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2018 REGIONAL ECONOMIC LABOR OUTLOOK ALIGNMENT

Finger Lakes

Prepared by the CTE Technical Assistance Center of NY

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FINGER LAKES

REGIONAL ECONOMIC LABOR OUTLOOK ALIGNMENT

National Career Clusters	Regional Economic Development Council Focus Industries ¹	Regional Industry Jobs with Strong Projected Growth (> 7% from 2014 through 2024) ²	Jobs in Significant Industries with Strong Projected Growth through 2022 ³	Further Description of Significant Industries
<p>Agriculture, Food and National Resources</p>	<p>Agriculture and Food Production</p> <p>The strengthening links between the Finger Lakes region’s food production manufacturers, growers, and retailers is resulting in an increase in the number of projects, private investments, and jobs made in our region.</p> <p>There is a strong convergence with agribusiness and other growing sectors in the region as well, including manufacturing, research, energy-related businesses, and agritourism. Each county in the region participates. Private investment, with regional support and small amounts of public dollars, is enhancing the diversity of the region’s agriculture — eggs to potatoes, wine and beer to goat cheese, organic beets to apple slices. The agricultural industry is also evolving rapidly. Some segments of agriculture like Controlled Environment Agriculture and organic farming are experiencing dramatic growth, and the Finger Lakes region is developing strategies to be on the forefront of these growth areas. Technology is advancing rapidly in the Agriculture and Food sector. Startup companies using digital technology and big data are ready to transform the industry. They are studying ways to reduce food waste, increase farm productivity, adapt to new environments, and provide alternative sources of proteins to supply the demands of the consumers.</p>	<p>Farming, Fishing, and Forestry Occupations (9.4%)</p> <ul style="list-style-type: none"> - Agricultural Workers (9.8%) - Forest, Conservation, and Logging Workers (9.1%) 		

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<p>Architecture and Construction</p>	<p>Infrastructure & Transportation The Work Team process has generated collaborations across the 9- county region. Infrastructure is aging and financial resources for replacement and expansion are limited. The relationships built at our Work Team enable consensus on prioritizing investments. Drawing from the work of the Genesee Transportation Council, funding is prioritized to first maintain the existing infrastructure (roads and bridges) and then support necessary expansion across all modes. The agreement of the Work Team to identify Transformative Corridors where investments had the highest priority generated needed focus and investments by NYS DOT.</p>	<p>Architecture and Engineering Occupations (6.5%)</p> <ul style="list-style-type: none"> - Architects, Surveyors, and Cartographers (11.8%) <p>Construction and Extraction Occupations (15.8%)</p> <ul style="list-style-type: none"> - Supervisors of Construction and Extraction Workers (13.8%) - Construction Trades Workers (16.7%) - Helpers, Construction Trades (21.1%) - 	<p>Specialty Trade Contractors</p> <ul style="list-style-type: none"> - Electricians - Plumbers, Pipefitters, and Steamfitters - Construction Laborers - Carpenters - Painters, Construction and Maintenance - HVAC Mechanics and Installers - Sheet Metal Workers - Bookkeeping, Accounting, and Auditing Clerks 	<p>Skilled trade occupations comprise much of the employment within the specialty trade contractors (NAICS 238) industry. Employment levels increased from 2009 to 2014, recovering all the jobs lost to the recession. Looking ahead over the next decade, the impending retirement of many baby boomers will contribute to job opportunities, especially among the skilled trades.</p>
<p>Arts, A/V Technology & Communications</p>		<p>Arts, Design, Entertainment, Sports, and Media Occupations (7.0%)</p> <ul style="list-style-type: none"> - Entertainers and Performers, Sports and Related Workers (9.6%) - Media and Communication Workers (8.3%) - 		

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<p>Business Management & Administration</p>	<p>Entrepreneurship and Development Minority and Women-owned Business Enterprises (MWBE): Recognizing the special needs of the minority and women entrepreneurs, in 2017 the workgroup dedicated efforts to support the Pathways to Prosperity initiative by taking on a leadership role in helping to close the gaps to MWBE growth.</p> <p>Performance Indicators</p> <ul style="list-style-type: none"> • Create or impact 3300 jobs over 5 years Status: Biz Track: 2,330 businesses/Tech Track 863 Companies. • Create 40 new high-tech startups per year across the region Status: 91+ over last 3 years. • Grow 200 small businesses in the downtown innovation zone (DIZ) Status: In progress. • Expand entrepreneurial programs to 6 events per year Status: Over 16 programs held in 2016. 	<p>Management Occupations (9.2%)</p> <ul style="list-style-type: none"> - Top Executives (9.6%) - Advertising, Marketing, Promotions, Public Relations, and Sales Managers (10.7%) - Operations Specialties Managers (12.5%) - Other Management Occupations (7.3%) <p>Business and Financial Operations Occupations (13.5%)</p> <ul style="list-style-type: none"> - Business Operations Specialists (11.3%) 	<p>Professional, Scientific, and Technical Services</p> <ul style="list-style-type: none"> - Accountants and Auditors - Software Developers, Applications - Management Analysts - Market Research Analysts and Marketing Specialists - Secretaries and Administrative Assistants - Customer Service Representatives - Computer User Support Specialists - Bookkeeping, Accounting, and Auditing Clerks - Computer Systems Analyst - General and Operations Managers <p>Management of Companies and Enterprises</p> <ul style="list-style-type: none"> - Accountants and Auditors - First-Line Supervisors of Office and Administrative Support Workers - Financial Analysts - Market Research Analysts and Marketing Specialists - Secretaries and Administrative Assistants - Customer Service Representatives - Computer User Support Specialists - Bookkeeping, Accounting, and Auditing Clerks - Computer and Information Systems Managers 	<p>Professional, scientific, and technical services (NAICS 541) and management of companies and enterprises (NAICS 551) are vastly different industries, however, one similarity is that both tend to sell to other businesses rather than consumers. Professional, scientific, and technical services gained jobs between 2009 and 2014. Additionally, this industry is expected to grow much more rapidly as the economy expands in the coming years. Management of companies and enterprises declined slightly between 2009 and 2014. However, this sector is projected to grow at a faster rate than the total for all industries between 2012 and 2022. Both industries pay above-average annual wages.</p>

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<p>Education and Training</p>	<p>Higher Education and Research The region has 19 institutions of higher education, enrolling nearly 90,000 students from across the nation and internationally; total economic impact of over \$5 billion annually.</p> <p>The University of Rochester is the largest private employer in upstate and 6th largest in New York State, with nearly 29,000 employees. The University of Rochester Medical Center employs more than 23,500 with an annual budget of around \$2 billion.</p> <p>The region's two NYS designated Centers for Advanced Technology and three Centers of Excellence are magnets for talent and research funding and a resource to industry for technology transfer.</p>	<p>Education, Training, and Library Occupations (8.5%)</p> <ul style="list-style-type: none"> - Postsecondary Teachers (15.5%) 	<p>Educational Services</p> <ul style="list-style-type: none"> - Teacher Assistants - Secondary School Teachers, Except Special and Career/Technical Education - Middle School Teachers, Except Special and Career/Technical Education - Elementary School Teachers, Except Special Education - Secretaries and Administrative Assistants, Except Legal, Medical, and Executive - Special Education Teachers, Kindergarten and Elementary School 	<p>With more than 71,000 jobs between the public and private sectors, educational services (NAICS 611) has, by far, the most employment of any significant industry. This sector added jobs (+0.8%) between 2009 and 2014. Leading job titles include teacher assistant, elementary school teacher, and secondary school teacher. The industry's 2014 average annual wage, (\$48,400), was higher than the all-industry average annual wage.</p>

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<p>Education and Training (continued)</p>	<p>CURRENT STRATEGIES:</p> <p>Expand opportunities for the region’s employees and spur the creation of high-skill, high-wage jobs; Strengthen and develop education and training programs needed to provide employees with the skill sets for key growth industries; Address regional workforce shortages in healthcare, agriculture, information technology, manufacturing, and other key fields.</p> <p>Develop programs and shared resources that allow closer collaboration between academic and industry scientists.</p> <p>There are many Consolidated Funding Application (CFA) and Upstate Revitalization Initiative (URI) projects related to the Higher Education, Research, & Healthcare Work Team that have the potential to positively impact the reduction of poverty in the region by creating new job and training opportunities for individuals that have been left out of the workforce.</p>			

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Finance		Business and Financial Operations Occupations (13.5%) - Financial Specialists (16.7%)	Professional, Scientific, and Technical Services - Accountants and Auditors - Market Research Analysts and Marketing Specialists - Bookkeeping, Accounting, and Auditing Clerks	
Government & Public Administration				

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<p>Health Science</p>	<p>The Finger Lakes Community College (FLCC) Existing Employee Healthcare Training Program will enroll 10 current nursing assistants within Rochester Regional Health care system and upgrade their skills to become licensed practical nurses.</p> <p>St. John Fisher College constructed a 36,000-sq. ft. integrated science and health sciences building, which was completed in September 2015. Upon graduation, approximately 95% of Fisher science and nursing graduates work in Rochester and in other areas of New York helping to fill employment openings in the science and health sciences sector.</p> <p>In 2016 Rochester General Hospital (Rochester Regional Health) was awarded \$1.1M in funding from ESD to develop a new simulation lab was operational in 2017 and construction will be completed in 2018. This transformation will vastly improve resources and allow the school to increase enrollment at the School of Practical Nursing by 20% each year, with a goal of doubling enrollment by 2020.</p> <p>FLCC submitted a CFA for Existing Employee Training Funds (EET) to strengthen the Certified Nursing Assistant (CNA) to Licensed Practical Nurse (LPN) Healthcare Pathway in partnership with Rochester Works! and Rochester Regional Health.</p>	<p>Healthcare Practitioners and Technical Occupations (13.1%)</p> <ul style="list-style-type: none"> - Health Diagnosing and Treating Practitioners (13.0%) - Health Technologists and Technicians (13.2%) - Other Healthcare Practitioners and Technical Occupations (16.7%) <p>Healthcare Support Occupations (16.4%)</p> <ul style="list-style-type: none"> - Nursing, Psychiatric, and Home Health Aides (17.1%) - Occupational Therapy and Physical Therapist Assistants and Aides (23.0%) - Other Healthcare Support Occupations (13.2%) 	<p>Ambulatory Health Care Services</p> <ul style="list-style-type: none"> - Medical Secretaries - Home Health Aides - Registered Nurses - Receptionists and Information Clerks - Dental Assistants - Emergency Medical Technicians and Paramedics - Dental Hygienists - Physicians and Surgeons, All Other - Licensed Practical and Licensed Vocational Nurses <p>Hospitals</p> <ul style="list-style-type: none"> - Registered Nurses - Nursing Assistants - Physicians and Surgeons, All Other - Medical and Health Services Managers - Licensed Practical and Licensed Vocational Nurses - Medical and Clinical Laboratory Technologists - Nurse Practitioners <p>Nursing and Residential Care Facilities</p> <ul style="list-style-type: none"> - Nursing Assistants - Licensed Practical and Licensed Vocational Nurses - Registered Nurses 	<p>Growth in health care industry employment is driven more by demographics than by overall economic conditions. Almost all health care occupations are expected to be in demand over the next decade as the Finger Lakes Region’s population continues to age.</p> <p>Three industries from the health care sector are on the significant industry list: ambulatory health care services (NAICS Industry 621), hospitals (NAICS Industry 622), and nursing and residential care facilities (NAICS Industry 623). The average annual wages at hospitals (\$51,700) and ambulatory health care services (\$48,100) exceeded the regional average annual wage (\$45,100). Nursing and residential care facilities (\$31,400) paid wages well below the all-industry average.</p>

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Health Science (continued)	<p>University of Rochester Medical Center (URMC), 3D Organ Printing and Surgical Simulation. URMC was awarded a \$500,000 capital grant to assist with the upgrade equipment and renovation of a mock operating room suite for their Simulated Inanimate Model for a Physical Learning Experience (SIMPLE).</p> <p>Rochester Regional Health’s Existing Employee Training. The proposed training will assist RRH employees (in positions such as Certified Nursing Assistant) to become LPNs. While the benefits to the community are numerous, for many individuals an LPN job becomes a pathway out of poverty, enhancing their life and that of their family, and positioning them for professional advancement in health care.</p>			

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<p>Hospitality & Tourism</p>	<p>Tourism & Arts With such geographical diversity across the Finger Lakes region, the Council aims to broaden and strengthen our national and international reputation for tourism using collaborative marketing and promotion to more fully realize its full potential.</p> <p>Performance indicators include Tourism Economics, an Oxford Economics Company which reports a \$3 billion economic impact from tourism on the Finger Lakes region, as well as more than 58,000 jobs. Year over year, the Finger Lakes saw a 2.4% increase in traveler spending. Monroe County accounts for 35% of the economic impact or \$1.1 billion and more than 19,000 jobs.</p>	<p>Food Preparation and Serving Related Occupations (17.5%)</p> <ul style="list-style-type: none"> - Supervisors of Food Preparation and Serving Workers (21.4%) - Cooks and Food Preparation Workers (13.0%) - Food and Beverage Serving Workers (19.6%) 		

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<p>Human Services</p>		<p>Community and Social Service Occupations (12.7%)</p> <ul style="list-style-type: none"> - Counselors, Social Workers, and Other Community and Social Service Specialists (12.7%) - Religious Workers (13.6%) <p>Building and Grounds Cleaning and Maintenance Occupations (11.3%)</p> <ul style="list-style-type: none"> - Supervisors of Building and Grounds Cleaning and Maintenance Workers (9.1%) - Building Cleaning and Pest Control Workers (11.2%) - Grounds Maintenance Workers (12.4%) <p>Personal Care and Service Occupations (15.4%)</p> <ul style="list-style-type: none"> - Supervisors of Personal Care and Service Workers (15.2%) - Animal Care and Service Workers (12.4%) - Entertainment Attendants and Related Workers (16.9%) - Funeral Service Workers (10.7%) - Personal Appearance Workers (10.0%) - Other Personal Care and Service Workers (16.7%) 	<p>Nursing and Residential Care Facilities</p> <ul style="list-style-type: none"> - Home Health Aides - Personal Care Aides - Food Servers, Non-restaurant - Maids and Housekeeping Cleaners - Social & Human Service Assistants - Cooks, Institution and Cafeteria - Recreation Workers <p>Social Assistance</p> <ul style="list-style-type: none"> - Personal Care Aides - Teacher Assistants - Preschool Teachers, Except Special Education - Childcare Workers - Social & Human Service Assistants - Child, Family, and School Social Workers - Secretaries and Administrative Assistants, Except Legal, Medical, and Executive - Rehabilitation Counselors - Janitors and Cleaners - First-Line Supervisors of Personal Service Workers 	<p>Although there is an expected demand for nursing and residential care facilities workers, this sector pays wages well below the all-industry average. This is largely a reflection of the mix of occupations in each health care industry.</p> <p>Job opportunities in social assistance should be numerous through 2022 because of turnover and rapid job growth. In fact, some of the fastest growing occupations in the region are concentrated in social assistance, such as: home health aides; personal and home care aides; and social and human service assistants. The average wages in social assistance are lower than the all-industry average because of the large number of part-time and low-paying service jobs.</p>

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Information Technology		Computer and Mathematical Occupations (16.5%) - Computer Occupations (16.3%)	Professional, Scientific, and Technical Services - Software Developers, Applications - Computer User Support Specialists - Computer Systems Analyst	
Law, Public Safety, Corrections and Security		Protective Service Occupations (7.6%) - Supervisors of Protective Service Workers (7.6%)	Professional, Scientific, and Technical Services - Paralegals and Legal Assistants - Lawyers	

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<p>Manufacturing</p>	<p>Next Generation Manufacturing and Technology PERFORMANCE INDICATORS Eastman Business Park</p> <ul style="list-style-type: none"> Over 100 companies operate in Eastman Business Park, up from 28 in 2011. Over 6,000 jobs estimated in Eastman Business Park. Estimated \$4 billion in manufacturing output from Eastman Business Park companies. <p>Downtown Innovation Zone</p> <ul style="list-style-type: none"> Number of innovation and creative class companies = 174 (an increase of 61% over 2015). Number of downtown employees = 48,000 (no change over 2011). Number of downtown residents = 7,200 (an increase of 40% over 2011). 	<p>Production Occupations (1.1%)</p> <ul style="list-style-type: none"> Food Processing Workers (16.0%) Woodworkers (10.7%) 	<p>Food Manufacturing</p> <ul style="list-style-type: none"> Packaging and Filling Machine Operators and Tenders Food Cooking Machine Operators and Tenders Food Batchmakers Packers and Packagers, Hand Maintenance and Repair Workers, General Industrial Machinery Mechanics <p>Machinery Manufacturing</p> <ul style="list-style-type: none"> Team Assemblers Machinists Laborers and Freight, Stock, and Material Movers, Hand Computer-Controlled Machine Tool Operators, Metal and Plastic <p>Computer and Electronic Product Manufacturing</p> <ul style="list-style-type: none"> Electrical Engineers Software Developers, Systems Software Electrical and Electronic Engineering Technicians Team Assemblers Software Developers, Applications 	<p>Food manufacturing (NAICS 311), machinery manufacturing (NAICS 333) and computer and electronic product manufacturing (NAICS 334) are industries that provide a relatively large number (27,800) of high-paying jobs in the region. The average annual wage in computer and electronic product manufacturing (\$78,500) was nearly 75 percent above the all-industry average wage (\$45,100) in 2014. The most common occupations in these industries include assemblers, inspectors, testers, and engineers.</p>

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Marketing, Sales and Service			Professional, Scientific, and Technical Services <ul style="list-style-type: none"> - Management Analysts - Market Research Analysts and Marketing Specialists - Customer Service Representatives - Computer Systems Analyst 	

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<p>Science, Technology, Engineering & Mathematics</p>	<p>Optics, Photonics, and Imaging (OPI) The Finger Lakes REDC identified the region’s OPI cluster in its URI proposal as one of the six key economic pillars in the economic plan. The plan committed to significant investments to build upon the region’s unparalleled core assets and strengthen its global leadership in this field. The OPI cluster is comprised of approximately 120 companies employing over 15,000 people in the nine county Finger Lakes region and another approximately 9,000 people employed at OPI companies in the nearby Southern Tier and Central New York regions.</p> <p>OPI scientists and engineers in the region are highly innovative and are responsible for many of the patents issued to companies in the Finger Lakes region. In terms of patents issued per capita, Forbes ranks Rochester as the fifth most productive city in the U.S.</p> <p>An innovative high school program for training optical technicians that began at East High School is now taking root at other area high schools, including Gates Chili, Greece, Irondequoit, Penfield and Henrietta. Approximately 200 to 250 students are now taking these, and several of the programs are accepted by Monroe Community College for advanced college credit.</p>	<p>Computer and Mathematical Occupations (16.5%)</p> <ul style="list-style-type: none"> - Mathematical Science Occupations (28.9%) <p>Architecture and Engineering Occupations (6.5%)</p> <ul style="list-style-type: none"> - Engineers (11.8%) <p>Life, Physical, and Social Science Occupations (13.4%)</p> <ul style="list-style-type: none"> - Life Scientists (13.6%) - Physical Scientists (15.4%) - Social Scientists and Related Workers (13.4%) - Life, Physical, and Social Science Technicians (12.9%) 	<p>Professional, Scientific, and Technical Services</p>	

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<p>Science, Technology, Engineering & Mathematics (continued)</p>	<p>Life Sciences</p> <p>The Finger Lakes region is positioned as one of the state’s centers for life science innovation and economic growth due to its leading academic research, highly educated workforce, strong culture of entrepreneurship, national leadership in emerging fields of technology, and a foundation of growing and established businesses.</p> <p>The foundation of any thriving life science sector is a robust ecosystem of biomedical research. In federal FY17, institutions and businesses located in the region received approximately \$159 million in NIH funding, making the Finger Lakes the largest recipient of NIH funding in Upstate New York.</p> <p>The University of Rochester is Upstate New York’s premier life science research institution and receives more NIH funding than any other institution outside New York City. The biomedical research enterprise at the university is comprised of more than 3,000 faculty, post-docs, grad students, and support staff. The Medical Center is home to leading research programs in fields such as neuroscience, cardiovascular disease, cancer, vaccine biology, and musculoskeletal diseases, many of which rank among the top programs in the nation in NIH funding.</p>			

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<p>Science, Technology, Engineering & Mathematics (continued)</p>	<p>Life Sciences (continued)</p> <p>RIT is home to several leading academic and R&D programs in the life sciences fields. RIT graduates more than 400 students per year prepared to work in the life sciences, health care, and biotechnical fields. RIT's biotechnology, environmental technology, and microsystems, biomedical engineering, data science, additive manufacturing, bio-modeling and bio-printing research programs have broad application in the fields of medical devices, diagnostics, and remote and wearable health monitoring technologies. RIT's MAGIC Center is a potential center of innovation for developing new digital media, wearable technology, and virtual and augmented reality solutions to health challenges.</p> <p>Collectively, the Finger Lakes' colleges and universities are national leaders in producing graduates with degrees in fields critical to life science companies. Among metropolitan statistical areas with a population more than 1 million, the Finger Lakes region ranks 1st per capita in STEM degrees, 3rd in degrees in biological and biomedical sciences, and 9th in life sciences degrees.</p>			

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Transportation, Distribution & Logistics	Infrastructure & Transportation <ol style="list-style-type: none"> 1. Improve reliability, reduce delay, and increase safety along key highway corridors that offer the potential to create jobs and leverage private investment. 2. Ensure sufficient infrastructure is in place at employment centers consistent with priorities of the URI and FLREDC Strategic Plan. 3. Increase connectivity between low-income job seekers and employment and educational opportunities. 4. Compile detailed data on sewer and water infrastructure so that more holistic planning of infrastructure can be conducted. 5. Expand transportation infrastructure that promotes active transportation and healthy lifestyles. 6. Increase multi-modal options for freight to improve efficiency and safety. 	Installation, Maintenance, and Repair Occupations (10.5%) <ul style="list-style-type: none"> - Supervisors of Installation, Maintenance, and Repair Workers (9.9%) - Vehicle and Mobile Equipment Mechanics, Installers, and Repairers Transportation and Material Moving Occupations (10.1%) <ul style="list-style-type: none"> - Supervisors of Transportation and Material Moving Workers (9.2%) - Air Transportation Workers (7.7%) - Motor Vehicle Operators (11.0%) - Material Moving Workers (9.0%) 		

¹ 2018 Progress Report - FINGER LAKES REGION ECONOMIC DEVELOPMENT COUNCIL <https://regionalcouncils.ny.gov/content/finger-lakes>

² New York State Department of Labor Long-Term Industry Employment Projections, 2014-2024 <https://www.labor.ny.gov/stats/2014-2024-Statewide-and-Regional-Long-Term-Occupational-Projections.xls>

³ Significant Industries - New York State Department of Labor <https://labor.ny.gov/stats/Significant-Industries.shtm>