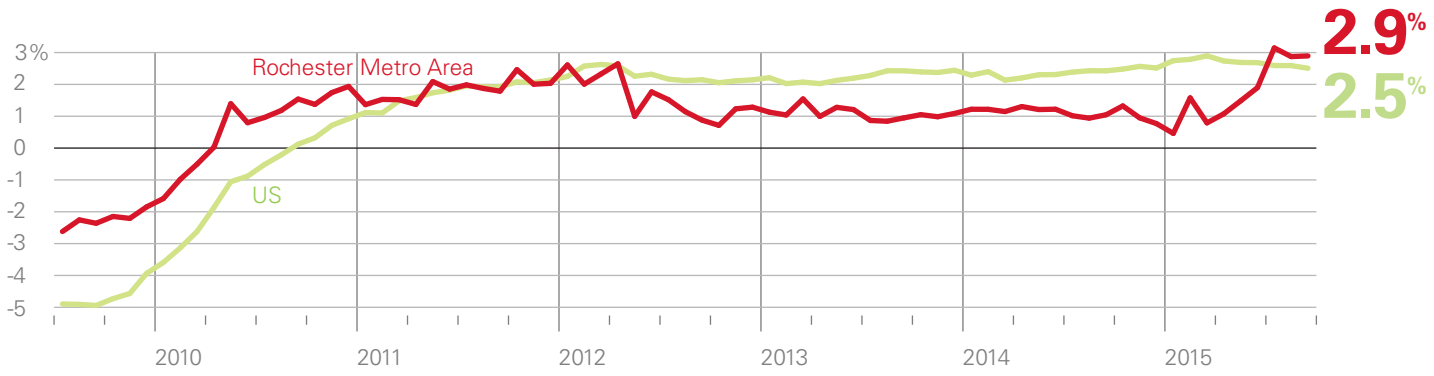


Fig. 11

Private sector non-manufacturing employment growth



SOURCE: U.S. Bureau of Labor Statistics

Leading Indicators

The Finger Lakes region is positioned for broad economic growth based on positive leading indicators and trends applicable to its economy. These trends provide evidence that the region has begun a transformation, demonstrating the potential value realizable through additional state investment.

Leading indicators that support readiness include:

- Private sector job growth is rising (Fig.11). Despite the decline in local manufacturing jobs, non-industrial hiring has sharply accelerated in 2015. During the three-month period ending in August 2015, year-over-year private sector job growth in the Rochester Metro Area averaged 10,400 (2.33 percent), the best historical performance according to the New York State Department of Labor, whose records date back to January 1990.[15]
- After a sharp decline in 2013 and 2014, businesses are becoming more upbeat about the region's near-term economic outlook. Nearly one in three employers (34 percent of mid-sized firms with sales between $10 and $500 million) plan to add more workers by end of the year vs. just 3 percent that expect to reduce employee headcount.[16]
- Patent production is high and growing. The Finger Lakes region produces patents at the fifth highest per capita rate in the country.[17] With three patents per 1,000 workers, the region produces almost three times the state and national rate.[18] Even in the wake of patent leader Kodak's downsizing, the Finger Lakes region is responsible for 26 percent of patents produced in New York State,[19] with the number of non-Kodak patents growing significantly during the past decade.
- Vacancy rates are decreasing across the region, especially in the City of Rochester, where the market rate rental vacancy rate has dropped to 3.4 percent, a 30 percent decrease from the 2013 rate.[20] Property managers in downtown Rochester indicate that market demand remains strong, with 69 percent reporting that vacant units are filled in less than one month.[21] While commercial vacancies are slightly higher, they are expected to follow residential trends.

Committed & Collaborative Community

The Finger Lakes region has a successful history of collaboration and has the right people in place to act on the state's $500 million URI commitment. The region benefits from an exceptional population who generously volunteer their time, money, and expertise. With the third highest rate of volunteer service in America[22] and the highest rate of philanthropy in the state,[23] the region's tradition of giving is rooted in Kodak founder George Eastman's commitment to quality of life. George Eastman not only founded the Community Chest (now the United Way of Greater Rochester), but also contributed lasting gifts to the region including the Eastman Dental Center and the Eastman School of Music.

The region's businesses and organizations have recently driven systematic change by leading local initiatives that have received national attention. A series of community successes speaks to the power of regional cooperation throughout the Finger Lakes region:

- The FLREDC Workforce Development Work Group has unified leaders throughout the community, bringing together dozens of executives including the CEOs of LiDestri Foods, Paychex, Wegmans Food Markets, and Excellus BCBS, the presidents of the University of Rochester, RIT, and Monroe Community College, the Mayor of Rochester and the County Executive of Monroe County. This commitment has translated into actions including the University of Rochester's recent agreement to serve as superintendent of East High School to dramatically improve educational outcomes, and sponsoring the first Jobs and Career Fair which targets Rochester high school seniors and drew more than 460 students and 50 businesses.[24]
- The Finger Lakes Health System Agency was awarded a $26.6 million grant, the largest in the nation, from the Center for Medicare and Medicaid Innovation for its Transforming Primary Care Delivery: A Community Partnership project. The initiative strengthens the ability of regional practices to care for their patients through care managers and connections to community organizations, and leverages unparalleled collaboration between regional stakeholders including hospitals, insurers, and nonprofits.
- Rochester Regional Health and UR Medicine partnered to lead a coalition of 28 hospitals, 3,000 health care organizations, and more than 600 community-based organizations that was recently awarded $565 million as part of the state's Delivery System Reform Incentive Payment (DSRIP) program.

Region's Foundation
Quality of Life

For over a million residents, Rochester and the greater Finger Lakes region provide an exceptional quality of life. Kiplinger named Rochester as the fifth best city in the U.S. for families,[25] and regional employers are continuously recognized for their commitment to employees and the community. One of the region's largest companies, Wegmans Food Markets, is consistently ranked by *Fortune* as one of the best places to work in the nation,[26] and was identified through a Harris Poll as number one for corporate reputation among the 100 most visible companies.[27] By focusing on quality of life, URI strategies will continue to promote the City of Rochester and the Finger Lakes region as an attractive place to invest, live, work, visit, and play.

Six key assets distinguish the Finger Lakes region:

- **Education**
- **Healthcare**
- **Skilled workforce**
- **Diverse economy**
- **Low cost of living**
- **Arts & Culture**

With 19 institutions of higher education, the Finger Lakes region is one of the most productive in the country, ranking third in degrees per capita.[28] Employers cite the high quality of labor, high employee retention, low absenteeism, and short commutes as key productivity drivers.[29]

K-12 schools also are an asset for a significant portion of the Finger Lakes population. Eight Rochester suburban high schools were ranked by *US News & World Report* in the top five percent in the nation,[30] and quality of education is among the primary reasons families decide to locate to the Finger Lakes. However, the Council recognizes that the strength in suburban Rochester schools stands in stark contrast to the challenges that are faced by the Rochester City School District and is addressed in the Pathways to Prosperity section of this report.

Healthcare in the Finger Lakes is exceptional for its high quality, low cost, and community focus. The region is home to one of the world's leading academic medical centers, the University of Rochester Medical Center, which pioneers innovative research and trains the next generation of healthcare providers. Rochester also has the lowest overall Medicare spending rate in the nation[31] and commercial insurance costs are 30 percent lower than the national average.[32] The Finger Lakes High Blood Pressure Collaborative, an effort to make Rochester the healthiest community in America, has improved the blood pressure control rate for adults by over 14 percent, compared to national rates of one percent, and was recognized as a "phenomenal success" by the Center for Disease Control and Prevention's Million Hearts Initiative.[33] The Greater Rochester Independent Practice Association, a partnership between Rochester Regional Health and more than 1,300 regional physicians, improves quality of care and reduces costs by sharing information between hospitals, private practices, clinical labs, and payers. The Rochester Business Alliance partnered with Wegmans Food Markets for the Eat Well Live Well Challenge to improve the health of the local workforce. More than 200,000 employees have participated to date, making it the largest

Fig. 12

Foundation
Finger Lakes region offers a world-class quality of life

"URI strategies will continue to promote … the Finger Lakes region as an attractive place to invest, live, work, visit, and play."

community-wide wellness program in the world.

Rochester and the Finger Lakes have an impressively skilled workforce and the availability of highly skilled labor is often cited by businesses as one of the top reasons to locate in Rochester. Sixty two percent of the population has at least some level of college education, with science, technology, engineering, and mathematics among the most popular fields of study. A 2013 U.S. Department of Education study ranked the greater Rochester area as first for degrees per capita in the physical sciences and mathematics and second for degrees in biological and life sciences fields.[34] The Brookings Institution ranked Rochester among the nation's top cities for patent generation[35] and *The Atlantic* magazine named it the 7th "Brainiest City in America" in 2013.[36]

The Finger Lakes' ability to weather the most recent economic crisis is due, in large part, to its diverse economy. Whereas the region once relied on a small number of large employers, today it is a diversified economy led by small- and medium-size businesses representing a portfolio of industries. This is evident in the growth of the non-manufacturing sector, which added 44,000 jobs since 2000, largely in education and healthcare sectors.[37] Once led by Kodak, Xerox, and Bausch + Lomb, today the University of Rochester, Wegmans Food Markets, and Rochester Regional Health are the region's largest employers.[38]

Families and businesses throughout the Finger Lakes also benefit from the region's noteworthy low cost of living, with Rochester ranked by Forbes as the fourth most affordable city in America.[39] With stable and affordable property and rental values, the median home sales price of $110,000 is 47 percent more affordable than the national average,[40] and according to U.S. Census Bureau data, Rochester has the second most affordable housing among the 52 major markets in the U.S.[41]

The Finger Lakes region also offers a rich array of arts and culture attractions, including theater, museums, music, and festivals. Rochester has been ranked by the National Center for Arts Research as one of the top cities for arts vibrancy,[42] a recognition supported by its diverse collection of museums and galleries. The George Eastman House, a National Historic Landmark, is the premier museum of photography and cinema in the world. From the relics of antiquity to works at the vanguard of contemporary movements, the Memorial Art Gallery's permanent collection of more than 12,000 objects has been called the best balanced in the state outside of New York City.[43] The Strong National Museum of Play holds the world's most comprehensive collection of play-related artifacts and archives, drawing 500,000 visitors to downtown Rochester every year. In addition, there are more than 140 festivals in the Finger Lakes region, covering almost every weekend from May to October. The Xerox Rochester International Jazz Festival has seen its attendance grow to 200,000, while the Rochester Lilac Festival, in partnership with the "I LOVE NY" program, brings visitors from across the world to enjoy more than 500 varieties of the flower. The Fringe Festival showcases unique culture of all types and attracted 60,000 visitors in 2014, its third year of operations. The University of Rochester's Eastman School of Music is regularly ranked as the nation's leading graduate music school.[44] The region is also home to a rich array of recreational opportunities, represented by local and state parks, the Erie Canal, Lake Ontario, and the Finger Lakes.

The Strong | National Museum of Play

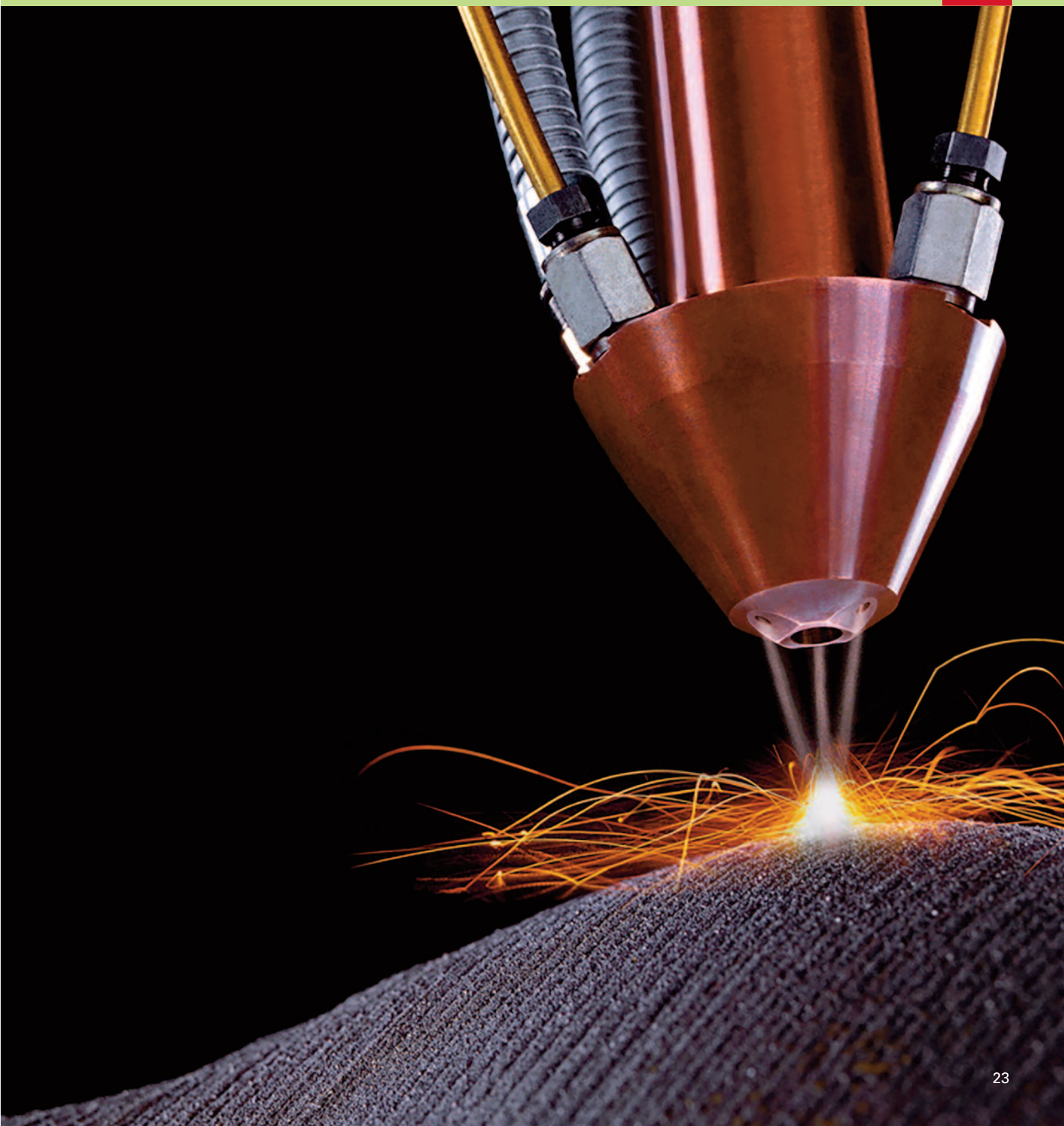
URI Concepts addressed in this chapter

Collaboration **Connectivity** **Readiness**

Growth Pillars

Key Industry Clusters

4

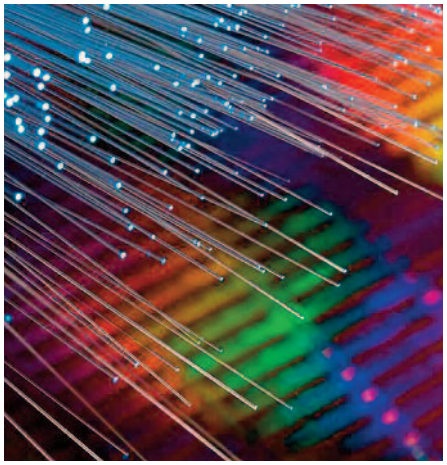


Growth Pillars:
Key Industry Clusters

To maximize the impact of investment, the Council has identified three industries to serve as economic growth pillars and act as the core drivers of job and output growth for the Finger Lakes region in coming years. The region's substantial assets and competitive advantages in these industries will generate growth that creates jobs not only directly within these industries, but also throughout the economy and in New York State more broadly through induced activity in supply chain fields.

The region anticipates broad-based growth. Industries identified as pillars will lead a major economic expansion, and represent the optimal target for URI investment to catalyze economic transformation.

Within each pillar, the region has identified initiatives that could potentially recieve URI investment. These highlighted initiatives, gathered through a consensus-based process from public forums and collaboration with FLREDC Work Groups, were vetted by the Council through an analytically rigorous process. While not necessarily the specific projects that will be funded, these initiatives represent examples of the type of project that the region would invest in with URI support. Initiatives titled "Year One" are well-defined proposals with associated private leverage that could be launched immediately after winning the URI competition. Initiatives titled "Full Implementation" are equally important, but will be further refined before implementation.



4.1 Optics, Photonics & Imaging

Vision

The Optics, Photonics, and Imaging industry has been driving the Finger Lakes economy for more than a hundred years, placing the region at the forefront of innovation while creating thousands of jobs. Strategic, targeted investments will keep this industry strong for years to come.

The Finger Lakes region has long heritage, a large manufacturing base, a highly skilled and entrepreneurial workforce, cutting-edge research, preeminent academic institutions, and a thriving start-up environment in the Optics, Photonics, and Imaging (OPI) industry. There is significant momentum in the Finger Lakes region: the recently awarded AIM Photonics, a federal research center headquartered in Rochester, will expand the economic potential for the region and New York State. The Finger Lakes region will build upon this momentum, employing URI investment in domains not covered by recent federal awards that fortify global leadership in OPI.

Strategic investment through the URI will enable the region to develop the full value chain from growing our robust base of component and sub-system manufacturing, to developing capabilities in the integrated systems that will fundamentally change computing and communications. Both of these industries will be based on photonics. By investing in nurturing start-ups, enabling small businesses, and attracting large enterprises, the URI will further allow the region to strengthen its leadership in this field, developing an even more robust OPI ecosystem that connects regional assets in industries adjacent to photonics, including life sciences, data sciences, energy innovation, and other fields. Through the URI, the region will build a new generation of large, globally recognized brands that call Rochester home.

University of Rochester Laboratory
for Laser Energetics

Photo by: Adam Fenster

Assets and performance

For more than a century, the Finger Lakes region has been the leading industrial center for optics and imaging, two related industries focused on the development and manufacturing of technologies to shape, focus, capture, and reproduce light. This leadership created substantial wealth for the region and tens of thousands of jobs.[45] Rochester has long been recognized as the "Imaging Capital of the World"[46] and the region has strong assets in Optics, Photonics, and Imaging (Fig.13):

- Approximately 120 companies form a robust local supply chain[47] with small business jobs growing by about four percent each year.[48]
- Assets from legacy companies, including industry-ready infrastructure at Eastman Business Park.
- Federal recognition and support through multiple funding awards.
- A strong academic community, including UR, RIT, SUNY Polytechnic, and many others.

All these assets combine to make the Finger Lakes region a world leader in OPI.

Global companies continue to look to Rochester to help develop new technologies, and larger local companies are expanding in the region. For example, Canadian-based IMAX established an R&D site in Rochester to help develop a new laser-based IMAX system which is being rolled out this year.[49] The regional business network includes small and large companies that create tens of thousands of jobs[50] and form a complete OPI supply chain. Complementary legacy assets, such as Kodak's roll-to-roll processing equipment at Eastman Business Park provide the business community access to needed capital equipment and the expertise to use it.

The federal government also recognizes Rochester as an evolving center in the field. Since 2012, the region has won all four of the federal government's major advanced manufacturing jobs initiatives related to OPI, based on its strength in the field:[51]

- The Advanced Manufacturing Jobs and Innovation Accelerator Challenge (AMJIAC).
- The Advanced Manufacturing Technology Program (AMTech).
- The Investing in Manufacturing Communities Partnership (IMCP) program.
- The National Network for Manufacturing Innovation (NNMI) Integrated Photonics,[52] creating the AIM Photonics.

The AIM Photonics award dramatically amplifies the region's leadership in Optics, Photonics, and Imaging. Integrated Photonics, the focus of the Institute, creates new types of devices that use light and electricity for communications and data processing. These miniaturized photonic devices are expected to revolutionize telecommunications and computing, just as integrated circuits have over the past 50 years, and the Finger Lakes region is positioned to lead this revolution. Rochester and the region will serve as the hub for the federal government and the more than 90 industry and 18 academic partners[53] in this $600 million consortium. The region will benefit from at least $115 million from New York State's $250 million commitment to the initiative[54] in addition to a portion of the $110 million in funding awarded by the Department of Defense. Components of the Institute will be in locations that are of strategic importance to the region's economic revitalization and supported by Governor Cuomo. The administrative headquarters, workforce development, education, training, and corporate and student incubator space will be located in downtown Rochester, including the Legacy Tower and the Sibley Building, which is the anchor of the Downtown Innovation Zone, a FLREDC priority project, and home to the region's federally- and state-designated business incubator. Eastman Business Park's world-class ITAR (International Traffic in Arms Regulations) clean rooms and laboratory facilities meet Defense Department specific

Fig. 13

Optics, Photonics, and Imaging is a historical strength of the Finger Lakes region that continues to grow today

Past

Kodak

xerox

BAUSCH + LOMB

Present

~26,000 jobs at

~120 companies (large and small businesses)

Leading programs and research at UR, RIT, and SUNY Poly

Workforce programs at MCC and others

AIM Photonics establishes Rochester as center for new research and development

Future

The region's strength in OPI is built upon more than 100 years of manufacturing innovation by companies like Eastman Kodak.

Photo courtesy: Eastman Kodak Company

security requirements and will house Rochester-led manufacturing efforts in sensors, testing, assembly and packaging, and electronic and photonic design. With these coordinated and focused efforts, AIM Photonics creates the opportunity to drive economic development and grow private employment in the Finger Lakes region in three ways: incubating new companies, expanding existing ones, and attracting new companies to the region.

Beyond integrated photonics, Rochester is known throughout the world for its innovations in light-based technologies, including xerography, the invention of the digital camera, lasers, high-speed scanners, LEDs, and others. The region's innovation is fueled by local universities that advance the field through research, help develop expertise in the field, and catalyze new technologies and companies. The University of Rochester encompasses a broad range of research. The Institute of Optics, established in 1929 as the nation's first optical science, engineering and design program, has awarded over 2,400 optics degrees to date, or more than half of the U.S. total.[55] The Laboratory for Laser Energetics (LLE), a New York State Energy Research and Development Authority (NYSERDA) and U.S. Department of Energy supported facility, is home to the second most powerful ultraviolet fusion laser in the world and has attracted almost $2 billion in federal funding.[56] More than 220 companies have been started by 115 graduates, faculty, and staff of the Institute of Optics.[57] Along with the Institute of Optics and the LLE, the Center for Emerging and Innovative Sciences, a New York State Center for Advanced Technology based at the University of Rochester, further strengthens the Finger Lakes region's OPI cluster by fostering industry-university collaborative research and attracting federal support.

At RIT, the Chester F. Carlson Center for Imaging Science (CIS) is a highly interdisciplinary university research and education center dedicated to exploring imaging in all its forms and uses. The science of imaging at CIS encompasses a wide range of subjects, from the physics of light sources to the psychology of visual perception. This research has also led to the formation of new companies in the region. Pictometry, a Rochester-based company, has pioneered a new geospatial imaging technology now used in a wide range of applications,[58] employs 250 people. RIT supports advanced optical lithography through the Nanopower Research Labs, and capitalizes on the revolution in light detection technology through its Center for Detectors. The Semiconductor Microsystems and Fabrication Lab at RIT will be expanded into integrated photonics in connection with AIM Photonics, and the Center for Electronics Manufacturing & Assembly will contribute to AIM Photonics, with a new course developed in photonics packaging.[59] These facilities are aligned closely to the research conducted at the RIT Nanophotonics Group and the Novel Material Photonics lab. These strengths help lift up other key New York State industries. For example RIT is collaborating with Cornell University's New York State Agriculture Experiment Station in Geneva to develop real-time crop imaging that allows for more precise agricultural management.

SUNY Polytechnic Institute's (SUNY Poly) presence in the Finger Lakes region helps connect the OPI industry to the nanoscience and advanced technology renaissance occurring throughout the state. The Photovoltaic Manufacturing and Technology Development Facility in Rochester focuses on crystalline silicon photovoltaics (PV), exploiting Rochester's strength in material and light sciences to develop next generation PV technologies. In addition, the New York Power Electronics Manufacturing Consortium and the Smart System Technology & Commercialization Center, two SUNY Poly facilities located in the Finger Lakes, take advantage of Rochester's highly skilled workforce to drive innovation in related semiconductor and nanotechnology fields.

Collectively, these centers have made Rochester a national leader in per capita OPI patents.[60]

Opportunities for growth

The Finger Lakes' numerous assets – academic institutions, a robust supply chain, industry leadership through AIM Photonics – position the region to capture a substantial share of the $500 billion global OPI industry, a key part of almost every modern technology.[61] Many of the companies in the Finger Lakes region's photonics cluster already compete successfully on an international level. As outlined in greater detail in the FLREDC's Regional Economic Cluster Plan, growth opportunities in the OPI space are centered on three main areas of support that will translate regional strength into broader commercial success:

- Attract even more large companies – historically the backbone of OPI jobs – to expand or establish operations in the region.
- Facilitate industrial research and technology development to keep the region on the cutting-edge.
- Increase the availability of manufacturing facilities, equipment, capital, and development support for local companies in order to help pool costs and keep pace with changing technology.

By expanding its photonics and imaging industries, the Finger Lakes region will create thousands of new well-paying jobs in the near future and increase exports to other states and countries. A stronger Finger Lakes regional cluster will also drive more foreign direct investment in the region, as companies around the globe recognize Rochester as the center for OPI manufacturing and innovation. Many large companies have expressed interest in the Finger Lakes region. The talented, innovative workforce and concentration of intellectual capital provides strong advantages to companies located here. A primary focus of the Council will be to identify and pursue large company projects in the region which require support for relocation to New York State. One such project is currently under consideration and highlighted in the Strategies to Achieve Vision section.

Expanding research and development capabilities in the region would further catalyze economic growth. Many small businesses in the Finger Lakes, including Lasermax, RPC Photonics, Sydor Instruments, and Lucid, were created as a result of regional research and innovation. Continued investment in these capabilities will spur further development in the small business sector, and position the region to capitalize on its leadership in photonics to grow an internationally recognized cluster in the field and in OPI more broadly.

The region has also identified several gaps in support for companies and start-ups. Investments in new facilities and equipment for small businesses will help them expand and grow. In high-tech fields such as OPI, the cost of equipment makes it difficult for small companies to innovate and expand into new areas.[62] Investment in industrial R&D resources and user facilities will help bridge this gap and unlock significant new growth. Supporting collaboration between industry and academic research institutions will help translate technology from invention to commercialization. In particular, regional strengths with a high need for investment include advanced optics technologies such as optics materials surface finishing, imaging systems and analytics, sensors, electro-optical systems, and laser technology.[63] In the past few years, the region has incubated many new OPI companies including FCR, Ovitz, LighTopTech, and Clerio Vision,[64] and increasing the support available to start-ups would further build upon this momentum.

In order to remain among the world's leaders in exploiting light-based technologies in products and services, the region must harness the science and technology necessary to fills gaps in OPI R&D, better utilize significant historical assets (e.g., Eastman Business Park), and fully leverage federal investments, like AIM Photonics. New investments in optics,

lasers, and imaging, in particular, are synergistic and will complement the state and federal government's investments in AIM Photonics. For example, new laser manufacturing technology will allow new research initiatives and processes such as additive manufacturing, advanced material functionalization, and surface annealing to be applied to advanced optics manufacturing. The packaging technology developed by AIM Photonics will allow optics manufacturers to enter into new markets for integrated optical systems. Advanced displays, LED/OLED lighting, and other light-based technologies are also areas where the region is capable of producing new world-class products. Continued advancement in micro-optics technologies, such as MEMS micro-mirror arrays are transforming fiber optic communications. However, investments need a critical mass in order to have an impact and future investments in optics, imaging, and lasers, along with the AIM Photonics investment in integrated photonics, have the potential to be large and broad enough to develop next generation platforms and technologies with significant commercial applications and substantial economic impact.

Strategies to achieve vision

Highlighted Year One initiative

Year One initiatives are specific, high-impact projects that could be launched immediately after winning the URI.

The region is competing for **Project Cataract,** a confidential project by a large OPI company to establish a new manufacturing facility. If the Finger Lakes region successfully attracts Project Cataract with the help of the URI, the new facility will be constructed in the urban core and will provide jobs for a range of skill levels with minimal transportation barriers – targeting hard-to-place and low-income workers. The region is a prime candidate thanks to a history of innovation in this space, a talented community with strong intellectual capital, and directly related workforce development programs such as the Optical Technology degree at Monroe Community College. Multiple sites globally are under consideration for Project Cataract, so URI support is crucial to attract this investment to New York State, and would result in up to $400 million of private capital investment and 600 new direct jobs in downtown Rochester.

Highlighted Full Implementation initiatives

Full Implementation initiatives are projects that would be further refined after winning the URI, including clarifying final investment and timing.

- **The Laboratory for Laser Energetics (LLE)** at the University of Rochester requires next generation laser and pulse power technology to keep New York and the U.S. at the forefront of energy research, technology, and development. The LLE will develop a new, state-of-the-art facility that will create the world's most advanced pulse power system and highest peak power laser, leveraging $135 million of private investment from the University of Rochester and the federal government. The project is estimated to create 246 construction jobs, 354 permanent jobs, and attract an additional $150 million in federal research over the next five years from the National Nuclear Security Administration, the Department of Energy's Office of Science, and the Department of Defense. This new strategic initiative will strengthen the LLE's global leadership in fusion and high-energy-density physics research, which today attracts approximately $70 million per year in federal support to New York State, involves around 400 scientists, engineers, and staff, and stimulates the region's OPI sector through technology commercialization, company creation, and local purchases. Absent New York State support, this facility could be built in another state in partnership with the federal government and national laboratories.
- **Developing a Finger Lakes Photonics Challenge** would help focus entrepreneurship resources on the Finger Lakes region's photonics industry, creating a collaborative, yet competitive, environment for start-ups to grow and thrive. With support from the URI, and with leadership from local institutions such as High Tech Rochester, the region could provide start-up acceleration support to cohorts of photonics-related start-up companies. Creating an annual conference with awards to showcase development and innovation in the photonics space would help anchor the industry in Rochester, establishing the Finger Lakes region as the global center for this new field. URI investment would create an engine to stimulate start-up activity in photonics, ensuring that state and federal investment in the sector via AIM Photonics translates to commercial activity.

URI Concepts addressed in this chapter


Community Reinvestment

Connectivity


Global Economy


Hard-to-place Workers

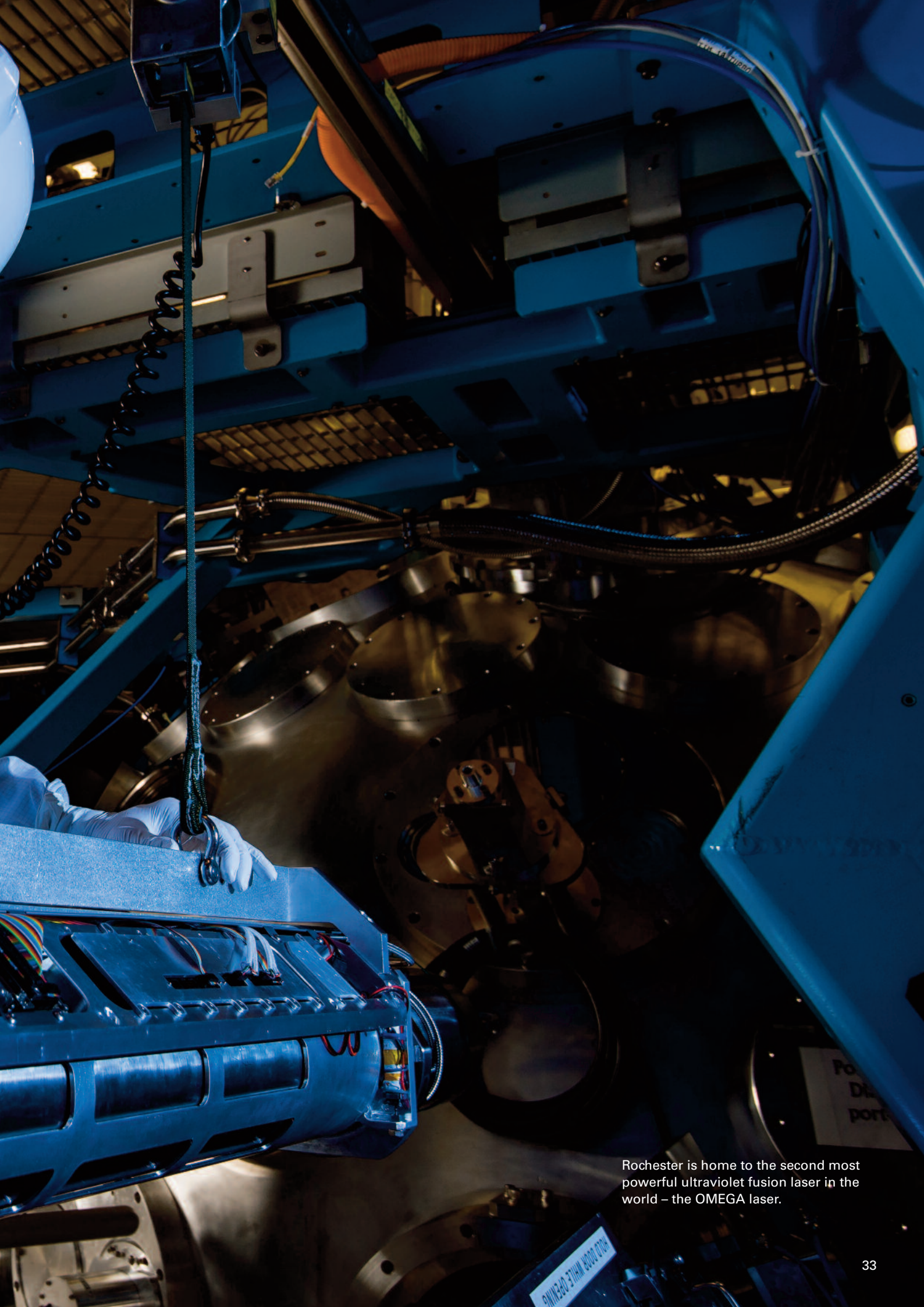

Innovation


Private Leverage


Readiness


Workforce Development

Photo by: Adam Fenster



Rochester is home to the second most powerful ultraviolet fusion laser in the world – the OMEGA laser.

4.2 Agriculture & Food Production

Vision

The food industry is changing faster than ever before. More consumers are demanding healthy, high quality, locally-sourced food. This recent trend provides the Finger Lakes region and New York State, with URI support, the opportunity to establish itself as the "Eastern Center for Organics."

The Finger Lakes region is building a robust, interconnected food ecosystem across its nine counties, offering job opportunities for workers of all skill levels. With more than $1.3 billion of private investment[65] under consideration in the next five years, the region will remain the leading food producer in New York State,[66] the northeast, and beyond. As the broader industry continues to transform to focus on fresh, healthy, sustainable, locally-sourced, high-quality food, strategic investments in equipment, research, and infrastructure will develop new capabilities that ensure next-generation production is headquartered in the Finger Lakes region. The region has the opportunity to grow local industry and become a global leader in agriculture and food production. These benefits will be spread across the food value chain, starting with industry and academic research, through farms and food production companies across the region, to retailers and consumers. Agriculture and food production is a growing industry in the Finger Lakes, making it a high priority target for strategic investment to grow jobs, wealth, and private investment.

Assets and performance

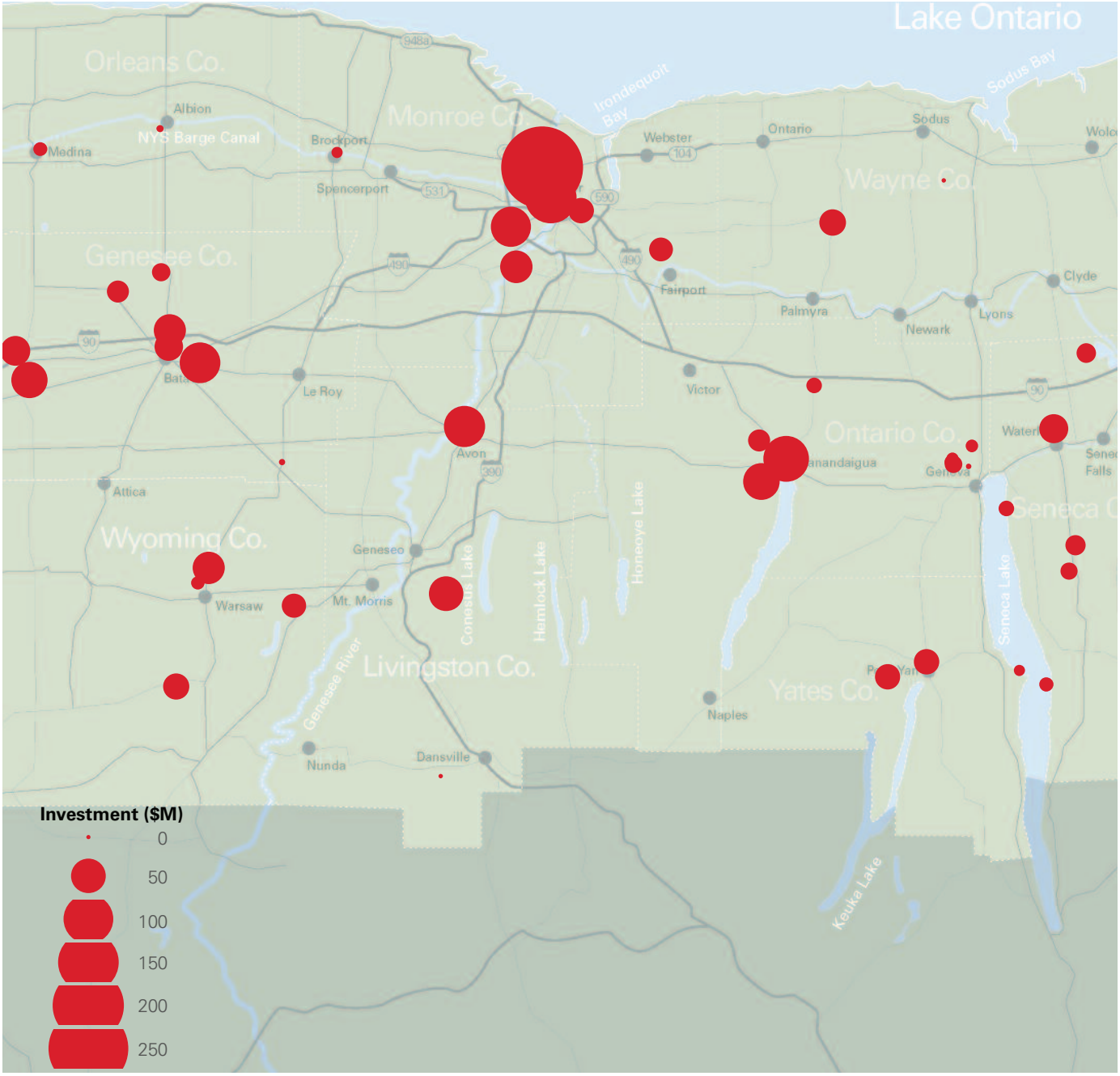
The Finger Lakes region's food industry draws on significant natural assets – 1.5 million acres of farmland (21 percent of upstate New York's total),[67] abundant fresh water assets including Lake Ontario, and diverse soil resources that produce a wide array of crops – to support a robust industry strong in agriculture, food production, and alcoholic beverages, creating about 19,000 jobs in the region.[68] Consumer demand is increasingly emphasizing fresh, natural, and locally-sourced food. With 120 million people within 500 miles of the Finger Lakes,[69] the region is well positioned to serve this demand for New York State and beyond. Today, the Finger Lakes region has the highest agricultural output of any upstate region, in both crop and animal production. The region's leadership in agriculture includes high production of vegetables, apples, wheat, corn, and the highest output of upstate New York regions in several specialized food production domains, including wine, yogurt, and canned and frozen goods.[70] These agricultural strengths are spread across the nine-county region. For example, New York State is the second highest apple producing region in the U.S., with Wayne County the leading contributor.[71] The region can build upon these tremendous strengths to continue growing jobs and regional wealth. The food industry has high jobs density, creating about 10 jobs per $1 million of economic output,[72] and with an average wage of about $34,000 per year,[73] the industry plays a critical role in reducing rural poverty by creating employment opportunities for a broad spectrum of workers with varying degrees of training and expertise. As such, the sector plays a critical role in reducing rural poverty by providing good jobs to workers at multiple skill levels.

Wegmans
Organic Farm
in Canandaigua

Photo by: Matt Wittmeyer

Fig. 14

Planned 2015–2019 investment in Finger Lakes agriculture and food production



The region is home to many food and beverage production companies including LiDestri Foods, Constellation Brands, Bonduelle, Seneca Foods, and Upstate Milk (Fig.16).[74] There are dozens of other established companies in the Finger Lakes region creating employment and attracting investment, and these companies plan to invest[75] in at least 63 documented projects across the region over the next five years (Fig.14). Companies like Wegmans Food Markets, with 700 employees working in food production and several thousand more in retail,[76] link multiple steps of the food ecosystem. These and other established companies plan to invest more than $1.3 billion over the next five years.[77] This investment impacts the entire region, and its more rural counties in particular, where agriculture and food production are major job creators. Beyond this, growth and investment in the Finger Lakes region will support and complement surrounding regions, especially Central New York and the Southern Tier.

The strengths of the Finger Lakes region's food industries span the value chain (Fig.15), beginning with research and business incubation assets, including Cornell University's New York State Agricultural Experiment Station (NYSAES) in Geneva, Cornell University's Agriculture and Food Technology Park (Technology Farm), Cornell Cooperative Extension, RIT's Food Processing Industry Cluster Initiative, RIT's Center for Sustainable Packaging, the New York State Pollution Prevention Institute at RIT, and the Wegmans Organic Farm, which form the knowledge-based foundation of the industry. NYSAES translates innovation into economic growth that benefits growers and consumers alike by developing safe, nutritious fruits and vegetables. Through a combination of cutting-edge research and hands-on provision of expertise to local farmers, NYSAES is responsible for new planting systems and increased production throughout New York State. In 2014, the Food Venture Center at NYSAES helped entrepreneurs

Fig. 15

The Finger Lakes region has strengths across the full food value chain

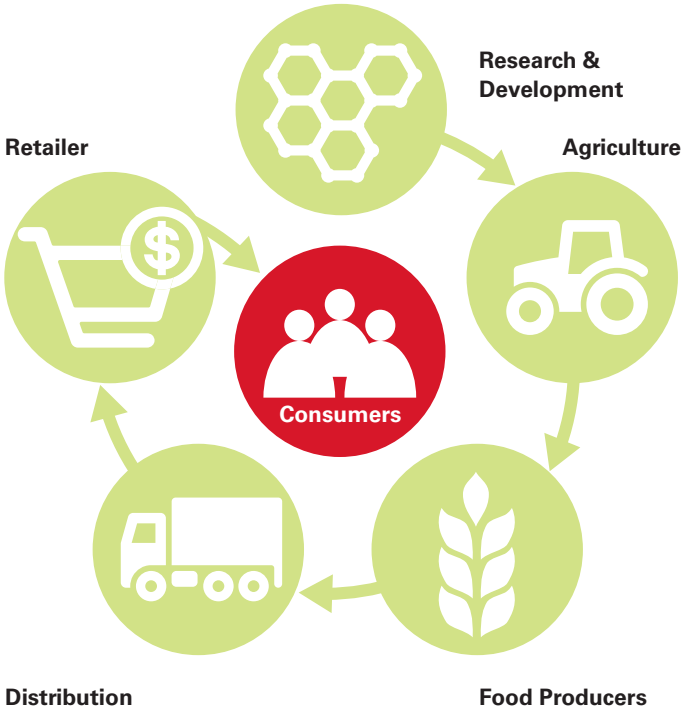


Fig. 16

Finger Lakes institutions and companies are leading the industry's transformation

develop and approve 836 new products, creating 397 new jobs.[78] State investments in NYSAES facilities includes the Fruit and Vegetable Processing Pilot Plant that aids large and small scale processors, a 30,000 square foot greenhouse, 600 acres devoted to fruit and vegetable facilities, a wine analytical lab, and a hops research facility have all helped keep the region's agriculture at the forefront of the changing food industry. Future investment will attract the next generation of food and agriculture researchers. The adjacent Technology Farm is a unique entrepreneurial development resource and its incubator is part of the STARTUP-NY program.

Customer preferences are shifting in favor of organic products, with national sales growing by more than 20 percent per year.[79] The Finger Lakes region's position as a center for sustainable, natural agriculture will help capture significant market share by building on momentum in several areas including Yates County, which leads New York State in organic product sales.[80] With increasing emphasis on sustainable waste management, which is growing thanks to commercial pressures and state programs such as Cleaner, Greener Communities, the biomaterials cluster at Eastman Business Park will expand in parallel with the local food industry. Industrial food production, including technologies like Controlled Environment Agriculture, will continue to flourish in the region as well.

In the dairy industry, a combination of private and state investment has had a significant impact in New York State. New York State is the third largest dairy producing state in the nation and the largest yogurt producing state, with the Finger Lakes region producing the most yogurt of any region in the state.[81] A recent example of the region's leadership in yogurt manufacturing is the $10 million in state investment at the Genesee Valley Agri-Business Park which has attracted new companies including Alpina Foods and Müller Quaker Dairy to the region, spurring $237 million of private spending, 236 direct jobs, and 456 indirect and induced new jobs anchored in the healthy food revolution.[82]

The Finger Lakes region is a national leader in wine, beer, and spirits. New York State produces more than half of all East Coast wine,[83] and the Finger Lakes region is responsible for the majority of state production.[84] The alcoholic beverages industry supports 2,000 regional jobs, and has grown nine percent per year over the past five years.[85] This production involves all nine counties of the region and extends to the neighboring Southern Tier, helping to link the region with the rest of the state. Wine is a unique asset and a significant growth driver that has the potential to be a signature export industry for the Finger Lakes region. (Fig.17)

The wine, beer, and spirits industry also attracts tourism to the region, and it has already been recognized for its unique wine assets: *Wine Enthusiast* magazine named it the top wine destination in the world this year,[86] and Governor Cuomo hosted his Wine, Beer, Spirits, and Cider summit in the Finger Lakes region in 2014.[87] New York State wines are internationally recognized and have won more than 700 Gold and above medals in international competitions over the past year.[88] Strong potential exists for the Finger Lakes region to take the lead in wine tourism and attract

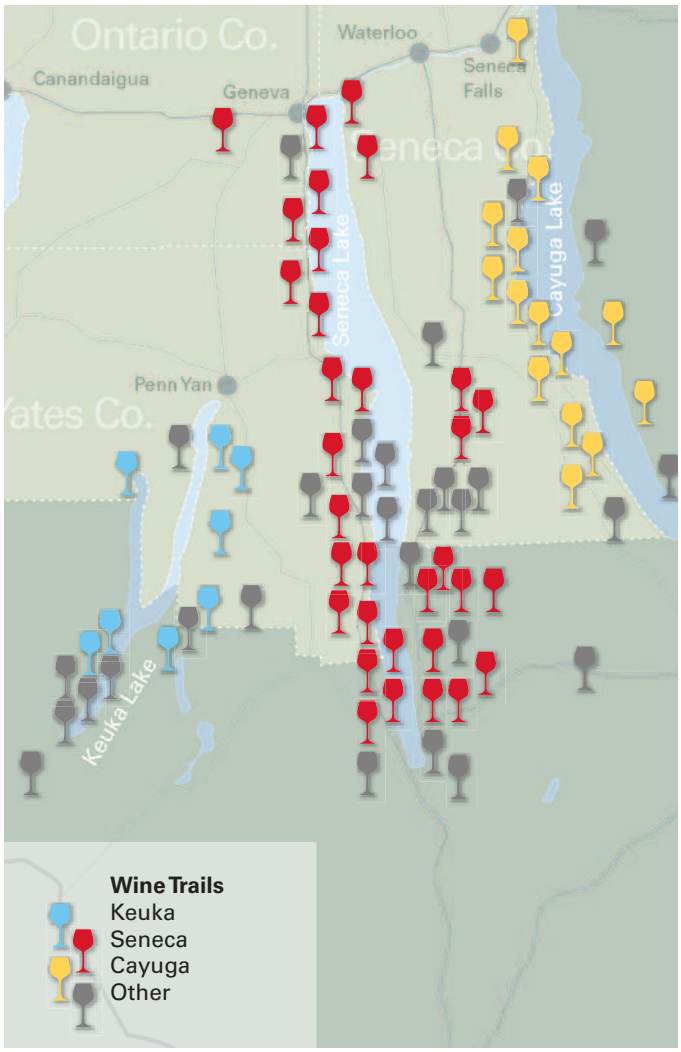
travelers from cities along the eastern seaboard. The region also has a strong and growing craft brewing cluster. With proper focus, the Finger Lakes region could establish itself as the center for craft brewing, a growing and profitable niche industry that would also support the tourism industry.

Connected to expansions in wine and agri-tourism, the hotel industry is growing in the Finger Lakes region. Supported by state investment in 2013 and 2014, the $120 million Pinnacle North development on the Canandaigua lakefront includes two hotel and resort complexes.[89] The planned Lago Resort and Casino in Seneca County could potentially draw $420 million in private investment and attract significant tourism to the region.[90] At Keuka Lake, a $30 million CFA-supported project is building a hotel, high-end housing units, and a marina.[91]

Growth in the Agriculture and Food sector drives significant job creation in the broader community. The Foodlink Food Hub Production Center provides a model for coordinating employment efforts with investment in the agriculture and food production industry. Foodlink distributes food to a network of human service agencies, helping to provide healthy food in underserved communities. In partnership with local colleges, the project trains workers and prepares them for job placement in the food industry.

Fig. 17

Finger Lakes wineries



Opportunities for growth

Opportunities exist to maintain the region's competitive advantage and further strengthen the agricultural food production ecosystem with both targeted strategies specific to the industry and broader strategies aligned to economic enablers. These strategies include investing in food production sites, increasing availability of capital, fostering further collaboration within the industry, and growing the workforce pipeline.[92]

Investment to support the creation of agriculture and food business parks has effectively drawn business to the area. At the Genesee Valley Agri-Business Park, site readiness, site control, and the ability to move in quickly were essential in Müller Quaker's decision to build a $200 million, 350,000 square foot facility there. Investments that create similar shovel-ready sites in other counties could have a similar impact (e.g., fruit production in Wayne and Ontario Counties, vegetables in Yates County, and other sites in the remaining counties).

Significant growth in demand for natural and organic food products is profoundly changing farming and manufacturing practices, and a shift towards sustainable and locally-sourced food is impacting operations and distribution. As next-generation agriculture and food production technologies become necessary, the cost of capital equipment has increased. Industry leaders have emphasized challenges accessing capital to purchase the equipment needed to enhance production capability, improve output, and remain competitive.[93]

To help solve this challenge, larger regional companies have stepped in, using the strong local ecosystem to help smaller companies grow. In 2015, at the recommendation of the FLREDC, LiDestri Foods acquired the first High-Pressure Processing (HPP) equipment in New York State, which will be located at Eastman Business Park. LiDestri Foods has committed about $10 million in capital and will make the HPP accessible to local food producers, broadly increasing regional productivity by providing access to capital equipment.[94] A broader capital program would amplify the significant positive effects to date and further increase collaboration within the ecosystem and improve productivity.

The involvement of LiDestri Foods and Wegmans Food Markets in helping smaller companies procure capital is part of a broader trend which is increasing the connectivity of the food sector within the region. Links between the Finger Lakes region's food companies are still developing. The success stories of LiDestri Foods and others point to the significant benefits of increasing these connections. By maintaining a local value chain, companies can work together to align production, decrease costs, and mitigate risk.

Today, the wine industry draws tourists to its three wine trails spread across the Finger Lakes region,[95] but could further benefit from increasing connectivity within the sector, such as creating a region-wide marketing campaign. The industry has grown and will continue to do so, but a more uniform strategy that addresses marketing and local operations would help make this growth even more pronounced.

Having the right workforce available is a critical element of the food industry, and with increasing retirements (an estimated 33 percent of the 15,000 regional agriculture employees will retire within the next 10 years[96]), some risks exist. To preempt these challenges, regional stakeholders have developed policies and programs to continue to foster a healthy workforce pipeline. Monroe Community College offers programs in Agriculture and Food Studies and Food Management, and Finger Lakes Community College (FLCC) offers a Viticulture and Wine Technology program, the only one of its kind in the northeast. The FLCC's Viticulture and Wine Center, a fully functioning

teaching winery, opened in 2015 with $3.25 million in support from New York State.[97] Genesee Community College's Food Processing Technology program is the only one of its kind offered at any of SUNY's 30 community colleges.[98] RIT is home to a leading workforce development initiative to help bridge the gaps between worker skills sets and job requirements, and has trained 418 individuals for jobs and created 73 new jobs with a $2 million federal investment.[99] Additional investments in training and efforts to better connect workers to jobs across the region (e.g., improving connections between where people live and work) would help companies fill gaps, and create viable career opportunities across the region. These issues and proposed solutions are addressed in detail in the Pathways to Prosperity section.

Strategies to achieve vision

Highlighted Year One initiative

Year One initiatives are specific, high-impact projects that could be launched immediately after winning the URI.

FLX Foods, an existing consortium of key stakeholders across the agricultural and food production supply chain, helps companies expand operations and remain at the forefront of innovation. Further investment in the Finger Lakes region's food ecosystem will help spur growth and create jobs. Examples of potential upcoming projects include:

- AquaTerRen, a controlled environment agriculture start-up, is planning to build a hydroponic/recirculating aquaculture facility at Eastman Business Park. The facility will produce fish, organic vegetables, and organic fertilizer using renewable energy from anaerobic biodigestion. This sustainable system would use shared utilities at the Park and would leverage URI funding with a $250 million private investment, creating 400 jobs.
- NYSAES plans to add a high-pressure processing (HPP) safety testing machine at their facility in Geneva, NY. HPP is a rapidly expanding technology and the equipment would be the only Hiperbaric testing machine in the U.S. – currently, testing is conducted in Canada. This collaboration between New York State, Cornell University, LiDestri Foods, Wegmans Food Markets, and others will enhance the ability of NYSAES to serve as a hub for product safety testing in the U.S., and will attract food start-ups and entrepreneurs.
- The Organic Grain Farming Conversion Initiative will help farmers convert to growing organic grain and position the Finger Lakes region as the organic food capital of the eastern U.S. and spur further investments by food manufacturers. Organic breads from heritage grains and organic meat using organic grain for feed will be produced from the grain grown in the Finger Lakes region.
- A cross-region wine marketing strategy and campaign, expanding and coalescing existing efforts into a unified plan, will substantially increase tourism to the region.

Highlighted Full Implementation initiatives

Full Implementation initiatives are projects that would be further refined after winning the URI.

- **North American Breweries has proposed an Eco-Brewery District** that would create a destination for marketing and enhance the quality and perception of New York State beer. The project will expand the Genesee Brew House concept and create a brewery incubator, beer education center, and a museum. Working in collaboration with Monroe Community College, the district would also support workforce development for the beer industry. In addition, the district would be marketed as a tourist attraction that aligns with Greentopia's EcoDistrict plans for the High Falls district. The project is situated in the low-income El Camino neighborhood and would contribute to its revitalization.
- **A Sustainable Food Production Initiative** will strengthen and expand the food production industry through an applied research strategy around the development of new technology, tools, skill sets, innovations, and information necessary to address the most critical industry-wide sustainability challenges, including energy, water usage, waste, and overall resilience. A focused effort on sustainable food production will require collaboration between food production companies, research institutions including NYSAES and the Technology Farm, community colleges, and economic development organizations. The initiative will be led by RIT's Golisano Institute for Sustainability and builds upon the existing Finger Lakes Food Production Cluster Initiative to further increase job and revenue growth in regional food cluster companies. Investments would focus on high-promise, applied research and development opportunities with the potential to drive innovation across large numbers of existing food production firms in the region. For example, the development and deployment of anaerobic digestion, fermentation, and gasification technologies throughout the food production chain offers significant productivity and commercial benefits that could lead to substantial private leverage from private companies that both use and develop these technologies.

URI Concepts addressed in this chapter

Connectivity


Global Economy


Hard-to-place Workers


Innovation


Private Leverage


Readiness


Sustainability


Workforce Development

Photo by: Matt Wittmeyer

Wegmans Affinage Facility / Cheese Cave

4.3 Next Generation Manufacturing & Technology

The two growth pillars described were selected from more than 1,000 potential industries as the region's most well-established economic strengths. The third pillar, Next Generation Manufacturing and Technology, follows a focused approach to initially support industries that are drivers of future growth. (Fig.18)

Today, these industries are concentrated in the Finger Lakes region within three key innovation hubs (Fig.19): Eastman Business Park, the Rochester Downtown Innovation Zone, and the Western New York Science and Technology Advanced Manufacturing Park (STAMP) in Genesee County. Each hub will act as a nexus for growth in industries such as energy innovation, life sciences, nanotechnology, semiconductors, and sustainable manufacturing. As the region's five-year URI plan unfolds, these industries will likely grow in other emerging hotspots, and the Council anticipates URI investment in those evolving areas. These hubs will capitalize on a strong track record of growth over the past four years and unify the region's next generation manufacturing and technology assets, including companies, academic institutions, and shared expertise.

At Eastman Business Park the investments will be deployed to attract new tenants within the energy innovation, biomaterials, and agriculture and food production spaces, stimulating further job growth.[100] In the Downtown Innovation Zone, investments will focus on job creation within IT, photonics, software, and new media, and help accelerate the residential, retail and commercial activity already occurring downtown. At STAMP, URI funding would help attract new tenants and build on $44 million committed by the state to date to support the development of the site.[101]

Fig. 18

Key industries identified as high-potential for Finger Lakes

Batteries
Tech and companies at EBP today

IT/New Media
Cluster focused in downtown Rochester

Nanoscale Manufacturing
Opportunities at STAMP

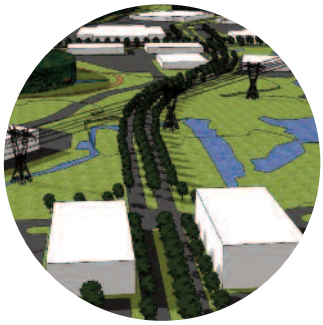
Many Others

Fig. 19

Several hubs where innovation and progress is happening now

Eastman Business Park

Downtown Innovation Zone



Science and Technology Advanced Manufacturing Park (STAMP)

4.3.1 Eastman Business Park

Vision

Thanks to well-timed, targeted state investment recommended by the FLREDC, Eastman Business Park is one of the largest, most diverse advanced manufacturing and technology parks in the U.S. There are 6,500 employees at the Park today.[102] Continuing to invest in attracting businesses will create even more jobs and grow the Park into an economic engine for the region.

Eastman Business Park (EBP) is one of the Finger Lakes region's most important industrial development sites and will be the centerpiece of a broader network of advanced manufacturing cutting across industries such as biomaterials, energy storage, agriculture and next-generation food production, and touch screen applications (functional films). As a result of these strengths, New York State will become a global leader in these fields. Through investments in user facilities and private capital assistance, portions of the 1,200 acres and 2.5 million square feet of industrial space originally built for Kodak will be repurposed to support a large, diverse set of innovative companies, growing beyond the non-Kodak jobs in the Park today.

Assets and performance

EBP was originally constructed by the Eastman Kodak Company to support research and production of still and motion picture film. The Park's abundant space is complemented by physical infrastructure designed to facilitate advanced manufacturing, including a 120-megawatt power plant, water processing and supply, waste treatment, on-site fire and safety, and rail services.[103] For the past four years, EBP has been the highest priority project for the FLREDC, and this focus and investment has paid off. New York State has made substantial investment in EBP's utilities and legacy environment issues, enabling Kodak to continue operating the Park as a landlord to new companies, as well as maintain its film, components and chemistry operations on-site. Today, there are about sixty tenants and owners at the Park (with the count more than doubling since 2011), employing approximately 4,800 staff.[104] Examples include:

- Natcore Technology – a thin-film solar cell manufacturer
- Cerion – an industrial biochemicals and nanomaterials manufacturing company

EBP will also serve as the primary manufacturing center for the AIM Photonics initiative, which will be located in Building 318, making the Park a global hub for this emerging field of technology and potentially creating thousands of new jobs.

To support these companies and attract new ones,


Eastman Business Park

the site includes facilities and employs experts covering a range of fields:

- **Biomaterials:** EBP offers the ready access to power, water, treatment, and disposal facilities required to support biomaterials work, including chemicals and testing services. Companies like Novomer and Cerion currently have 100 employees on site. Sweetwater Energy and FermCo have plans to add an additional 100 to 120 jobs.[105]
- **Energy storage and innovation:** EBP is home to the NY-BEST Test and Commercialization Center, a $23 million facility that opened in 2014 thanks to a $7 million state investment in battery manufacturing equipment and is supported by a consortium of 150 industry, academic, and government partners.[106] Two battery companies – Graphene Devices and NOHMs Technologies—have located operations at the Park.[107]
- **Functional films:** A legacy of the innovation that occurred at Kodak, EBP has multiple roll-to-roll processing, printing, and deposition facilities on site, with Kodak-employed experts to enable facility usage. These technologies are used in applications ranging from displays to solar panels to chemical sensors.
- **Agriculture and food production:** The easily accessible utilities, waste management, and logistics resources at EBP make it an ideal site for next-generation food production. Several companies, including LiDestri Foods, already operate advanced food production facilities on-site, and EBP has the potential to add many more. AquaTerRen, a salmon farming company, may install a fishery at EBP to grow organic salmon, and the waste from AquaTerRen will be processed and reclaimed by biofermentation facilities at EBP, enabling a sustainable, profitable network of businesses at the Park.[108] Columbia Care is in the process of establishing medical marijuana operations at EBP.

The Park's capabilities, including a $100 million suite of pilot and testing equipment, low-cost lab and office space, and on-site utilities, make it highly attractive to companies. EBP is also the proposed home for a new Monroe Community College workforce development initiative that will help provide the skilled workforce required by growing companies located at the Park, while contributing to the revitalization of the Rochester community.

These assets link strongly to resources across the community. RIT's Golisano Institute for Sustainability, which houses the NYS Center of Excellence in Sustainable Manufacturing, provides complementary resources for local manufacturing companies by developing innovative technologies for more efficient and sustainable products. Additionally, the New York State-supported Battery Prototyping Center at RIT, a $1.5 million facility which opened in 2015, gives companies a resource for building prototype pouch-cell batteries – similar to the technology found in cell phones – and testing the batteries in environmental chambers. Once prototyped, the technology can be transferred to the NY-BEST Test and Commercialization Center at EBP.[109]

The assets at EBP and across the community are already attracting new companies and start-ups. NOHMs Technologies, a recipient of a CFA award in 2012, relocated into Eastman Business Park in 2013.[110] NOHMs cited "testing facilities where we can get world class equipment … that represent millions and millions of dollars that have already been invested by Eastman Kodak" as well as "the availability of a highly skilled and talented workforce" as reasons for choosing to locate at EBP.[111]

Opportunities for growth

The Finger Lakes region's key strengths in the cutting-edge manufacturing industries supported by EBP focus on new technology development and prototyping driven primarily by small businesses and innovative start-ups. As such, for small companies, high capital costs required for prototyping and testing often stand in the way of commercialization efforts.[112] Shared production and testing facilities would help resolve this issue if further deployed within EBP.

The NY-BEST Test and Commercialization Center at EBP makes resources available to companies that prepare energy storage technologies for commercialization and mass production, including battery testing and performance validation. To continue

NY-BEST Test and Commercialization Center at Eastman Business Park

Photo by: Matt Wittmeyer

Omni-ID, located in Eastman Business Park, is a manufacturer of industrial RFID tags.

to build on its success, NY-BEST has identified additional capabilities that would attract further business to the region. For example, critical safety tests (e.g., battery stability at extreme heat ranges) to comprehensively evaluate batteries has been identified as an industry need that NY-BEST could help meet. In addition, NY-BEST and Kodak are working to repurpose Kodak production equipment for battery production, and upgrading this equipment could better serve the market[113] and help local companies expand and enhance production and accelerate commercialization.

While enabling start-ups helps keep the Finger Lakes region on the leading edge of technology, attracting large companies would serve as a major driver of new jobs. The assets available at EBP make the region very competitive for many chemicals and manufacturing companies, but making capital available to further incentivize companies to locate to the Park could spur significant economic growth.[114] Companies across a variety of industries are currently in talks to relocate to EBP, representing $700 million in potential capital spending.[115] Supporting and incentivizing such moves would help ensure both investments and jobs are kept in New York State.

Many private companies moving into EBP, including Sweetwater Energy, have committed to hiring at least 10 percent of their employees from hard-to-place worker populations, delivering the benefits of economic growth directly to the local community. This commitment and other investments in workforce development, including a partnership with Monroe Community College, will help local residents obtain the industrial jobs created by growth at EBP, connecting key industry expansion with URI objectives to create private jobs, grow regional wealth, and reduce poverty.

Strategies to achieve vision

Highlighted Year One initiative

Year One initiatives are specific, high-impact projects that could be launched immediately after winning the URI.

- With URI support, **Sweetwater Energy's Integrated Biorefinery Project** would invest $211 million in private capital for a facility at EBP to produce concentrated sugars for biofuels and chemicals using the company's patented technology. The project will fund 150 direct jobs and purchase up to $40 million of agriculture product by the fifth year – spending that will stay in the New York State economy and help develop the agricultural sector's sustainable waste management practices. URI support is critical to ensure that Sweetwater Energy selects EBP and New York State as the location for this investment.
- The establishment of the **AIM Photonics Manufacturing Center** at EBP will satisfy the Department of Defense's requirement for security-compliant clean rooms and laboratory space, while simultaneously providing access to the assets and capabilities of EBP. Rochester-led AIM Photonics manufacturing will include sensors, testing, assembly and packaging, and electronic and photonic design. The facility will occupy approximately 30,000-50,000 square feet with ample space for expansion, as well as adjacent room for supply chain manufacturers and photonics companies. Providing URI support for these companies will help grow a true photonics industry cluster at EBP, with co-located companies helping each other grow and making Rochester even more attractive for the photonics industry.

Photo by: Matt Wittmeyer

Highlighted Full Implementation initiatives

Full Implementation initiatives are projects that would be further refined after winning the URI.

Investing in technology commercialization in partnership with private companies, following a proven model where the FLREDC facilitates and supports projects with both shared resources and direct support, is expected to be a significant area of funding. Past state support for NY-BEST has led to substantial economic activity at the Park. The Council will continue to pursue these opportunities:

- Rochester-based nanotechnology company Cerion, the largest independent developer and manufacturer of high performance metal nanoparticles in North America, is in early discussions with several of the world's leading chemical companies to construct a **Nanomaterials Commercialization Center (NCC)** at EBP. The NCC will focus on solving commercialization and manufacturing challenges where there is existing demand for new and innovative nanomaterials. This would be achieved by recruiting a consortium of global chemical companies and physically connecting them to the leading nano-manufacturing companies to develop scalable, disruptive nanomaterials. By taking advantage of the current infrastructure at EBP, along with Cerion's network of multi-national chemical companies, the NCC will create a state-of-the-art, shared R&D facility at EBP to pool capital costs and allow for a collaborative approach to commercializing nanomaterials that will power over $3 trillion in global products by 2020.[116] Such a facility would attract significant private investment and position Rochester as a global leader in nanomaterials commercialization and manufacturing. This facility could create an estimated 100 to 200 direct jobs, with private investment between $75–125 million.
- Several energy storage innovation companies are expanding battery production and testing operations at the Park. The Council is working closely with these companies and with Kodak to determine future avenues to expand operations and attract more companies, such as upgrading EBP's pilot coating facility, adding additional testing capabilities to the NY-BEST site, and other improvements that would include substantial private investment.

URI Concepts addressed in this chapter

Connectivity


Global Economy


Hard-to-place Workers


Innovation


Leveraging other State Initiatives


Private Leverage

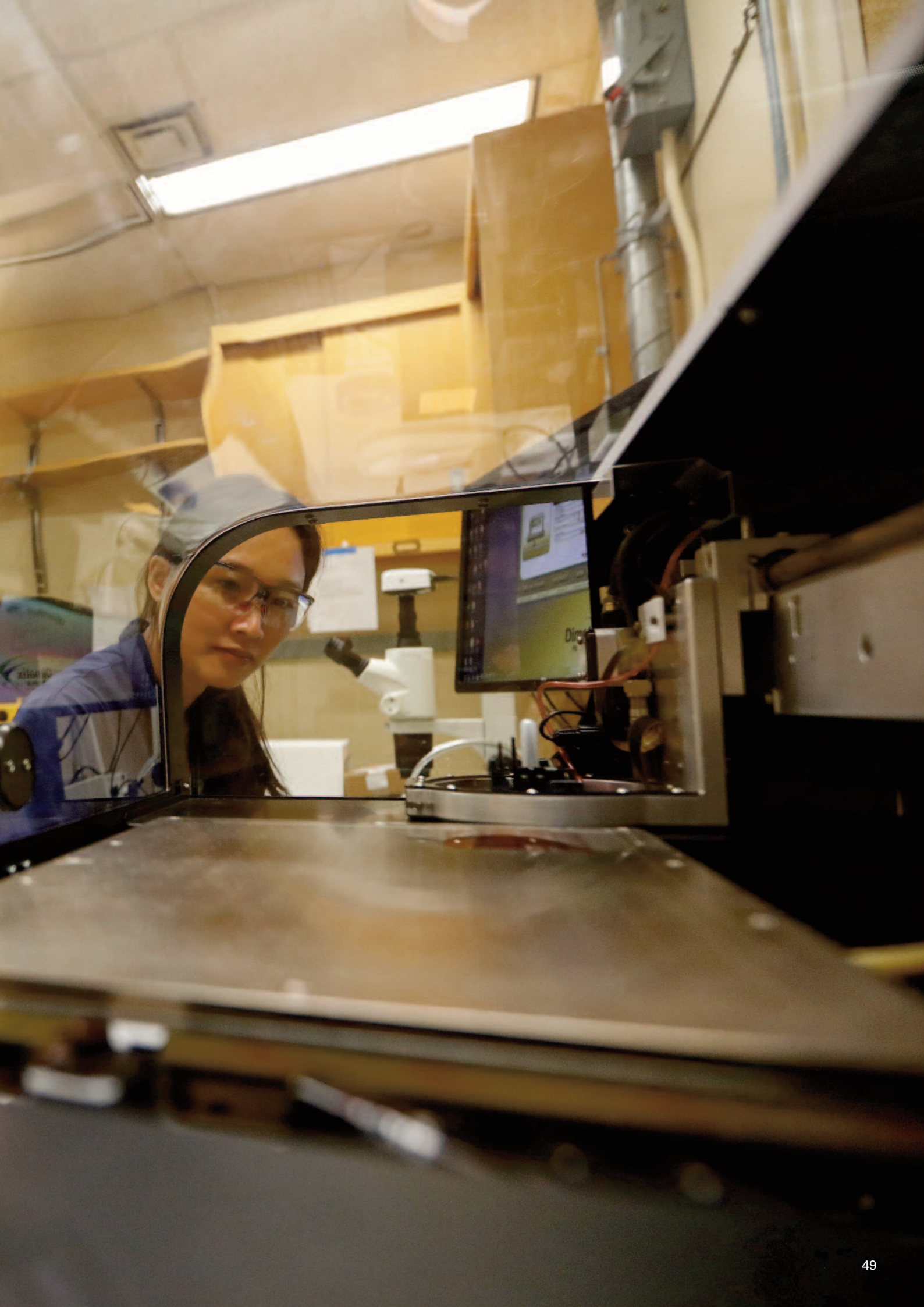

Readiness


Sustainability


Workforce Development

Intrinsiq Materials is adapting Kodak's roll-to-roll technology to manufacture printed electronics and photovoltaic cells.

Photo by: Matt Wittmeyer



4.3.2 Downtown Innovation Zone

Fig. 20

Vision

Downtown Rochester is the heart of the Finger Lakes region. URI investments will connect the bright spots in the urban landscape with the rapidly growing downtown area – the thriving Neighborhood of the Arts, historic properties such as the Sibley Building, the expanded Public Market, and many others – into a vibrant core that attracts people to live, work, and play.

The continued development of a Downtown Innovation Zone will catalyze the broader revitalization of the City of Rochester (Fig.20). Over the next five years, the region will initially focus on investing in the revitalization of the Midtown area, beginning with Main Street. The primary goal will be to attract new businesses, create jobs, and spur retail activity, thereby increasing the number of people that not only work but also reside downtown. By leveraging assets including research universities, incubation facilities, and recent investments in AIM Photonics, which will be headquartered in Rochester, the region will make significant progress over the course of the next five years with URI support. The region's investments in downtown will link closely with incentives provided by START-UP NY to focus on sustainable growth. By helping create new jobs primarily in the IT, photonics, software and new media industries, URI investment will facilitate longer term transformation that will integrate the Downtown Innovation Zone into a broader commercial, retail, and residential ecosystem. Over time, the Downtown Innovation Zone will help connect areas along East Avenue towards Alexander Street, linking newer development to existing retail and residential activity and expand westward toward the convention and arena facilities, attracting not only new residents, but also new visitors to Rochester.

Assets and performance

The City of Rochester already has notable assets in place to build upon with URI support. These include new real estate and mixed-use developments, historic properties, and projects that will further integrate the activity downtown.

More than $840 million in real estate development is currently being invested in downtown Rochester,[117] and approximately 100 growing companies classified as "innovative" or "creative class" have recently located downtown.[118] This number is growing, in part, because of the START-UP NY locations, entrepreneurial and technology commercialization activity driven by the RIT and the University of Rochester, and a number of business incubation and entrepreneurial support facilities. With more than $72 million in state and county support and 130,000 square feet dedicated to START-UP NY activity, Monroe Community College is creating a new campus in the heart of downtown Rochester to foster a collaborative, innovative learning environment that matches the aspirations of students with the needs of the local community.[119]

This growth is also being aided by investments in public transportation infrastructure, including the new $50 million downtown RTS Transit Center and the planned redevelopment of the Rochester Amtrak Station, which will make downtown more walkable and livable for workers and residents.

New mixed-use developments have already begun transforming downtown Rochester. Forty-four commercial buildings are being or have been converted to residential and mixed-use properties and nine new residential projects have been constructed.[120] Residential vacancy rates have fallen to under three percent as downtown's residential population has nearly

Downtown Rochester is home to a new Innovation Zone.

doubled to about 6,100 residents since 2000,[121] a population that is expected to increase by an additional 40 percent over the next few years.[122] While 48,000 people are currently working downtown,[123] the health of the office market does not reflect the growing residential market momentum. Price per square foot is especially attractive in comparison to nearby cities, and office asking rates that remain around $12 per square foot[124] make Rochester significantly more affordable than either large cities, such as New York City at $47,[125] and mid-sized peer cities, such as Pittsburgh at $20.[126] A number of keystone real estate projects are already underway, including:

- **Tower280:** $59 million redevelopment that will convert a formerly vacant 17-story office building into nearly 200 residential units with office and retail space.[127]
- **Chase Tower:** $35 million renovation of a former conventional office tower into a mix of 140 residential units, and office and retail space.[128]
- **Alexander Park North:** $25 million construction of more than 200 residential units along with first floor retail and commercial office space surrounding an interior court yard.[129]

Historic Midtown properties including the **Sibley Building** and 40 Franklin Street will provide a cornerstone for the Downtown Innovation Zone, creating a critical mass of businesses and residents. Covering a full block and containing more than one million square feet, the Sibley Building is undergoing a comprehensive $200 million restoration, with more than $23 million committed from New York State, that will transform the largest building in Monroe County into a mix of office and retail space, affordable and market-rate apartments, an outdoor roof terrace, an urban farmers' market, and underground parking.[130] The renovated Sibley Building will house the **University of Rochester/High Tech Rochester Business Accelerator Cooperative,** a comprehensive incubation and business support facility that is expected to foster 100 new tech start-ups and create 1,000 new direct jobs over the next five years.[131] The Sibley Building will also be home to AIM Photonics workforce development and business incubation activities. RIT's downtown facility at 40 Franklin Street, a 47,000 square foot building that formerly housed the Rochester Savings Bank, is the new home of RIT's **Center for Urban Entrepreneurship,** which builds community wealth by facilitating growth for local businesses. RIT also is renovating 40 Franklin Street facilities to house start-ups, and Rochester's first START-UP NY company, Datto, has already moved into the site. Midtown Rising is a redevelopment partnership of a nine acre site in Rochester's city center that will provide the amenities necessary to attract a critical mass of residents. Once completed, the site will accommodate approximately one million square feet of office, residential, hotel, and retail space. Private developers are transforming the area in partnership with Empire State Development, which has invested $55 million, and the City of Rochester, which has invested $20 million.

The redevelopment of the Inner Loop is connecting Rochester's vibrant East End with the rest of the city. With nearly $25 million in investment from New York State, the U.S. Department of Transportation, and the City of Rochester, the project will fill in eight lanes of below-grade and underutilized beltway, creating a boulevard with wide sidewalks and dedicated bicycle lanes, making Rochester a more walkable, livable city. In addition to improving traffic safety, the Inner Loop project is promoting further economic activity by opening approximately six acres of developable land with the potential for 800,000 square feet of commercial and residential development adjacent to an area of the City that offers lively dining, entertainment, and nightlife.

Opportunities for growth

Leading urban transformation examples from cities including Los Angeles, St. Louis, Philadelphia, and Pittsburgh serve as best practice models for Rochester. These examples point to a set of common prerequisites that help spur job creation within the urban core. These include improving safety and security in order to draw in more businesses and real estate investments, incentivizing and attracting further commercial and retail activity, and improving common and neighborhood infrastructure.

Developers and businesses cite safety and parking availability as common barriers to locating to downtown Rochester.[132] Increasing safety efforts as well as developing amenities such as well-lit streets, revitalized abandoned properties, and improved parking facilities, would serve as a starting point for more businesses to locate within the Downtown Innovation Zone. Expanding programs such as START-UP NY to include broader parts of the Sibley Building and other key developments in the area as well as creating similar incentive structures for sales tax abatement would attract new tenants. While downtown currently has a few large anchor tenants including Xerox and Windstream, it has room to attract more. Attracting a critical mass to targeted properties will be crucial for driving demand for services and attracting more new businesses to the area.

Leading examples also point to the need to concentrate revitalization efforts in a narrowly focused geographic and industry area. Cortex Innovation Community in St. Louis, a bioscience and technology innovation district with close parallels to Rochester, is the result of a focused and carefully managed effort over more than 15 years to attract new businesses and large anchor tenants.[133] Maintaining the focus on the Sibley Building and its immediate surroundings, exploring brownfield developments, adaptive reuse, and historic preservation when possible, and integrating new tenants and developments into a coherent strategy will not only yield positive results in a short time frame, but will also be critical to the long-term success of the Downtown Innovation Zone.

Strategies to achieve vision

Highlighted Year One initiative

Year One initiatives are specific, high-impact projects that could be launched immediately after winning the URI.

The **Rochester Regional Fund** will bring together public and private stakeholders in an effort to provide resources for development and capital improvements for key downtown assets. A group of elected officials, including the Mayor and the County Executive, along with key real estate developers, academic representatives, and representatives of community development, planning, and municipal organizations, would facilitate the application and scoring process. Eligible projects would primarily focus on job creation, business development and attraction, and the revitalization of common and neighborhood infrastructure. Projects could potentially include:

- Developing a Downtown Innovation Zone Master Plan, potentially including the hiring of a leading urban planner and the marketing

Mayor Warren announcing HTR's decision to locate in the Sibley Building.

URI Concepts addressed in this chapter

- Community Reinvestment
- Connectivity
- Innovation
- Leveraging other State Initiatives
- Private Leverage
- Readiness
- Sustainability
- Workforce Development

of the Downtown Innovation Zone to prospective tenants.

- Light up Rochester, an initiative to create a greater sense of security in downtown Rochester and increase foot traffic in and around the Downtown Innovation Zone through investments in: multi-modal transportation improvements, including bicycle, pedestrian, transit and parking enhancements; improved street lighting; and accelerated building and approval processes.
- Improving the speed of broadband internet for businesses downtown, and ensuring access to broadband internet throughout the community, especially in lower incomes areas, by providing additional resources and support for New NY Broadband.
- Incentives for new or expanding businesses to locate downtown alongside key enterprises, potentially including tax abatements, START-UP NY status, or other incentive packages.
- Revitalization of common and neighborhood infrastructure within and around the Downtown Innovation Zone, including the removal of abandoned buildings, developing green space, installing public art, and updating municipal infrastructure, such as the Broad Street Aqueduct and the Joseph A. Floreano Rochester Riverside Convention Center.

Highlighted Full Implementation initiatives

Full Implementation initiatives are projects that would be further refined after winning the URI, including clarifying final investment and timing.

The **redevelopment of the Inner Loop,** which will help reconnect communities previously separated by a below-grade roadway, will create substantial land downtown available for development. The City of Rochester is soliciting proposals for east side land use, which include potential office construction, living spaces, and parks. URI funding could be used to attract high-impact private investment for development in this new space as well as to create future opportunities for Inner Loop development on the north side.

Inner Loop redevelopment

Photo by: Annette Lein, *Democrat & Chronicle*

Academic research at places like URnano will foster innovation and academic-industry collaboration.

Photo by: Adam Fenster

4.3.3 Science and Technology Advanced Manufacturing Park (STAMP)

Vision

Thanks to state investment, STAMP has been developed into a site ready to attract large, high-investment tenants. Further investment will build upon and go beyond the current level of development. Specifically, strategic, targeted URI investment will make the site ready for additional large tenants, unlocking thousands of jobs and driving growth in the Finger Lakes and the Western New York regions.

The Finger Lakes region will host a large, commercially-successful semiconductor and nanoscale production mega-site as the centerpiece of a broader, cross-regional nanotechnology and advanced manufacturing cluster. A growing semiconductor/nano network is developing across New York State along the I-90 corridor, and STAMP is well-positioned to capture significant market share from the massive private investment available – and win the global competition for these investments – in these new, advanced manufacturing industries.

Assets and performance

STAMP, the Science and Technology Advanced Manufacturing Park, in Genesee County is a 1,250-acre greenfield production site designed to attract multiple, large manufacturing facilities.

The site's location was designed from the ground up to maximize attractiveness to companies:[134]

- Direct access to high-capacity utilities, including low-cost power via the New York Hydro-Power zone, connections to the Empire gas pipeline, and planned installation of high-capacity water and sewer facilities.
- Connection to Buffalo and Rochester workforces, with a combined population of 2.1 million.
- Access to a highly-trained workforce from the 57 nearby colleges with 17,500 enrolled engineering students, such as RIT's Microsystems engineering degree, and complementary degrees (e.g., AAS in Nanotechnology) at local community colleges.
- A very large, nearly shovel-ready mega-site (1,250 acres) able to attract a diverse portfolio of large companies including nano,

The STAMP site in Genesee County will host a new generation of advanced manufacturing companies.

Atomic layer deposition tool that makes insulating layers on integrated photonic devices.

Photo by: Adam Fenster

semiconductors, displays/imaging, photovoltaics, bio-manufacturing, and others.

STAMP's attractiveness to developers has been validated by industry, with multiple potential tenants in discussions to relocate to the site. The transformative STAMP project is among the highest priorities for the FLREDC.

The Finger Lakes region and New York State have made a substantial investment in developing STAMP, with $11.4 million spent to date. An additional $33 million was allocated in the 2014–15 State budget and re-appropriated in the 2015–16 State budget.[135] State support is critical to ensure this site has the right infrastructure in place to compete with regions across the world vying for multi-billion dollar projects. The site is not yet fully shovel-ready for additional projects, and further investment would enable new companies to quickly move in.

This strong asset serves as the centerpiece of a broader semiconductor and nanoscale manufacturing network. The RIT Microelectronics Engineering program was the country's first undergraduate program specializing in semiconductor fabrication, and now graduates about 30 students per year.[136] Complementary research at labs such as the Semiconductor and Microsystems Fabrication Lab and the Center for Electronics Manufacturing Assembly at RIT, along with URnano at the University of Rochester,[137] and SUNY Polytechnic Institute's Smart Systems Technology & Commercialization Center and Photovoltaic Manufacturing and Development Facility,[138] which assists firms to develop next generation equipment, materials, and process flows for crystalline silicon photovoltaic (PV) devices, makes the region a hub for development and innovation. All of these programs link with related workforce development degree programs at Monroe, Finger Lakes, and Genesee Community Colleges.

Opportunities for growth

The team managing STAMP is in discussions with potential anchor tenants, but the site requires additional investment to attract private capital and allow companies to move into the site. At the Genesee Valley Agri-Business Park, New York State was instrumental in attracting Müller Quaker Dairy, which indicated that a major driver of their decision to locate in the region was state support that enabled a short turn-around time to becoming operational. The Agri-Business Park is now at full capacity.[139] A similar achievement at STAMP, bringing the site to full capacity, would draw 8,500 to 26,500 jobs to the area depending upon industry.[140]

Strategies to achieve vision

Highlighted Year One initiative

Year One initiatives are specific, high-impact projects that could be launched immediately after winning the URI.

Project Eagle is a major project pending at STAMP that will leverage committed state support to induce $705 million in private investment, creating 1,000 direct jobs. Specific details are confidential, but Project Eagle is a photovoltaics manufacturing facility that will leverage the capabilities available at STAMP and the talented workforce in the region, to become the first of many major manufacturers at the site.

Highlighted Full Implementation initiatives

Full Implementation initiatives are projects that would be further refined after winning the URI, including identifying private sector partners and clarifying investment and timing.

Active discussions are under way with four additional companies that may locate to STAMP. These nanoscale manufacturing companies have the potential to attract substantial private investment and create thousands of jobs, but require URI support to ensure that STAMP is the most attractive site among its global competitors. Projects in the pipeline include private investments ranging from $100 million to $3 billion. Based on the expected success rate among these projects, the Council expects to attract at least $1.5 billion in private investment, creating 1,460 direct jobs in the next five years.

URI Concepts addressed in this chapter

Connectivity **Innovation** **Private Leverage** **Readiness** **Sustainability** **Workforce Development**

4.3.4
Emerging Advanced Manufacturing Technology

SUNY Polytechnic Smart System Technology & Commercialization Center in Canandaigua.

"…as the region's economy continues to transform and grow, new industries will emerge across the region."

Eastman Business Park, the Downtown Innovation Zone, and STAMP have become nexuses for emerging industries in the Finger Lakes region. These hubs represent locations where the region is most poised for growth and will be the initial focus of the URI investment. However, as the region's economy continues to transform and grow, new industries will emerge across the region. Industries including sustainable technologies, additive manufacturing, and life sciences are becoming increasingly important to the region thanks to local strengths and state support. As these industries continue to evolve, the Council will identify potential new regional hubs for technological innovation where URI investment could have the greatest impact. For example, the City of Batavia and the City of Geneva are working with the stakeholders involved in planning the Rochester Downtown Innovation Zone to create similar areas in their cities focused on the entrepreneurial activities in agriculture and food production industries. In next-generation manufacturing, the SUNY Polytechnic Smart System Technology & Commercialization Center of Excellence (STC) in Ontario County has nearly 40,000 square foot facility of cleanroom space with semiconductor and optoelectronic foundry equipment used in the development and commercialization of micro electromechanical systems (MEMS) and photonics technologies. Furthermore, STC has developed a 57-acre shovel-ready site to accommodate up to 800,000 square feet of new facilities, with a focus on growing semiconductor manufacturing in the region. Areas such as these will be considered for future URI investments as appropriate.

URI Concepts addressed in this chapter

Connectivity

Innovation

Key Enablers 5

Monroe Community College's
Applied Technologies Center

Photo by: Matt Wittmeyer

Key Enablers

In order to achieve transformative economic development, the region must have the right set of talent and processes in place to support growth in key industries.

Rapidly changing industries also require many powerful community assets, including a dynamic workforce pipeline, support for business expansion, and institutions driving industry innovation. Rochester and the Finger Lakes region already have people and organizations working tirelessly to advance economic development. The Council has identified a set of further enablers that, through URI investment, will allow the region to achieve transformative growth both through targeted support for key industries and broader efforts to robustly develop the economy.

5.1 Pathways to Prosperity Workforce Development

Vision

The URI is a once-in-a-lifetime opportunity to transform the economy of the Finger Lakes region and establish leadership in several key industries. By investing in workforce development, the region can supply the job demand from growing pillar industries and ensure all members of the community share in this success, fulfilling the challenge of Governor Cuomo's Anti-Poverty Initiative to make the promise of economic mobility a reality.

Guided by the efforts of the Rochester-Monroe Anti-Poverty Initiative (RMAPI), the Finger Lakes region is committed to reducing poverty and providing opportunities for success through targeted education and training efforts that directly link to employment. At the core of this approach is the relationship between education, employment, and poverty. The unemployment rate in Rochester for those without a high school diploma is 23 percent,[141] more than five times higher than the rate for college graduates (Fig.21).[142] The consequences of this lack of educational attainment follow residents into adulthood, magnifying the economic and community impact.

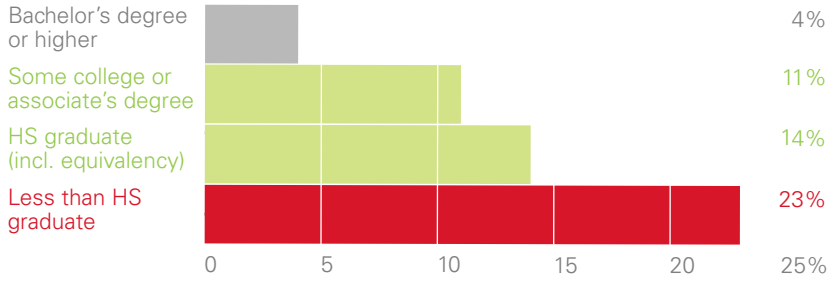
For achievable, sustainable impact through the URI, the region will focus on efforts that will make a step change in improving high school graduation rates, increasing college and employment readiness, reducing unemployment, and reducing poverty. These efforts will be critical in facilitating the growth of key regional industries, including food production and advanced manufacturing, by providing employers with the required dynamically skilled workforce.

To maximize impact, the region will take a results-based portfolio approach by scaling successful efforts and conditionally supporting new ideas based on results, participants, and funding. The URI presents an opportunity to catalyze these efforts by providing a portion of the resources needed to create partnerships and coordinate efforts among key stakeholders. RMAPI, a partner whose efforts the FLREDC endorses and supports, will be critical in this process (Fig.22, Fig.24).

In order to focus these efforts where they are most needed, the Finger Lakes region will target distinct hard-to-place populations. For high school students at risk of not graduating, efforts will scale successful early intervention programs that improve graduation rates, increase readiness, and expand access to employment opportunities by providing mentorship and connections to first jobs. For the working poor and the unemployed, efforts will provide industry demand-driven skills training and direct job placement, further removing barriers to maintaining employment in coordination with RMAPI. For veterans, efforts will support integration into the community, including targeted job training and placement.

Fig. 21

Rochester unemployment by educational attainment



Source: US Census Bureau

Assets and performance

The Finger Lakes region has a strong legacy of collaboration and a key set of assets upon which to build, including organizations that specifically serve hard-to-place populations, committed employers, and the involvement of community members.

To improve high school graduation rates as well as college and employment readiness, the Finger Lakes region will build upon initiatives that have already demonstrated success, and have the potential to scale up throughout the region with targeted support. A prominent example is the Hillside Work-Scholarship Connection. Hillside currently enrolls more than 2,300 students and its partners have employed more than 400 high school graduates so far this year.[143] In its 28-year history, Hillside has successfully improved retention and graduation rates for high-risk students enrolled in the Rochester City School District through the provision of social and academic support systems, including school-based professional youth advocates, job training and placement, and job site mentoring. The region also supports the development of newer programs, including the Educational Partnership Organization established at East High School by the University of Rochester, which aims to double the graduation rate from 42 percent to 84 percent over a seven-year period.[144] Another innovative high school program, P-TECH Rochester, is a six year "9–14" program in which students are matched with a business mentor, take college classes, and gain professional work experience. Launched in Rochester in the fall of 2014 and serving approximately 600 students at full enrollment, graduates earn both a New York State Regents diploma and an associate's degree from Monroe Community College.[145] The model has received both national and state attention through President Obama's 2013 State of the Union Address[146] and Governor Cuomo's commitments to expand the program across New York State. Regional universities are also making commitments to improve college enrollment from the City of Rochester through programs that include RIT's City Scholars and the University of Rochester's Rochester Promise, initiatives which provide free tuition to qualified graduates of the Rochester City School District.

The FLREDC Workforce Development Work Group has demonstrated remarkable success in advancing efforts to reduce unemployment through education, training, and placement. The Work Group has been meeting on a weekly basis for the past two years and consists of 54 members representing 39 different organizations, including high schools, colleges, employers, charitable foundations, non-profits, organized labor, veterans, and government. Its results-oriented approach has focused on creating access to meaningful long-term employment for both student populations and adult learners. The Work Group exceeded their annual job placement goal last year by placing more than 350 individuals including veterans and Hillside students with jobs in high demand areas such as advanced manufacturing.[147]

The Finger Lakes region is committed to providing specialized education and training opportunities for hard-to-place worker populations, including the deaf and hard-of-hearing. There are an estimated 43,000 deaf and hard-of-hearing individuals in the greater Rochester area, and at 3.7 percent of residents, the region has the largest per capita deaf and hard-of-hearing population in the country among those ages 18 to 64.[148] However, the percentage of deaf and hard-of-hearing 18- to 25-year-olds attending postsecondary education – 61 percent – is almost double the national average,[149] and the region has seen tremendous success in reducing poverty and unemployment for this population. This is due in large part to RIT's National Technical Institute for the Deaf (NTID), which is among the leading research and training institutions of its kind. With more than 1,200 students and 100 faculty and staff who are deaf or hard-of-hearing, RIT has the largest staff of professional sign language interpreters of any college program in the world.[150] NTID also is exceptional for its commitment to job placement, making the Institute a valuable resource for the hard-to-place worker community.

In its effort to reduce unemployment through targeted job training, the Finger Lakes region works with a robust network of community colleges: Monroe Community College (MCC), Finger Lakes Community College, and Genesee Community College. A nationally-recognized leader in workforce training, MCC is ranked in the top two percent of U.S. community colleges for the most associate degrees awarded,[151] and the MCC-educated workforce adds approximately $510 million in income to Monroe County each year.[152] In 2014, MCC worked with more than 170 employers and organizations in the public and private sectors to provide targeted workforce training throughout the Finger Lakes region.[153] MCC's SkillBuild program educates young adults about in-demand careers in advanced manufacturing, healthcare, and the skilled trades. With investment to expand capacity, the program could annually serve more than 2,000 students in the region.[154] MCC's Bridges program is an innovative educational outreach effort to extend a skill-based career pathway to disadvantaged and underrepresented populations in Rochester's urban core. The program will establish a network of accelerated college remediation programs in partnership with the City of Rochester, the Veterans Outreach Center, the Ibero-American Action League, and other community colleges and organizations.

The Rochester Educational Opportunity Center (REOC) – hosted by the College at Brockport – has been transforming the lives of economically disadvantaged adult students in Rochester for more than 40 years. REOC offers high-quality, tuition-free academic and workforce training programs to 1,300 students annually, providing a seamless transition from assistance to economic self-sufficiency. Adult students prepare for careers in culinary arts, nursing, and more than 20 other programs offered in downtown Rochester and many REOC students move on to other higher education institutions in the Rochester area.

Photo by: Matt Wittmeyer

Fig. 22

A Unique Asset: Rochester-Monroe Anti-Poverty Initiative[155]

The Finger Lakes region's URI application has the advantage of incorporating the efforts of the Rochester-Monroe Anti-Poverty Initiative (RMAPI), an initiative unique to Rochester and spearheaded by Governor Cuomo, which seeks to reduce poverty by transforming systems, programs, and policies in a coordinated, sustainable manner. RMAPI is collaborating with several members of the URI Steering Committee and the FLREDC Workforce Development Work Group to ensure clear channels of communication and synergy. Success in Rochester is of particular importance as it has the potential to be replicated elsewhere, providing a scalable model for implementation in other cities throughout New York State.

RMAPI seeks to reduce poverty, and is unique among other initiatives for its practical, collaborative approach: aiming for a coordinated system overhaul, following a data-driven approach, and leveraging participation from community members in poverty. While many poverty alleviation efforts focus on isolated, downstream solutions, RMAPI presents a novel approach by bringing together service providers with the populations they serve. In addition to RMAPI's integrated systems and community approach, three critical factors, community building, structural racism and the effects of past and present trauma, have been explicitly called out to be included in the design principles. All recommendations and implementation plans will be assessed against these three factors to ensure that they are deliberately addressed.

RMAPI has formed a work group for each of the eight key drivers of poverty, tasked with the following objectives:

- Identifying and prioritizing key barriers and challenges that keep people in poverty.
- Creating recommendations to counter the highest impact barriers for each driver.
- Identifying current assets and initiatives that can be leveraged in support of the recommendations.
- Identifying the resources required and obstacles that need to be removed at the state and local level in order to implement these recommendations.
- Establishing key measures for determining success.

RMAPI's commitment to participation is reflected in the structure of the work groups. Each group has 25 members, including local providers, subject experts, and at least five community members who are currently affected by poverty. RMAPI also gains insight from members of the community and affected families, through one-on-one interviews, focus group discussions, neighborhood meetings, community input forums, and a survey (with nearly 800 responses, more than 300 of which came from respondents currently in poverty), as well as engaging community members to help determine the criteria used to rank and prioritize recommendations.

RMAPI has employed a data-driven approach to identify and target the populations affected by poverty, particularly the working poor. The demographic profile of significant sub-populations will be a key determinant in terms of which recommendations are critical for the first phase of this initiative. RMAPI is further committed to measuring and being held accountable for improved outcomes by setting and tracking success metrics for solutions coming from the work groups.

To coordinate the solutions emerging from the work groups and provide a sustainable framework for eliminating poverty in the long term, RMAPI has established a systems design team that brings together community stakeholders from the business, government, education, and non-profit sectors to address how to affect the major program and policy shifts necessary to enable broadly implementable solutions. The support and coordination of the state will be critical to the success of this work. The State Task Force, appointed by the Governor, will leverage state resources for Rochester's work, while local efforts will be led by Assembly Majority Leader Joseph Morelle, Rochester Mayor Lovely Warren, Monroe County Executive Maggie Brooks, and convened by the United Way of Greater Rochester. In addition to other community members who sit on the board, RMAPI has hired three full time staff members to drive the initiative.

Preliminary Recommendations

The eight work groups developed 32 recommendations that are now being assessed for inclusion in a phased implementation plan. The first phase of the plan will address the needs of the working poor in order to help them move from and stay out of poverty. These recommendations are coalescing into several overarching objectives and recognize the need to address the three critical underlying issues that keep many individuals and families trapped in poverty; specifically lack of community-based support, structural racism, and the effects of past and present trauma.

Given the complexity and breadth of these issues, the progress report takes an "both/and" approach to contain specific recommendations on each one, as well as a design principle that screens recommendations for efficacy in addressing these issues.

Another common issue across all work groups is the lack of coordination, integration, or alignment across the system of social supports (including infrastructure, policies, and regulations).

Silos across government agencies, non-profit providers, and community support structures (e.g., faith and neighborhood communities) inhibit awareness, accessibility, eligibility, and participation in the patchwork of services and programs needed to enable economic mobility and the movement out of poverty. One of the first barriers to overcome is the lack of a central data repository that provides a 360 degree view of both the services/support received and the results and outcomes of those services.

Phase 1 recommendations will include several components to address this barrier:

- **Single point of access** and consistent professional mentoring with the ability to link persons affected by poverty to needed or expert resources.
- **Centralized database** to enable a 360 degree view of needs, services, and results for persons impacted by poverty/moving out of poverty.
- **Prioritized plan of attack** for the most critical areas of alignment and coordination around early childhood supports and mentor/navigators.
- **Flexibility and localized decision-making ability** to ensure existing and additional future benefits/funds are responsive to individual and unique circumstances.

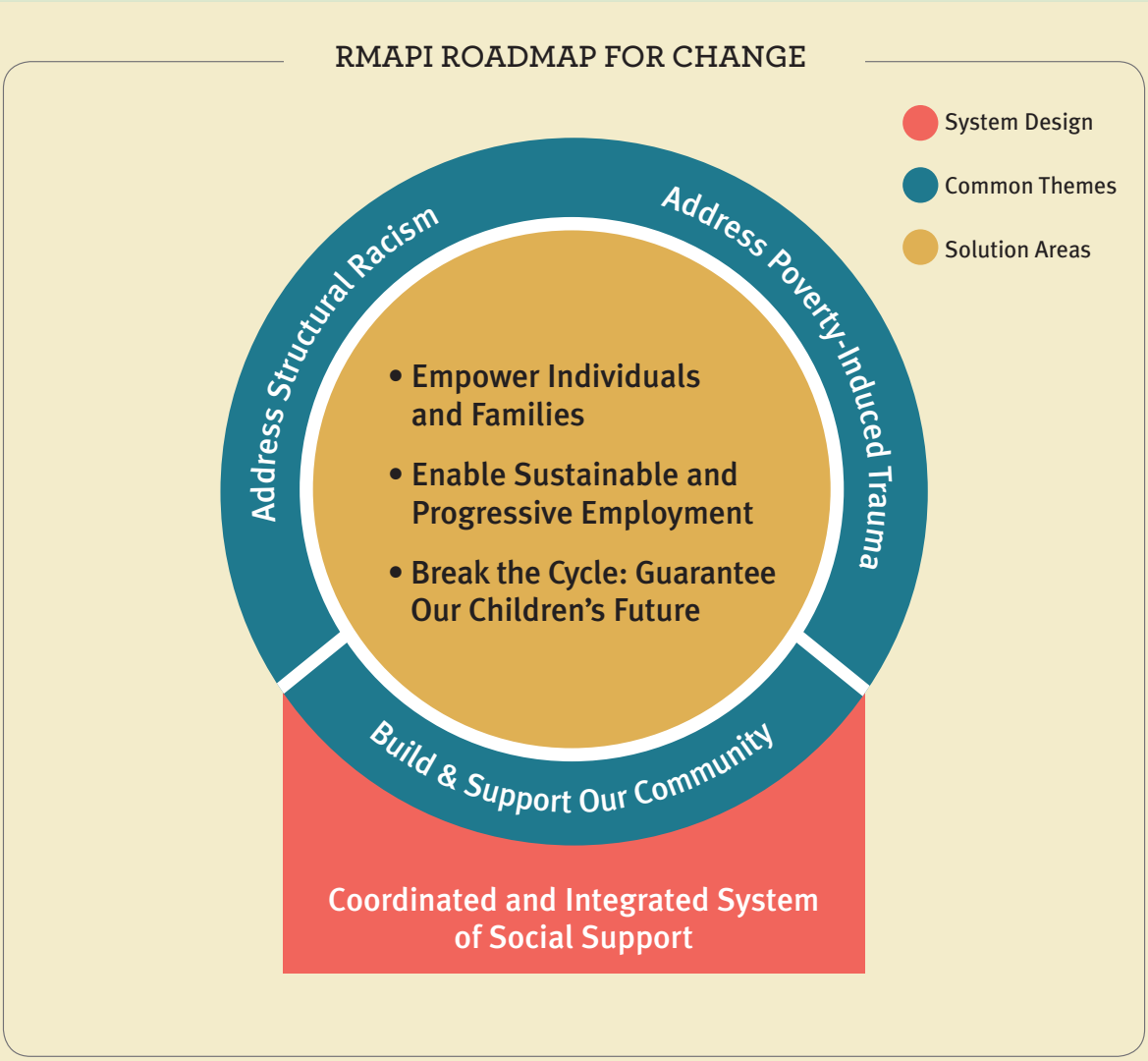
While the work to develop the progress report has concluded, the next phase of RMAPI's work will be to find definitive recommendations for implementation. As RMAPI continues their work, it is clear that it shares some overlapping objectives with the URI, and the Pathways to Prosperity enabler, in particular. These overlaps include:

- Ensuring effective pipelines exist between training/credentialing programs for living wage jobs (both in secondary education and adult educational opportunities).
- Connecting the working poor with effective mentoring services to successfully navigate the continuous barriers to stable employment that arise for persons emerging from poverty.
- Improving the accessibility and affordability of childcare and transportation – two of the critical enablers to stable employment.
- Improving accessibility and cultural relevance of many social and health supports by locating them in Neighborhood Centers and employing neighborhood residents.

Preliminary Proposed Funding Model and Coordination with the URI

A critical element of success for the RMAPI recommendations will be access to a sustainable funding mechanism. While the funding model is still a work in progress, the proposed approach relies on a combination of state and private support. Given the strong intersections with the Pathways to Prosperity enabler, select RMAPI recommendations could be funded through URI investment, while others will rely on direct state support for RMAPI. In both instances, and across the initiatives, efforts will be made to galvanize private funding in support of proposed recommendations. Private funding is expected to come in the form of donations, private foundation matches, and other sources.

As RMAPI begins the next phase of its work to implement the initial recommendations, leadership will ensure that initiatives closely aligned with URI efforts are well coordinated to ensure implementation and avoid duplication. To facilitate this collaboration, the proposed governance of the URI Pathways to Prosperity enabler includes dedicated representation from RMAPI.



Opportunities for growth

The URI presents a significant opportunity to build on existing assets, and targeted investment will follow a portfolio approach by scaling successful efforts and conditionally supporting new initiatives. Rochester has long endured some of the lowest high school graduation rates in the country[156] and only five percent of Rochester City School District graduates were deemed ready for college or employment upon graduation in 2013.[157] Substantially lower employment and earnings lead to greater poverty levels, greater reliance on public services, and poorer health outcomes.[158] Most poor adults with limited education are concentrated in high poverty areas across the region, many of which are in and around Rochester.[159]

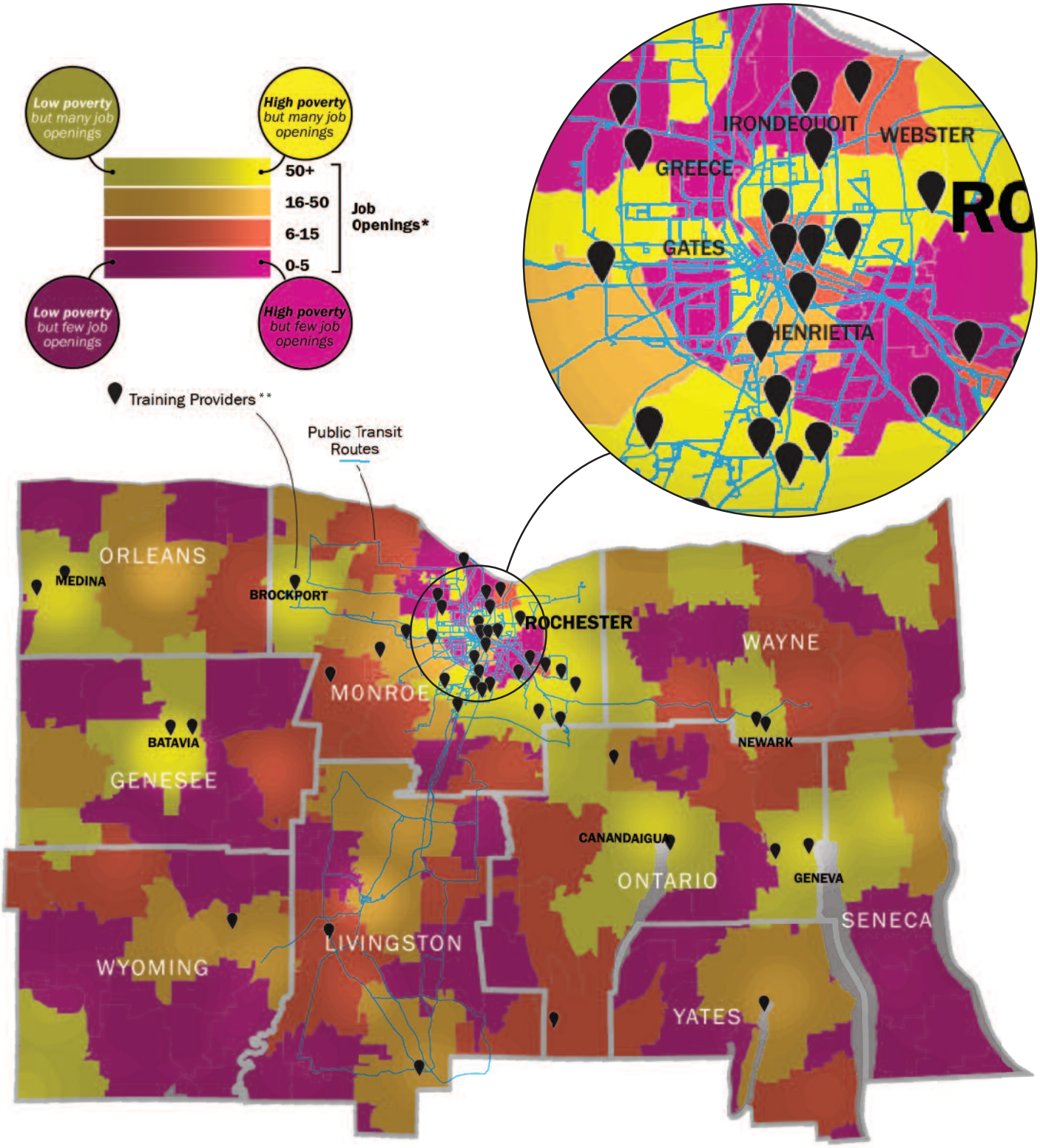
Because employment opportunities are highly limited for those without a high school diploma, it is critical to provide early interventions to improve graduation rates. Scaling successful initiatives to provide mentorship and connections to first jobs will make a significant outside-in impact on improving graduation rates. Reducing unemployment will require closing the growing skills gap, as employers in expanding industries increasingly look for workers with specialized training. Of the region's more than 10,000 yearly job openings that pay a minimum of $30,000, 87 percent require training or a degree beyond high school.[160] Half of these jobs require mid-level skills and an associate's degree, post-secondary education, or commensurate training, rather than a bachelor's degree.[161]

In order to maximize benefit to the regional economy and reduce unemployment, workforce development efforts must be connected to key industry growth. New programs will focus on industries identified as growth pillars in the URI plan.
To sustainably close the skills gap, the region requires URI support to scale successful training programs and develop infrastructure that will match workers directly with relevant employment. Growth in the agricultural and food industries will require greater numbers of workers throughout the Finger Lakes region, and many occupations in these industries provide ideal entry level employment opportunities for those with limited training, and enable workers to create value on their first day.
An aging population also is contributing to gaps between industry demand and the available workforce in key industries. Notably, manufacturing is expected to lose almost a quarter of its workforce – more than 8,500 workers – to retirement in the next decade.[162] Targeting training programs to younger workers provides an opportunity to make growth in these industries more sustainable. Training institutions are working to better match skill supply and demand by improving ties to industry through efforts such as co-designing training, establishing apprenticeship programs, and developing feeder models between community colleges and employers. Developed in partnership with local businesses, Finger Lakes Community College's Accelerated Mechatronics Technology Program is a 12-week program that bridges the skills gap by teaching students technical math, mechanical fundamentals, electrical schematics, and other skills needed to fill open positions in regional advanced manufacturing companies.[163] MCC, in partnership with the Rochester Technology and Manufacturing Association, launched a 22-week, accelerated precision machining program that has successfully completed three cohorts and averages more than 90 percent job placement.[164] In addition, MCC is leading a $14.6 million SUNY grant through the U.S. Department of Labor to optimize the advanced manufacturing and workforce readiness curriculum in order to accelerate even more programs throughout the region.[165]

Photo by: Matt Wittmeyer

Fig. 23

Distribution of workforce trainers, job openings & public transit, relative to the working age population in or near poverty



Source: UBRI analysis of data from the U.S. Census Bureau, 2013; NYS Department of Labor, 2015; and Rochester-Genesee Regional Transportation Authority, 2015. Only shows public transportation systems with available digital route data.

*(NYSDOL-listed job openings as of May 2015)
** eligible for workforce investment funding)

Strategies to achieve vision

The FLREDC has identified a set of initiatives that speak to the capacity of Rochester and the Finger Lakes region to provide support to its residents and move those in need on the pathways to prosperity. The funding and implementation of these initiatives will be coordinated between the FLREDC and RMAPI, as the latter continues its work and finalizes recommendations to reduce poverty.

Highlighted Year One initiative

Year One initiatives are specific, high-impact projects that could be launched immediately after winning the URI.

Finger Lakes Workforce Development Center (FWD Center), a partnership between MCC and Eastman Business Park, will design a comprehensive training complex to serve as a regional industrial training facility to local businesses in high-growth industries. MCC will partner with employers to offer short-cycle non-credit industry training for skilled production workers in basic manufacturing skills. The Center will also serve veterans who require support for reintegration into the workforce. Over five years, the FWD Center is expected to train more than 2,300 workers and add $90 million in economic impact, primarily from worker salaries and increased supply chain value.[166]

Highlighted Full Implementation initiatives

Full Implementation initiatives are projects that would be further refined after winning the URI, including clarifying final investment and timing.

Rochester-Monroe Anti-Poverty Initiative Coordinated System

As described earlier, the URI will include initiatives to directly address poverty by developing a coordinated, integrated system of support services for those in need.

Hillside Work-Scholarship Connection

Hillside Work-Scholarship Connection (HWSC) has achieved great success in Rochester, 77 percent of HWSC students who stay in the program graduated from high school, and 93 percent of those employed with job partners graduated, compared with the average graduation rate of 45.5 percent.[167] By age 30, the difference in the earned income of program participants compared to nonparticipants exceeds program costs by 40 percent.[168] Hillside currently operates in 21 sites in the Rochester City School District and Greece Central School District, and new investment would enable Hillside to expand annual enrollment from 2,300 to 4,300 students.

Targeting Hard-to-Place Workers

- The Ex-Offender Job Training and Placement and Support Services Program will be led by the City of Rochester Innovation team and building on programs that have succeeded at increasing placement in other states. The program will fund workforce development for ex-offenders, including job training and placement services for this hard-to-place population of workers. The program also will focus on support services that address potential obstacles to successful job training and placement such as transportation, housing, childcare, and mental health. Only 25 percent of the 5,000 individuals annually released from Monroe County Jail are employed[169] and an estimated 21,000 city residents will go to state or federal prison in their lifetime.[170] Services will be provided evenly over the five years of operation to at least 200 ex-offenders per year, and the program expects to increase employment among the post-incarcerated population by at least a 5 percentage points and reduce recidivism by 10 percent.
- Helping Employers Hire from the Working Poor will assist local employers to make a commitment to fill at least 10 percent of positions with individuals from the working poor. The program complements a similar initiative proposed for Eastman Business Park, which is already achieving results with proposed investments from companies such as Sweetwater.
  The program will evaluate and fund two services:
  - Provide local businesses with an HR service that simplifies the process of receiving state reimbursements for hiring people living in poverty that have been identified through designated training organizations without screening or background checks.
  - Select and fund consulting services with experience in "no screen" hiring and business administration to assist with on-boarding and retaining these types of employees.

Initial funding would allow testing of both program services. The program is expected to enable at least 200 jobs and create economic leverage of 1:12 ($18.5 million of wages reinvested into the community and $5.5 million saved on state and local services).[171]

Fig. 24

Working together to address poverty in the region

URI Concepts addressed in this chapter

- Connectivity
- Hard-to-place Workers
- Private Leverage
- Readiness
- Workforce Development

5.2 Entrepreneurship & Development

Vision

Small businesses are increasingly fundamental to the Finger Lakes region's economy. Through strategic investments ensuring access to capital, facilities, and support, the region will catalyze growth across targeted URI sectors.

The Finger Lakes region will develop a robust entrepreneurship ecosystem that captures the region's entrepreneurial potential and supports the growth of key pillar industries. With a legacy of innovation and a collection of university assets, including research commercialization and incubation facilities, the region will foster the growth of new businesses and promote expansion of existing enterprises. More specifically, the region will help accelerate growth and expansion within priority industries, including photonics, agriculture, food production, energy, life sciences, and additive and sustainable manufacturing. For these industries, efforts will focus on improving access to capital, equipment, and testing and commercialization facilities in order to offset cost and capital barriers for small businesses. In parallel, and through the development of the Downtown Innovation Zone, efforts also will focus on growing entrepreneurial activity, retaining the region's university graduates, and focusing on start-up growth in the City of Rochester as well as outlying counties.

Assets and performance

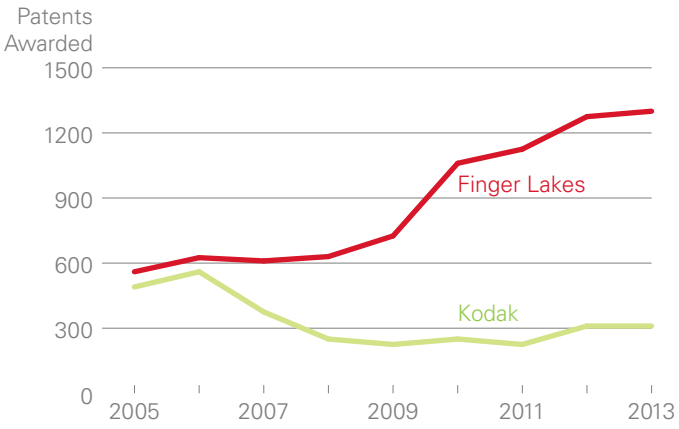
Despite the downsizing of Kodak, the region's historic leader in the generation of intellectual property, the Finger Lakes region continues to increase its rate of patent development, outpacing state and national benchmarks – for every 10,000 workers, the Finger Lakes region produces 30 patents, exceeding the upstate New York average of 19 and national average of 12 (Fig 25).[172]

Rochester has a wealth of assets embedded within its universities and start-up community that support the region's business incubation and acceleration efforts. Organizations including RIT Venture Creations, High Tech Rochester's Lennox Tech Enterprise Center and Business Accelerator Cooperative, RIT's Center for Urban Entrepreneurship, Excell Partners, and others play a pivotal role not only in incubating and supporting regional businesses, but also in accelerating the development of the Downtown Innovation Zone. These entities have a strong track record of success targeting, incubating, and funding emerging businesses that either go on to be acquired by leading national companies or continue to grow and expand their footprint in the Finger Lakes region.

RIT Venture Creations, part of RIT's START-UP NY campus plan, is an incubator for mid-seed stage companies, providing them with experienced mentors and connections with investors. Entrepreneurial students and faculty have access to RIT's world-class research and testing facilities. Venture Creations has graduated 5–7 companies per year since 2010.[173] As of June 2015, more than 400 people are employed by current tenant and graduate companies,[174] including Vnomics, recognized in 2014 by the Rochester Business Alliance as the region's second-fastest growing privately held company.[175]

Fig. 25

Patents awarded in the Finger Lakes region



Rendering of HTR's Business Accelerator Cooperative in the Sibley Building.

High Tech Rochester (HTR), an affiliate of the University of Rochester, is a nonprofit whose mission is to be a catalyst for entrepreneurship and innovation-based economic development by applying business expertise and network connections to aid in the formation and profitable growth of companies in the Finger Lakes region. HTR operates the Lennox Tech Enterprise Center and Rochester BioVenture Center in Henrietta and is sponsoring the Business Accelerator Cooperative, which will be located in the **Sibley Building** and is expected to create 1,000 new jobs in the first five years of operation[176]. The University of Rochester operates an incubator based at HTR that advances student-run businesses through a collaborative, interdisciplinary environment and interaction with mentors and local entrepreneurs. The incubator will move to the Sibley Building along with HTR when it relocates in 2016. UR's Kauffman Entrepreneurial Year also provides a fifth tuition-free year for selected students to pursue an entrepreneurial endeavor.

RIT's Center for Urban Entrepreneurship (CUE) is helping reshape the regional economy and build wealth within the urban community by ensuring anyone with the passion to create a business or social venture has the opportunity to reach their entrepreneurial goals. CUE aims to empower urban entrepreneurs and develop a pipeline of local businesses that can further grow and support the development of the regional economy. Through the Capacity Building program, CUE has stimulated growth in 10 local businesses[177] by providing mentors and workshops for a nominal fee to urban entrepreneurs who have been in business for at least a year.

Excell Partners, a Rochester-based fund that invests in seed and early stage high-tech start-ups, has successfully funded 43 companies that have created more than 200 jobs with average salaries of more than $60,000.[178] Earlier this year, Governor Cuomo announced that Excell was selected to manage a $2 million Minority- and Women-Owned Business Enterprises (MWBE) Investment Fund that will make seed and pre-seed investments in start-ups with a focus on the fields of advanced materials, clean technology, and life sciences and medical devices, increasing opportunities for MWBE businesses throughout New York State.[179] Excell also was selected as a participant in the New York State Innovation Venture Capital Fund and Innovate NY Fund investment programs.

While much of this activity is tied to downtown Rochester and the two large universities, efforts are underway to incorporate the entire nine-county region into the broader ecosystem that links closely with these programs and with state initiatives like START-UP NY. HTR's Hub and Node Network will link with facilities throughout all nine counties and create an entrepreneurial ecosystem that shares support services among members and the entrepreneurship community. This program will provide services to new start-up companies housed within the HTR Business Accelerator facility and to hundreds of companies throughout the region that interact with HTR. Currently, HTR offers video conferencing connectivity to all nine counties, allowing the region to tap into services and share best practices.

RIT's Center for Urban Entrepreneurship

Opportunities for growth

Despite an abundance of intellectual capital generated throughout the Finger Lakes region, lack of access to capital hinders the development of start-ups, and local entrepreneurs and businesses often struggle to secure resources that will enable them to expand their businesses. The Finger Lakes region annually receives more than $350 million in research and development funding[180] – 22 percent of the upstate New York total[181] – but receives only a small fraction of the state's venture capital investment. In Rochester, Excell has leveraged over $120 million from $3.6 million in investment,[182] demonstrating the promise of regional investment and the necessity of scaling up funding operations. While Excell's success is notable, access to capital at the later revenue stage often represents a challenge for local companies. Creating a funding support model that acts as a funnel and ensures access to capital throughout the start-up life cycle would ensure that more entrepreneurial activity is generated and retained within the region. This model will connect both start-ups and entrepreneurs to private capital, and support programs like the newly created New York State Innovation Venture Capital initiative.

Supporting grassroots entrepreneurship is also an important component of the anti-poverty efforts. Connecting small businesses located in underserved areas with necessary business support and resources will stimulate growth and job creation in these communities. These efforts include matching companies with experienced mentors/coaches and easing access to capital through credit enhancements that will encourage traditional and alternative lenders to expand the credit window for businesses that don't currently meet conventional lending requirements.

Strategies to achieve vision

Highlighted Year One initiative

Year One initiatives are specific, high-impact projects that could be launched immediately after winning the URI.

The **Finger Lakes Venture Fund** will provide critically needed capital to start-ups and small businesses. Currently, local venture fund entities receive hundreds of funding applications per year, but lack the capacity to fund all high-potential projects, leaving innovation and potential economic growth on the table. By leveraging URI funding to raise a $35 million in venture capital, the new fund will have the capacity to support 10–12 high potential Series A investments of $2–3 million and 10–15 seed investments of $200,000–300,000 per company. The fund will take advantage of existing community expertise, including Excell Partners' nine year history of successfully managing a seed stage venture fund in the region.

Highlighted Full Implementation initiatives

Full Implementation initiatives are projects that would be further refined after winning the URI, including clarifying final investment and timing.

- Building out an **Urban Entrepreneurship Ecosystem** will catalyze job growth and build community wealth by providing urban entrepreneurs with the support services they need to create and sustain successful business ventures. The revitalization of Rochester's urban core will increase demand for "main street services" for new residents and institutions, including food services, landscaping, and printing operations. Fostering the creation of small, local businesses will both meet this demand and support upward mobility for many Rochester residents. To provide a comprehensive network of entrepreneurial resources, RIT's Center for Urban Entrepreneurship will coordinate partnerships among regional institutions including PathStone, which provides microloans to small businesses, and the Urban League, which assists local entrepreneurs in developing business plans. RIT has committed $2 million over five years to CUE, which is planning to expand existing successful programs and add new offerings including a mentor/coach system in which experienced entrepreneurs will provide advice and support to new start-ups.
- The **Center for Entrepreneurship, Innovation, and Economic Development (CEIED)** at SUNY Geneseo will establish a centralized location to house SUNY Geneseo's VentureWorks entrepreneurship program, the Geneseo Small Business Development Center (SBDC), a makerspace, a business incubator, and include START-UP NY-designated space for businesses. The CEIED will create a one-stop shop that will enable business owners and entrepreneurs in Livingston County and the Finger Lakes region to access technology, faculty expertise, student interns, and SBDC services, promoting innovation and ultimately business and workforce development.

URI Concepts addressed in this chapter

Community Reinvestment

Connectivity

Innovation

Leveraging other State Initiatives

Private Leverage

Readiness

Sustainability

5.3 Higher Education & Research

Vision

With 19 institutions of higher education,[183] the industry is a major economic driver, drawing students and researchers to the region. Investing in the region's flourishing research facilities at leading institutions will attract federal research dollars, create jobs, promote commercial activity at start-ups, and help retain students.

The Finger Lakes region will leverage its higher education assets in order to continue to attract and retain world class talent, and drive innovation and economic activity in key regional strengths including life sciences, software development, and data science. Through growth and collaboration, the region's network of institutions of higher learning will establish the Finger Lakes as a leader in research and innovation. Expanding research activity will not only propel innovation in the region, but also attract investment and create jobs from sponsored research funding. Growing student enrollment, with particular focus on successful programs in key science, technology, engineering, and mathematics (STEM) fields, will continue to draw top talent to the region and create significant economic impact through tuition revenue and the creation of new employment opportunities.

Fig. 26

Economic impact of Higher Education in the Finger Lakes

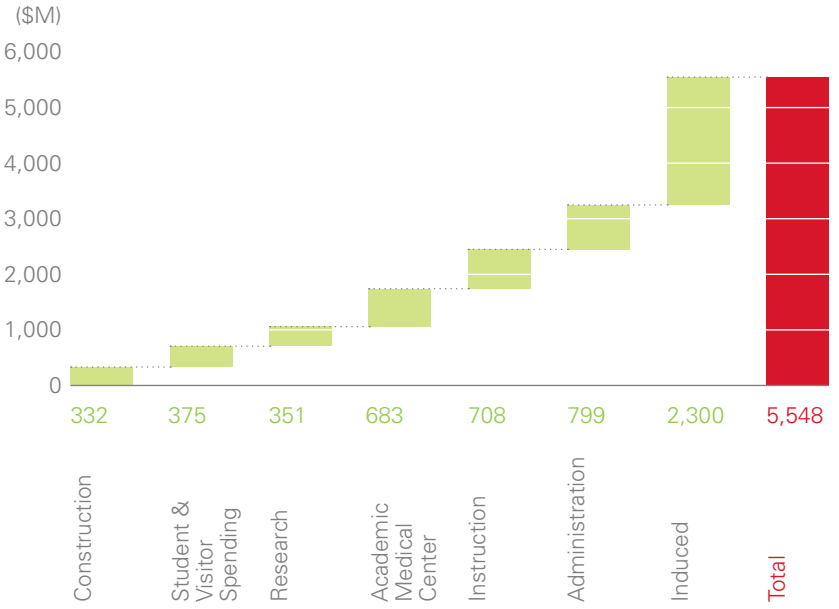
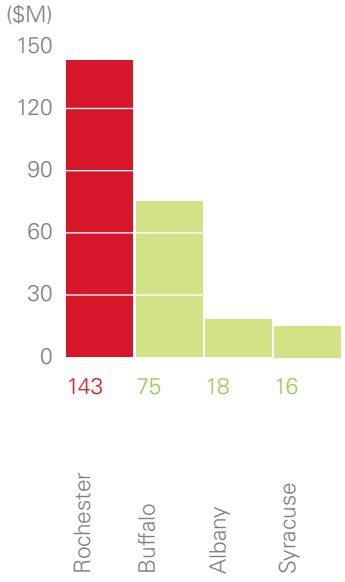


Fig. 27

2014 NIH funding



Roberts Wesleyan College's Science and Nursing Center

Assets and performance

The Finger Lakes region is home to 19 institutions of higher education, (Fig.29) including leading research universities, private liberal arts colleges, SUNY campuses, and community colleges. These institutions serve a variety of economic and community development roles and serve as drivers of employment, research, and industry innovation. The sheer number of institutions makes higher education a powerful force in the regional economy (Fig.26): institutions are spread geographically throughout the region, and many colleges and universities serve as major employers in their counties. Independent colleges and universities contribute more than $5.5 billion in economic impact,[184] and $3.1 billion in payroll.[185] The University of Rochester and its affiliates employ nearly 27,000 full or part-time employees,[186] making it the largest employer in the Finger Lakes region, the largest private employer based in upstate New York, and the eighth largest private employer in all of New York State.[187]

Rochester has attracted more external research funding than any other city in upstate New York and the Finger Lakes spends $277 per capita in research and development expenditures,[188] far exceeding benchmark comparisons of $182 for upstate New York and $170 for the U.S.[189] (Fig.27, Fig.28)

Finger Lakes higher education institutions enroll more than 86,000 students every year.[190] The region's universities are particularly strong in the STEM fields, with 26 percent of degrees awarded in these fields,[191] compared to 20 percent for upstate New York and 18 percent for the U.S. (Fig. 28)[192] The CFA process has supported the expansion of STEM programs and facilities throughout the region and has helped build a strong workforce pipeline, with funded projects including the NextGen Sciences Initiative at Roberts Wesleyan College, which will increase science and nursing enrollment by more than 50 percent,[193] and the Integrated Science and Health Sciences Building at St. John Fisher College, where nearly 80 percent of science and nursing graduates continue on to work in New York State.[194] The Rochester Institute of Technology (RIT) is the second largest producer of STEM degrees among private universities in the nation,[195] and enrollment has grown by more than 10 percent in last five years.[196] This STEM specialization supports growing regional industries including computing and software development, for which RIT awards nearly 800 degrees every year.[197] RIT also leads innovative research efforts in key STEM fields, and has produced more than $70 million in engineering research and more than $50 million in physical sciences research over the last five years.[198]

The University of Rochester received more than $350 million in research funding in 2014,[199] and is recognized as one of the top 10 universities in the nation for the impact of its life sciences research based on the number of licenses, licensing/royalty revenue, the number of start-ups, and the number of awards received.[200] The University of Rochester Medical Center produces cutting edge research across a breadth of topics, with particular strengths in neuroscience, orthopedics, and vaccine biology. Notable technologies include the world's first cancer-preventing vaccine – Gardasil and Ceravix – and advancements in LASIK surgery that have improved the vision of tens of thousands of people.[201] In 2014, the University of Rochester received $25 million in licensing revenue and 155 invention disclosures, a more than 10 percent increase over 2013.[202] These disclosures were received from 250 university inventors, as well as 51 external collaborators from 28 institutions, agencies, and corporations.[203] Since 1996, 56 companies have been created using University of Rochester licensed technologies, including iCardiac Technologies, Vaccinex, Lucid, and QED Technologies.[204]

Thanks to support from Governor Cuomo and the New York State Legislature, the University of Rochester is among the top 15 most powerful university-based supercomputing sites in North America and home to the most advanced computer system dedicated to health research in the nation,[205] the Health Sciences Center for Computational Innovation (HSCCI), developed in partnership with IBM. The University of Rochester also is home

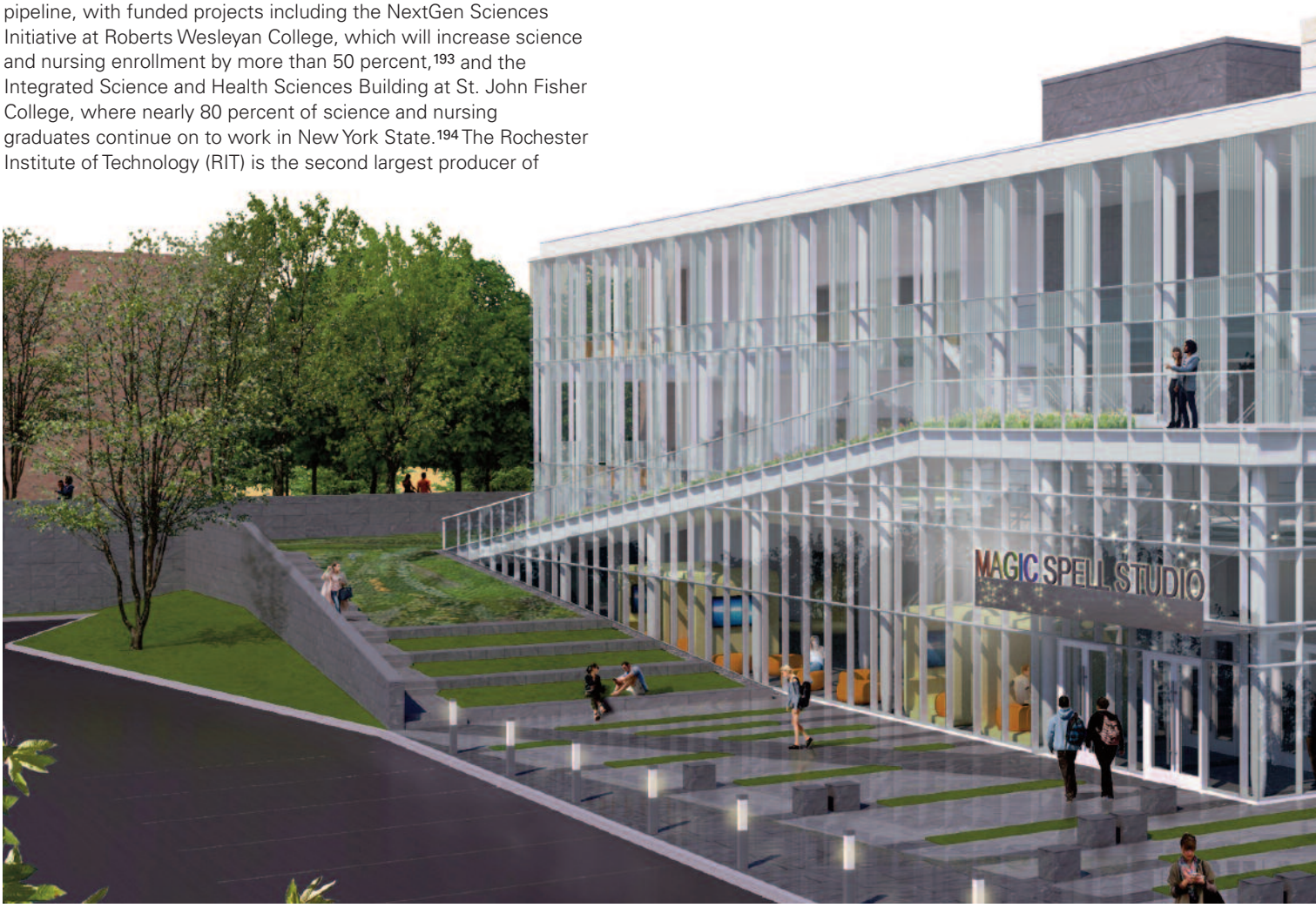
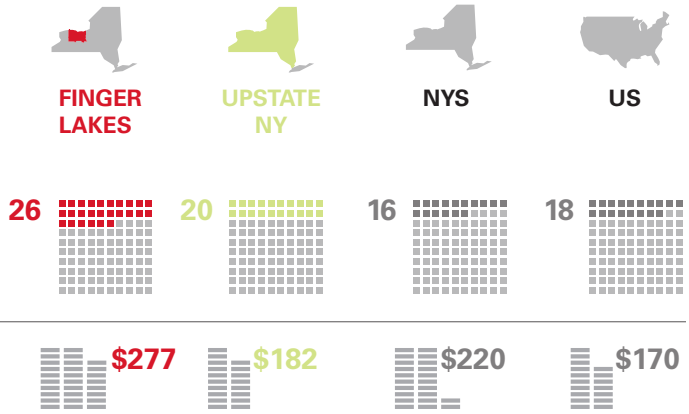


Fig. 28

STEM degrees and R&D expenditures



Source: National Science Foundation, National Center For Education Statistics

to New York State's Center of Excellence in Data Science, and these unique data science capabilities have already generated more than $330 million in research funding over the last six years and involve more than 650 faculty, students, and research staff from more than 40 departments.[206] Annual research awards associated with the University of Rochester's super computing technology and infrastructure have tripled in the last three years. Grant funding awarded is projected to exceed $1 billion for University faculty who utilize the Goergen Institute for Data Science's core competencies and facilities,[207] which includes the Center for Integrated Research Computing and the HSCCI.

Universities play a pivotal role in driving industry innovation. Companies in the Finger Lakes region benefit from access to unique academic assets such as RIT's Golisano Institute for Sustainability (GIS), one of the transformational projects previously designated by the FLREDC. GIS has received $15 million in state capital funding, along with significant private sector and industry support to advance cutting edge research in sustainable production technologies. These investments enabled GIS and RIT to be invited as a Tier One partner in one of the first National Networks for Manufacturing Innovation (NNMI) to be designated by the federal government in Digital Design and Manufacturing (DMDII). In its first year of operation, the DMDII has awarded four research projects to GIS, leveraging federal and corporate funding and enabling GIS to transition new technologies to several companies in New York State. GIS houses five research centers, including the New York State Center of Excellence in Sustainable Manufacturing and the New York State Pollution Prevention Institute (NYSP2I), and works with local manufacturing firms to increase their global competitiveness by helping them develop and implement more sustainable products and environmentally efficient manufacturing processes. Its industry outreach arm, the Center for Integrated Manufacturing Studies (CIMS), has a long track record of applied research and technology transfer dating back to 1992. One of the companies spun out of CIMS, Vnomics, was recognized in 2014 as the second fastest growing company in the greater Rochester region and is poised to add at least 100 employees over the next two years.[208]

RIT's Center for Media, Arts, Games, Interaction, and Creativity (MAGIC) is establishing the Finger Lakes region as a leader in the rapidly growing software and digital media industry. The Center provides a dedicated environment for the construction, experimentation, and design of digital media, and MAGIC Spell Studios is linking RIT's internationally ranked academic programs with the high-tech facilities needed to commercialize computer gaming, film and animation, and imaging sciences projects. The Studio has received $13.5 million in funding from New York State, $3 million from Dell, and $12.4 million from Cisco Systems.[209] MAGIC is projected to graduate one company per year from its incubator, creating an estimated 50 new jobs over the next five years.[210]

Opportunities for growth

This broad base of assets means that the region's universities will continue to grow enrollment in key STEM programs and attract research funding and top tier faculty. The proportion of STEM degrees awarded each year in the Finger Lakes has increased more than 60 percent since 2000.[211] The region ranks fourth in the nation among large U.S. metropolitan areas for the share of total college graduates in STEM fields.[212] This trend is supported by regional strengths in research and development, and the expansion of research programs provides room to grow the number of students who come to study at the region's colleges and universities. Focusing student recruitment efforts on hallmark STEM programs also provides a talent pipeline for growing regional industries. Surveys and interviews reveal that many recent college graduates are leaving the region, in part, because they are unable to find relevant long-term career opportunities,[213] a challenge which URI support will address by creating new employment opportunities throughout the region and supporting student-led start-ups through incubator and accelerator programs. Internships with local businesses help create direct career pathways for students. For example, RIT's cooperative education program places 2,500 students per year in co-op positions. About 40 percent of the resulting permanent job offerings are in the Finger Lakes region,[214] providing a scalable model for systematically embedding talent into the regional economy.

Universities are agents for change through their ability to translate academic discoveries into applications that spur economic growth. The region's universities are particularly strong in research and development, and there is significant room to grow translation efforts into economic activity. Expanding sponsored research activity through URI support will create jobs, as sponsored research activity alone creates a number of employment opportunities, including expanded teaching positions and full-time research positions, and further drives the creation of jobs in related industries.

IBM Blue Gene/Q supercomputer – part of UR's Health Sciences Center for Computational Innovation.

Photo by: Ken Huth

Fig. 29

The strength of higher education & research will grow the regional economy.

Attract
federal and private research dollars

Grow
student populations

Tie
to commercialization and tech transfer through entrepreneurship programs

Strategies to achieve vision

Highlighted Year One initiative

Year One initiatives are specific, high-impact projects that could be launched immediately after winning the URI.

Expanding the **Goergen Institute for Data Science** at the University of Rochester will meet a growing national need for skilled data scientists and establish the Finger Lakes as a leader in this field through a recently established series of data science degree programs, including a Master of Science, Bachelor of Arts, and Bachelor of Science. Harnessing cutting-edge computational power and data analytics, the Institute is accelerating research and development in fields including medicine, engineering, physics, optics, and finance. The Institute promotes the expansion of industry and government partnerships, and is building on existing data science collaborations with Xerox, IBM, the National Institutes of Health, the Food and Drug Administration, the Department of Defense, and state-based, university-sponsored economic incentives such as STARTUP-NY. The Institute is projected to attract more than $530 million in research funding and create 270 direct jobs.[215] Further URI investment would likely induce similar leverage ratios.

Highlighted Full Implementation initiatives

Full Implementation initiatives are projects that would be further refined after winning the URI, including clarifying final investment and timing.

Investments in research facilities at the region's pre-eminent universities have a strong history of success: advanced research capabilities draw substantial federal research funding to the region, creating a high degree of leverage. URI investment could be targeted to support to specific research facilities at local institutions. Examples of potential projects include:

- The **Center for Advanced Technology in Additive Manufacturing and Multifunctional Printing** will focus on developing next-generation technologies for 3D printing commercialization, including new materials and new products. The Center will collaborate with industry partners, addressing the needs of small businesses through consultation, product design, and testing services. URI investment would leverage at least $1.7 million in approved private funding from RIT and industry partners to purchase 3D printing equipment and fund product development that would place it among the top three laboratories in the country. This center could attract $17.5 million in research funding in the first five years of operation,[216] and would lead to related start-up activity and growth at regional corporate partners. Further funding for the Center could result from RIT's membership in the FlexTech Alliance, the awarded consortium in the Flexible Electronics NNMI, and from an $8 million America Makes grant opportunity.
- The University of Rochester **Neurorestoration Institute** will expand Rochester's preeminence in the growing field of neurorestorative care. Diseases and injuries that impact the brain and central nervous system have a unique set of challenges and require expertise that is not commonly found. The University of Rochester Medical Center is among the top ten in the nation in neuromedicine research and is the hub for some of the world's largest networks for clinical trials of new treatments for neurological conditions. Investment in this Institute would position Rochester as a national destination for the rehabilitation of people with chronic neurologic conditions and center for excellence in research on the restoration of cognitive, motor, and sensory function. State investment to help build the center will leverage a $30 million University of Rochester investment, enabling the Medical Center to attract additional federal funding and new patients.[217] Beyond this, technology developed and talent retained at the center would help grow activity across the life sciences and related clusters, including medical devices (e.g., robotics technologies) and imaging (e.g., sensory devices).

URI Concepts addressed in this chapter

Connectivity

Innovation

Leveraging other State Initiatives

Private Leverage

Readiness

Workforce Development

Recommended Funding Allocations

6

Photo by: Matt Wittmeyer

Recommended Funding Allocations

While the URI guidelines do not require the $500 million in state funds to be designated to future projects at the time of submission, it is vital for each region to offer a set of example initiatives that URI funds could support. Although allocations are preliminary and subject to change, the region has identified an initial set of allocations across the key pillars and enablers. (Fig.30)

The Finger Lakes region has identified a minimum of $6.4 billion in potential private leverage within the key industry pillars and enablers. To build the capabilities that will allow New York State and the Finger Lakes to retain that private investment, the region plans to invest approximately $250 million of URI funding in key industries:

- Within Optics, Photonics, and Imaging, the region plans to invest approximately $50 million in projects beyond AIM Photonics intended to strengthen optics, imaging, integrated photonics, and laser commercialization and business attraction efforts.
- Within Agriculture and Food Production, the region plans to invest approximately $75 million in projects primarily focused on expanding current operations and investments in innovative food production technologies that support industry trends towards natural, healthy foods and sustainable farming.
- Within Next Generation Manufacturing and Technology, the region plans to invest approximately $125 million in projects to repurpose existing assets to attract new tenants at Eastman Business Park, improve safety, security, and infrastructure, and develop an incentive program for businesses to locate and create jobs within the Downtown Innovation Zone, and bring STAMP to shovel-ready status in order to attract future anchor tenants.

The region has identified an additional $800 million of potential private leverage within key enabler areas. To help support both these investments and growth in industry pillars, the region plans to invest approximately $250 million of URI funding across the enablers.

- Within Pathways to Prosperity, the region plans to invest approximately $100 million in projects that improve high school graduation rates, and reduce poverty and unemployment. This allocation includes support for select Rochester-Monroe Anti-Poverty Initiative recommendations.
- Within Entrepreneurship and Development, the region plans to invest approximately $75 million in efforts that increase access to capital for start-ups and small businesses within key pillar industries, and promote incubation and acceleration efforts.
- Within Higher Education and Research, the region plans to invest approximately $75 million to support cutting-edge research in areas such as data science, neurorestoration, and additive and sustainable technologies.

URI Concepts addressed in this chapter

Private Leverage

Readiness

Sustainability

Fig. 30

Proposed URI allocation

Note: This represents a preliminary funding allocation proposal. These numbers are subject to change and adjustment during the five-year implementation of the URI.

GOALS

Grow jobs | Increase regional wealth | Drive private investment | Reduce poverty

Pillars

Optics, Photonics & Imaging	Agriculture & Food Production	Next Generation Manufacturing & Technology
$50 million	$75 million	$125 million

Enablers

Pathways to Prosperity: Workforce Development	Entrepreneurship & Development	Higher Education & Research
$100 million	$75 million	$75 million

Additionally: Up to $30 million in annual CFA funding

Photo by: Matt Wittmeyer

Governance & Implementation

7

Governor Cuomo announces the Upstate Revitalization Initiative in Rochester in January 2015.

Governance & Implementation

Effective implementation will be essential to the success of the URI. The FLREDC also intends to put in place a governance and implementation structure to maximize impact of URI projects in meeting the region's four primary goals of job creation, private investment, wealth generation, and poverty reduction, while avoiding waste and misallocation of funds.

While the ultimate governance model will follow New York State's direction, the FLREDC has developed a preliminary framework based on four key principles that could be used for the URI implementation:

- The URI organizational structure is aligned around key priorities (i.e., key pillars and enablers) established by the URI plan.
- The funding allocation process ensures collaboration, transparency, and community inclusion while maintaining strategic direction.
- Robust performance measurement structures and tools ensure effective implementation of individual projects, and measure the overall economic impact trajectory of the URI.
- Coordination with New York State and all funding agencies for URI project recommendation and tracking.

Proposed Structure

The region will rely on a clearly defined support organization, composed of a subset of the FLREDC organization, with specific roles, mandates, and accountabilities to assist New York State (Fig.31).

The URI structure will blend the community-oriented, bottom-up approach exercised through the extensive Work Group participation in the CFA process with an implementation team that supervises the project pipeline, funding, implementation, and tracks performance.

Each pillar and enabler will be managed by a dedicated advisory council that will coordinate project implementation. Depending on the need and nature of pillars and enablers, the Council may be supported by a team of experts. Recognizing that key pillars and enablers are complementary, these teams will coordinate and work closely together along with the relevant Work Groups in defining and proposing projects. In order to ensure optimal coordination with the Rochester-Monroe Anti-Poverty Initiative, the Pathways to Prosperity advisory council will facilitate dedicated representation from RMAPI.

The URI Implementation Team will have a broader set of responsibilities across the program:

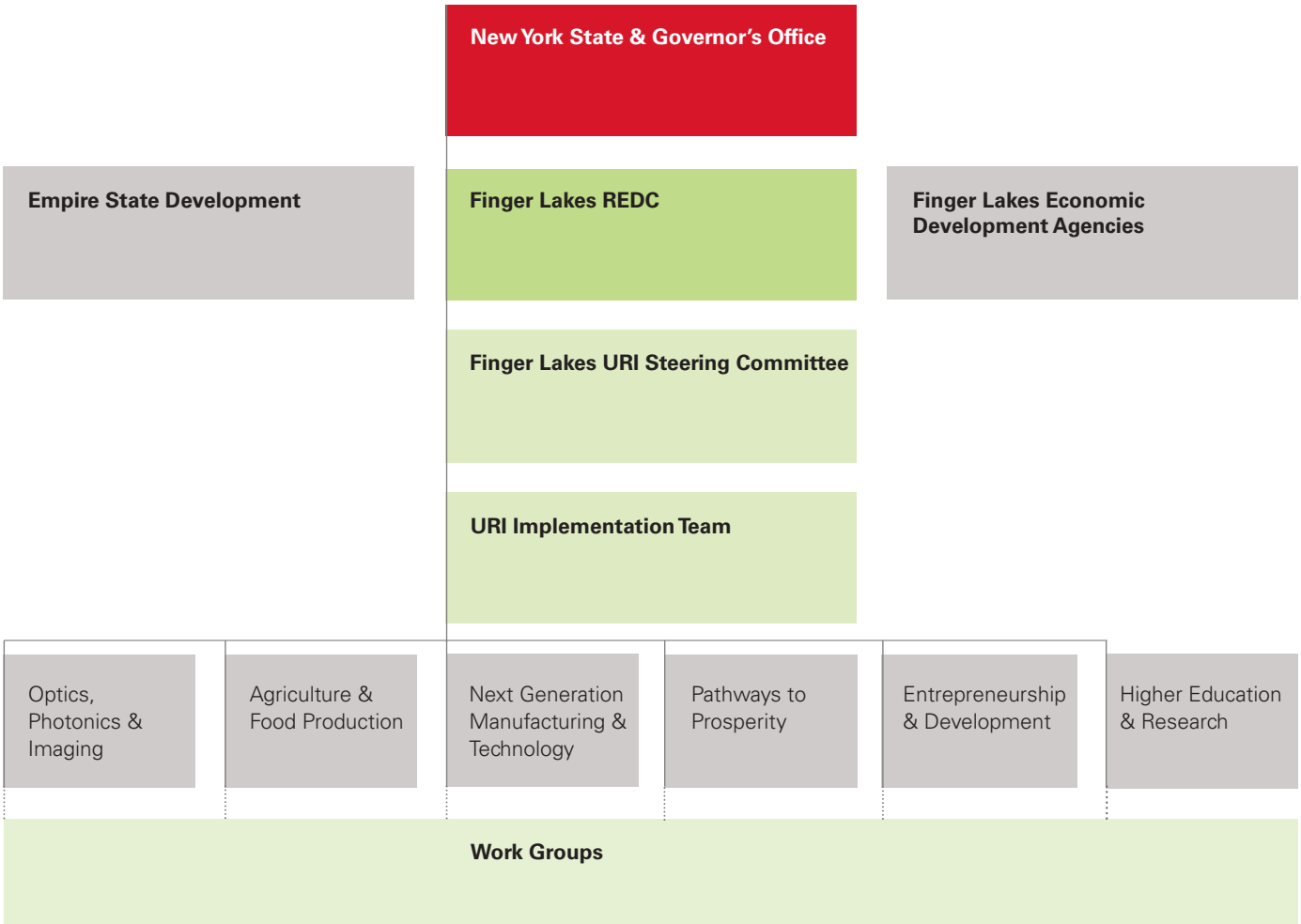
- Coordinate each of the six pillars and enablers to ensure collaboration and avoid overlap.
- Provide implementation support where needed.
- Track and manage ongoing projects and measure program impact against URI goals.

The URI Steering Committee, composed of a subset of relevant FLREDC members, including both State Legislative appointees, as well as Mayor of the City of Rochester and the County Executive of Monroe County, will monitor progress updates, provide strategic direction for the program, and make recommendations to the broader FLREDC and New York State.

In addition, other economic development agencies (e.g. GRE and county organizations) will play an important role in advising the Work Groups, the FLREDC committee, leads, and implementation teams throughout project development, selection, and implementation. Building on the regional management structure, Empire State Development and New York State will manage the overall process, make final funding decisions, and disburse funds.

Fig. 31

Proposed governance structure



SIAT members tour LiDestri Foods' Innovation Center in July 2015.

Process for Project Funding Recommendations

While this URI plan outlines a set of key industries and signature projects for investment, funding for specific projects will only occur after the region has been designated a URI-winning region by the State, providing a five-year commitment of up to $500 million for projects that will implement the vision and meet the goals of this plan.

The process currently used by the REDC system will be expanded in order to select and prioritize potential projects for URI support. At a high level, the proposed URI funding vetting process includes these steps (to be refined with state input):

1. Define potential projects for funding: The URI Implementation Team will solicit concepts from potential project sponsors, Work Group members, and other stakeholders to develop project proposals that should be submitted for consideration.
2. Potential project applicants submit a pre-application: Within the existing Consolidated Funding Application (CFA) portal, project sponsors can submit a (Phase 1) pre-application as an "intent to propose" a project for URI funding. Project sponsors are encouraged to work with existing Work Group and FLREDC stakeholders to develop their project ideas.
3. Evaluate and prioritize projects: Through collaboration with the existing related advisory council, the Implementation Team will establish a rigorous, consistent, pressure-tested review process for each project pre-application to ensure compatibility with the plan that will include impact on URI goals, funding requested, expected private capital (with documentation when available), private operational spending planned, and economic impact. Projects that pass this initial review process will be submitted to the Steering Committee for approval to submit a final URI (Phase 2) application within the CFA portal.
4. Review final URI applications: Projects that are cleared to submit a final URI application will be jointly reviewed by the Implementation Team and the State, using a similar review process outlined above to analyze the additional project detail.
5. Recommend projects for funding: Upon successful review of project applications, the URI Steering Committee and the FLREDC will review input, make any changes as needed, and submit recommended approval to the state, which will maintain final approval for any project funding.

Proposed Implementation and Measurement

Ensuring transparency and accountability of program funding and spending will be a key component of successfully managing the program. After funding for each individual project begins, the project owner will be required to track the funding disbursed, private operational expense, private capital expense, and direct jobs created on an ongoing basis. The information will be validated by the URI Implementation Team and published. By gathering this data, the region will certify that state funds are being spent as planned, ensuring delivery of URI goals. An example project tracking dashboard to support this process is shown in Figure 32.

In parallel to tracking the individual performance of projects, the Implementation Team also will track the overall URI program effectiveness to ensure the URI funding has the maximum impact on the regional economy. The results will be measured against the key URI objectives: job creation, wealth creation, attraction of private investment, and poverty reduction. The data will be released every six months to match project tracking, keeping the public and program stakeholders aligned with the overall URI goal. An example tracking dashboard to support this process is shown in Figure 33.

URI Concepts addressed in this chapter

Implementation & Reporting

Sustainability

Fig. 32

Sample project reporting dashboard

Project Overview

Project Name:

Managing Entity:

Corresponding pillar/ enabler:

Primary Contact:

Project Type:

Project Description:

Project Milestones & Timeline

	Target 1	Target 2	Target 3	Target 4
Date				
Target				
Actual				
Status				

Economic Impact

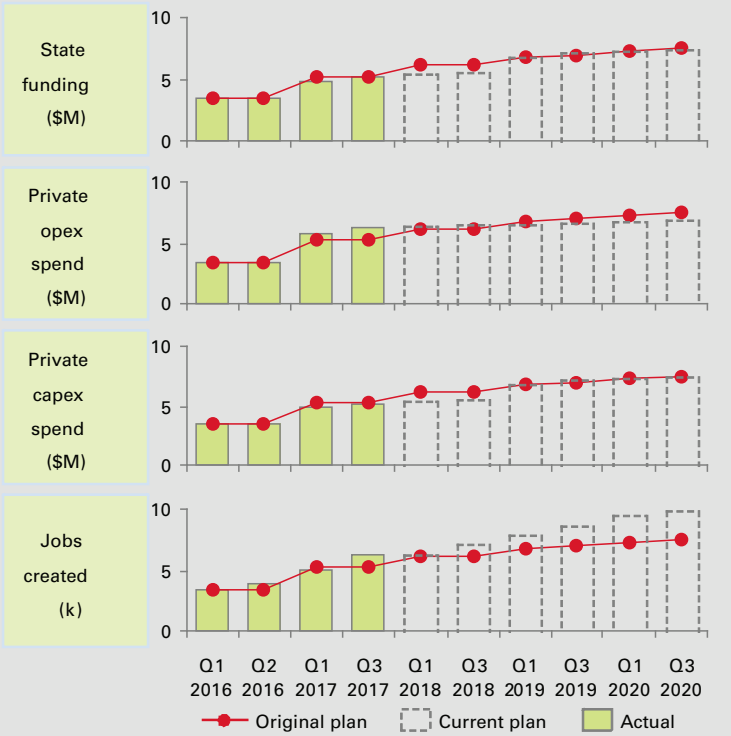
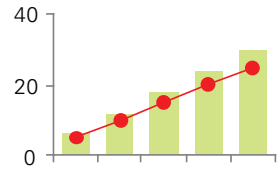
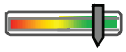
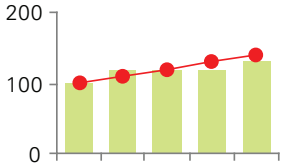
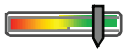
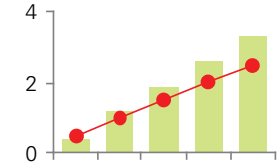
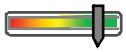
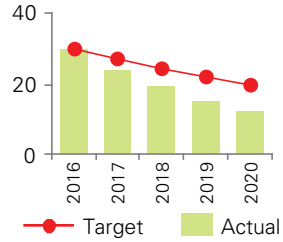
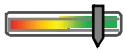


Fig. 33

Sample program reporting dashboard

	Key metrics	Status	Comments
Job creation		 x% of target	
Weath creation		 x% of target	
Private investment		 x% of target	
Poverty mitigation		 x% of target	

Conclusion 8

Finger Lakes Regional Economic Development Council meeting in September 2015

Photo by: Adam Fenster

United for Success

Photo by: Adam Fenster

FINGER LAKES *FORWARD*

We are united for success. The Finger Lakes region is on the verge of transformation. The Upstate Revitalization Initiative has united the community by inspiring a shared vision of the region's future. Developing the URI plan has facilitated unprecedented collaboration throughout the nine counties by providing the opportunity to build consensus on what the region needs to thrive.

This holistic plan presents best use for $500 million: a strategic portfolio for state investment that will yield generations of returns for the Finger Lakes region and all of New York State. Through months of rigorous analysis and dedicated community effort, the Finger Lakes Regional Economic Development Council has identified $6.4 billion in private investment and more than 17,000 direct and indirect jobs. This plan for the Finger Lakes region is bold in its aspirations, yet eminently achievable, grounded in unique strengths, data-driven insights, commitments of support, and community consensus. The pillars and enablers identified in this plan are focused and specific so that targeted investment will produce immediate impact, and collectively, they complement each other and form the foundation for comprehensive economic development.

Targeted investment in three industry pillars will enhance the competitive advantages of the Finger Lakes region. The region is fortifying global leadership in the Optics, Photonics, and Imaging cluster by drawing on historical strengths and recent federal awards. Investments in Agriculture and Food Production build on a wealth of natural resources, and place the Finger Lakes region at the forefront of nationwide trends favoring healthy, natural food. The focused developments of Eastman Business Park, Rochester's Downtown Innovation Zone, and STAMP are preparing the region to lead cutting-edge advances in Next Generation Manufacturing and Technology.

Three enablers will develop the people, the support structures, and the innovation needed to sustain economic growth. Pathways to Prosperity will provide the dynamically skilled workforce needed to support economic growth, and presents the critical opportunity to ensure the success of the Rochester-Monroe Anti-Poverty Initiative through coordination with the URI. Fostering Entrepreneurship and Development will grow regional wealth by enabling new and small businesses to capitalize on industry growth. Expanding Higher Education and Research will drive innovation and attract the talent needed to make these advances adaptable for years to come.

Developing this plan has generated optimism throughout the region by renewing confidence in unique regional strengths and identifying solutions to the challenges that have prevented progress, but the momentum to realize these gains will be lost without the support of the URI. From downtown Rochester and throughout its nine counties, the community has united around this plan, and is committed to executing it. The Finger Lakes region is ready for transformation, and the Upstate Revitalization Initiative is the catalyst we need to make our potential a reality.

Thank you, Governor Cuomo, for this once-in-a-lifetime opportunity to transform the future of our region.

Appendix 9

The Appendix includes additional detail supporting the URI plan, including information on the creation of the FLREDC URI Submission, as well as summaries of the technical details included.

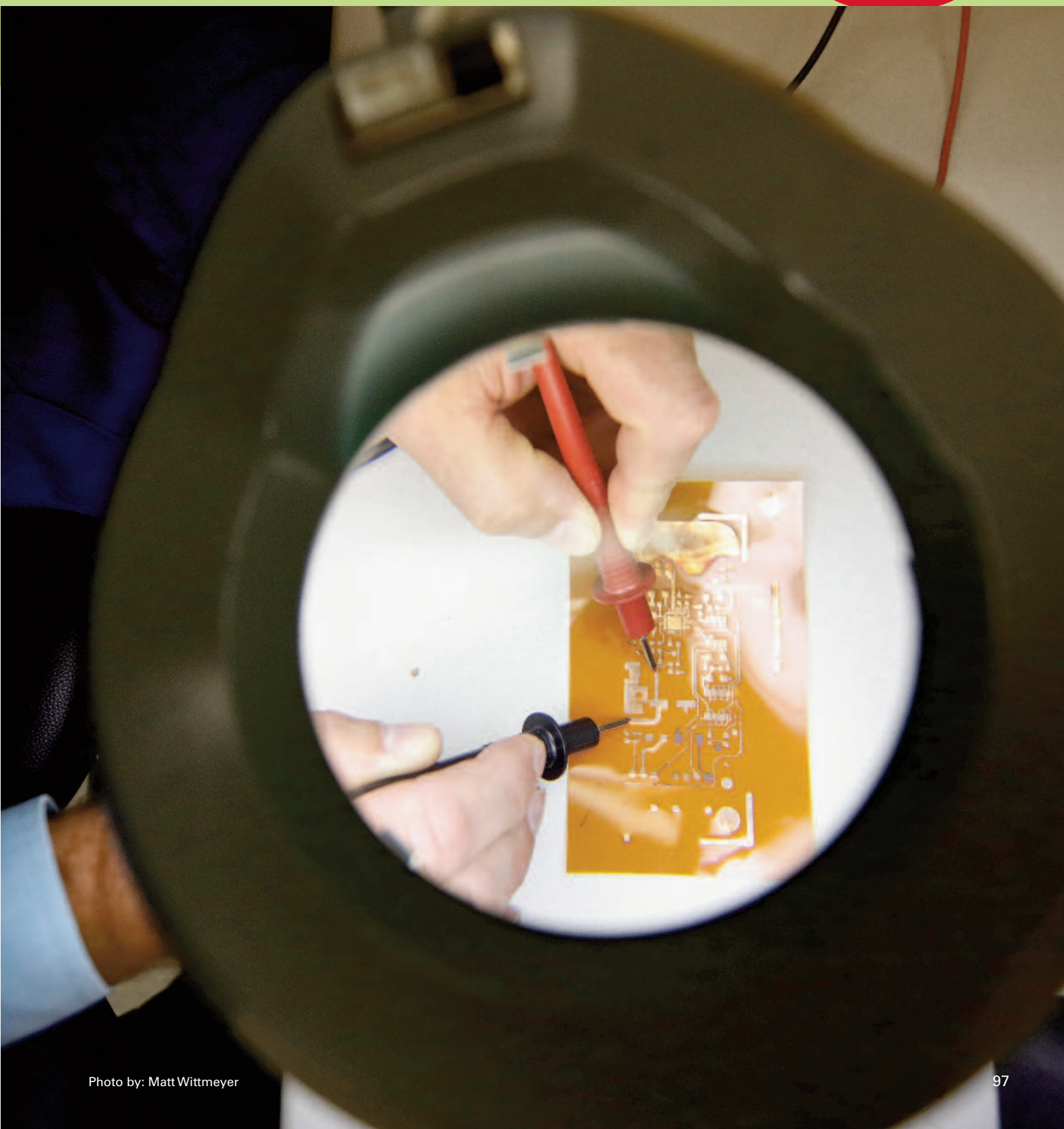


Photo by: Matt Wittmeyer

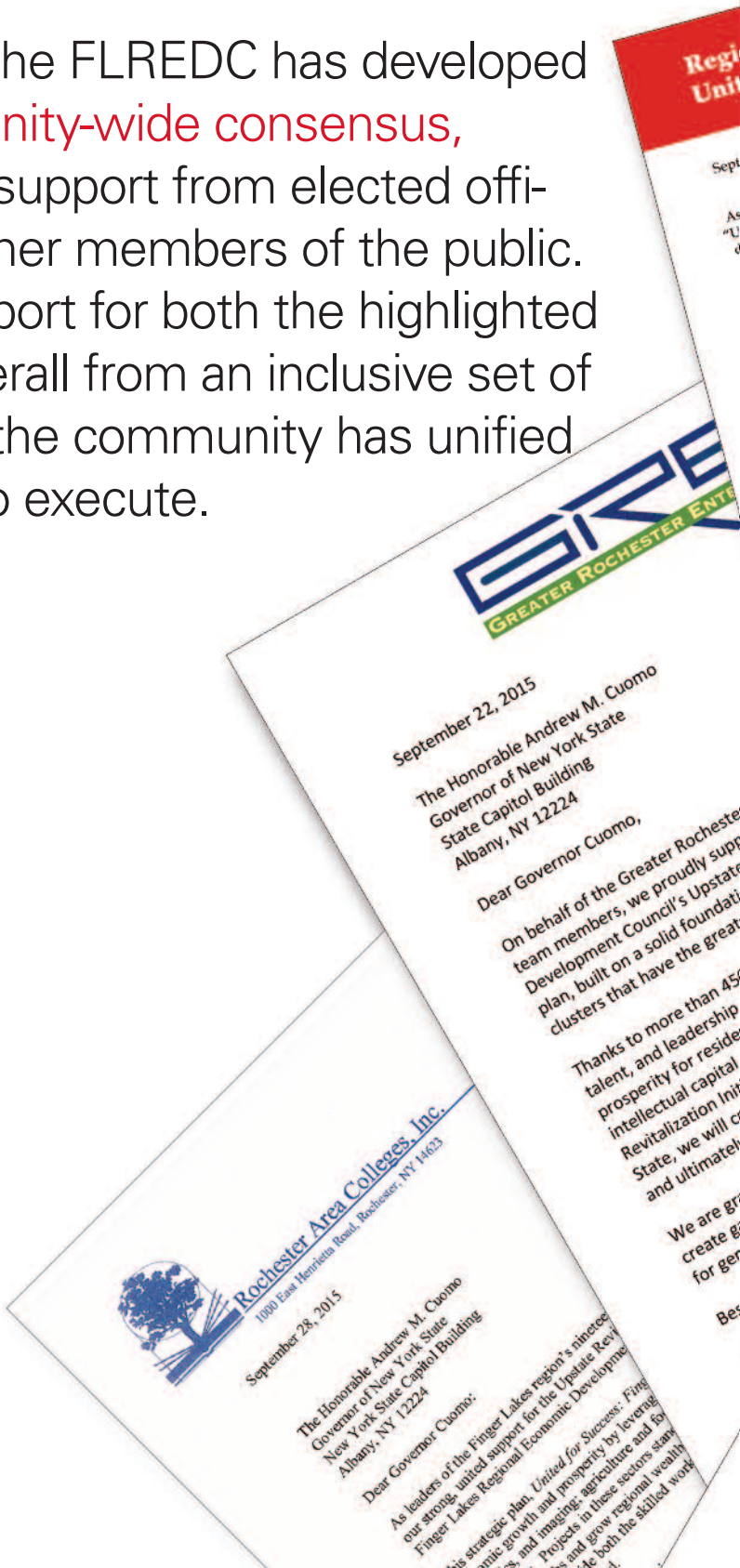
9.1 Demonstrations of Support

Throughout the URI process, the FLREDC has developed a robust plan and built community-wide consensus, gathering input and garnering support from elected officials, business leaders, and other members of the public. The Council has collected support for both the highlighted initiatives and the URI plan overall from an inclusive set of stakeholders, confirming that the community has unified around the plan and is ready to execute.

Businesses and private enterprises have expressed their support for the plan, and those partners providing specific initiatives have confirmed their commitment to implement them. Highlighted initiatives featured in this plan are supported by letters of intent and offers of support – this documentation has been collected by Empire State Development and is viewable upon request.

The Council solicited input through interactive public meetings and more than 120 stakeholder interviews, and used this input to develop a framework and supporting detail for the optimal plan. The Council then returned to the public to solicit direct input on draft versions of the plan. Following further refinement, the Council gathered final support for the Finger Lakes region's URI plan from the public by collecting more than 2,400 signatures of support.

The FLREDC has additionally secured support from elected officials and other leaders from all nine counties in the Finger Lakes region, ensuring regional support structures are in place to execute on the plan. Samples of which are included in this section.



NEW YORK STATE LEGISLATURE
FINGER LAKES REGION DELEGATION

September 29, 2015

Honorable Andrew M. Cuomo
Governor, State of New York
Executive Chamber
Albany, NY 12224

Dear Governor Cuomo,

We write to lend our full support to the 2015 Finger Lakes Regional Economic Development Council's (FLREDC) Upstate Revitalization Initiative (URI) Plan. The plan, "United for Success Finger Lakes Forward," encapsulates a clear vision for the future of this region and creates a sense of hope and excitement for all of us.

As State leaders in the area encompassing the FLREDC, we understand our potential for economic growth. By creating this opportunity, you have created a sense of optimistic and confidence in our region's future. The plan set forth by the FLREDC provides a clear focus on the key pillars for economic resurgence in the Finger Lakes region, including: Optics, Photonics, and Imaging; Agriculture and Food Production; and, Next Generation Manufacturing and Technology. Economic growth within these three p[illegible] will be supported through investment in three key enablers identified in the URI plan: Wor[illegible]lopment; Entrepreneurship and Development; and Higher education and Research

Furthermore, in aligning with the Rochester-Mo[illegible] placed special emphasis on ensuring that all me[illegible] the economic growth this plan will generate.

This comprehensive plan builds on our legacy [illegible] Lakes region to emerge as a national, if not, [illegible] legislative delegation stands behind you, the[illegible] request the state's support of this outstand[illegible]

JOSE[illegible]

onal Leaders' Statement in Support of ted for Success: Finger Lakes Forward

ember 28, 2015

elected officials and community leaders, we are united in our support for nited for Success: Finger Lakes Forward", the Upstate Revitalization Initiative plan eveloped by the Finger Lakes Regional Economic Development Council.

From its rural roots to its urban core, the Finger Lakes region is a diverse collection of residents, geographies, and economies. This plan presents an extraordinary opportunity for inclusive economic development by investing in our unique strengths.

The Finger Lakes region's strategic plan clearly charts a course for success that will create jobs, attract private sector investment, grow regional wealth, and reduce poverty.

The development of this plan has brought together stakeholders from across the region, including businesses, government leaders, and members of the community This regional collaboration has laid the groundwork for success, and as leaders of the community, we are committed and ready to get to work to implement this plan and transform our economy for the benefit of all people in our region.

Sincerely,

David Callard, Orleans County Legislature Chairman
Kathy Blackburn, Orleans County Chamber of Commerce
James Whipple, Orleans County Economic Development Agency

Maggie Brooks, Monroe County Executive
Lovely Warren, City of Rochester Mayor
Robert Duffy, Rochester Business Alliance
Paul Johnson, County of Monroe Industrial Development Agency

Raymond Cianfrini, Genesee County Legislature Chairman
Brooks Hawley, Batavia City Council President
Tom Turnbull, Genesee County Chamber of Commerce
Steve Hyde, Genesee County Economic Development Center

A. Douglas Ber[illegible], Wyoming County Board of Supervis[illegible]
Scott Gardner, Wyoming County Ch[illegible] of Commerce
James Pierce, Wyoming County Indus[illegible] Development Agency

James [illegible]
Rich[illegible]
Dia[illegible]
Tow[illegible]
Wa[illegible]
M[illegible]

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erations to come.

t Regards,

Rochester Building and Construction Trades

Building & Construction Trades Council – Building the Future for Working Families

David Young, President, 2300 East River Road, Rochester, NY 14623, 1910 - Fax: 585-235-0420

Eugene Cassamise, Vice President, 3750 Monroe Avenue, Pittsford, NY 14534, 585.641.0750 - Fax: 585.641.0764

William Kurtz, Recording Secretary, 1850 Mt. Read Blvd., Rochester, NY 14615, 585.338.7350 - Fax: 585.544.0[illegible]

29, 2015

ndrew M. Cuomo
ew York

Rochester BusinessAlliance – The Regional Chamber of Commerce

150 State Street
Rochester, NY 14614-1308
Phone: (585) 244-1800
(585) 263-3679
RochesterBusinessAlliance.com

September 21, 2015

Joel Seligman
President/FLREDC Co-Chair
University of Rochester
240 Wallis Hall, Box 270011
Rochester, New York 14627

Daniel R. Wegman
Chief Executive Officer/FLREDC Co-Chair
Wegmans Food Markets, Inc.
P.O. Box 30844
1500 Brooks Avenue
Rochester, New York [illegible]

Dear Danny and Joel,

your fellow members on the Executive Com[illegible]
ness Alliance, we fully endorse the 201[illegible]
t's Upstate Revitalization Initi[illegible]
of the plan during your pr[illegible]
res our vision for [illegible]
for all of us [illegible]

of the Board
Braveman
Rochester
[illegible]
[illegible]

UNICON – Unions and Businesses United in Construction
www.uniconrochester.com
180 Linden Oaks, Suite 150 • Rochester, NY 14625
P: 585-288-3440 • F: 585-288-5480 • info@uniconrochester.com

September 29, 2015

Honorable Andrew M. Cuomo
[illegible]or, State of New York
[illegible]pitol Building
[illegible] 12224

[illegible]r Cu[illegible]

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Editorial Board

Help region win by showing support

10:06 a.m. EDT September 21, 2015

(Photo: TODD CLAUSEN/DEMOCRAT AND CHRONICLE PHOTOGRAPHER)

In July 2011, Gov. Andrew Cuomo announced he was going to change the way New York state invests in its economy and job creation. He set up 10 economic development coun[illegible] across the state, including one here in [illegible] Lakes, and told them each to develop [illegible] for growth.

get the most money. No more pi[illegible]
and a little money going th[illegible]
join forces and figure [illegible]
higher than e[illegible]
Upstate [illegible]

[illegible] Construction Trades Council and the wor[illegible]
[illegible] of the Finger Lakes Regional Economic [illegible]
We believe this plan shows a clear [illegible]

[illegible] plans would
[illegible] going here
[illegible] were told to
[illegible] are
[illegible] the

FLREDC URI Support Form | Regional Economic Development Councils

regionalcouncils.ny.gov/content/flredc-uri-support-form

Rush Rhees ... - uofrphoto | URMC Intranet | Apple | iCloud | Facebook | Twitter | Wikipedia | Yahoo | URMC BOX | BBennett | FLREDC URI

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REGIONAL ECONOMIC DEVELOPMENT COUNCILS

REGIONS | NEWS | FAQS | MAP | MATERIALS | CONSOLIDATED FUNDING APPLICATION | CFA PROJECT INFO

Show Your Support for the FLREDC URI Plan

I support the Finger Lakes Regional Economic Development Council's Upstate Revitalization Initiative plan.

This plan builds on the strengths of our region, and charts a course that will create jobs, attract private sector investment, grow regional wealth, and reduce poverty. The Finger Lakes region is a great place to live and work, and I believe the strategies laid out in this plan will spark future economic success for all our citizens.

Name *

State Assembly and Senate Delegation support

NEW YORK STATE LEGISLATURE

FINGER LAKES REGION DELEGATION

September 29, 2015

Honorable Andrew M. Cuomo
Governor, State of New York
Executive Chamber
Albany, NY 12224

Dear Governor Cuomo,

We write to lend our full support to the 2015 Finger Lakes Regional Economic Development Council's (FLREDC) Upstate Revitalization Initiative (URI) Plan. The plan, "United for Success Finger Lakes Forward," encapsulates a clear vision for the future of this region and creates a sense of hope and excitement for all of us.

As State leaders in the area encompassing the FLREDC, we understand our potential for economic growth. By creating this opportunity, you have created a sense of optimistic and confidence in our region's future. The plan set forth by the FLREDC provides a clear focus on the key pillars for economic resurgence in the Finger Lakes region, including: Optics, Photonics, and Imaging; Agriculture and Food Production; and, Next Generation Manufacturing and Technology. Economic growth within these three pillars will be supported through investment in three key enablers identified in the URI plan: Workforce development; Entrepreneurship and Development; and Higher education and Research.

Furthermore, in aligning with the Rochester-Monroe Anti-Poverty Initiative, our region has placed special emphasis on ensuring that all members of our population are able to participate in the economic growth this plan will generate.

This comprehensive plan builds on our legacy assets and strengths, and positions the Finger Lakes region to emerge as a national, if not, world leader in key industries. The region's State legislative delegation stands behind you, the FLREDC and our URI application. We respectfully request the state's support of this outstanding blueprint for our region's economy and future.

Sincerely,

Joseph E. Robach

JOSEPH E. ROBACH
Senator, 56 District

Joseph D. Morelle

JOSEPH D. MORELLE
Majority Leader, NYS Assembly

RICH FUNKE,
Senator, 55th District

MICHAEL F NOZZOLIO
Senator, 54th District

MICHAEL RANZENHOFER
Senator, 61st District

ROBERT G. ORT
Senator, 62nd District

THOMAS F. O'MARA
Senator, 58th District

CATHERINE M. YOUNG
Senator, 57th District

Minority Leader, NYS Assembly

HARRY B. BRONSON
Assemblyman, 138th District

STEPHEN HAWLEY
Assemblyman, 139th District

MARK JOHNS
Assemblyman, 135th District

PHILIP A. PALMESANO
Assemblyman, 132nd District

PETER A. LAWRENCE
Assemblyman, 134th District

BOB OAKS
Assemblyman, 130th District

Regional Leaders' Statement in Support of United for Success: Finger Lakes Forward

September 28, 2015

As elected officials and community leaders, we are united in our support for "United for Success: Finger Lakes Forward", the Upstate Revitalization Initiative plan developed by the Finger Lakes Regional Economic Development Council.

From its rural roots to its urban core, the Finger Lakes region is a diverse collection of residents, geographies, and economies. This plan presents an extraordinary opportunity for inclusive economic development by investing in our unique strengths.

The Finger Lakes region's strategic plan clearly charts a course for success that will create jobs, attract private sector investment, grow regional wealth, and reduce poverty.

The development of this plan has brought together stakeholders from across the region, including businesses, government leaders, and members of the community. This regional collaboration has laid the groundwork for success, and as leaders of the community, we are committed and ready to get to work to implement this plan and transform our economy for the benefit of all people in our region.

Sincerely,

Rochester Business Alliance support

150 State Street
Rochester, NY 14614-1308
Phone: (585) 244-1800
Fax: (585) 263-3679
www.RochesterBusinessAlliance.com

Rochester BusinessAlliance
The Regional Chamber of Commerce

September 21, 2015

Joel Seligman
President/FLREDC Co-Chair
University of Rochester
240 Wallis Hall, Box 270011
Rochester, New York 14627

Daniel R. Wegman
Chief Executive Officer/FLREDC Co-Chair
Wegmans Food Markets, Inc.
P.O. Box 30844
1500 Brooks Avenue
Rochester, New York 14603

Dear Danny and Joel,

As your fellow members on the Executive Committee and Board of Directors of Rochester Business Alliance, we fully endorse the 2015 Finger Lakes Regional Economic Development Council's Upstate Revitalization Initiative Plan. On September 15, we learned about the details of the plan during your presentation at Rochester Business Alliance. The proposal encapsulates our vision for the future of this region and creates a sense of hope and excitement for all of us.

As longstanding business leaders of the Rochester region, we understand the challenges of conducting business in these difficult economic times, but through Governor Cuomo's generosity and the process he has created with the Upstate Revitalization Initiative, we are optimistic and confident of our region's economic future. The plan set forth by our Regional Council clearly defines the core differentiators for the Finger Lakes area, including Optics, Photonics and Imaging, Agriculture and Food Production, and Next Generation Manufacturing and Technology. Our current commitment to Pathways to Prosperity, Entrepreneurship and Development, and Higher Education and Research will be strengthened to further facilitate the effectiveness of our key pillar industries. Pathways to Prosperity will also focus heavily on our efforts to reduce the poverty currently plaguing the Rochester community. Set on a strong quality of life foundation, the URI plan is a successful blueprint for the growth and prosperity of the Finger Lakes region.

Rochester Business Alliance's Board of Directors and Executive Committee stand behind you, the FLREDC and our URI application and will respectfully request the state's consideration and concurrence with this outstanding path forward for our region's economy and future.

Sincerely,

Bob

Robert J. Duffy
President & CEO

- and-

Rochester Business Alliance Board of Directors and Executive Committee (*see attached*)

Rochester Business Alliance, the regional chamber of commerce, is the connection to the people, information, and expertise your business needs to grow.

Rochester Business Alliance Executive Committee:

Daan Braveman
President
Nazareth College of Rochester
RBA Chairman of Board

Matthew Augustine
President & Chief Executive Officer
Biodrill Technical Solutions

Christopher Booth
Chief Executive Officer
Excellus BlueCross BlueShield

William W. Destler
President
Rochester Institute of Technology

Lauren Dixon
Chief Executive Officer
Dixon Schwabl

David L. Fiedler
Chief Executive Officer
ESL Federal Credit Union

Brian G. Flanagan
Partner & General Counsel
Nixon Peabody LLP

Brian E. Hickey
Executive Vice President & Upstate NY Area Executive
M&T Bank

Susan R. Holliday
President & Publisher
Rochester Business Journal

Thomas H. Judson, Jr.
Chairman & Chief Executive Officer
The Pike Company

Michael Kane
President & Publisher
Democrat & Chronicle Media Group

R. Wayne LeChase
Chairman
LeChase Construction Services, LLC

Martin Mucci
President & Chief Executive Officer
Paychex, Inc.

Edward J. Pettinella
President & Chief Executive Officer
Home Properties, Inc.

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Bank of America

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University of Rochester Medical Center

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E. Malcolm Wolcott, Jr.
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JPMorgan Chase & Co.

Michael Zimmer
President, US Large Enterprise Operations
Xerox Corp.

Additional Members of Rochester Business Alliance Board of Directors:

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David J. Beinetti, President, SWBR Architecture, Engineering & Landscape Architecture, P.C.
Martin K. Birmingham, President & Chief Executive Officer, Five Star Bank
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Paul Deering, Regional Vice President, East Region Sales, Time Warner Cable
Andrew R. Gallina, President, Gallina Development Corporation
Kimberly Gangi, Partner, Insero & Company, CPAs, P.C., Small Business Council of Rochester Representative
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Mark S. Lynch, President & Chief Executive Officer, NYSEG and RG&E
Timothy Mason, President & Chief Executive Officer, Mason Marketing
Dana A. Mehnert, President, Harris Corporation, RF Communications Division
Suzanne Nasipak-Chapman, Market Executive, First Niagara Bank, Regional President, First Niagara Risk Management
Michael R. Nuccitelli, President & Chief Executive Officer, Parlec Inc.
John J. Perrotti, President & Chief Executive Officer, Gleason Corporation
Mark Peterson, President & Chief Executive Officer, Greater Rochester Enterprise
Greg Soehner, President & Chief Executive Officer, East House, Council of Agency Executives Representative
Timothy G. White, Office Managing Partner, KPMG LLP

Greater Rochester Enterprise support

September 22, 2015

The Honorable Andrew M. Cuomo
Governor of New York State
State Capitol Building
Albany, NY 12224

Dear Governor Cuomo,

On behalf of the Greater Rochester Enterprise board members, investors and team members, we proudly support the Finger Lakes Regional Economic Development Council's Upstate Revitalization Initiative plan. It is a comprehensive plan, built on a solid foundation of legacy assets and focused on the core industry clusters that have the greatest potential for long term economic success.

Thanks to more than 450 active volunteers who gave tirelessly of their time, talent, and leadership, we have a strategic plan that establishes pathways to prosperity for residents throughout our nine-county region. We also have the intellectual capital and leadership necessary to maximize the Upstate Revitalization Initiative's once in a lifetime windfall. With support from New York State, we will create jobs, increase regional wealth, attract private investments, and ultimately reduce poverty throughout the Finger Lakes region.

We are grateful for the opportunity to attract $500 million to our community and create game changing initiatives that will positively affect the Finger Lakes region for generations to come.

Best Regards,

Mark S. Peterson
President & CEO

Peter Robinson
Chairman

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GREATER ROCHESTER, NY

Regional Economic Development

GRE Greater Rochester Enterprise

GRE BOARD LEVEL INVESTORS

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City of Rochester
Coalition of Area Developers
Constellation Brands, Inc.
County of Monroe Industrial Development Agency
Eastman Business Park
Excellus BlueCross BlueShield
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Genesee County EDC
Harter Secrest & Emery LLP
LeChase Construction
Livingston County Economic Dev. (ex-officio)
LLD Enterprises
M&T Bank
Monroe Community College
Monroe County
Nixon Peabody LLP
Ontario County Office of Economic Dev. (ex-officio)
Orleans County IDA / EDA (ex-officio)
Rochester Business Alliance (ex-officio)
Rochester Gas & Electric
Rochester Institute of Technology
Rochester Regional Health System
Seneca County IDA (ex-officio)
The Pike Companies
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University of Rochester /
University of Rochester Medical Center
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Wells Fargo Bank, N.A.
WinnDevelopment

[1] Coalition of Area Developers

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Digital Rochester

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September 29, 2015

The Honorable Andrew M. Cuomo
Governor, State of New York
State Capitol Building
Albany, NY 12224

Dear Governor Cuomo,

As an organization representing both business and labor united in economic development, UNICON Rochester strongly supports the Finger Lakes Regional Economic Development Council's Upstate Revitalization Initiative plan. The plan, *United for Success: Finger Lakes Forward,* makes a strong case that Rochester and the Finger Lakes region is ready for the kind of transformational investment that will grow jobs, increase regional wealth, and reduce poverty.

At UNICON, we are dedicated to building a stronger community through economic development, and we support the URI plan because it does just that for the Finger Lakes Region. The plan builds on the strengths and competitive advantages of our region to grow jobs. The strategies and investments outlined in this plan, with their focus on workforce development and key enablers of the economy, mean that our businesses will have the trained, local workforce necessary to grow our economy and sustain its growth.

We are excited about the opportunities that the future holds for our region, and we see the Finger Lakes economy moving forward with the help of this plan. In closing we would like to reaffirm our position that we solidly stand behind the Finger Lakes Regional Economic Development Council's URI plan. Thank you for your consideration of our support for this outstanding economic development initiative.

Sincerely,

Joseph Leone, Executive Director
UNICON Rochester

UNICON: Unions and Business United in Construction represents over 250 employers and thousands of tradesmen within the Finger Lakes region's local building trades.

DEDICATED TO BUILDING A BETTER COMMUNITY

Rochester Building & Construction Trades Council support

Rochester Building and Construction Trades Council

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dan.kuntz@local435.org

September 29, 2015

The Honorable Andrew M. Cuomo
Governor, State of New York
State Capitol Building
Albany, NY 12224

Dear Governor Cuomo,

On behalf of the Rochester Building and Construction Trades Council and the working men and women we represent, we write in support of the Finger Lakes Regional Economic Development Council's Upstate Revitalization Initiative plan. We believe this plan shows a clear path forward to economic prosperity for our region.

Importantly, this plan does not shy away from the fact that many in our region do not share in that prosperity. The Rochester area has some of the highest poverty measures in the state and nation, including high rates of extreme poverty and childhood poverty. Our city school district struggles to graduate more than fifty percent of its students. This URI plan addresses these issues head-on by supporting the work of the Rochester-Monroe Anti-Poverty Initiative. It also focuses heavily on workforce development and moving people out of poverty and into good paying jobs that will be created through needed investments in our key economic sectors.

We believe the transformational investment outlined in this URI plan will create thousands of jobs that will benefit all people in our region. We thank you for this opportunity, we stand behind this plan, and we are ready to get to work to build a new and better Finger Lakes economy.

Sincerely,

David Young, President
Rochester Building & Construction Trades Council

Asbestos Workers Local 12A
Boilermakers Lodge 7
Bricklayers Local 3
Cement Finishers Local 111

Electrical Workers Local 86
Elevator Constructors Local 27
Glaziers & Glassworkers Local 677
Insulators & Allied Workers, Local 26
Iron Workers Local 33

Laborers Local 435
Operating Engineers Local 832
Painters Local 150
Plasterers Local 9

Plumbers & Steamfitters Local 13
Road Sprinkler Fitters Local 669
Roofers Local 22
Sheet Metal Workers Local 46
Teamsters Local Union No. 118

Rochester Area Colleges support

Rochester Area Colleges, Inc.
1000 East Henrietta Road, Rochester, NY 14623

September 28, 2015

The Honorable Andrew M. Cuomo
Governor of New York State
New York State Capitol Building
Albany, NY 12224

Dear Governor Cuomo:

As leaders of the Finger Lakes region's nineteen colleges and universities, we write to express our strong, united support for the Upstate Revitalization Initiative (URI) plan developed by the Finger Lakes Regional Economic Development Council.

This strategic plan, *United for Success: Finger Lakes Forward*, articulates a clear vision for economic growth and prosperity by leveraging the region's considerable strengths in optics, photonics, and imaging; agriculture and food production; and next generation manufacturing and technology. Projects in these sectors stand ready for the kind of transformational investment that will create jobs and grow regional wealth for years to come. Significantly, we stand ready—and united—to provide both the skilled workforce and research-driven innovation necessary to move our regional forward.

We see first-hand how this plan will benefit the Finger Lakes region. The higher education institutions we represent contribute significantly to these sectors by attracting billions of research dollars, driving innovation that leads to new companies, and providing the pipeline of skilled workers needed by our region's industries. Our colleges and universities enroll more than 86,000 students who will become our future workforce. We employ tens of thousands of employees, and have a regional economic impact of more than $5 billion. As such, the Finger Lakes URI plan acknowledges this role by naming higher education and research as a key enabler of our economy, leveraging our collective strength.

Significantly, *United for Success: Finger Lakes Forward* creates a pathway to prosperity that will benefit the full diversity in our region. In this, it embodies the mission of the Upstate Revitalization Initiative and the complementary missions of our colleges and universities. We thank you for this opportunity and for your commitment to Upstate New York.

Sincerely,

Alfred State College · Alfred University · Colgate Rochester Crozer Divinity School · Finger Lakes Community College · Genesee Community College · Hobart and William Smith Colleges · Houghton College · Keuka College · Monroe Community College · Nazareth College · Rochester Institute of Technology · Roberts Wesleyan College · St. Bernard's School of Theology and Ministry · St. John Fisher College · The College at Brockport · SUNY Empire State College · SUNY Geneseo · University of Rochester · Wells College

Denise Battles
SUNY Geneseo

James Sunser
GCC

Barbara Risser
FLCC

Jorge Diaz-Herrera
Keuka College

Joel Seligman
University of Rochester

Shirley Mullen
Houghton College

Jonathan Gibralter
Wells College

Heidi Macpherson
The College at Brockport

Deana L. Porterfield
Roberts Wesleyan

Daan Braveman
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SUNY Empire

Gerard Rooney
St. John Fisher College

Mark Gearan
Hobart and Wiliam Smith Colleges

Alfred State College · Alfred University · Colgate Rochester Crozer Divinity School · Finger Lakes Community College · Genesee Community College · Hobart and William Smith Colleges · Houghton College · Keuka College · Monroe Community College · Nazareth College · Rochester Institute of Technology · Roberts Wesleyan College · St. Bernard's School of Theology and Ministry · St. John Fisher College · The College at Brockport · SUNY Empire State College · SUNY Geneseo · University of Rochester · Wells College

Online public support form

The FLREDC received more than 2,500 affirmations of support using its online public support form.

FLREDC URI Support Form | Regional Economic Development Councils

regionalcouncils.ny.gov/content/flredc-uri-support-form

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Show Your Support for the FLREDC URI Plan

I support the **Finger Lakes Regional Economic Development Council's Upstate Revitalization Initiative plan.**

This plan builds on the strengths of our region, and charts a course that will create jobs, attract private sector investment, grow regional wealth, and reduce poverty. The Finger Lakes region is a great place to live and work, and I believe the strategies laid out in this plan will spark future economic success for all our citizens.

Name *

Organization *

County of Residence *

Email *

Submit

Suggestions

« September 2015 »

S	M	T	W	T	F	S
		1	2	3	4	5
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20	21	22	23	24	25	26
27	28	29	30			

Latest News and Announcements

September 22, 2015

Western New York Regional Economic Development Council Submits Round V Progress Report

September 22, 2015

Finger Lakes Regional Economic Development Council Approves Upstate Revitalization Initiative Plan

September 22, 2015

North Country Regional Economic Development Council Submits Round V Progress Report

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Help region win by showing support

Editorial Board *10:06 a.m. EDT September 23, 2015*

(Photo: TODD CLAUSEN/@toddjclausen/STAFF PHOTOGRAPHER)

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In July 2011, Gov. Andrew Cuomo announced he was going to change the way New York state invests in its economy and job creation. He set up 10 economic development councils across the state, including one here in the Finger Lakes, and told them each to develop a regional strategy for growth.

Each year, the most promising strategic plans would get the most money. No more piecemeal investments, with a little money going here and a little money going there. Instead, competing interests in each region were told to join forces and figure out how to get the most bang for their buck. The stakes are higher than ever this year, with Cuomo dangling a half billion dollar prize through the Upstate Revitalization Initiative.

Fortunately, the Finger Lakes Regional Economic Development Council is well-positioned to capture this coveted prize. There has been a tremendous amount of collaboration in producing a promising plan for the initiative. But it is important for our entire community to acknowledge this show of unity.

How can you show your support for the plan? We were hoping you would ask. You can fill out a form backing the effort as soon as possible. These endorsements will become part of the application, which must be submitted by Oct. 5.

It just takes a minute — you need to put in your name, organization, county and email address. But that moment could help bring about a dramatic transformation that will impact generations to come.

9.2 Summary of Highlighted Initiatives

As described in the Methodology section, the Council conducted a wide-ranging search to identify potential projects to attract or amplify private investment leveraging URI funds.

To date, the Council has received more than 40 official "Intent to Propose" URI pre-applications in the CFA system and has identified nearly 150 potential projects for URI investment within the key industry pillars and enablers.

Throughout this report, projects have been highlighted with accompanying detail describing the need, opportunity, anticipated leverage, and approach to implement. These highlighted projects were selected by the Council as prototypical examples that represent the type of initiatives that would likely be prioritized if the Finger Lakes region is awarded URI funds.

While the region considers these highlighted projects to be potential high impact investments, any URI initiative will be required to go through a prioritization and selection process in conjunction with New York State and Empire State Development. As such, highlighted projects should be considered as examples to clarify the types of initiatives the region would pursue rather than an endorsement or allocation of support.

Highlighted PILLAR Initiatives

Section	Initiative	Description
Optics, Photonics, and Imaging	Project Cataract	Confidential project to build an OPI manufacturing facility in Rochester
Optics, Photonics, and Imaging	LLE capability expansion	Expanded LLE capabilities, leveraged by private UR/federal capital spending and anticipated federal national security funding
Optics, Photonics, and Imaging	FL Photonics Challenge	Photonics-focused start-up competition to energize OPI network, tied to annual photonics conference
Agriculture and Food Production	FLX Food	Investment across Finger Lakes food players to build the industry, e.g., AquaTerRen ($250M investment, 400 jobs at EBP), high pressure processing at NYSAES, organic grain farming conversion, wine marketing
Agriculture and Food Production	Eco-Brewing District	Hub for craft beer brewing and tourism in Downtown Rochester, creating jobs and drawing visitors to the High Falls area
Agriculture and Food Production	Sustainable Food Production Initiative	Research facility with collaboration from RIT and Cornell's New York State Agriculture Experiment Station
Eastman Business Park	Sweetwater Energy Integrated Biorefinery	Creation of a biorefinery at Eastman Business Park

Section	Initiative	Description
Eastman Business Park	Technology commercialization support with private companies	– Nanomaterials Commercialization Center: Create a shared facility to pool capital costs, leverage Rochester's knowledgeable workforce, and draw large companies working to efficiently commercialize nanotech – Expand NY-BEST facilities for prototyping, manufacturing, and testing batteries that have successfully drawn many companies to EBP
Eastman Business Park	AIM Photonics Manufacturing Center	AIM Photonics to create a manufacturing facility at EBP; URI investment to be focused on helping adjacent companies develop and grow, creating a true photonics cluster in Rochester
Downtown Innovation Zone	Rochester Regional Fund	Investment in development and capital improvements for downtown assets, helping revitalize the urban core
Downtown Innovation Zone	Inner Loop Redevelopment	Redevelopment of land created by Inner Loop roadway redevelopment, to help reconnect communities
STAMP	Project Eagle	Confidential imminent nanoscale manufacturing project at STAMP
STAMP	Other pipeline projects at STAMP	Four other projects actively considering STAMP with substantial potential private investment

Highlighted ENABLER Initiatives

Section	Initiative	Description
Pathways to Prosperity	FWD Center	MCC-led training facility at EBP to train the local workforce and connect workers with new jobs
Pathways to Prosperity	RMAPI Coordinated System	Initiatives deriving from RMAPI recommendation, intended to connect components of anti-poverty network into coordinated system
Pathways to Prosperity	Hillside Work-Scholarship	Expand program to improve high school graduation rates in the areas of most need
Pathways to Prosperity	Ex-Offender Job Support Services	Job training, placement services, and obstacle mitigation foR ex-offenders
Pathways to Prosperity	Helping Local Employers Hire from Working Poor	Assist employers with HR needs and accessing incentives for hiring the working poor
Entrepre-neurship and Developmnt	FL Venture Fund	Private capital fund to increase capital availability in the region, expanding on success of Upstate NY venture funds
Entrepre-neurship and Developmnt	Urban Entre. Ecosystem	Building support network (e.g., mentor/mentee system, training/courses) to help enabling start-up growth
Entrepre-neurship and Developmnt	SUNY Geneseo: Center for Entrepreneurship Innovation & Econ Dev	Create an incubator in Livingston County with entrepreneurship program, business incubator, connected to START-UP NY via High Tech Rochester partnership
Higher Education and Research	Goergen Institute for Data Sciences	Data Sciences facility (research, academics, commercialization) at the University of Rochester
Higher Education and Research	AMPrint Center	3D Printing research and commercialization center at RIT, helping to grow this nascent industry in the Finger Lakes
Higher Education and Research	University of Rochester Neurorestoration Institute	Expand research and treatment capabilities in Neurorestoration domain at the University of Rochester Medical Center, drawing additional research dollars

9.3 Methodology

Early in the URI planning process, the FLREDC recognized the unique challenge presented by Governor Cuomo. The URI represents an opportunity for each upstate region to approach economic transformation from a fresh perspective, and identify the optimal areas for investment that will catalyze dramatic growth in the region's economy.

To rise to the Governor's challenge, the Council, led by the co-chairs, established a rigorous, outcome-driven approach to develop the Finger Lakes URI plan. The plan, United for Success, is the culmination of months of work deeply engaging members of the community, analyzing both outside-in and locally gathered data, and building a cohesive strategy that will best capitalize on this unprecedented opportunity for transformative growth.

The Council followed five steps to develop a successful URI plan:

1. Assemble the right team to develop the region's plan
2. Identify the primary goals and metrics for the URI
3. Develop a framework for the URI strategy
4. Define key growth pillars and enablers, and identify specific projects and leverage
5. Build a cohesive strategy for URI investment and maximize impact

The initial step was to assemble the right team to develop the region's plan. The Council convened several groups to focus on the URI:

- **A URI Steering Team** composed of over 30 influential community stakeholders drawn from industry, academia, government, and nonprofits. The Steering Team directly governed the plan development process, providing ongoing feedback and ensuring the plan was aligned with regional goals. The full Steering Team met seven times throughout the process and will continue to engage during the implementation of the URI award.
- **A URI Working Team** that included 20 key community members deeply familiar with the region's unique challenges and opportunities, and with the region's long-term history and recent successes in the CFA process. The Working Team met every week throughout the process – more than 20 times in total – and provided day-to-day support and input to the process.
- **A broad group of community stakeholders** and local experts, including FLREDC Work Groups, government officials, economic development organization employees and members, and more than 120 interviewees. These supporting groups and individuals provided information and initial guidance for the strategy, as well as feedback on multiple drafts of the report.
- **The FLREDC** met four times throughout the process to align and support these teams. In addition, the FLREDC co-chairs met weekly, more than 20 times, throughout the process to oversee and drive the process, ensuring alignment with regional objectives and priorities.

Additionally, members of the community made an upfront investment in the URI to engage The Boston Consulting Group, an outside consulting firm, to drive and execute plan development. The region engaged the firm to ensure the URI plan would be developed through a rigorous, balanced, data-driven process that appropriately incorporated past efforts, but also diverged from previous strategies where necessary to fulfill the opportunity afforded by the URI's "fresh look."

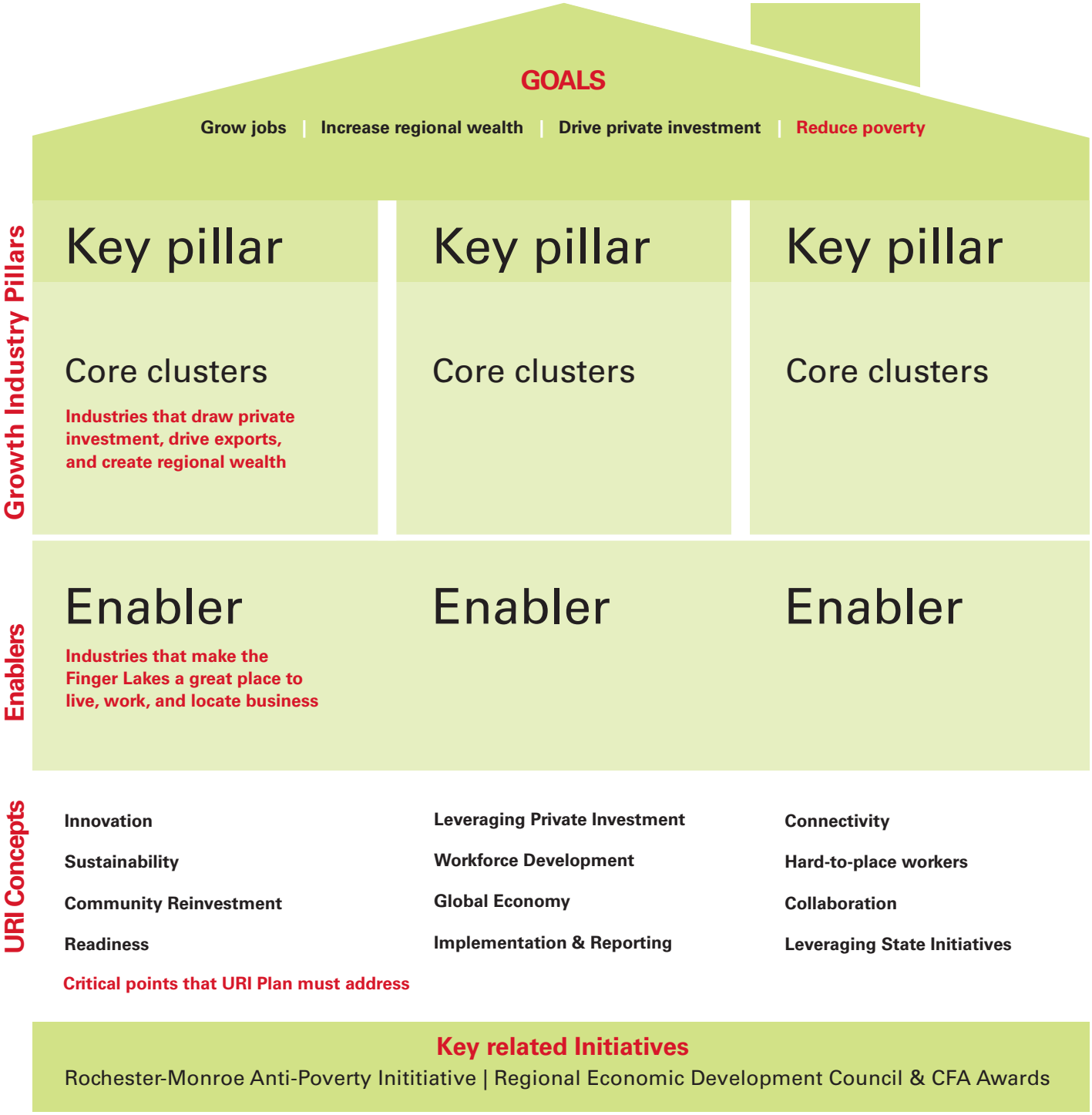
Second, the team worked to identify the primary goals and metrics for the URI. By first clearly identifying the desired outcome, the team was able to evaluate industries and proposals in a transparent, consistent way that would enable development of the best possible plan. The goals identified for the URI were:

- **Grow jobs**
- **Increase regional wealth**
- **Drive private investment**
- **Reduce poverty**

The team intentionally focused on simple, economically-focused, data-driven goals to facilitate a rigorous, analytical process. These goals are drawn from the URI guidelines with the exception of Reduce Poverty, a critical challenge for the Finger Lakes region. The Governor's newly created Rochester-Monroe Anti-Poverty

Fig. 34

Framework for the URI strategy



Initiative is focused on eliminating poverty in Rochester, and the Finger Lakes URI plan was designed from the start to align closely with this goal and invest in economic growth that will provide opportunity and mobility for all residents of the Finger Lakes. The four goals connect closely with the focus concepts established by the URI guidelines (e.g., Readiness, Innovation, Connectivity), as industries and projects that fulfill these concepts are the ones that more effectively drive economic impact.

Third, the team worked to develop a framework for the URI strategy. Recognizing that a successful economic transformation would require investment both directly in core industries, to stimulate growth, and in enabling factors that allow the region's economy to flourish, the team established a framework that would incorporate both growth pillar industries and enablers.

This framework is depicted in Figure 34 and formed the core basis for the URI strategy over the remainder of the process.

Fig. 35

Quantitative

Data driven prioritization

Which large sectors (historic in Finger Lakes, future in US) show:
- **Output growth**
- **Jobs growth**
- **Wage growth**

In which sectors does the Finger Lakes show specializations compared to US and NYS?

What are the main industry drivers within these sectors? What are the closest adjacencies to those industries?

How do these industries / sectors map onto the most attractive clusters for the Finger Lakes?

Fig. 36

Qualitative

Interviews and benchmarks

What are the main sectors and clusters where the Finger Lakes should focus its URI funding?

What are the examples of REDC projects and metrics to show that there is already potential within these fields that $500M would further accelerate?

What are examples of other projects / policies similar regions / cities have implemented in the past?

What are potential recommendations for the Finger Lakes?

Fourth, the team worked to fill the framework and identify key growth pillars and enablers for the Finger Lakes region. This included a dual approach focused both on quantitative insights driven by rigorous data analysis, and qualitative insights derived from interviews and assessment of local conditions.

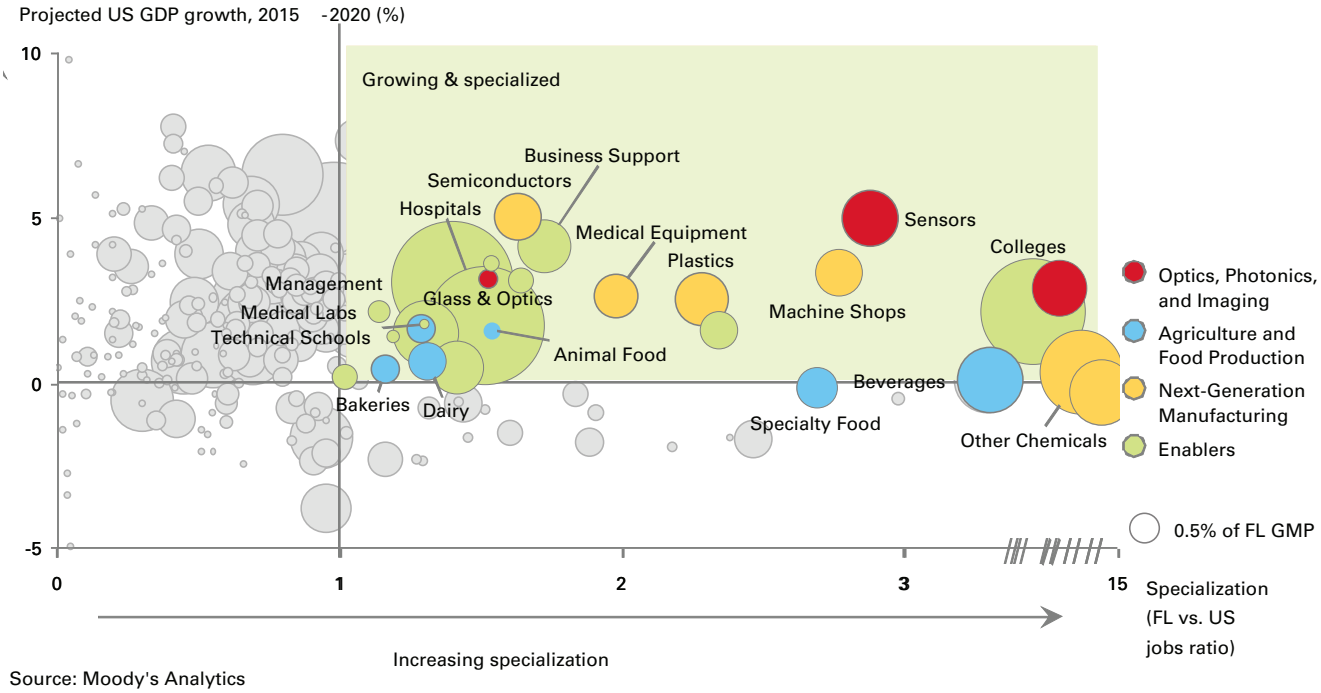
Figure 35 summarizes some of the key questions answered by the quantitative approach to strategy development. To ensure a comprehensive assessment of the region's strengths and weakness, the team incorporated multiple independent sources of data into the analysis:

- Economic indicator data from Moody's Analytics was used to assess national trends and provide a high-level view of the strong and weak industries in the Finger Lakes region. While this provided significant and highly accurate data, it was not available at fine levels of granularity. This data included figures on jobs, output, exports, and firms, covering both historical and future estimates.
- Economic indicator data from Economic Modeling Specialists, Inc. (EMSI) supplemented data from Moody's to identify core growth industries. This dataset included less historical data, but was available at much finer levels of granularity (including for all nine counties in the Finger Lakes region, and for the most specific level of industry classification available). By combining EMSI and Moody's data, the team was able to assemble a comprehensive picture of the region's economy, identifying and evaluating both primary growth industries and secondary adjacencies.
- Government data available from agencies such as the Bureau of Labor Statistics, the Bureau of Economic Analysis, the New York State Department of Labor, the Federal Reserve, the U.S. Census Bureau, the U.S. Postal Service, the U.S. Geological Survey, and many other sources supplemented this data as the team worked to refine its understanding of individual trends.
- Data gathered by local financial institutions, nonprofits, and local agencies helped the team understand local conditions. This included data gathered by Work Groups such as the Optics, Photonics, and Imaging Work Group, which periodically surveys all local companies in the industry to understand jobs associated with the sector, total economic output, and growth trends – as the sector is not captured directly by government data. Other information included financial data from local companies and institutions, vacancy information, university enrollment and graduation data, and other data sets provided by the community.
- Data and analysis provided by the University at Buffalo Regional Institute (UBRI) tailored to the specific needs of the Finger Lakes region were a critical factor in shaping strategy development, particularly the development of key enablers. UBRI conducted several rounds of analysis, including an initial economic overview of the region that was used to evaluate and understand the broader economic context for the plan. A selection of state and national rankings including research and development expenditures and patent development per capita illuminated regional strengths in higher education and research. A later deep dive at the direction of the FLREDC identified hard-to-place worker populations throughout the Finger Lakes region and created an interactive mapping tool showing proximity to workforce trainers and public transportation. The deep dive also provided best practice examples informing the development of the Rochester Downtown Innovation Zone.

The URI team combined these data sources to identify industry clusters that represent growth drivers unique to the region, and cross-cutting sectors that support growth. One key analysis focused on a high-level pass through the data to select areas that were both growing in the U.S. (indicating high degree of opportunity) and specialized in the Finger Lakes (indicating high probability of success). After identifying high-level areas of strength, the team grouped these areas together to form industry clusters that were the subject of further analysis. An output of this

Fig. 37

Initial, high-level analysis to identify regional strengths & opportunities



Source: Moody's Analytics

analysis is depicted in Figure 37.

The team then used more granular data to build out these clusters, identifying important adjacencies and narrowing to the true regional strengths. By combining multiple levels of analysis from different data sources (including data from both Moody's Analytics for higher-level analysis, and from EMSI for more granular analytics), the team was able to achieve an accurate, data-grounded output that was embraced by key community stakeholders.

To supplement quantitative data analysis, the team used rigorous, comprehensive qualitative analysis to help refine the recommendation and ensure it fit with the Finger Lakes region. Figure 36 details several of the questions to be answered through this process. This drew on multiple sources:

- More than 120 interviews conducted with members of the Finger Lakes community. These interviews drew from the commercial, government, academic, and nonprofit spheres, and covered all nine counties. Interviews were used to probe strengths and weaknesses of the region, validate hypotheses and analyses, and identify areas for further investigation. By engaging a broad sample of the community, the team sought to capture diverse perspectives.
- Multiple public input forums and channels for contribution from the public. By soliciting input from the general public, the Council ensured that no perspectives were excluded from the development process.
- Deep engagement with Work Groups tied to targeted industries and enablers. The team worked closely with key stakeholders to source data, validate approaches and analyses, and ensure alignment with the community. The team met with these contacts as necessary.
- Identification and review of many outside benchmarks for economic revitalization. These included tightly defined revitalization programs such as the Cortex Innovation Community in St. Louis, industry-specific growth projects such as the biotech industry program in Boston, and broad-based city growth initiatives such as the Kiev 2020 revitalization plan. The team identified over a dozen benchmark cities and plans to help identify best practices in order to avoid pitfalls and learn from prior experience.
- Qualitative assessment of proposed projects (linking with quantitative analysis), including pressure-testing business cases to ensure realistic estimates, measuring strategic fit with the URI plan and framework, and fit with the URI guidelines as leverage.

The team had identified Optics, Photonics, and Imaging, Agriculture and Food Production, and Next Generation Manufacturing and Technology as potential foci for the URI, and conducted a qualitative deep dive via research and stakeholder interviews to clarify the potential and to help build consensus around these fields. Figures 38 through 40 show example outputs of this process: discussion documents that the team built and refined as more information was received. Over the course of the project, the team summarized key data in this format for more than 15 industries and sub-industries in order to support discussions.

By combining these qualitative and quantitative approaches, the team identified potential growth pillars and enablers to underlie the Finger Lakes URI plan. These identified targets for investment were the subject of many iteration cycles with the URI Working Team, the URI Steering Team, and the FLREDC co-chairs, and formed the basis for developing the final plan submission.

For example, the team identified Higher Education and Quality of Life as strengths of the region, but worked to determine how the URI could best leverage those strengths to catalyze economic transformation. Figure 41 shows an example of the types of questions discussed with key stakeholders to assess these issues and build consensus.

Fig. 38

Qualtitative assessment of industry strengths identified through data analytics

Optics, Photonics, and Imaging industry deep dive

Example working output

Summary

Industry growth	Job growth across US (2.2%) and accelerating potential for the Finger Lakes (e.g., leveraging AIM Photonics)
Job potential	Not job intensive (4 jobs/$1M GDP) so limited direct jobs, but draws significantly from support industries
FL fit	Fit with Rochester infrastructure (existing laboratories), training programs (UR/MCC), momentum (~120 local optics companies)
URI fit	Strong on innovation, connectivity, readiness, sustainability, private sector investment, and global economy elements of URI

Local conditions

Local subcomponents: Lasers, optics, optoelectronics, imaging, roll-to-roll, and biomedical applications

Firms: ~120 local firms with ~22k employees, $7.2B output. Rich history of large firms (Xerox, Kodak, B&L)

Training: Local higher education: Institute of Optics at UR, Center for Imaging Sciences at RIT, Optical Systems Technology at MCC

CFA history and pipeline

- Photonics Industry Association machinery purchase for common usage among membership (enabling access to capital equip)
- Workforce training programs for local OPI companies funded
- Funding for expansion of manufacturing at several OPI firms

Competitive profile

Strongest optics education programs
- Spanning scope of skill level: UR graduates >50% of Optics PhDs & extensive research at various labs
- MCC's Optical Technology program is top in country

Minimal direct competition with other NYS regions
- Optics manufacturing in Corning, spread across NYS, but no other "centers of excellence"

Strong nodes at Univ. of Arizona, Univ. of Central Florida, Univ. of Alabama
- Primary competitors are outside New York State

Connectivity

Intersecting sectors
- Precision machining
- Equip manufacturing
- Clean energy & sustainability
- Nanoscale manufacturing (e.g., solar panels)
- 3D printing

Other
- Linkage with academia (MCC, UR), government (AIM Photonics, LLE)

URI criteria

URI concepts fulfilled:
- Innovation (new,leading-edge tech)
- Connectivity (across academia & business)
- Readiness (strong momentum)
- Sustainability (long -term strength in FL)
- Private sector investment
- Connectivity with other state programs
- Collaboration (connection with SUNY Polytechnic in Capital District region)
- Global economy

Job creation rate:
- 4 jobs / $1M GDP

Fig. 39

Agriculture & Food Production industry deep dive

Example working output

Summary

Industry growth	1% historical jobs growth in the Finger Lakes, with potential to capture leadership in transforming industry
Job potential	Very favorable job densities (10 jobs per $1M GDP in some subsectors), with high accessibility to hard -to-place workers
FL fit	Competitive advantage within NY (largest agriculture -producing region) and in the US, with key differentiators e.g., wine
URI fit	Strong on innovation, leveraging private sector investment, connectivity, sustainability, workforce development, hard to place workers, and readiness

Local conditions

Local subcomponents: Alcoholic beverages (wineries, breweries, distilleries), food production (large and small companies), agriculture (variety of strengths, e.g., apples)

Firms : ~700 local firms with ~ 20k employees. Wide range of companies (e.g., North American Brewers/Constellation large companies and many small companies for alcohol)

Training: Many training programs at local institutions including workforce development at community colleges

CFA history and pipeline

- Many capital investments provided (e.g., high pressure processing machine) with emphasis on shareability between companies in sector
- Investments in academic programs to help build the sector

Competitive profile

Strongest agriculture region in New York State
- 21% of total New York farmland and the highest agriculture output of any upstate region
- Several specialties, e.g., apples, wheat, corn

Opportunity to partner with other regions
- For example, integrated wine tourism marketing would benefit FL, Southern Tier, Central NY
- Growing FL agriculture economy will help make NY the leading agriculture center in the 21st century

Connectivity

Intersecting sectors
- Hospitality (e.g., tied to wine tourism)
- Restaurants
- High connectivity between various sub -sectors (e.g., agriculture to food production)

Other
- Linkage with other regions (Southern Tier)

URI criteria

URI concepts fulfilled:
- Innovation (rapidly changing sector)
- Leveraging private sector investment (substantial $1B+ investment expected)
- Connectivity (high degree within sector)
- Sustainability (long -term successful industry)
- Workforce development /hard to place workers (favorable job availability)
- Readiness (substantial momentum in FL)

Job creation rate:
- 9.5 jobs/$1M GDP average of subsectors

Müller Quaker Dairy's yogurt manufacturing facility in Batavia.

Photo by: Matt Wittmeyer

Fig. 40

Next Generation Manufacturing & Technology industry deep dive

Example working output

Summary

Industry growth	Identified hotspots growing dramatically (first company moving into STAMP, EBP adding ~5k non -Kodak jobs recently, etc)
Job potential	Range of job intensities depending on industry; commitments to hire from hard-to-place worker pools increase impact
FL fit	Emphasis on leveraging current assets, strategy designed to build on current momentum in the Finger Lakes
URI fit	Strong on innovation, connectivity, readiness, sustainability, private sector investment, and global economy elements of URI

Local conditions

Local hotspots: Eastman Business Park, Science and Technology Advanced Manufacturing Park, and Downtown Innovation Zone identified focus areas that have attracted substantial past investment; many potential future expansion areas (e.g., STC in Canandaigua)
Firms: Industries identified as potential fit include ~700 firms, ~17,000 employees across a range of industries (semiconductors, energy innovation, advanced chemicals, etc)
Training : Higher education programs at RIT/UR and comm. colleges

CFA history and pipeline

- Strong history of investment at hotspots has paid off:
  - EBP highest Council priority, now seeing substantial job growth with non -Kodak companies moving in
  - STAMP received heavy investment, company imminent

Competitive profile

Hotspots selected as areas where Finger Lakes can attract substantial private investment

- Infrastructure already in place at EBP substantially reduces start -up costs, makes it an ideal site
- STAMP ready for companies to move in, leverage site and NYS strength/expertise in nanoscale mfr
- Downtown Innovation Zone already receiving private investment ($800M in 2015) and ready to grow further

Opportunity to collaborate with other regions

- Further growth at STAMP will help create jobs/grow expertise in Western NY

Connectivity

Intersecting sectors

- Other URI focus pillars (Optics Photonics & Imaging, and Agriculture & Food Production) both have presence at sites
- Precision machining, chemicals, other inputs

Other

- Links to academic programs (e.g., micro -electronics at RIT)

URI criteria

URI concepts fulfilled:

- Innovation (focus on next-generation industries that will create wealth/jobs)
- Leveraging private sector investment (hotspots now seeing many companies move in)
- Workforce development (e.g.,MCC at EBP)
- Global economy
- Collaboration
- Readiness (sites are ready to launch)

The team also identified specific projects and leverage for each pillar and enabler. In order to ensure that investment in these targets would result in economic growth, the team sought to define concrete potential projects and private investment to leverage state funding. Identifying private investment serves a dual purpose: first, by ensuring a private investment match to state dollars, the economic impact of state funding is maximized. Second, availability of private leverage is a strong indicator that economic realities support the investment areas identified, so by identifying private leverage, the team was able to validate that identified pillars and enablers would grow sustainably in the long term, even after the conclusion of URI funding.

The URI team worked closely with the community and FLREDC Work Groups to identify potential projects. Figure 42 shows a sample project description form that the team used to gather and assess (through a rigorous pressure-testing process, ensuring accurate projections and consistent assumptions between projects) all necessary information on potential URI initiatives.

The team compiled a set of proposed URI initiatives covering the targeted pillars and enablers. These projects were gathered both from FLREDC Work Groups and through a public submission process designed to ensure community participation.

The team worked to pressure-test the proposals, ensuring that private investment, economic impact, and job creation estimates were credible and calculated consistently with other initiative proposals. The team worked with the Steering Team to identify and highlight initiatives: the projects that best capture the types of investments that would be targeted by the URI and could be quickly launched if the region is awarded the URI. Beyond this, the team identified other credible initiatives that could be implemented later in the five-year URI funding period. These identified projects are not necessarily projects that the URI will fund, but they represent strong examples of the types of projects that the region would select for URI funding if given the opportunity.

Beyond highlighting specific potential projects, the team also worked to identify broader private investment in the growth pillar industries that is dependent on URI funding. The working groups surveyed companies tied to each growth pillar industry to determine potential investment that companies are considering in the Finger Lakes region over the next five years. This potential investment is a valuable source of leverage, as URI investments will be critical to help the region maintain its competitive advantage in the growth driver industries. Without the URI investment, there is significant risk that this private spending could be drawn out of New York State.

The fifth and final step was to build a cohesive strategy to unify these targets for investment and maximize impact. Through previous steps, the team had identified strong industries and enablers where investment would have a transformative effect on the economy, and the team had identified potential specific investments that would unlock this effect. The team worked closely with community stakeholders, engaging the URI Working Team, Steering Team, the co-chairs, the FLREDC, and stakeholders previously interviewed to draft and iterate a cohesive, unified strategy for economic transformation. The team then shared the draft plan with the public, soliciting and incorporating feedback to ensure no perspectives were excluded. Throughout this process, community collaboration and consensus was essential in developing the best possible plan. Developing the draft plan allowed the team to closely re-engage stakeholders and ensure the community is fully aligned on this plan: United for Success.

Fig. 41

Example questions used to assess issues and build consensus

Higher Education & Research

Are we creating a lot of intellectual and human capital that is not retained?

What is the economic benefit of academic programs?

What is the economic benefit of research programs?

Quality of Life

Is it recognized as a strength of the region externally?

How does it compare to the rest of New York State?

How does it help enable the region's growth pillars?

Will investments translate into URI economic growth goals?

Fig. 42

URI initiative data gathering form

Project	High Pressure Processing (HPP) Center	
Background	Project definition	New project: food processing user facility in Eastman Business Park to locally process food through HPP process, allowing local production of a new range of food products
	Project type	User facility
	Investment use	Capital costs to purchase and install HPP machine at user facility (owened by LiDestri)
	Timeline	Installed during Year 1 of URI and immediately becomes available for use
Leverage	State funding	$xx M to subsidize purchase of machine
	Private capital	$xx M to purchase machine (committed, LiDestri) $xx M to fund installation (committed, LiDestri)
	Operational spend (within 5 yr.)	$xx M ($yy M / year for Z years) new jobs (estimated, Wegmans) $xx M R&D, $xx M G&A (estimated, Wegmans)
	Operational spend (after ramp-up)	$xx M new jobs spending per year (estimated, Wegmans) $xx M G&A spending per year (estimated, Wegmans)
Impact	Direct jobs & output	xx manufacturing jobs at facility, ~$yyk average salary. Output primarily in indirect (at client companies that use the facility)
	Indirect jobs & output	Support food processors: anticipate ~xx clients, potential to increase jobs by ~yy at each at ~$zzk average salary
	Expected result timing	Anticipate ramping up to full capacity (xx client companies) linearly over yy years

9.4 Concepts to address

Innovation

Each of the three key pillar industries was selected for its potential to accelerate growth in cutting-edge industries where the Finger Lakes region will establish and maintain global leadership: Optics, Photonics, and Imaging, Agriculture and Food Production, and Next Generation Manufacturing and Technology. Growth in these industries will create a range of employment opportunities, including positions for highly educated graduates of regional institutions of higher education along with hard-to-place worker populations. Two enablers, Entrepreneurship and Development and Higher Education and Research, also facilitate growth in advanced industries through support for state-of-the-art research and business incubation efforts.

1	Introduction Pages 4 – 9
4.1	Optics, Photonics, and Imaging Pages 26 – 31
4.2	Agriculture and Food Production Pages 34 – 39
4.3	Next Generation Manufacturing and Technology Page 42
4.3.1	Eastman Business Park Pages 44 – 47
4.3.2	Downtown Innovation Zone Pages 50 – 53
4.3.3	Science and Technology Advanced Manufacturing Park Pages 55, 58
4.3.4	Emerging Advanced Manufacturing Technology Page 59
5.2	Entrepreneurship and Development Pages 72 – 75
5.3	Higher Education and Research Pages 76 – 80

Leveraging Private Sector Investment

The plan identifies $6.4 billion in private leverage far exceeding the required 5:1 ratio for $500 million of URI funding. Each pillar and each enabler identifies significant private investments from companies and other organizations that are expected in the Finger Lakes region over the next five years. Throughout the development of the URI plan, the FLREDC maintained a commitment to identify specific promising investments and pressure test these figures through a rigorous analytical approach. Highlighted initiatives in each pillar and enabler reflect these efforts, and a dedicated chapter on the leverage provides additional information on the process.

1	Introduction Page 2
2	Leverage: Significant Private Investment Will Exceed State Goals Pages 14 – 16
4.1	Optics, Photonics, and Imaging Pages 31
4.2	Agriculture and Food Production Pages 34 – 39
4.3.1	Eastman Business Park Pages 46
4.3.2	Downtown Innovation Zone Pages 52 – 53
4.3.3	Science and Technology Advanced Manufacturing Park Pages 58
5.1	Pathways to Prosperity Pages 66 – 67
5.2	Entrepreneurship and Development Pages 75
5.3	Higher Education and Research Pages 82
9.3	Methodology Page 115–118

Key concepts to be addressed by the URI plan


Collaboration


Community Reinvestment

Connectivity


Global Economy


Hard-to-place Workers


Implementation & Reporting


Innovation


Leveraging other State Initiatives


Private Leverage


Readiness


Sustainability


Workforce Development

Connectivity

With an exceptional competitive advantage that leverages historical strengths and new investment, the FLREDC has identified Optics, Photonics, and Imaging as a focused cluster for the Finger Lakes region. The URI plan also identifies two additional interconnected clusters: Agriculture and Food Production, which builds on a diverse regional ecosystem including academic research, organic farming, food processing, and tourism, and Next Generation Manufacturing and Technology, which unites assets throughout the region including unique facilities, innovative new businesses, and academic research. The three enablers were identified to synergistically support these industries, tying together the region's development strategy. To develop this plan, the FLREDC engaged a wide variety of community stakeholders to leverage their expertise and build the foundation for collaborative transformation.

Sustainability

The Finger Lakes region's URI plan has been designed to transform the region through strategic investment in a portfolio of projects that will facilitate significant growth in a five year timeframe, and URI support for proposed initiatives will ensure that jobs and investment are maintained in New York State. The plan projects private investment and job creation as a result of this investment, and the FLREDC has proposed a preliminary governance model for managing the funds, tracking results and ensuring accountability both for individual projects and the region as a whole.

Workforce Development

Key pillar industries were selected for their ability to create opportunities to employ a diverse workforce and the Pathways to Prosperity enabler reflects the FLREDC's dedicated commitment to workforce development by building a dynamic talent pipeline throughout the region, bridging the gaps between industry needs and regional talent with particular attention paid to hard-to-place workers. The URI plan process engaged stakeholders from leaders in industry and institutions of higher education, successfully identifying strategies to align training programs with employer demand, including a partnership between Monroe Community College and Eastman Business Park.

Community Reinvestment

The development of the Innovation Zone and the AIM Photonics headquarters in downtown Rochester will foster growth in innovative industries and promote the broader revitalization of the city. Focused, phased development of the Innovation Zone and its connections into the city, including investment in neighborhood infrastructure, will create a dynamic commercial, retail, and residential ecosystem to support and attract a critical mass of businesses and residents. Many initiatives in Entrepreneurship and Development will focus on downtown Rochester, fostering new start-ups and retaining talent in the region.

Hard-to-Place Workers

The Finger Lakes region is committed to providing opportunities for hard-to-place populations, and has identified strategies to support these groups, including the working poor, those without a high school education, ex-offenders, and the deaf and hard-of-hearing. The URI plan presents a number of strategies to support these populations and provide them with education and training that directly lead to job placement. Investments in pillar industries also will provide specific opportunities for hard-to-place workers to support growth in key regional industries.

Global Economy

The Finger Lakes region has long been a leader in exports, and targeted investment in key industries will build on the foundations of the 2014 Global NY plan. Many initiatives in the URI plan will draw international investment into the region with state support, and investment in key pillar industries will establish the region as a global leader in export intensive industries and assist regional producers with the support they need to reach global markets.

Collaboration

Throughout every step of the plan development process, the FLREDC actively engaged key stakeholders and members of the community, achieving widespread regional consensus and support for the plan. The development of the URI plan forged partnerships across the region, including leaders in business, government, and academia. To develop and refine the plan, the FLREDC facilitated interviews for more than 120 regional stakeholders and solicited extensive public engagement, including public comments on drafts of the URI plan and a signed statement of support. Companies and other organizations throughout the region have proven their support through commitments to invest, and elected officials and community leaders from all nine counties signed a letter of support.

Implementation and Reporting

The FLREDC and stakeholders throughout the Finger Lakes community are committed to successful execution of the URI plan. A dedicated chapter proposes a preliminary framework for governing the process, including dedicated advisory councils for each pillar and enabler, and standardized reporting on project status and regional implementation.

Readiness

A dedicated chapter presents the Finger Lakes region's readiness to implement $500 million of state investment, drawing on a record of success, leading indicators, a committed and collaborative community, and quality of life. Within each pillar and enabler, the Strategies to Achieve Vision section presents specific initiatives ready for implementation with the support of the URI.

Leveraging Other State Initiatives

A critical foundation of the FLREDC's approach to economic development through the URI is successfully building on existing assets throughout the Finger Lakes region and New York State. The URI plan will create synergies with many successful state initiatives including START-UP NY, NY-BEST, NYSUNY 2020, and New NY Broadband. The URI also presents the opportunity to advance the efforts of the Rochester-Monroe Anti-Poverty Initiative, advancing the FLREDC's fourth URI objective to reduce poverty.

9.5 Bibliography & Endnotes

Bibliography

i. Benchmarking Rochester's Poverty: A 2015 Update and Deeper Analysis of Poverty in the City of Rochester
ii. Brookings Institution: Metro Monitor
iii. Brookings Institution: The Growth and Spread of Concentrated Poverty, 2000 to 2008–2012
iv. Brookings Institution: The Rise of Innovation Districts: A New Geography of Innovation in America
v. Commission on Independent Colleges and Universities: Economic and Community Impact
vi. Cortex Innovation Community: Who We Are
vii. Economic Modeling Specialists, Incorporated: Labor Market Data
viii. Empire State Manufacturing Survey
ix. Federal Reserve Bank of New York: Economic Research
x. *Fortune:* Special Report: The War on Big Food
xi. LoopNet Market Trends: Commercial Real Estate Trends
xii. Monroe200 Millenials: 2015 Survey and Focus Group Results
xiii. Moody's Analytics: Gross Domestic Product and Employment Data
xiv. Moody's Analytics: Economic and Consumer Analytics: U.S. Metro City Reports
xv. National Center for Charitable Statistics: Data and Statistics
xvi. National Center for Education Statistics: Data and Tools
xvii. New York State Community Action Association Poverty Report
xviii. New York State Department of Labor: Labor Statistics
xix. New York State Department of Labor: Employment Projections
xx. Poverty and the Concentration of Poverty in the Nine-County Greater Rochester Area
xxi. RocCity Coalition Vision 2025 Survey
xxii. United States Bureau of Economic Analysis: Gross Domestic by Metropolitan Area
xxiii. United States Bureau of Labor Statistics: Employment Data
xxiv. United States Census Bureau: American Community Survey 5-Year Estimates 2009–2013
xxv. United States Census Bureau: Data
xxvi. United States Department of Agriculture: National Agricultural Statistics Service
xxvii. United States Patent and Trademark Office: Statistics
xxviii. University at Buffalo Regional Institute: Finger Lakes Regional Assessment
xxix. University at Buffalo Regional Institute: Finger Lakes Targeted Analysis and Best Practices

Endnotes

1 New York State Department of Labor: Current Employment Statistics
2 University at Buffalo Regional Institute analysis of New York State Department of Labor, United States Bureau of Labor Statistics, and Brookings Institution data
3 Poverty Status in the Past 12 Months: Rochester City, Monroe County, New York: United States Census Bureau American Community Survey 5-Year Estimates 2009–2013
4 Benchmarking Rochester's Poverty: A 2015 Update and Deeper Analysis of Poverty in the City of Rochester
5 Poverty and the Concentration of Poverty in the Nine-County Greater Rochester Area analysis of United States Census Bureau American Community Survey data
6 United States Census Bureau American Community Survey 5-Year Estimates 2009–2013
7 Business First: Upstate New York School District Rankings
8 Rochester City School District data
9 Census of local companies conducted by Optics, Photonics, and Imaging REDC Work Group
10 Economic Modeling Specialists, Inc Input-Output Model (2014)
11 FLREDC Higher Education Work Group data
12 FLREDC Work Group data
13 New York State Department of Labor: Current Employment Statistics
14 Eastman Business Park internal data
15 New York State Department of Labor: Current Employment Statistics
16 2015 M&T Bank Economic Outlook Survey of Rochester Area Mid-Sized Firms
17 *Forbes:* America's Most Innovative Cities
18 University at Buffalo Regional Institute analysis of United States Patent and Trademark Office, New York State Department of Labor, and United States Bureau of Labor Statistics data
19 University at Buffalo Regional Institute analysis of United States Patent and Trademark Office data
20 Rochester Downtown Development Corporation Downtown Market Report, December 2014
21 Rochester Downtown Development Corporation Downtown Market Report, December 2014
22 Corporation for National and Community Service: 2013 Volunteer Rates
23 *The Huffington Post:* These Are the Most Generous Cities in America
24 Finger Lakes Regional Economic Development Council Workforce Development Team internal data
25 Kiplinger: America's Best Cities for Families
26 *Forbes:* America's Best Employers
27 Harris: Regional Grocer Wegmans Unseats Amazon To Claim Top Corporate Reputation Ranking
28 United States Department of Education
29 Interviews with Finger Lakes regional economic and business leaders
30 *US News & World Report:* Best High Schools 2015
31 Institute of Medicine
32 Milliman Survey
33 Finger Lakes Health Systems Agency: Initiative Helps Monroe County Reach 'Phenomenal' 14 Percent Improvement in High Blood Pressure Control
34 United States Department of Education
35 Brookings Institution: Patenting Prosperity: Invention and Economic Performance in the United States
and its Metropolitan Areas
36 CityLab from *The Atlantic:* Are These America's Brainiest Cities?
37 Economic Modeling Specialists, Inc Labor Market Data (2015)

38 Center for Governmental Research
39 *Forbes:* America's Most Affordable Cities
40 NAHB Housing Opportunity Index, Q1 2015
41 Demographia International Housing Affordability Survey, Q3 2014
42 National Center for Arts Research: Arts Vibrancy Index 2014
43 Memorial Art Gallery: About: Rochester's Art Museum
44 US College Rankings: America's Top Music Schools Ranking
45 Economic Modeling Specialists, Inc. Labor Market Data (2015)
46 *National Public Radio* report: Rochester Focuses On A New Picture Of American Manufacturing, September 29, 2014
47 Census of local companies conducted by Optics, Photonics, and Imaging REDC Work Group
48 Census of local companies conducted by Optics, Photonics, and Imaging REDC Work Group
49 *Democrat & Chronicle* article: IMAX laser projector has Kodak origins, November 17, 2014
50 Economic Modeling Specialists, Inc. Labor Market Data (2015)
51 White House press release: Vice President Biden Announces New Integrated Photonics Manufacturing Innovation Hub in Rochester, NY, July 27, 2015
52 University of Rochester press release: Vice President Biden, Governor Cuomo announce that Rochester will be headquarters for nation's newest manufacturing innovation hub, July 27, 2015
53 White House press release: Vice President Biden Announces New Integrated Photonics Manufacturing Innovation Hub in Rochester, NY, July 27, 2015
54 University of Rochester press release: Vice President Biden, Governor Cuomo announce that Rochester will be headquarters for nation's newest manufacturing innovation hub, July 27, 2015
55 University of Rochester Institute of Optics factsheet
56 University of Rochester internal research funding data
57 University of Rochester internal graduate data
58 Rochester Institute of Technology internal data
59 Rochester Institute of Technology internal data
60 U.S. Patent and Trademark Office
61 National Photonics Initiative
62 Finger Lakes region Optics, Photonics, and Imaging industry interviews
63 Finger Lakes region Optics, Photonics, and Imaging industry interviews
64 Finger Lakes Optics, Photonics, and Imaging data gathered by OPI work group
65 Planned company investment data gathered by Food and Agriculture work group
66 Economic Modeling Specialists, Inc Input-Output Model (2014)
67 U.S. Department of Agriculture data analyzed by the University at Buffalo Regional Institute
68 Economic Modeling Specialists, Inc Labor Market Data (2015)
69 United States Census data
70 Economic Modeling Specialists, Inc Input-Output Model (2014)
71 U.S. Department of Agriculture data
72 Economic Modeling Specialists, Inc Labor Market Data (2015) and Input-Output Model (2014)
73 Economic Modeling Specialists, Inc Occupations Data (2015)
74 Rochester Business Journal local company data
75 Planned company investment data gathered by Food and Agriculture Work Group
76 Wegmans Food Markets internal data, 2015
77 Planned company investment data gathered by Food and Agriculture Work Group
78 Anchor Programs for the Agricultural Science Research Laboratory: document provided by Cornell
79 Nutrition Business Journal research cited by the U.S. Department of Agriculture
80 United States Department of Agriculture, National Agricultural Statistics Service: 2012 Census of Agriculture County Data
81 Economic Modeling Specialists, Inc Input-Output Model (2014)
82 Genesee Valley Agri-Business Park internal data
83 Alcohol and Tobacco Tax and Trade Bureau: Statistical Report -- Wine
84 Finger Lakes wine production fact sheet, The Wine Detective
85 Economic Modeling Specialists, Inc Labor Market Data (2015)
86 *Wine Enthusiast Magazine,* Best Wine Travel Destinations 2015
87 Office of the Governor Press Release: Govenor Cuomo Hosts Second New York State Wine, Beer, Spirits, and Cider Summit, April 8, 2014
88 Award and Accolades tracking by New York Wines
89 Finger Lakes Regional Economic Development Council project data
90 Lago Resort press release, June 26, 2014
91 Finger Lakes Regional Economic Development Council project data
92 Interviews with Finger Lakes regional economic and business leaders
93 Interviews with Finger Lakes regional economic and business leaders
94 Finger Lakes Regional Economic Development Council project data
95 Finger Lakes Wine Country Tourism Marketing Association fact sheet
96 U.S. Department of Agriculture, Department of Labor, and Census data analyzed by the University at Buffalo Regional Institute
97 Finger Lakes Regional Economic Development Council project data
98 SUNY Genesee Community College Food Processing Technology fact sheet
99 RIT Jobs Accelerator program internal data

100 Eastman Business Park internal data provided by Kodak
101 Empire State Development data
102 Eastman Business Park internal data provided by Kodak
103 Eastman Business Park facility information and history provided by Kodak
104 Eastman Business Park company data provided by Kodak
105 Empire State Development data
106 NY-BEST Test and Commercialization Center historical information
107 Eastman Business Park company data provided by Kodak
108 Eastman Business Park potential construction data provided by Kodak
109 RIT Press Release: RIT unveils state-of-the-art Battery Prototyping Center, March 6, 2015
110 Eastman Business Park company data provided by Kodak
111 Kodak press release: Energy is building for NOHMs' new lithium battery manufacturing facility at EBP
112 Finger Lakes region community stakeholder interviews
113 Interview with NY-BEST leadership and staff
114 Interview with Eastman Business Park site leadership
115 Eastman Business Park leads data provided by Kodak
116 Lux Research report, 2014
117 Rochester Downtown Development Corporation 2015 Investment Report
118 Rochester Downtown Development Corporation internal data
119 Monroe Community College Downtown
120 Rochester Downtown Development Corporation Downtown Market Report, December 2014
121 Rochester Downtown Development Corporation Annual Report, June 2014
122 Rochester Downtown Development Corporation Annual Report, June 2014
123 Rochester Downtown Development Corporation Downtown Rochester Story, July 2015
124 LoopNet Office Property Asking Rent Lease Trends for Rochester, New York
125 LoopNet Office Property Asking Rent Lease Trends for New York, New York
126 LoopNet Office Property Asking Rent Lease Trends for Pittsburgh, Pennsylvania
127 Rochester Downtown Development Corporation Investment Projects: Tower 280
128 Rochester Downtown Development Corporation Investment Projects: Chase Tower
129 Rochester Downtown Development Corporation Investment Projects: Alexander Park North
130 Press Office of Governor Andrew M. Cuomo: Governor Cuomo Announces Finger Lakes Business Accelerator Cooperative to Locate in Rochester's Historic Sibley Building, 14 December 2014
131 Center for Governmental Research Economic Impact Assessment of High Tech Rochester Business Accelerator Cooperative, August 2014
132 Finger Lakes region community stakeholder interviews
133 Cortex Innovation Community: Who We Are
134 STAMP site information provided by Genesee County Economic Development Center
135 Empire State Development data
136 RIT internal data
137 University of Rochester URnano Mission Statement
138 SUNY Polytechnic Statewide Facilities fact sheet
139 Genesee Valley Agri-Business Park retrospective data provided by the Genesee County Economic Development Center
140 STAMP capacity estimates provided by the Genesee County Economic Development Center
141 Educational Attainment by Employment Status for the Population 25 to 64 Years, Rochester City, Monroe County, New York: United States Census Bureau American Community Survey 5-Year Estimates 2009-2013
142 Educational Attainment by Employment Status for the Population 25 to 64 Years, Rochester City, Monroe County, New York: United States Census Bureau American Community Survey 5-Year Estimates 2009-2013
143 Hillside Work-Scholarship Connection Rochester internal data
144 University of Rochester: A Plan to Save East High School
145 P-TECH Rochester
146 The White House: 2013 Remarks by the President in the State of the Union Address
147 Finger Lakes Regional Economic Development Council Workforce Development Team internal data
148 National Technical Institute for the Deaf analysis of American Community Survey data
149 National Technical Institute for the Deaf analysis of American Community Survey data
150 National Technical Institute for the Deaf internal data
151 Monroe Community College Marketing and Community Relations: High Quality Benchmarks
152 Monroe Community College Marketing and Community Relations: Economic Impact
153 Monroe Community College Marketing and Community Relations: Economic & Workforce Development
154 SkillBuild internal data

155 Rochester-Monroe Anti-Poverty Initiative
156 ACT Rochester Community Indicators for the Greater Rochester Area: Four Year Cohort Graduation Rate analysis of New York State Department of Education Data
157 New York State Department of Education College and Career Ready Graduation Rate data
158 Finger Lakes Health Systems Agency: A Return on Investment: The Hillside Work-Scholarship Connection
159 University at Buffalo Regional Institute analysis of United States Census Bureau American Community Survey 5-Year Estimates 2009–2013
160 University at Buffalo Regional Institute analysis of New York State Department of Labor Employment Projections 2010–2020 and United States Census Bureau American Community Survey 5-Year Estimates 2009–2013
161 University at Buffalo Regional Institute analysis of New York State Department of Labor Employment Projections 2010–2020 and United States Census Bureau American Community Survey 5-Year Estimates 2009–2013
162 University at Buffalo Regional Institute analysis of United States Bureau of Labor Statistics data
163 Finger Lakes Community College Professional Development and Continuing Education Courses and Programs: Mechatronic Technology
164 Monroe Community College Accelerated Precision Machining Program data
165 United States Department of Labor Grant Information
166 Monroe Community College internal analysis
167 Hillside Work-Scholarship Connection Rochester Graduation Rates
168 Finger Lakes Health Systems Agency: A Return on Investment: The Hillside Work-Scholarship Connection
169 City of Rochester Office of Innovation internal analysis
170 City of Rochester Office of Innovation internal analysis
171 City of Rochester Office of Innovation internal analysis
172 University at Buffalo Regional Institute analysis of United States Patent and Trademark Office, New York State Department of Labor, and United States Bureau of Labor Statistics data
173 RIT Venture Creations internal data
174 RIT Venture Creations internal data
175 Rochester Business Alliance: 100 Fastest Growing Privately Held Businesses, October 2014
176 Center for Governmental Research Economic Impact Assessment of High Tech Rochester Business Accelerator Cooperative, August 2014
177 RIT Center for Urban Entrepreneurship internal data
178 Excell Partners internal data
179 Press Office of Governor Andrew M. Cuomo: Governor Cuomo Announces Launch of $2 Million Investment Fund to Support MWBE and Small Business Growth, 8 May 2015
180 FLREDC Higher Education Work Group data
181 University at Buffalo Regional Institute analysis of National Center for Education Statistics data
182 Excell Partners internal data
183 Rochester Institute of Technology, University of Rochester, State University College at Brockport, State University College at Geneseo, St. John Fisher College, Nazareth College of Rochester, Roberts Wesleyan College, Hobart and William Smith Colleges, Keuka College, New York Chiropractic College, St. Bernard's School of Theology and Ministry, Northeastern Seminary, Colgate Rochester Crozer Divinity School, SUNY Empire State College, SUNY Polytechnic Institute, Monroe Community College, Genesee Community College, Finger Lakes Community College, Bryant & Stratton College
184 Commission on Independent Colleges and Universities: Finger Lakes Independent Colleges and Universities
185 Commission on Independent Colleges and Universities: Finger Lakes Independent Colleges and Universities
186 University of Rochester internal data
187 Center for Governmental Research: University of Rochester Economic Impact Report
188 University at Buffalo Regional Institute analysis of National Center for Education Statistics data
189 University at Buffalo Regional Institute analysis of National Center for Education Statistics data
190 United States Department of Education, Institute of Educational Sciences, National Center for Education Statistics
191 University at Buffalo Regional Institute analysis of National Center for Education Statistics data
192 University at Buffalo Regional Institute analysis of National Center for Education Statistics data
193 Roberts Wesleyan College internal data
194 St. John Fisher College internal data

195 Rochester Institute of Technology University News: A Top 100 Global University by 2025, August 2014
196 RIT internal data
197 RIT internal data
198 RIT internal data
199 University of Rochester Office of Research and Project Administration Annual Report of Sponsored Program Activity, 2014
200 *Nature Biotechnology:* Top US Universities and Institutes for Life Sciences
201 University of Rochester 2015 New York State Funding and Legislative Priorities
202 University of Rochester internal data
203 University of Rochester internal data
204 University of Rochester internal data
205 University of Rochester: Health Sciences Center for Computational Innovation
206 University of Rochester internal data
207 Center for Governmental Research: Institute for Data Science Economic Impact
208 Rochester Business Alliance: 100 Fastest Growing Privately Held Businesses, October 2014
209 RIT University News: RIT announces investments in MAGIC Spell Studios, aimed at spurring growth of local digital media industry, 9 July 2015
210 RIT internal analysis
211 University at Buffalo Regional Institute analysis of National Center for Education Statistics data
212 Brookings Institution: America's Advanced Industries, February 2015
213 Monroe200 Millenials: 2015 Survey and Focus Group Results and Finger Lakes region community stakeholder interviews
214 RIT internal data
215 Center for Governmental Research: Institute for Data Science Economic Impact
216 RIT internal data
217 University of Rochester internal data

Report Art Direction & Design: Mitchell Christensen

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