

Workforce Development Strategy

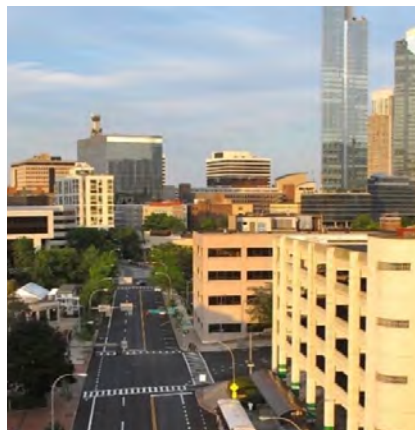
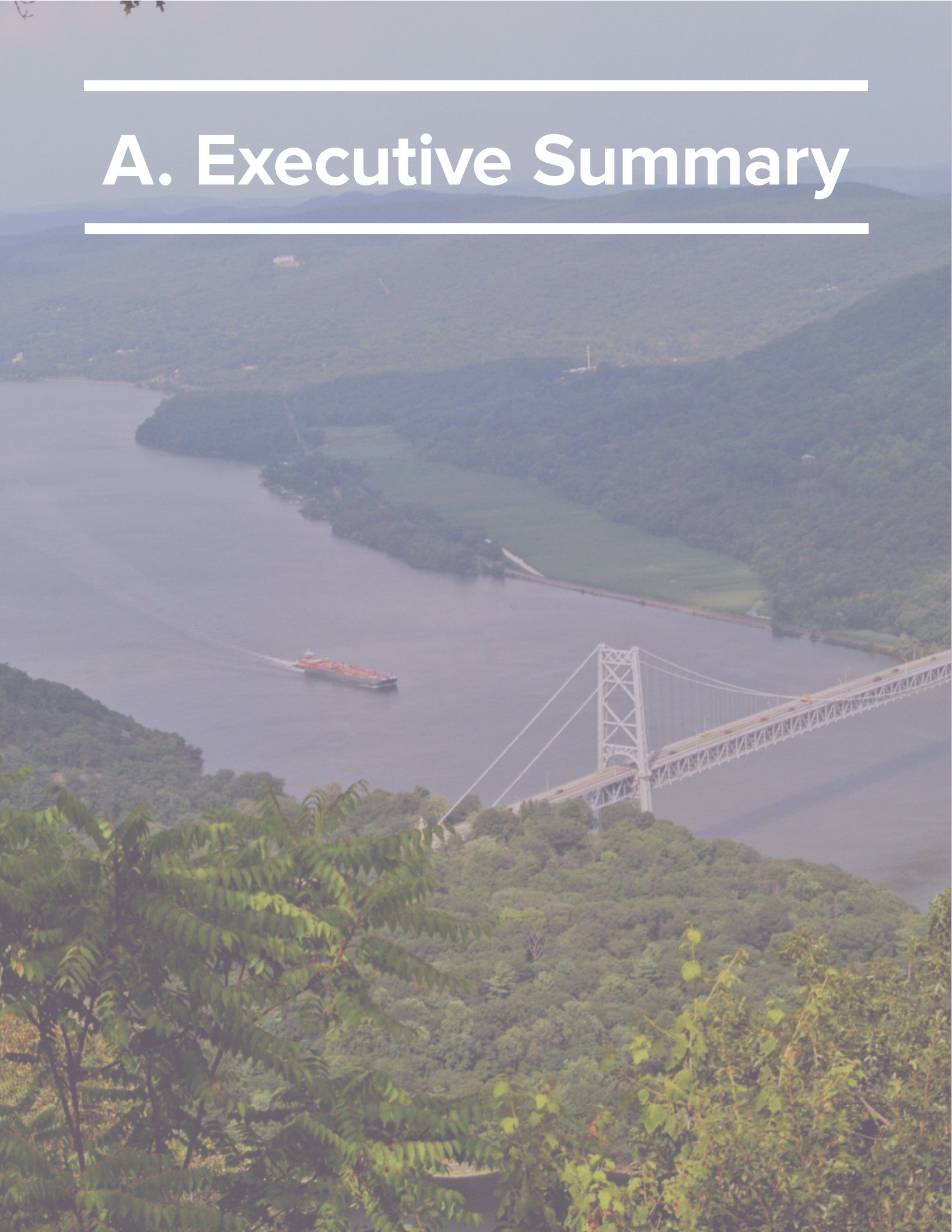


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A. Executive Summary



A. Executive Summary

The purpose of this Workforce Development Strategy is to create a roadmap for addressing workforce challenges in selected high-growth tradable industry sectors within the Mid-Hudson Region (the Region). The strategies outlined in this report will guide the development of workforce programs as well as the application of workforce development funding by regional organizations.

Identifying Priority Sectors

This report and its recommended strategies build upon the Mid-Hudson Regional Economic Development Council's (MHREDC's) 2022 Annual Report and Regional Workforce Inventory, which identified three priority sectors for sector-specific workforce strategies:



ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS¹



LIFE SCIENCES



BUSINESS SERVICES AND FINANCIAL SERVICES²

1. Note that Advanced Manufacturing and Transportation & Logistics are a combined cluster of two industry sectors

2. Note that Financial Services and Business Services are a combined cluster of two industry sectors

Additional Data Analysis and Stakeholder Input

The consultant team analyzed additional labor and economic data to assess a range of metrics for these sectors, including regional trends in job growth, occupation types, and wages, education requirements. The consultant team also conducted interviews with employers and industry organizations in these sectors, workforce development organizations, and county economic development officials. These stakeholders confirmed the most acute challenges facing workforce efforts in the Region, including a shortage of workers at multiple skill levels, difficulties retaining younger employees, a deficiency of appropriate and coordinated workforce training programs, lack of awareness regarding career pathways, and barriers to entry in some sectors for workers without a college degree.

Sector-Based Workforce Strategies

Informed by the data analysis and input from stakeholders, the consultant team identified workforce strategies for each of the priority sectors. These are outlined in Table 1 on the following page.

TABLE 1. MID-HUDSON REDC SECTOR BASED STRATEGIES



Advanced Manufacturing and Transportation & Logistics

- 1 Foster early awareness of career and training pathways among younger populations
- 2 Expand existing apprenticeship programs to create a comprehensive job training and placement program
- 3 Develop career coaching and training programs with targeted support for new and/or transitioning workers



Life Sciences

- 1 Build awareness of career paths using hands-on learning opportunities and online portals
- 2 Promote skills building through apprenticeship and technical certification programs

Business Services and Financial Services



- 1 Align curricula with the needs of employers
- 2 Expand the role of paid internships to help build soft skills and better prepare candidates for employment
- 3 Increase enrollment among underserved populations in skills-based training programs

B. Regional Background



B1. Regional Overview

The Mid-Hudson Region, encompassing the seven counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester, is the third most populous of the ten regions in the state, behind New York City and Long Island. It is geographically and economically diverse, encompassing populous suburbs of New York City, former industrial cities along the Hudson River that are undergoing rejuvenation, in addition to sparsely populated rural areas. Three of the Region's counties - Rockland, Putnam and Westchester - are located within the New York-Newark-Jersey City Metropolitan Statistical Area (MSA), the most populous MSA in the nation. Orange and Dutchess counties comprise the whole of the Poughkeepsie-Newburgh MSA while Ulster County comprises the much smaller Kingston MSA.

A fuller analysis of the Region's demographics and economy is found in Appendix A. Highlights from the demographic and economic analysis include the following points:



DEMOGRAPHICS



POPULATION
2.3 million

As of 2020 Census



BACHELOR'S DEGREE OR HIGHER
42%

40% in New York State



MEDIAN AGE
40.5³

39.8 in New York State



NON-WHITE
22.3%

30.9% in New York State

LABOR & ECONOMY



TOTAL LABOR FORCE
1.2 million

As of December 2022



TOTAL JOBS
875,200



MEDIAN HOUSEHOLD INCOME
\$94,650³

\$75,160 in New York State



UNEMPLOYMENT RATE
2.5%

30-year low across all 7 counties

3. Median Age and Household Income calculated as weighted average of seven counties' medians

B2. MHREDC 2022 Regional Workforce Inventory

In 2022, each of the REDCs in New York State undertook a Regional Workforce Inventory (the Inventory) that identified industries and employment sectors that would benefit from workforce development efforts. Priority sectors were determined by the MHREDC, and workforce development needs were identified using three sources of information:

1. A survey of employers and job seekers conducted by the State of New York in 2022
2. Statistics from the New York State Department of Labor, updated to 2022 and detailing trends within industry sectors and other useful data
3. Qualitative data from interviews with county workforce offices and economic development departments



As a result of this effort, the following employment sectors were identified as priorities for workforce investment in the Region:



**ADVANCED
MANUFACTURING
AND
TRANSPORTATION
& LOGISTICS**



LIFE SCIENCES



**BUSINESS
SERVICES AND
FINANCIAL
SERVICES**

In addition, MHREDC identified Agritourism & Craft Breweries as an important sector for workforce development efforts.

It should be noted that all priority sectors are tradable sectors, which are defined as industries that produce goods that can be sold outside their local region, as opposed to local sectors, such as Healthcare and Construction, whose goods are not sold outside their region.

B3. Identification of Target Tradable Sectors

ESD requested that each REDC refine its list of priority sectors identified in the Inventory to three target tradable sectors. Upon its engagement in August 2022, the consultant team undertook additional economic and labor data assessments, beyond what MHREDC had completed in the Inventory, in order to refine and confirm three target tradable sectors, or clusters of sectors for future workforce investment. The source for this additional data analysis was Lightcast, a labor market data provider that aggregates data from a number of government sources.⁴

The analysis of Lightcast data provided a clearer understanding of the fastest growing sectors and occupations in the Region, in addition to associated credentialization and skills requirements. Importantly, this analysis affirmed the priority sectors identified in the Inventory. However, as the Workforce Development Strategy would focus on only three sectors, MHREDC and the consultant team agreed to remove Agritourism & Craft Breweries, owing to its significantly lower wages, which are only a little over half, or 56 percent, of the overall annual average wage in the region.

4. Lightcast aggregates data from a number of government sources including U.S. Department of Labor (USDOL) and New York State Department of Labor's (NYSDOL) Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics (BLS) research, the U.S. Census, the Equal Employment Opportunity Commission (EEOC) and additional employment and earnings statistics, including job posting analytics.

The overview below highlights job growth, average annual earnings, representation of women and non-whites in each sectors' workforce, and typical educational requirements for each of the three target sectors.

- Among the ten largest tradable sectors in the Region, Life Sciences experienced the largest growth in jobs over the last decade, in addition to having the highest average earnings. The large majority of occupations within this sector are high-skilled and require at least a Bachelor's degree.
- Transportation & Logistics was the second fastest growing of the top tradable sectors in the Region over the past decade, with particular growth in heavy and tractor-trailer truck drivers. Bachelor's degrees are typically not required for jobs in this sector.
- While Business Services is the largest tradable sector in the Region by job count, it saw a small decline in jobs over the past decade and is projected to see little growth over the next ten years. Three of the fastest growing occupations in this sector are project management specialists, market research analysts, and human resources specialists, all of which typically require a Bachelor's degree.

LIFE SCIENCES



TOTAL JOBS
9,284

AVG EARNINGS (2021)
\$313,346

CHANGE 2011-21
43%

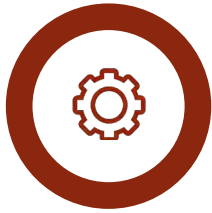
% WOMEN
48%

% NON-WHITE
13%

TYPICAL REQUIREMENT
HS Diploma

B3. Identification of Target Tradable Sectors

ADVANCED MANUFACTURING



TOTAL JOBS
17,405

CHANGE 2011-21
-33%

% NON-WHITE
35%

AVG EARNINGS (2021)
\$122,989

% WOMEN
34%

TYPICAL REQUIREMENT
HS Diploma

TRANSPORTATION & LOGISTICS



TOTAL JOBS
3,407

CHANGE 2011-21
36%

% NON-WHITE
21%

AVG EARNINGS (2021)
\$107,623

% WOMEN
38%

TYPICAL REQUIREMENT
HS Diploma

ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS COMBINED



TOTAL JOBS
20,812

CHANGE 2011-21
-26%

% NON-WHITE
35%

AVG EARNINGS (2021)
\$120,500

% WOMEN
32%

TYPICAL REQUIREMENT
HS Diploma



B3. Identification of Target Tradable Sectors

BUSINESS SERVICES



TOTAL JOBS
32,892

CHANGE 2011-21
-5%

% NON-WHITE
36%

AVG EARNINGS (2021)
\$123,324

% WOMEN
46%

TYPICAL REQUIREMENT
Bachelor's

FINANCIAL SERVICES



TOTAL JOBS
10,050

CHANGE 2011-21
-6%

% NON-WHITE
29%

AVG EARNINGS (2021)
\$243,764

% WOMEN
46%

TYPICAL REQUIREMENT
Bachelor's

BUSINESS SERVICES AND FINANCIAL SERVICES COMBINED



TOTAL JOBS
42,942

CHANGE 2011-21
-5%

% NON-WHITE
34%

AVG EARNINGS (2021)
\$151,500

% WOMEN
46%

TYPICAL REQUIREMENT
Bachelor's



C. Outreach



C1. Outreach

MHREDC prioritized transparency, engagement, and outreach in the crafting of this Workforce Development Strategy. The stakeholder outreach process was developed by the consultant team with input from MHREDC leadership, and structured to complement and build on the robust and deep engagement carried out through REDC’s original research as part of the Inventory.

Stakeholder Interviews

In September and October 2022, the consultant team conducted interviews with 25 stakeholders, including employers in the priority sectors, workforce development and industry organizations, and economic development officials from each of the counties in the Region, with the exception of Putnam County. Stakeholders were asked about observable trends shaping the regional labor market and/or their individual industry sectors, opportunities and challenges, growing occupations, skills needs and gaps, existing resources and programs that work, and what is lacking. The consultants noted key findings or takeaways from each interview. Through this process, stakeholder input played an important role in informing the strategies.

Working Group Meetings

A working group of MHREDC staff was assembled to guide the strategy formulation and prioritization of sectors. The working group held regular conference call meetings throughout the fall of 2022 to provide feedback, to strategize on outreach efforts, and to discuss insights gained through the study’s stakeholder engagement.



TABLE 2. LIST OF INTERVIEWEES

STAKEHOLDER CATEGORY	ORGANIZATION	INTERVIEWEE	COUNTY
County Economic Development Officials	Dutchess County	Ron Hicks, Assistant County Executive	Dutchess
	Orange County	Steve Gross, Economic Development Director	Orange
	Rockland County	Lucy Redzeposki, Director of Economic Development & Tourism	Rockland
	Sullivan County	Freda Eisenberg, Planning Commissioner	Sullivan
	Ulster County	Tim Weidemann, Director of Economic Development	Ulster
	Westchester County	Bridget Gibbons, Director of Economic Development	Westchester
Workforce/ Industry Organizations	Business Council of Westchester	Marsha Gordon, President & CEO	Westchester
	Hudson Valley Council of Industry	Harold King, President	All
	Hudson Valley Pattern for Progress	Adam Bosch, President	All
	Orange County Employment and Training	Stephen Knob, Director	Orange
	Westchester County Association	Jason Chapin, Director of Workforce	Westchester
	Workforce Development Institute	Mary Jane Bertram, Regional Director	All
Academic Institutions	Burke Neurological Institute	David Gould, COO	Westchester
	Hudson Valley Additive Manufacturing Center / SUNY New Paltz	Dan Freedman, Director	Ulster (but covers entire Mid-Hudson Region)
Private Employers and Sector	Bantam Tools <i>Advanced Manufacturing</i>	Ron Lorentzen, General Manager	Westchester
	eLab <i>Life Sciences</i>	Mary Howard, Program Director	Westchester and Rockland
	FALA Technologies <i>Advanced Manufacturing</i>	Frank Falatyn, President	Ulster
	Magnetic Analysis Corp <i>Advanced Manufacturing</i>	Dudley Boden, CEO	Westchester
	PTI <i>Life Sciences</i>	Oliver Stauffer, CEO	Westchester
	RBW Lighting <i>Advanced Manufacturing</i>	Charles Brill, Managing Partner Alan Ince, Director of People	Ulster
	Regeneron <i>Life Sciences</i>	Regina Thomas, VP for Talent	Westchester
	Sapience Therapeutics <i>Life Sciences</i>	Barry Kappel, CEO	Westchester
	TurboFil <i>Advanced Manufacturing</i>	Deborah Smook, Owner	Westchester
Other	Westchester County Biosciences Initiative and Biotechnology Incubator	Deborah Novick, Director	Westchester

C2. Stakeholder Interviews: Regional Themes

Difficulty Hiring and Retaining Workers

- Stakeholders reported a large number of job openings across multiple sectors and a shortage of employees at multiple skill levels.
- The high cost of living in the Region was cited as a significant hurdle to recruiting and retaining employees, particularly younger employees.

Disconnect between Employee and Employer Preferences related to Remote Work

- Employees, particularly younger workers and workers with children, prefer more lenient work-from-home policies. Companies that have not evolved or allowed for more flexibility have had difficulty hiring or retaining employees.
- It is important to note that jobs in the Life Sciences, Advanced Manufacturing, and Transportation & Logistics sectors do not generally lend themselves to remote work.

Lack of Soft Skills

- Several stakeholders cited a growing lack of soft skills among younger workers. These include communication, time management, organization, and teamwork. Some stakeholders felt that the pandemic has exacerbated this lack of soft skills.

Geographic Disparity of Skilled Workers

- Local economic development officials and employers in the Region's more rural counties (Sullivan and Ulster) noted an acute lack of adequate skill sets among younger workers despite an uptick in labor force needs. These include engineering technicians, commercial drivers, electricians and electrical assemblers, and general software skills.

Wraparound Services Needed

- Lack of childcare is a significant impediment for many parents to enter or reenter the workforce. Wraparound services that address needs were noted by many stakeholders as an essential component for any workforce development strategy.
- Transportation subsidy is another needed wraparound service, particularly for lower skilled workers who do not have cars and live in more urban places, such as Kingston and Newburgh, and cannot access jobs in outlying areas. Some residents of Orange and Ulster Counties currently rely on the federal Jobs Access Reverse Commute (JARC) program, which provides federal funding to state governments and public bodies for capital, planning, and operating expenses for projects that transport low-income workers to and from jobs and activities related to employment, and for reverse commute programs in urban and rural areas.

Complicated and Disconnected Existing Workforce Programs

- Many employers noted that existing workforce programs in the Region are difficult to understand, time consuming, and seemingly uncoordinated. Because of this, employers may conclude that these programs are not worth the effort to pursue.

Note that stakeholder feedback related specifically to each of the three priority industry sectors is included in Sections E – G.

D. Overview of Strategies



D. Overview of Strategies

This report includes strategies for each of the priority sectors, detailing insights and action items. The consultant team also identified three strategies that may be deployed across all sectors to expand workforce readiness. These are:

1. Expand and Integrate Successful Existing Programs and Initiatives

Many of the strategies outlined in this report build upon strategies and initiatives that currently exist in the Region. Some of these are existing apprenticeship and internship programs under the sponsorship of SUNY or the individual SUNY community colleges within the Region; others are courses and training programs designed and operated by private nonprofit organizations, individual county governments, or Boards of Cooperative Educational Services.

It is not the intent of this report to replace those existing programs that are successful with new programs or simply to establish additional programs alongside them. A significant challenge facing workforce development efforts in the Region is the siloed nature of many of these programs and the lack of region-wide coordination. This fragmentation makes it difficult for both employers and job-seekers to find the optimal resources and identify sources of talent or optimal career pathways. An effective regional Workforce Development Strategy will seek to build upon and integrate successful existing programs, expand them across the Region, and create a single portal or hub where both employers and job-seekers can access information and resources.

It should be noted that with many of these proposed strategies, MHREDC can only play a limited role in execution without the State and other agencies first embracing them. Other strategies will require active participation by SUNY and individual SUNY colleges, in addition to employers themselves.

2. Reduce Barriers to Entry

Several strategies across the three priority sectors in this report focus on cohorts of job-seekers who have faced the most significant barriers to entering the workforce or identifying effective paths for career transition. These include students and adults from historically underrepresented populations in the workforce, including people of color, women, and veterans.

A successful Workforce Development Strategy will include access to career counseling, mentorship, and employer-based training programs, in addition to training programs that focus on both hard and soft skills that are integral to employability.

3. Address the Need for Wraparound Services, particularly Child Care

Lack of child care is a significant barrier preventing many parents from entering or reentering the workforce. While larger employers often have the resources to provide child care services, either onsite or through third party contracts, many smaller and mid-size companies do not. A successful Workforce Development Strategy should facilitate the wider provision of child care services, identify third-party partners, and promote existing child care services tax credits.

Adequate transportation links and affordable housing are also important factors in facilitating access to jobs in the Region. The New York State Department of Transportation and some county governments in the Region currently receive funding from the federal Jobs Access Reverse Commute (JARC) program to offer augmented transit services that link transit deficient communities to job centers. This program should continue to be evaluated and expanded as necessary.

The pandemic and its associated relocation patterns brought new higher income populations into many localities in the Region. This has resulted in significant increases in housing costs that have made it difficult for some employees or job-seekers to live near their work. State and local programs that incentivize workforce and below market housing units should continue to be bolstered.

E. Advanced Manufacturing and Transportation & Logistics



E1. ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS OVERVIEW



The combined cluster of Advanced Manufacturing and Transportation & Logistics represents almost 21,000 jobs in the Region. While Advanced Manufacturing and Transportation & Logistics are two independent industry sectors, they have been combined in this report because of their prioritization in MHREDC's Regional Workforce Inventory, in addition to the close relationship and connections that exist between them.

Advanced Manufacturing differs from traditional manufacturing in that it incorporates innovative technologies, such as computation, sensing, and networking, into the production process. Types of Advanced Manufacturing include additive manufacturing/3D printing, advanced/composite materials, robotics/automation, laser machining/welding, and certain types of nanotechnology.

While Transportation focuses on the movement of goods from one place to another, Logistics has a broader scope that encompasses not only the movement and delivery of goods, but also supply chain management, storage, and inventory. Similar to Advanced Manufacturing, new technological trends have brought significant changes to Logistics over the past decade. These trends include machine learning, advanced automation, and more digital processes, including Transportation Management Systems. The technological advances reshaping Advanced Manufacturing and Transportation & Logistics have resulted in new skill set requirements in these sectors. However, while many jobs in these sectors do require new abilities and training, the majority of occupations still have relatively low barriers to entry, do not require a Bachelor's degree or previous experience, provide on-the-job training, and offer relatively high wages.

Although employment in Advanced Manufacturing has seen a decline in the Region over the past ten years and is not projected to grow significantly over the next decade, this sector continues to be one of the largest tradable sectors in the Region in terms of total number of jobs. In

addition, average earnings in this sector are 35 percent higher than the average earnings for all industry sectors in the Region. Many traditional manufacturers in the Region have also adopted value added manufacturing processes that require similar skill sets and training as those in Advanced Manufacturing. Accounting for a smaller number of total jobs than Advanced Manufacturing, Transportation & Logistics is among the fastest growing sectors in the Region and is projected to see continued growth over the next ten years.

Employment:

- Advanced Manufacturing: 17,405 (2nd largest tradable sector in Region)
- Transportation & Logistics: 3,407
- Total: 20,812 (two percent of the Region's employment)
- Employment Growth (2011-2021): Transportation & Logistics is 2nd fastest growing sector in the Region. Advanced Manufacturing has declined by 33 percent.
- Specialization (Location Quotient): 2.9 (Advanced Manufacturing) 2.1 (Transportation & Logistics)

Top Occupations (by number of jobs):

- Electrical Assemblers
- Software Developers
- Misc. Assemblers & Fabricators
- Commercial Truck Drivers
- Production, Planning & Expediting Clerks
- General & Operations Manager
- Inspectors, Testers, Sorters, & Weighers
- Sales Reps, Sales Reps - Technical
- First Line Supervisors of Production & Operating Workers

Fastest Growing Occupations:

- Commercial Truck Drivers
- First Line Supervisor of Transportation & Material Moving Workers
- Production, Planning & Expediting
- Sales Reps – Technical
- Packaging & Filling Machine Operators

Skills in Demand:

- Electrical technical skills - installing and maintaining electrical systems and equipment
- Knowledge of mathematics pertaining to machinery and mechanical systems
- 3-D printing / CNC machinists
- Software programming and development
- Information technology
- Commercial driving (Commercial Drivers Licenses)

Note that many employers in Advanced Manufacturing offer on-the-job training with minimal experience required.

Additional Opportunity

IBM's recent announcement regarding expansion of its facilities in Dutchess County presents new opportunities for jobs in semiconductor manufacturing, though the exact scope and scale of these jobs is not yet known.

Examples of Existing Programs

The Gene Haas Foundation was established in 1999 by Haas Automation, Inc. founder and CEO Gene Haas. The foundation supports manufacturing training programs and provides scholarships to trainees. The foundation has provided more than \$120 million in grants since its inception including through college-level programs. In 2021, Pine Bush High School in Orange County was the first high school in the nation to receive a Gene Haas Foundation grant for manufacturing education programs.

Next-Generation Manufacturing Workforce Initiative (Next-Gen)

is an apprenticeship and on-the-job training initiative operated by Kingston-based FALA Technologies that has become a critical component of the talent pipeline for this contract manufacturer of advanced electromechanical products. FALA Technologies' Next-Gen program offers New York State Certified Apprenticeship training for CNC machinists, toolmakers, electro-mechanical technicians, welders, quality assurance auditors, industrial manufacturing technicians, and maintenance mechanics. FALA Technologies also offers Pre-Apprenticeships and Internship programs that include classroom and on-site training.

Hudson Valley Council of Industry (COI)

Apprenticeship Program helps Hudson Valley manufacturing employers develop the skilled workforce they need to be globally competitive. The Council of Industry (COI) has been the manufacturers association for the Hudson Valley since 1910 and represents more than 140 manufacturers in the Region. COI is a privately funded, not-for-profit organization, whose mission is to promote the success of its member firms and their employees. COI leads the New York State Manufacturers Alliance Intermediary Apprenticeship Program in the Hudson Valley by partnering with local community colleges to create and support customized training.

Hudson Valley Additive Manufacturing Center at SUNY New Paltz (HVAMC)

provides expert advice on 3D printing process and materials and designing for additive manufacturing to the Hudson Valley business community. HVAMC's 3D printers are some of the most advanced technology at any academic lab in the country and are available for members of the local business community to use. HVAMC, as part of SUNY New Paltz, also offers training programs that are structured to the needs of local manufacturers.

Westchester County Advanced Manufacturing Task Force

was established by the Westchester County Office of Economic Development to advance the growth of the Advanced Manufacturing sector in Westchester County and support the needs of Advanced Manufacturing companies in the county. The Task Force's membership includes a diverse cohort of advanced manufacturers, academic institutions, and civic and business organizations.

E2. INSIGHTS

The consultant team conducted interviews with stakeholders from Advanced Manufacturing and Transportation & Logistics sectors, including private employers, local economic development officials, educators, and nonprofit workforce development entities. Themes from the interviews included the following findings:

Middle Skills are in Demand

- Advanced Manufacturing stakeholders cited a greater need for machinists, welders, electrical and mechanical technicians, and semiconductor technicians.
- Logistics employers are seeking employees with skills in warehouse management systems and supply chain management.

Impact of Technology and Growing Need for Technicians

- Both Advanced Manufacturing and Logistics have been significantly reshaped by technological advances over the past decade. Technicians are increasingly important in these sectors as machinery and inventory systems are becoming more computerized and complex.
- Computer science skills are becoming essential for higher skilled positions within Advanced Manufacturing and Logistics and provide wider opportunities for those who have them.

More Opportunities for Lower Skilled Workers

- While there is a greater need for more technicians in Advanced Manufacturing and Logistics, there is also a large and growing number of jobs in warehouses and distribution centers for lower skilled workers.

Greater Need for Commercial Drivers

- While the State's Young Adult Commercial Drivers License (CDL) program was a welcome initiative to help younger commercial drivers enter the labor market, there is still an acute need for more commercial drivers and CDL training in the region.

Greater Demand for Information Technology (IT) Skills

- The Region has seen a seven percent increase in IT jobs over the past five years data collected from employers in these sectors suggest that the Region will see continued growth in IT.

The Manufacturing Workforce is Aging Out and Fewer Younger People are Entering

- Older workers are exiting the workforce, particularly from the machinist trade, and fewer younger people are going into both traditional manufacturing and Advanced Manufacturing. Some stakeholders thought this could be a perception issue and cited the importance of more high school training programs that educate students about the scope of Advanced Manufacturing and make them aware of its career pathways.

E3. ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS

STRATEGIES	ACTION ITEMS	STAKEHOLDERS
<p>1</p> <p>Foster early awareness of career training pathways among younger populations</p>	<p>1A. Organize involvement with Parent Teacher Associations (PTAs/PTOS) to build career awareness about these sectors</p> <p>1B. Develop skills-building programs with industry partners and local academic institutions that expand successful existing models in the Region</p> <p>1C. Create micro-credential programs targeted for skills-building</p> <p>1D. Facilitate conversations with key actors at SUNY to expand dual enrollment curriculum streams</p>	<ul style="list-style-type: none"> Local PTAs/PTOs and local school districts Hudson Valley Council of Industry Hudson Valley Additive Manufacturing Center SUNY community colleges Industry partners Westchester County Advanced Manufacturing Task Force
<p>2</p> <p>Expand existing apprenticeship programs to create a comprehensive job training and placement program</p>	<p>2A. Identify industry partners to further develop and expand apprenticeship programs</p> <p>2B. Designate a single point of contact to build and expand upon apprenticeship programs</p>	<ul style="list-style-type: none"> Hudson Valley Council of Industry Hudson Valley Additive Manufacturing Center SUNY community colleges Industry partners Westchester County Advanced Manufacturing Task Force Certified CDL training programs County Workforce Development Boards Workforce Development Institute
<p>3</p> <p>Develop career coaching and training programs with targeted support for new and/or transitioning workers</p>	<p>3A. Work with providers to develop training programs for specific in-demand occupations</p>	<ul style="list-style-type: none"> Hudson Valley Council of Industry Multi-service nonprofit organizations





ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS STRATEGY #1:

Foster early awareness of career and training pathways among younger populations

Over the next decade, Transportation & Logistics is projected to be among the Region's fastest growing sectors, and it is being reshaped by new technologies and processes. While Advanced Manufacturing experienced employment decline over the last decade, it remains one of the largest tradable sectors and has also experienced tremendous technological transitions that require new skills. Cultivating a new generation of skilled workers is vital to the success of these sectors.

Both sectors, however, still face challenges; they employ an older workforce that is aging out while younger people are not entering these sectors in large numbers, due either to lack of awareness about the diversity of career opportunities that exist or negative perceptions about manufacturing and industrial labor. Starting industry and career awareness earlier in a child's education, and including parents / guardians in the discussion, can spark interest with the potential to bolster the future talent pipeline. Developing opportunities for credentialization and expanding early college programs can help high school students get a head-start on their training pathway.

ACTION 1A: Organize involvement with Parent Teacher Associations and Parent Teacher Organizations (PTAs / PTOs) to build career awareness about these sectors

Fostering awareness in students about Advanced Manufacturing and Transportation & Logistics and the types of careers people pursue in these sectors is essential for stimulating interest at a young age and nurturing a pipeline of talent.

- PTAs / PTOs have unique capability as they work with both educators and parents/guardians. By involving PTAs / PTOs, career awareness and activity promotion can flow directly from the school to the parent/guardian and give the latter the information they need to guide their children toward career options.
- PTAs / PTOs can also facilitate attendance at industry events, obtaining industry mentors, and participation in short-term internships designed to give students real-world experience in the industry.

ACTION 1B: Develop skills-building programs with industry partners and local academic institutions that draw upon successful existing models in the Region

An important early task of the Workforce Development Strategy is identification of those programs in the Region that can be grown to reach broader audiences and offer additional skills training to more participants in additional subsectors. These programs can take place at K-12 school, at a post-secondary institution, or at industry partners' work sites. Getting students and their parents/guardians on-site with employers is key to providing detailed information about the types of employment opportunities that exist at the end of the program.

ACTION 1C: Create micro-credential programs targeted to skills-building

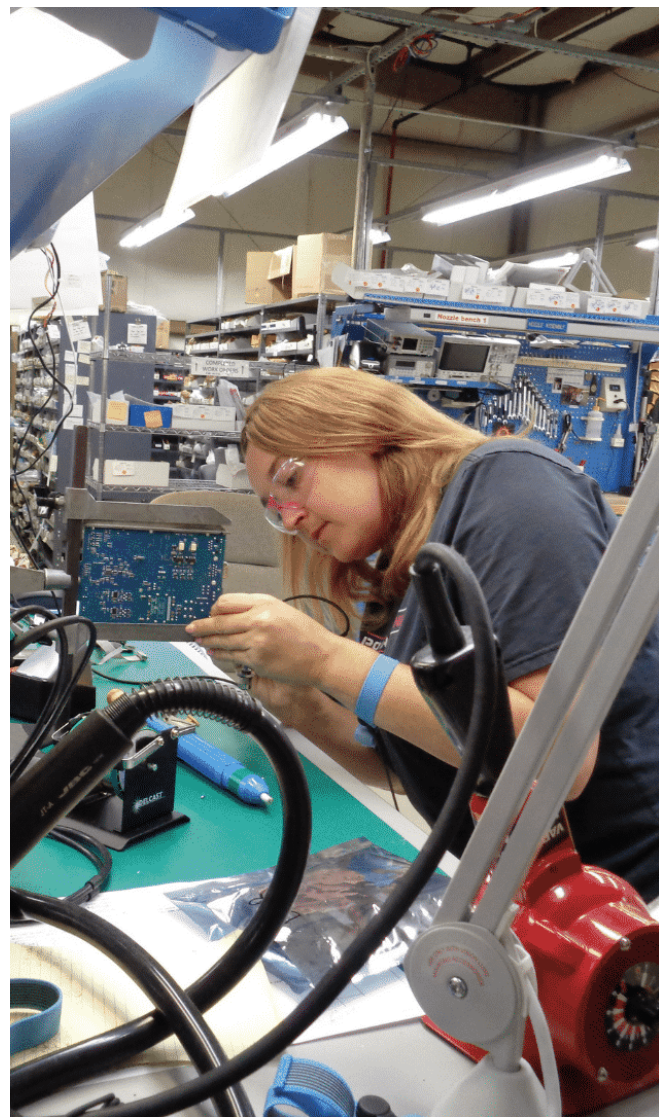
Micro-credential programs are online intensive programs, designed by academic institutions in partnership with industry leaders, that certify that a student has mastered specific skills or competencies in an area directly associated with specific occupations.

Micro-credential programs can give students a head-start, enable them to stand-out, and learn the skills needed to land jobs and internships.

As micro-credential programs involve partnerships between participating colleges and credentialing organizations that allow for the transfer of credit, this strategy would likely require articulation agreements between the colleges and the organizations. Many SUNY campuses have micro-credential programs supported by articulation agreements with credentialing partners. In New York City, CUNY has an extensive micro-credential program in partnership with the nonprofit organization NY Jobs CEO Council, which could be a model for institutions in this Region.

ACTION 1D: Facilitate conversations with key actors at SUNY to expand dual enrollment curriculum streams

Dual enrollment programs offer students the ability to earn college credit while still attending high school and currently exist at all SUNY campuses. For example, SUNY Westchester offers an extensive Early College Experience program and SUNY Sullivan has direct partnerships with several local school districts.





ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS STRATEGY #2: **Expand existing apprenticeship programs to create a comprehensive job training and placement program**

Employers in Advanced Manufacturing and Transportation & Logistics have identified an acute need for more middle-skilled workers, including machinists, electrical and mechanical technicians, and supply chain managers. Some employers have cited the need for coordinated workforce development programs focused on apprenticeships.

While many Advanced Manufacturers in the Region do provide on-site training, a more comprehensive program led by a single agency, acting as a point of contact and resources, could better link jobseekers, pre-employment training providers, and employers. By providing an end-to-end pathway, such as apprenticeship programs combined with other supportive services and opportunities for ongoing mentorship, individuals seeking employment can make more informed decisions on career opportunities in these two sectors.

The Registered Apprenticeship Program of SUNY and the New York State Department of Labor, has successfully engaged a broad range of employers to secure paid apprenticeships for jobseekers, with a stated focus on Advanced Manufacturing and Healthcare. The proposed comprehensive job training and placement program would build upon the existing State programs and increase the number of apprenticeship opportunities throughout the Region. The provider chosen to administer the program in partnership with employers, would recruit participants using interviews and skills-based assessments, and would then guide them to open apprenticeships and employment opportunities.

ACTION 2A: Identify industry partners to further develop and expand apprenticeship programs

Work with the Hudson Valley Council of Industry, the Hudson Valley Additive Manufacturing Center, and other industry organizations, to identify both industry partners with existing apprenticeship programs that can be expanded and additional companies in need of new apprenticeship programs.

ACTION 2B: Designate a single point of contact to build and expand upon apprenticeship programs

A successful comprehensive job training and placement program should have a single point of contact to coordinate with apprenticeship program partners and provide individual mentorship for participants. Once employed, participants can continue to receive individual mentorship to keep them engaged and on a successful path.



ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS STRATEGY #3: **Develop career coaching and training programs with targeted support for new and/or transitioning workers**

As senior employees increasingly exit the workforce in Advanced Manufacturing and Transportation & Logistics, there are new opportunities in these sectors for individuals to enter occupations that feature relatively low barriers to entry and high average wages. A structured career coaching program targeted to new and/or transitioning workers could be inspiring to adults who face barriers to entry or lack the time or means to pursue new career opportunities. Having a trusted third party who can guide the individual through the process, and who is able to coordinate wraparound services, would greatly facilitate program participants' entry into new occupations.

Program participants would meet with a counselor who would engage and assess needed skills, and then recommend appropriate training programs.

ACTION 3A: Work with providers to develop training programs for specific in-demand occupations

Training programs for new and transitioning workers should focus on high-demand occupations. In the case of commercial truck drivers, programs can coordinate with those third-party private entities that, under the State's new Third Party CDL Road Test Program, can apply for certification to offer the CDL road test and help ease the critical shortage of commercial truck drivers in the Region and the State.

Program Examples:

American Corporate Partners

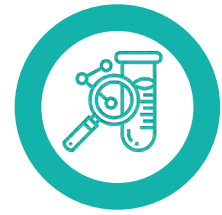


An example of a successful career counseling program for transitioning workers is American Corporate Partners (ACP), a 501(c)(3) based in New York City that helps veterans transition from the military into civilian life through counseling and mentorship programs. ACP has mentored over 25,000 veterans since its founding in 2008, using volunteer mentors from over 100 companies.

F. Life Sciences



F1. LIFE SCIENCES OVERVIEW



Life Sciences is a broad sector that encompasses the fields of pharmaceuticals, biotechnology, medical devices, biomedical technologies, bioengineering, nutraceuticals, medical imaging, bioinformatics, and biomanufacturing, among others. While Life Sciences is often associated with highly-skilled laboratory work related to drug discovery, there are many occupations that do not require advanced degrees and therefore offer opportunities for mid-skilled workers.

While the commercial Life Sciences sector accounts for a relatively small percentage of the Region's total employment, this sector experienced a 43 percent increase in jobs in the Region between 2011 and 2021, making it the Region's fastest growing tradable sector. Additionally, based on the Region's historical trends, job growth is projected to rise 18 percent between 2021 and 2031, which is one of the highest job growth projections among the tradable sectors examined.

This growth can be partly attributed to the substantial expansion over the past decade of Westchester-based Regeneron, the largest Life Sciences employer in New York State. Regeneron now employs over 4,000 people in the Region and in 2022 announced a \$1.8 billion expansion that will bring an additional 1,000 employees to Westchester over the next five years. Pfizer has also substantially expanded in the Region in recent years, undertaking enlargement of its vaccines research and development operations in Rockland County. Pfizer employs over 1,000 people at its Rockland County facility and announced plans in 2022 for a \$450 million expansion at this site for vaccine research and development.

However, Because of the multiple subsectors within Life Sciences and the rapidly evolving nature of this industry, there may be less awareness across the Region of what the Life Sciences sector encompasses or the opportunities that exist. Awareness may be fostered through hands-on experiences such as direct-to students programs in colleges and high schools.

While there are a growing number of jobs in this sector that do not require advanced degrees, these jobs do require training and skills-building. Skills-building can be achieved through apprenticeships and general training and/or certification programs.

Employment:

- 9,284
- Employment Growth (2011-2021): 43 percent
- Specialization (Location Quotient): 2.2

Top Occupations (by number of jobs):

- Medical Scientists (excluding Epidemiologists)
- Software Developers
- General and Operations Managers
- Clinical Laboratory Technologists and Technicians
- Executive Secretaries
- Project Managers
- Biological Technicians
- Natural Sciences Managers
- Other Lab Technicians
- Computer and Information Systems Managers

Fastest Growing Occupations:

- Project Managers
- Natural Sciences Managers
- Biological Technicians
- General and Operations Managers
- Software Developers
- Computer and Information Systems Managers

Skills in Demand:

- Data and Analytics
- Information Technology
- Software Development
- Lab Technicians
- Project Management

Examples of Existing Programs

The Westchester Life Sciences Task Force was established by the Westchester County Office of Economic Development (OED) to support the Life Sciences industry in Westchester County and keep the OED up to date on the industry's trends and needs. Its membership includes representatives from a broad array of life sciences companies, academic institutions, civic and business organizations, commercial real estate, and venture capital. While the Life Sciences Task Force does not have a specific workforce development mission, its goals and responsibilities include promoting awareness of the Life Sciences sector, facilitating collaboration among participants, identifying industry needs and advancing the county's "centers of excellence" and areas of specific expertise.

Westchester County Bioscience Accelerator (WCBA) is a competitive-entry, six-month program of personalized entrepreneurial education delivered for first time founders of bioscience ventures in Westchester. WCBA focuses on addressing individual needs and utilizing accredited entrepreneur coaches and expert mentors to craft unique, educational experiences crucial to the development of successful ventures. WCBA teaches founders how to find grant and foundation funding and provides resources to strengthen future investment outreach endeavors. WCBA's unique and expansive network of over 40+ WCBA alumni engages with participants to further elevate the founders' business acumen and network. WCBA's alumni have raised \$3 million, added over 22 new employees, with several founders launching second ventures. As of 2022, nearly 80 percent of alumni ventures continue to achieve significant business milestones.

Mid-Hudson Life Sciences: Building Careers in MedTech is a new program from Pace University that is designed to revitalize and upgrade existing science labs at its campus in Pleasantville, creating a state-of-the-art facility for training clinical laboratory technicians, which will support growth of the life sciences industry in the Region and state.

F2. INSIGHTS

The consultant team conducted interviews with stakeholders from the Life Sciences, including private employers, local economic development officials, educators, and nonprofit workforce development entities. Themes from the interviews included the following findings:

Broad scope of this sector includes increasing number of jobs that do not require advanced degrees

- While early-stage drug discovery companies generally do not have the resources or capacity to hire non-scientist support staff, there are growing opportunities for non-degreed job seekers in multiple subsectors, including medical devices, and nutraceuticals and wellness, in addition to lab technicians. Larger companies in this sector have a need for lab technicians, quality assurance specialists, and information technology support.

Life Sciences Sector in Region Encompasses Multiple Activities Beyond Drug Development

- Westchester County's growing Life Sciences ecosystem includes over 200 firms engaged in medical device production, digital health, and nutraceuticals and wellness products. Many jobs in these areas have lower barriers to entry.

Growing Shift to Computational Research

- The Life Sciences sector in general has seen a shift from “wet lab” research to more “dry lab” computational research. The result has been a significant increase in need for software developers among Life Sciences employers in the Region.

Few Training Programs to Address Project Management and Operations Needs

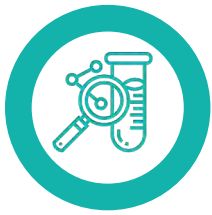
- While the number of project managers in this sector increased threefold over the past decade in the Region, there are few training programs to address skills needs and, beyond Regeneron or Pfizer, few companies have the resources for on-the-job training.

Few Internship Opportunities to Attract Interested Younger People to Sector

- Internship design, administration, and recruitment is a challenge for early- and mid-stage companies as many do not have the resources or bandwidth to develop or administer programs. While larger companies may have the capacity, they are not making significant inroads with non-Bachelor's degree candidates.

F3. LIFE SCIENCES: IMPLEMENTATION PLAN

STRATEGIES	ACTION ITEMS	STAKEHOLDERS
<p>1</p> <p>Build awareness of career paths using hands-on learning opportunities and online portals</p>	<p>1A. Work with Life Sciences industry organizations and academic institutions to develop direct-to-student programs in high schools and colleges.</p> <p>1B. Develop an online Life Sciences job portal targeted toward potential candidates from underrepresented communities.</p>	<ul style="list-style-type: none"> • SUNY • SUNY community colleges • Westchester County Life Sciences Task Force • County Workforce Development Boards • RECAP • County BOCES
<p>2</p> <p>Promote skills building through apprenticeship and technical certification programs</p>	<p>2A. Work with SUNY, industry organizations, and employers to design and build Life Sciences apprenticeship programs.</p> <p>2B. Partner with academic institutions and industry organizations to develop and expand training and certification programs.</p>	<ul style="list-style-type: none"> • SUNY • SUNY community colleges • Industry partners • Westchester County Life Sciences Task Force • County Workforce Development Boards



LIFE SCIENCES STRATEGY #1: **Build awareness of career paths using hands-on learning opportunities and online portals**

Due to its primary focus on advanced research and development, the Life Sciences sector has not traditionally attracted or retained candidates without college degrees. Many younger people do not have a clear understanding of what this sector encompasses or the expanding number of career paths, both scientific and non-scientific, that it presents. Providing opportunities for high school and post-secondary students to meet with local life sciences professionals, visit laboratories and other worksites, and learn about the types of jobs that exist can cultivate better awareness of this sector among a broader and more diverse population.

ACTION 1A: Work with Life Sciences industry organizations and academic institutions to develop direct-to-student programs in high schools and colleges

Direct-to-student programs are designed specifically to educate college and high school students about the Life Sciences sector, introduce them to its expansive scope and multiple subsectors, and directly expose them to the types of occupations they may pursue. A comprehensive direct-to-student program would include guest speakers and speaking panels, field trips to company worksites, and opportunities to learn directly from Life Sciences professionals about their careers and skills requirements.

ACTION 1B: Develop an online Life Sciences job portal targeted toward potential candidates from underrepresented communities

A well-designed online jobs portal can better inform job seekers, particularly those from underrepresented communities, about the opportunities and occupations that exist in the broader Life Sciences sector, in addition to linking them to job listings, training, and resource programs across the Region.

Program Examples:

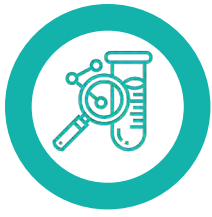
Hands-on Learning and Online Portal



OpenDoors, a program in the North Carolina Research Triangle, may serve as a model for this action. Founded by the CEOs of two life sciences companies in partnership with the North Carolina Biotechnology Center, a state-affiliated economic development organization, OpenDoors is a non-profit organization with a mission is to help current and future generations of underrepresented Black, Latinx, and Indigenous students gain hands-on learning experiences in the Research Triangle's life sciences industry.



In 2021, the State of North Carolina, working with private sector partners, established BioJobsHub, an online portal specifically designed to match workers with non-scientific jobs in the Life Sciences. The portal also links job seekers to training and resource programs. Recent job listings include Manufacturing Associate, Maintenance and/or Instrumentation Technician, and Quality Assurance Specialists.



LIFE SCIENCES STRATEGY #2: **Promote skills building through apprenticeship and technical certification programs**

As the Life Sciences ecosystem grows and diversifies in the Region, it increasingly features more job opportunities that do not require four-year degrees. These occupations include lab technicians, software developers, quality assurance managers, and IT professionals. While these jobs may not require an advanced degree, they do require skills training and sometimes certification or other credentials.

Apprenticeships are important skills-building engagements that often lead to industry-recognized credentials and full-time employment. New York State and SUNY have been national leaders in developing registered apprenticeship programs that match candidates with paid apprenticeships in high-demand and competitive wage occupations. The SUNY Apprenticeship Program and the NY College Apprenticeship Network, for instance, have a record of success with a strong focus on Advanced Manufacturing and Healthcare. These apprenticeship programs could be adapted/expanded to include a focus on the Life Sciences.

Technical certification programs are courses that offer skills training and certification and can be supported through academic-industry partnerships.

ACTION 2A: Work with SUNY, industry organizations, and employers to design and build Life Sciences apprenticeship programs

A new workforce development strategy should consider initiatives to broadly increase the number of Life Sciences apprenticeship programs available in the Region. The program should be a combination of classroom learning followed by extensive on-the-job training.

Program Examples:

MassBioEd Apprenticeships



MassBioEd is a 501(c)(3) created in 2001 with funding from the Massachusetts Biotechnology Council, the Commonwealth of Massachusetts, and private industry. Its apprenticeship program offers a streamlined pathway for non-degree holders into the Life Sciences, combining technical training, on-site work experience, and income support. MassBioEd has worked with Life Sciences employers, including Bristol Myers Squibb, Pfizer, MassBiologics, and many others, to design two current apprenticeship programs for biomanufacturing technicians and clinical trial associates. These programs enable individuals to obtain foundational knowledge and industry-recognized skills in order to allow them to quickly transition into full-time employment.

ACTION 2B: Partner with academic institutions and industry organizations to develop and expand training and certification programs

Work with SUNY, industry organizations, and employers to identify evolving skills needs and design training and certification programs that prepare students and jobseekers for non-scientific employment in this sector and provide industry-recognized certification that facilitates employment opportunities.

Program Examples:

Laboratory Technician Training



SUNY Westchester Community College has, in the past, offered a Basics in Biotechnology class that was designed to prepare students who had one year of both biology and chemistry with the skills necessary to enter the field of laboratory work within the commercial Life Sciences sector.



Pace University in Westchester recently established its Building Careers in MedTech program to provide state-of-the-art training labs for technicians. The Westchester Biotech Project, a nonprofit industry organization, launched a pilot certificate program in 2020 called “Essential Skills in the Laboratory” geared to training students for careers as laboratory technicians. This program is currently on hiatus.



G. Business Services and Financial Services



G1. BUSINESS SERVICES AND FINANCIAL SERVICES



Business Services is the largest tradable sector in the Region and is characterized by high average wages and a relatively high representation of non-white and women workers. Due to their close relationship and correlation of skills needs, Business Services has been joined with the smaller sector of Financial Services to create a combined cluster comprising almost 43,000 jobs and five percent of the Region's private sector workforce.

Although these two sectors have not seen employment growth over the past decade, their stability, high average wages, and jobs at multiple skill levels make them priority sectors for the Region.

As reported in the 2022 MHREDC Annual Report, workforce development data collected from job seekers in the Region showed that management and administrative training were among the top skills local job seekers were interested in obtaining. The data also show that 39 percent of the job seekers stated they do not have the necessary degree and/or certificates required to find work, and 32 percent believed they lacked the necessary education or training. Over half of the job seekers in these sectors noted financial obstacles as the primary reason for not obtaining the necessary education. This suggests that Business Services and Financial Services would benefit from workforce development programs that provide opportunities for upskilling and continued education.

Employment:

- Business Services: 32,892 (Largest tradable sector in Region, with four percent of Region's employment)
- Financial Services: 10,050
- Total: 42,942 (five percent of Region's employment)
- Employment Growth (2011-2021): Decline of five percent
- Specialization (Location Quotient):
0.7 (Business Services)
1.0 (Financial Services)

Top Occupations (By number of jobs):

- Management Analysts
- Securities, Commodities, and Financial Services
- Software Developers
- General and Operations Managers
- Market Research Analysts and Marketing Specialists
- Accountants and Auditors
- Project Management Specialists
- Customer Service Representatives
- Sales Representatives
- Human Resources Specialists

Fastest Growing Occupations:

- Software Developers
- Market Research Analysts
- Project Management Specialists
- Sales Representatives
- Human Resources Specialists
- General and Operations Managers
- Loan Officers
- Financial Managers

Skills in Demand:

- Software Development
- Market Research
- Administrative Office Skills
- Accounting
- Paralegal Services
- Financial Analysis
- General Office Computer Skills
- Customer Service Skills
- Project Management Skills
- Communications and other Soft Skills

Examples of Existing Programs

Dutchess County Dept. of Community and Family Services (DCFS)' Youth Financial Literacy and Computer Training Program. DCFS collaborated with TEG Federal Credit Union, the Poughkeepsie Public Library District, the Dutchess County Workforce Investment Board, and the Dutchess Board of Cooperative Educational Services (BOCES) to offer an annual training program offering financial and computer skills for disadvantaged youth. The program provides budgeting and computer skills, in addition to financial literacy.

Center for Career Freedom (CCF). CCF is a 501(c)(3) New York State Education Department-certified business school that offers extensive computer training to nontraditional participants in the workforce, including persons with disabilities, persons reentering the workforce, veterans and seniors. Classes are offered both in-person in White Plains and remote. Courses include a portfolio of computer job skills and certification programs in Microsoft Office, Quickbooks Pro, and web development.

Nonprofit Westchester Learning Labs (NWLL). NWLL is a nonprofit membership organization that offers courses and workshops to provide participants with training in financial management, outcome management, management skills and other subject areas. Currently, Nonprofit Learning Labs' programs are offered free of charge through the support of the Westchester County government.

Rockland BOCES: Computer Skills for the Workplace. The Rockland County BOCES offers a course designed specifically to teach fundamental computer competencies needed for a wide range of office-based jobs. All courses are offered online, either instructor-led or self-paced, and focus on practical applications for software most common to the workplace.

G2. INSIGHTS

The consultant team conducted interviews with stakeholders representing the Business Services and Financial Services sector, including local economic development officials and nonprofit workforce development entities. Themes from the interviews included the following findings:

Many Jobseekers Lack Basic Computer Skills

- Stakeholders noted that basic office computer skills can be surprisingly lacking among many candidates. Community colleges can and do play an important role in teaching computer skills or helping candidates reentering the workforce to update their skills.
- More advanced Software Developer positions grew by 18 percent in Business Services in the Region over the past decade, presenting an opportunity for candidates that have the right skills.

Younger Employees and Jobseekers Need Training in Soft Skills

- Soft skills, such as communications skills and teamwork, are important for employees in Business Services and Financial Services. Yet, many younger employees and candidates are lacking in these skills.

Shortage of Workers for Mid-Level Banking Occupations

- Data show that Loan Officers were one of the fastest growing occupations in the Financial Services sector in the Region over the past decade as lower skilled banking jobs, such as teller positions have experienced a significant decline. Yet stakeholders in some counties (notably Sullivan) reported a shortage of skilled workers for these mid-level positions.

Growing Need for Legal and Accounting Services

- Stakeholders noted an increased need for legal and accounting services, both professional and paraprofessional (i.e., CPAs and attorneys, but also bookkeepers and paralegals).

Challenges Replacing Managerial Talent

- As senior managers retire from positions in these sectors some businesses face challenges attracting managerial talent to replace them.

Importance of Flexible/Hybrid Work Culture

- Unlike Advanced Manufacturing, Transportation & Logistics or Life Sciences, many jobs in Business Services and Financial Services can be conducted remotely or in hybrid mode. Employers must adapt to this new work culture to attract and retain younger workers, recognizing that the balance between on-site and remote work will continue to evolve.

G3. BUSINESS SERVICES AND FINANCIAL SERVICES: IMPLEMENTATION PLAN

STRATEGIES	ACTION ITEMS	STAKEHOLDERS
<p>1 Align education curricula with the needs of employers</p>	<p>1A. Establish and manage a clearinghouse among education providers and employers to update and align curricula to meet workforce needs</p>	<ul style="list-style-type: none"> • SUNY community colleges • Private education and training providers • Industry partners • County BOCES
<p>2 Expand the role of paid internships in the hiring process</p>	<p>2A. Support employers in expanding the role of paid internships and other trial-based work programs</p> <p>2B. Build upon successful Internship-to-Employment programs</p>	<ul style="list-style-type: none"> • SUNY community colleges • Private education and training providers • Industry partners
<p>3 Increase enrollment in training programs among underserved populations</p>	<p>3A. Conduct a review of continuing education services in the Region and create a publicly accessible inventory of skills-based training programs that focus on underserved populations</p> <p>3B. Build upon existing successful skills-based training models and expand them across Region</p>	<ul style="list-style-type: none"> • SUNY community colleges • Private education and training partners • Industry partners • County BOCES





BUSINESS SERVICES AND FINANCIAL SERVICES STRATEGY #1:

Align education curricula with the needs of Business Services and Financial Services employers

Employers in Business Services and Financial Services have noted a greater need for education and workforce training that includes software and computer skills, financial analysis, accounting, and paralegal skills. This objective requires sustained and effective coordination between education providers, employers, and workforce service organizations.

Some community colleges in the Region, such as SUNY Dutchess, currently offer a robust selection of Business Administration courses that address many skills needs, including classes in information processing, advertising, professional selling, marketing, and customer service, in addition to Excel and other Microsoft Office programs. Identifying successful models and expanding them across the Region is key.

ACTION 1A: Establish and manage a clearinghouse among education providers and employers to update and align curricula to meet workforce needs

A clearinghouse would help track continuing employer skills needs throughout the Region and identify specific steps education providers could take to better align their curricula to meet these needs. The clearinghouse may also facilitate ways in which employers can better partner with education and workforce service providers to prepare workers.

Program Examples:

SUNY Employer Partnership



Employer partnerships at community colleges in the Region can set an example on how to serve students in their career searches and meet employer's skills needs, including via non-degree programs. The White Plains Education and Training Center at Westchester Community College partners with local employers to offer corporate training, employee development training, and a certification center for assessments of industry recognized credentials. Training and education includes leadership development, business process improvements, customer service, and IT.



BUSINESS SERVICES AND FINANCIAL SERVICES STRATEGY #2:

Expand the role of paid internships to help build soft skills and better prepare candidates for employment

Many stakeholders report a lack of soft skills among job candidates and employees that is sometimes difficult to measure solely through a resume. Expanding the role of paid internships and other trial-based work programs is an effective means to evaluate job candidates and provide experiential training to students, including in the soft skills that are valuable in the Business Services and Financial Services sectors. Paid internships can allow students to better understand the culture of the workplace and provide opportunities for employers to more holistically evaluate a candidate's potential at a relatively low cost.

ACTION 2A: Support employers in expanding the role of paid internships and other trial-based work programs

An effective workforce development strategy should facilitate collaboration between education providers and employers to design paid internship and contract training programs that serve the dual purpose of evaluating candidates and training student workers.

Program Examples:

SUNY Internship Program



All SUNY community colleges in the Region have well developed internship programs that connect students with paid internships. These internships are designed to provide students with a realistic view of workplace culture and expectations, integrate academic preparation with professional challenges, and help students build their professional networks. Internship programs can be expanded to better address the needs of employers in Business Services and Financial Services and with a focus on in-demand skills, including accounting, marketing, financial management, customer service, paralegal studies, and information technology.



ACTION 2B: Build upon successful Internship-to-Employment programs

Internship-to-Employment programs provide short-term work opportunities to college students with a specific aim of converting the internship to full-time employment. Successful Internship-to-Employment programs augment the internship with professional development and workplace skills. Subsidies for intern wages would incentivize employers to participate in the program.

Program Examples: CUNY 12E



In New York City, CUNY's 12E program provides paid eight-week internships to recent CUNY graduates that are fully subsidized by CUNY. If the employer makes an offer of full-time employment at the end of the internship, then the 12E program will partially subsidize the first 24 weeks of the participant's salary. This program is supported through grants from third-party partners, including BNY Mellon, the Robin Hood Foundation, the Tiger Foundation, and the Brooklyn Navy Yard Development Corp.





BUSINESS SERVICES AND FINANCIAL SERVICES STRATEGY #3:

Increase enrollment among underserved populations in skills-based training programs

A disproportionate share of the Region's economically vulnerable workers face one or more barriers to employment, from low educational attainment to limited English proficiency. Educators and workforce development professionals in the Region offer numerous basic adult and continuing education programs, but lack coordination in design and delivery. Additionally, greater efforts should be made in linking basic adult and continuing education to technical programs that are often the next step in the career preparation ladder. A successful workforce development strategy may coordinate the services of various stakeholders that serve the economically vulnerable. It may also utilize the Region's transportation and library systems to enhance these workers' physical and digital access to education opportunities.

ACTION 3A: Conduct a review of continuing education services in the Region and create a publicly accessible inventory of skills-based training programs that focus on underserved populations

A thorough review of existing education and skills-based training services in the Region will allow for the identification of potential integration opportunities in order to create a more comprehensive network of providers that delivers more effective services through information and resource sharing.

ACTION 3B: Build upon existing successful skills-based training models and expand them across Region

Programs such as the Rockland BOCES "Essential Computer Skills" course are designed specifically to teach the most current software applications that are needed in the workplace. However, this program currently only has one instructor and its resources are limited. The Center for Career Freedom teaches office technology skills with a focus on underrepresented segments of the workforce, yet its only location is in Westchester County. Programs such as these can be built upon, resourced, and expanded to serve the wider Region.

Appendices

APPENDIX A. BACKGROUND ANALYSIS

A.1. INTRODUCTION

Appendix A provides a background assessment of the Region’s demographics and labor markets. The purpose of this analysis is to supplement work conducted as part of the Inventory with additional demographic and economic data to identify and further confirm the regional tradable sectors that are the highest priority for the MHREDC. It evaluates industry sectors using Lightcast – a labor market data provider⁴.

Labor data are generally organized according to classification systems that correspond with industries, as defined by the North American Industry Classification System (NAICS), or occupations, as defined by the Standard Occupational Code (SOC) system. The research outlined in Appendix A augments NAICS and SOC information with public datasets that support an evaluation of additional characteristics including:

- Full-time employment
- Employee earnings
- Typical educational requirements for occupations
- Diversity of workforce in industry sectors, specifically race and gender

Based on the previous Inventory, and the supplemental tradable sector analysis of this Report, MHREDC selected three employment sectors as priorities for workforce investment. Those sectors are as follows:



**ADVANCED
MANUFACTURING
AND
TRANSPORTATION
& LOGISTICS**



LIFE SCIENCES



**BUSINESS
SERVICES AND
FINANCIAL
SERVICES**

4. Lightcast aggregates data from a number of government sources including U.S. Department of Labor (USDOL) and New York State Department of Labor’s (NYSDOL) Quarterly Census of Employment and Employee earnings (QCEW), Bureau of Labor

A.2. DEMOGRAPHICS AND LABOR ANALYSIS

The demographic and labor analysis summarized existing conditions in the Region as they pertain to workforce development. The analysis assessed labor force, age distribution, median area income, educational attainment, industry trends, largest occupations. Below is a summary of key findings.

Demographics

- As of the 2020 US Census, the seven-county Region has a population of approximately 2,322,000. It remained steady over the past decade, with only a 1.4 percent growth rate.
- Approximately 78 percent of the Region's population is white, more than New York State (69.1 percent).
- The median age in the Region is 40.5, compared to 39.8 in New York State as a whole.
- Household median income in the Region is \$94,650, compared to \$74,315 in New York State. Within the Region, this ranges from Westchester's household median income of \$110,710 to Sullivan's Median Household Income of \$60,430. Both Sullivan and Ulster Counties have household median incomes below the statewide household median income.
- 43.4 percent of the Region's population 25 years or older has a Bachelor's degree or higher, compared to 37.5 percent for New York State; however, this ranges widely from county to county, with 54.4 percent in Westchester County and 41.9 percent in Rockland County having a Bachelor's degree or higher compared to 26.6 percent in Sullivan County and 30.8 percent in Orange County. Dutchess and Ulster Counties are below the statewide percentage of 37.5 as well.

Labor

- There are currently 726,900 private sector jobs in the Region. Between 2016 and 2021, private sector employment in the region declined by 4.1 percent, or 31,440 jobs.
- The largest tradable sectors⁵ for employment in the Region are Business Services (3.8 percent of total jobs), Advanced Manufacturing (2.0 percent of total jobs), Agritourism and Craft Breweries (1.6 percent of total jobs), Financial Services (1.2 percent of total jobs), Marketing (1.1 percent of total jobs), and Life Sciences (1.1 percent of total jobs).
- Location Quotient shows that, compared to the national average, the Region has a higher concentration of employment in the Advanced Manufacturing, Jewelry, Marketing, Transportation & Logistics, and Life Sciences sectors. The Region is about equal to the national average in the concentration of employment in Agritourism and Craft Breweries, Financial Services, and Video Production. While Business Services is the largest
- While Business Services is the largest tradable sector in the Region in terms of employment, its Location Quotient is below 1.0, meaning that the Region's concentration of employment in this sector is below the national average.
- Shift share is a standard regional analysis method that attempts to determine how much of regional job growth can be attributed to national trends and how much is due to unique regional factors. A negative shift share means that an industry sector is underperforming as compared to national trends while a positive shift share means that an industry is overperforming. As of 2021, Transportation & Logistics and Video Production are the only tradable sectors in the Region that are overperforming as compared to national trends.

Statistics (BLS) research, the U.S. Census, the Equal Employment Opportunity Commission (EEOC) and additional employment and wage statistics, including job posting analytics.

5. Tradable sectors are defined as sectors whose output, in terms of goods and services, can be sold outside their region. By contrast, local sectors are sectors whose output, in terms of goods and services, is sold only within their region

TABLE 1. TOP TEN TRADABLE SECTORS IN THE MID-HUDSON REGION BY EMPLOYMENT

Industry Cluster	Total Jobs, 2021	% Change in Jobs, 2011-21	% Change in Jobs, 2021-	Average Earnings, 2021	Location Quotient, 2021	Shift Share, 2021	% Minority, 2021	% Women, 2021	Total New Hires	Typical Education
All industries	875,263	1%	7%	\$90,986	1.06	(81,527)	41%	51%	592,000	Hs. Dip
Life Sciences	9,284	43%	18%	\$313,346	2.16	(309)	13%	48%	3,895	Bach. Deg
Agritourism and Craft Breweries	14,258	-6%	45%	\$40,439	1.22	(303)	35%	49%	23,405	HS. Dip
Advanced Manufacturing	17,405	-33%	-16%	\$122,989	2.94	(10,914)	35%	34%	5,383	HS. Dip
Financial Services	10,050	-6%	3%	\$243,764	0.97	(2,031)	29%	46%	3,582	Bach. Deg
Marketing	9,473	-4%	5%	\$93,735	1.80	(962)	25%	54%	4,984	Bach. Deg
Business Services	32,892	-5%	0%	\$123,324	0.66	(11,528)	36%	46%	21,848	Bach. Deg
Transportation and Logistics	3,407	36%	19%	\$107,623	2.06	710	38%	21%	1,881	HS. Dip
Jewelry	364	-37%	-24%	\$84,750	2.88	(49)	45%	39%	210	HS. Dip
Video Production	566	22%	85%	\$160,522	1.02	14	25%	42%	892	Bach. Deg

Source: Lightcast, 2022

A.3. PRIORITY TRADABLE SECTOR PROFILES



Advanced Manufacturing and Transportation & Logistics

Advanced Manufacturing and Transportation & Logistics represents almost 21,000 jobs in the Region. While Advanced Manufacturing and Transportation & Logistics are two independent industry sectors, they have been combined in this report because of the close relationship and connections that exist between them. Transportation & Logistics is integral to Advanced Manufacturing’s supply chain, in addition to getting the manufactured product to the customer. Both Advanced Manufacturing and Transportation & Logistics have been greatly impacted by new technologies and required skill sets over the past decade.

Average wages in the combined cluster are higher than the average wages for all private sector jobs in the Region and most jobs only require a high school diploma, though there is a growing need for software developers, and sales representatives for technical and scientific products that do require a Bachelor’s degree and pay higher wages. Many jobs in transportation require a Commercial Driver’s License (CDL). Despite the relatively low barriers to entry, employment diversity in this sector falls below the Region’s average with 36 percent non-white and only 29 percent women.

Advanced Manufacturing has seen a 33 percent decline in employment in the Region since 2011 while employment in Transportation & Logistics in the Region has grown by 36 percent and is projected to grow by another 19 percent over the next 10 years.

The top occupations in the Region for Advanced Manufacturing and Transportation, & Logistics are outlined in Table 2.



TABLE 2. TOP TEN OCCUPATIONS IN ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS

Top 10 Occupations in Cluster	Total Jobs, 2021	% Change in Jobs, 2021-21	% of Industry Cluster, 2021	Hourly Wage, 2021	Min. Level Edu.	Typ. Work Exp.	On-the-Job Training
Electrical Assemblers	1,252	(8%)	7.2%	\$18.31	High school diploma or equivalent	None	Moderate-term on-the-job training
Software Developers	922	(32%)	5.3%	\$61.13	Bachelor's degree	None	None
Miscellaneous Assemblers and Fabricators	694	(43%)	4.0%	\$18.08	High school diploma or equivalent	None	Moderate-term on-the-job training
Heavy & Tractor-Trailer Truck Drivers	583	104%	3.3%	\$25.37	High school diploma or equivalent	None	Moderate-term on-the-job training
Production, Planning, and Expediting Clerks	540	(20%)	3.1%	\$58.70	Bachelor's degree	5 years or more	None
General and Operations Managers	413	(34%)	2.4%	\$22.67	High school diploma or equivalent	None	Moderate-term on-the-job training
Inspectors, Testers, Sorters, Samplers, and Weighers	409	(21%)	2.4%	\$32.83	High school diploma or equivalent	None	Moderate-term on-the-job training
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	408	30%	2.3%	\$51.19	Bachelor's degree	None	Moderate-term on-the-job training
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	400	(37%)	2.3%	\$35.11	High school diploma or equivalent	Less than 5 years	None

Source: Lightcast, 2022



Life Sciences

Data from Lightcast shows that Life Sciences was the fastest growing tradable sector in the Region over the past decade, having grown 43 percent between 2011 and 2021. It is projected to experience continued robust growth over the next ten years, with an 18 percent increase in jobs. The Region is home both to Regeneron, based in Westchester County and New York State's largest employer in the Life Sciences, in addition to Pfizer's Research and Development facilities in Rockland County. Both Regeneron and Pfizer have announced significant expansion and employment growth in the Region over the next five years.

Average earnings in the Life Sciences sector are the highest of all tradable sectors in the Region, though most jobs require Bachelor's or post-graduate degrees. This is particularly true for early-stage and mid-stage Life Sciences companies where there are few opportunities for workers with only high school diplomas. However, there are opportunities for high school graduates at larger and more mature Life Sciences companies, which are in need of lab technicians and administrative support staff.

Employment in this sector is less diverse than in other top tradable sectors in the Region, with only 13 percent of employees being non-white, though the sector has a relatively high percentage of women employees, at 48 percent.

The top occupations for Life Sciences in the Region are outlined in Table 3.



TABLE 3. TOP TEN OCCUPATIONS IN LIFE SCIENCES

Top 10 Occupations in Cluster	Total Jobs, 2021	% Change in Jobs, 2011-21	% of Industry Cluster, 2021	Hourly Wage, 2021	Min. Level Edu.	Typ. Work Exp.	On-the-Job Training
Medical Scientists, Except Epidemiologists	448	(15%)	4.8%	\$49.14	Doctoral or professional degree	None	None
Software Developers	446	118%	4.8%	\$61.13	Bachelor's degree	None	None
General and Operations Managers	337	124%	3.6%	\$58.70	Bachelor's degree	5 years or more	None
Clinical Laboratory Technologists and Technicians	260	32%	2.8%	\$37.95	Bachelor's degree	None	None
Executive Secretaries and Executive Administrative Assistants	246	23%	2.6%	\$35.87	High school diploma or equivalent	Less than 5 years	None
Project Management Specialists	240	311%	2.6%	\$46.90	Bachelor's degree	None	None
Biological Technicians	229	172%	2.5%	\$29.14	Bachelor's degree	None	None
Natural Sciences Managers	211	252%	2.3%	\$82.93	Bachelor's degree	5 years or more	None
Life, Physical, and Social Science Technicians, All Other	162	(19%)	1.7%	\$31.80	Associate's degree	None	None
Computer and Information Systems Managers	149	102%	1.6%	\$91.76	Bachelor's degree	5 years or more	None

Source: Lightcast, 2022



Business Services and Financial Services

Business Services is the largest tradable sector in the Region and is characterized by high average wages and relatively high representation of minorities and women in its workforce, though still below the average representation for all industries in the Region.

Due to their close relationship and correlation of skills needs, Business Services has been joined with the smaller sector of Financial Services to create a combined cluster comprising almost 43,000 jobs and five percent of the Region's private sector workforce.

Despite their size, both Business Services and Financial Services are mature sectors that respectively saw a five and six percent decrease in jobs in the Region over the past decade. While the number of jobs in Financial Services is expected to see a small increase of three percent over the next ten years, there is little growth projected for Business Services.

Average annual earnings for these two sectors are among the highest for tradable sectors in the Region,

surpassed only by Life Sciences and Video Production. Most jobs require a Bachelor's degree, however there are opportunities for workers with a high school diploma, including tellers, customer service representatives, executive administrative assistants and first line office supervisors and administrative support workers.

The top occupations in the Region for Business Services and Financial Services are outlined in Table 4.



TABLE 4. TOP TEN OCCUPATIONS IN BUSINESS SERVICES AND FINANCIAL SERVICES

Top 10 Occupations in Cluster	Total Jobs, 2021	% Change 2011-21	% of Industry Cluster, 2021	Hourly Wage, 2021	Min. Level Edu.	Typ. Work Exp.	On the Job Training
Management Analysts	1,965	(1%)	5.4%	\$45.96	Bachelor's Degree	Less than 5 years	None
Securities, Commodities, and Financial Services Sales Agents	1,748	9%	17.4%	\$57.62	Bachelor's degree	None	Moderate-term on-the-job training
Software Developers	1,733	18%	4.8%	\$61.06	Bachelor's Degree	None	None
General and Operations Managers	1,411	9%	3.9%	\$58.63	Bachelor's Degree	5 years or more	None
Market Research Analysts and Marketing Specialists	1,271	64%	3.5%	\$35.33	Bachelor's Degree	None	None
Accountants and Auditors	1,262	5%	3.5%	\$44.85	Bachelor's Degree	None	None
Project Management Specialists	1,013	265%	2.8%	\$46.86	Bachelor's Degree	None	None
Customer Service Representatives	885	(9%)	2.4%	\$19.94	High school diploma or equivalent	None	Short-term on-the-job training
Sales Representatives of Services (Except Advertising, Insurance, Financial Services, and Travel)	855	39%	2.4%	\$32.66	High school diploma or equivalent	None	Moderate on-the-job training
Human Resource Specialists	814	38%	2.3%	\$36.82	Bachelor's Degree	None	None

Source: Lightcast, 2022

APPENDIX B. SECTOR DEFINITIONS

The MHREDC 2022 Regional Workforce Inventory evaluated broader target industry sectors based on 2-digit North American Industry Classification System (NAICS) codes. The consultant team's subsequent analysis assessed only tradable sectors. NAICS sectors can be sorted into tradable sectors (or “tradable clusters”) and local sectors. Tradable sectors are groups of related industries that serve markets beyond the region in which they are located. According to the US Cluster Mapping Project, traded sectors are “... free to choose their location of operation and are highly concentrated in a few regions, tending to only appear in regions that afford specific competitive advantages. Since traded sectors compete in cross-regional markets, they are exposed to competition from other regions.

For the purposes of this report, tradable sector definitions were primarily derived from Lightcast, with stakeholder feedback and consultant team knowledge.

TABLE 5. ADVANCED MANUFACTURING AND TRANSPORTATION & LOGISTICS NAICS

SUB-SECTOR	NAICS CODE
Petroleum and Coal Products Manufacturing	3241
Basic Chemical Manufacturing	3251
Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	3253
Pharmaceutical and Medicine Manufacturing	3254
Other Chemical Product and Preparation Manufacturing	3259
Clay Product and Refractory Manufacturing	3271
Other Nonmetallic Mineral Product Manufacturing	3279
Iron and Steel Mills and Ferroalloy Manufacturing	3311
Alumina and Aluminum Production and Processing	3313
Foundries	3315
Industrial Machinery Manufacturing	3332
Commercial and Service Industry Machinery Manufacturing	3333
Engine, Turbine, and Power Transmission Equipment Manufacturing	3336
Other General Purpose Machinery Manufacturing	3339
Computer and Peripheral Equipment Manufacturing	3341
Communications Equipment Manufacturing	3342
Audio and Video Equipment Manufacturing	3343
Semiconductor and Other Electronic Component Manufacturing	3344
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	3345
Manufacturing and Reproducing Magnetic and Optical Media	3346
Electric Lighting Equipment Manufacturing	3351
Household Appliance Manufacturing	3352
Electrical Equipment Manufacturing	3353
Other Electrical Equipment and Component Manufacturing	3359
Motor Vehicle Manufacturing	3361
Motor Vehicle Body and Trailer Manufacturing	3362
Motor Vehicle Parts Manufacturing	3363
Aerospace Product and Parts Manufacturing	3364
Railroad Rolling Stock Manufacturing	3365
Ship and Boat Building	3366
Other Transportation Equipment Manufacturing	3369

SUB-SECTOR	NAICS CODE
Medical Equipment and Supplies Manufacturing	3391
Other Miscellaneous Manufacturing	3399
Scheduled Air Transportation	4811
Nonscheduled Air Transportation	4812
General Freight Trucking	4841
Specialized Freight Trucking	4842
Charter Bus Industry	4855
Support Activities for Air Transportation	4881
Support Activities for Road Transportation	4884
Freight Transportation Arrangement	4885

TABLE 6. LIFE SCIENCES NAICS

SUB-SECTOR	NAICS CODE
Medicinal and Botanical Manufacturing	325411
In-Vitro Diagnostic Substance Manufacturing	325413
Biological Product (except Diagnostic) Manufacturing	325414
Irradiation Apparatus Manufacturing	334517
Dental Equipment and Supplies Manufacturing	339114
Dental Laboratories	339116
Research and Development in Biotechnology (except Nanobiotechnology)	541714
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	541715
Offices of All Other Miscellaneous Health Practitioners	621399
Medical Laboratories	621511

TABLE 7. BUSINESS SERVICES AND FINANCIAL SERVICE NAICS

SUB-SECTOR	NAICS CODE
Taxi Service	485310
Limousine Service	485320
All Other Transit and Ground Passenger Transportation	485999
Data Processing, Hosting, and Related Services	518210
Savings Institutions	522120
Credit Card Issuing	522210
Sales Financing	522220
Consumer Lending	522291
Real Estate Credit	522292
All Other Nondepository Credit Intermediation	522298
Mortgage and Nonmortgage Loan Brokers	522310
Financial Transactions Processing, Reserve, and Clearinghouse Activities	522320
Other Activities Related to Credit Intermediation	522390
Investment Banking and Securities Dealing	523110
Securities Brokerage	523120
Commodity Contracts Dealing	523130
Commodity Contracts Brokerage	523140
Miscellaneous Intermediation	523910
Portfolio Management	523920
Investment Advice	523930
Trust, Fiduciary, and Custody Activities	523991
Miscellaneous Financial Investment Activities	523999
Other Financial Vehicles	525990
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	533110
All Other Legal Services	541199
Payroll Services	541214
Architectural Services	541310
Landscape Architectural Services	541320
Engineering Services	541330
Drafting Services	541340
Custom Computer Programming Services	541511
Computer Systems Design Services	541512

SUB-SECTOR	NAICS CODE
Computer Facilities Management Services	541513
Other Computer Related Services	541519
Administrative Management and General Management Consulting Services	541611
Human Resources Consulting Services	541612
Process, Physical Distribution, and Logistics Consulting Services	541614
Other Management Consulting Services	541618
Other Scientific and Technical Consulting Services	541690
Translation and Interpretation Services	541930
All Other Professional, Scientific, and Technical Services	541990
Offices of Other Holding Companies	551112
Corporate, Subsidiary, and Regional Managing Offices	551114
Facilities Support Services	561210
Employment Placement Agencies	561311
Executive Search Services	561312
Professional Employer Organizations	561330
Telephone Answering Services	561421
Telemarketing Bureaus and Other Contact Centers	561422
Convention and Trade Show Organizers	561920

APPENDIX C. PHOTO CREDITS

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APPENDIX D. CONTRIBUTORS AND SUPPORTERS

BJH Advisors and Workforce Opportunity Services would like to thank the following individuals and organizations for their support and/or contributions to this report.

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FALA Technologies
Hudson Valley Council of Industry
Hudson Valley Pattern of Progress
Magnetic Analysis Corp.
Orange County Office of Economic Development
RBW Lighting
Regeneron
Rockland County Office of Economic Development and Tourism
Packaging Technologies and Inspection (PTI)
Sapience Therapeutics
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