2023

GROWTH & DIVERSIFICATION PLAN

GO VIRGINIA REGION 2

OUTREACH & INTERNATIONAL AFFAIRS
CENTER FOR ECONOMIC AND COMMUNITY ENGAGEMENT
VIRGINIA TECH

Introduction

GO Virginia's objectives, as set by the state, are simple and provide a clear path for action. The program seeks to grow jobs that pay higher than the regional average wage, primarily through investment that is new to Virginia. This requires a focus on industries with high growth potential, featuring in-demand occupations with higher wages.

The 2023 Growth and Diversification Plan Review provides a roadmap for utilizing GO Virginia funding for projects across Region 2, which includes the Lynchburg, New River Valley, and Roanoke-Alleghany sub-regions. Each of these areas has a strong history of local cooperation, and some experience with interregional collaboration, primarily between the New River and Roanoke Valleys. Together, they all share many economic similarities: traditional industry strengths in manufacturing, transportation, and agriculture; emerging technology sectors such as green energy and automation; mixed urban and rural characteristics; and higher education and healthcare as economic and employment drivers.

This plan documents the socio-economic trajectory of this region, particularly the concentration of different industries across this footprint, their job growth rates compared to the nation, their contributions to gross regional product, the number of higher-than-average wage jobs available in these industries, and assets unique to the region that drive opportunity. The analysis of that data identifies four target "clusters"–or geographic concentrations of businesses with common markets, suppliers, technologies, and workforce needs. These four interrelated clusters offer the greatest potential for sustainable, scalable, future growth in the region.

Priority Industry Clusters

- Transportation and Autonomy Manufacturing
- Materials and Machinery Manufacturing
- Life Sciences and Biotechnology
- IT, Engineering, and Emerging Tech

Types of development work we fund:


Talent


Entrepreneurship


Cluster Scale Up


Sites and Infrastructure

GO VIRGINIA REGION 2

Summary of Target Clusters

2022 Wages by Target Cluster and Urbanization[1]

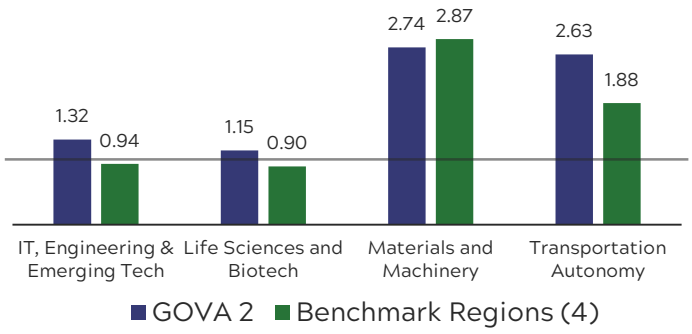
The average wage for workers in GOVA Region 2 is $24.85. Urban areas have higher wages than rural areas with average wages of $25.63 and $22.74, respectively. All target clusters have higher average wages than the regional average, with a combined average of $34.18.

Cluster	Entire Region	Urban	Rural
All Industries	**$24.85**	**$25.63**	**$22.74**
Materials Machinery	$38.28	$34.21	$44.96
Transportation Autonomy	$33.77	$33.95	$33.49
Life Sci and Healthcare	$31.83	$33.24	$23.32
IT, Engineering, & Emerging Tech	$39.85	$39.88	$39.64

2022 GOVA Region 2 Target Industry Clusters[2]

Transportation and Autonomy	Materials and Machinery	Life Sciences and Biotechnology	IT, Engineering, & Emerging Tech
10,448 Jobs	9,830 Jobs	26,414 Jobs	13,349 Jobs
• Vehicles (eg. Trucks) • Vehicle Parts • Automation (Sensors, Controls, Displays)	• Chemicals • Plastics • Metalworking and Machinery	• Biopharma and Medical Devices • Life Sciences R&D • Living Lab: Healthcare System	• IT & Cybersecurity • Computer and Electrical Component Manufacturing • Engineering Services

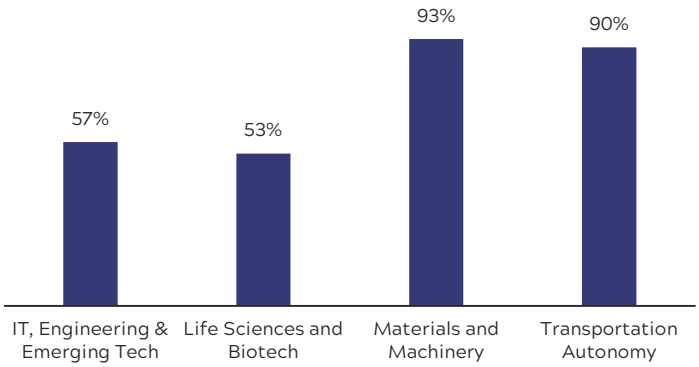
2022 Target Cluster Location Quotients[3]



Location Quotient (LQ) measures the concentration of cluster jobs compared to the nation. Values of 1.2 or above indicate greater concentration and a comparative advantage in the specific cluster. Our existing manufacturing clusters remain strong. Our two emerging clusters, Life Sciences and IT, have demonstrated growth in LQ since 2017. In 2017, GOVA Region 2 also identified peer regions[4] for each target cluster, based on similar economic indicators and assets. Today, the region has higher LQ levels than most prominent peer regions.

2022 Exported Sales by Cluster[5]

The GOVA program places large emphasis on traded industries of the economy, those with higher levels of exported sales. Exported sales are valuable because they bring new capital into the economy thereby promoting growth. As shown to the right, more than 50% of sales for GOVA 2 target clusters are exported; however, these clusters also include many supply chain industries that support the cluster through their in-region production and skill-aligned workforce.



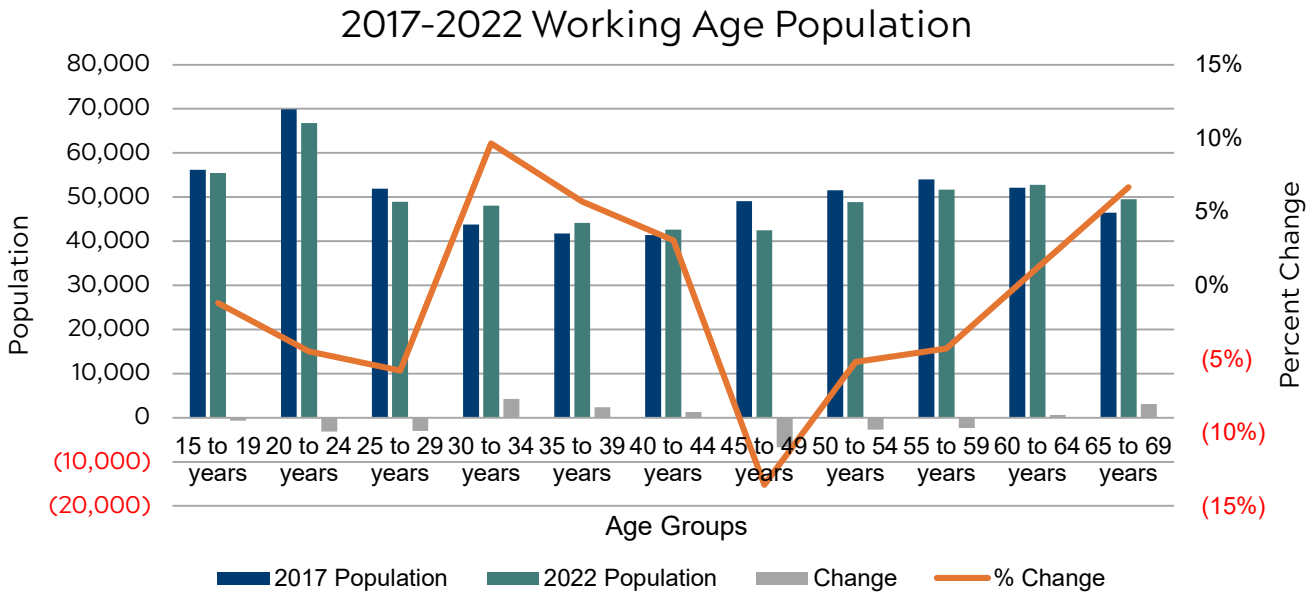
(4) **Peer regions:** Greenville-Anderson SC MSA for Materials and Machinery & Transportation Autonomy; Chattanooga TN-GA MSA for IT and Emerging Tech; and Birmingham-Hoover AL MSA for Biotech-Life Sciences

1, 2, 3, 5 Lightcast Datarun 2023.3

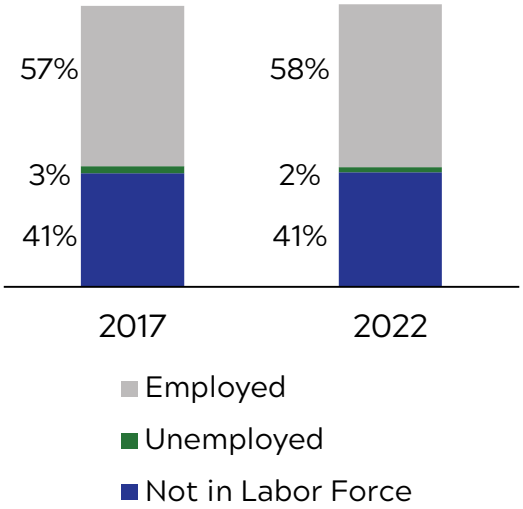
State of the Regional Economy

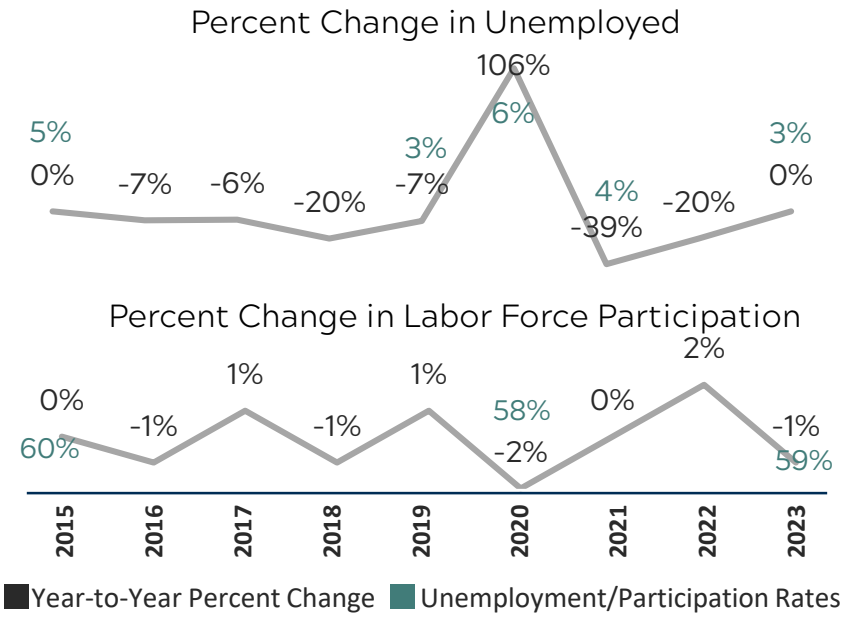
Demographics

As of 2022, GOVA Region 2's population has experienced **a modest increase of 0.2% since 2017**, equivalent to a growth of 1,461 individuals. This growth is slower that state and national rates, which were 6% and 5% respectively. Looking ahead, projections suggest that the population will continue to grow at the same rate through 2027, suggesting some **need to attract working age adults and families** if the region is to significantly grow demographically and economically.



Early-to-mid career adults in their 30s represent the highest proportional increase of among age groups, at 7-10%. This growth may be fueled by the region's expanding higher education institutions and technology-forward industry growth. The second highest increase aligns with national trends, an over 5% increase in seniors age 65+ years since 2017. This demographic shift brings unique challenges and opportunities related to healthcare, social services, and senior living industries. However, the region also experienced a decrease in the number of mid-to-late career residents, those in their 40s and early 50s. This dip of about 13% indicates a **possible workforce gap in supervisory and middle management positions**.

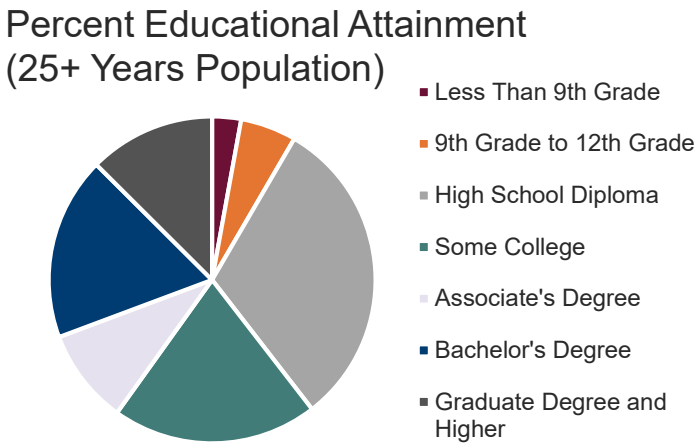


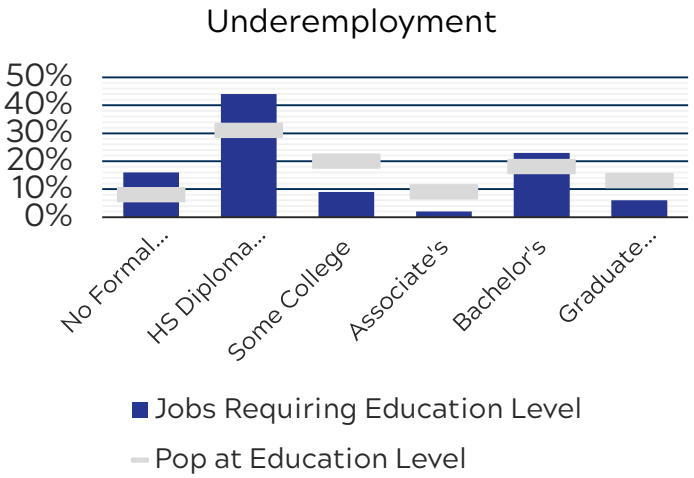


State of the Regional Economy

Demographics

The region has witnessed an increase in the proportion of residents with post-secondary degrees. However, this demographic data may misrepresent the proportion of available workers, as many with bachelor degrees and higher may be attending one of the region's many higher education institutions. Interestingly, when looking at underemployment, there is distinct need to fill jobs that require no formal education or only a high school degree. These tend to be entry-level jobs but may require some degree of technical skills related to IT and math. Currently, there is very little incentive among typical entry-level workers to fill these lower wage jobs.





Educational attainment in urban counties is relatively close to the national average, with 20.7% of residents possessing a bachelor's degree (0.1% below the national average) and 8.9% holding an associate degree (0.1% above the national average). Educational attainment levels within the rural counties show a greater difference when compared to national percentages, as 14.2% of residents possess a bachelor's degree (6.6% below the national average), while 10.2% hold an associate degree (1.4% above the national average).

Key Workforce Challenges Inhibiting Economic Growth

The key factor that seems to be preventing greater economic growth and development in the Region 2 is limited access to a full-time skilled workforce. Industry stakeholders agree that if Region 2 is to enhance its economic vibrancy, **we must address challenges that prevent existing workforce from participating in the economy and that dissuade potential workers from coming to the area**.

Childcare

Average childcare for infants and toddlers in GOVA2 costs $7.8-$10.3K per child annually. That is 10-13% of median family income needed per child.[5] Organizations advocating for quality and affordable early childcare include New River Valley Community Services and United Ways of SWVA and Roanoke Valley.

Housing

Twelve percent of households face overcrowding or lack of plumbing/ kitchen facilities.[6] Twenty-one percent have rents at 50% or more of their incomes.[7] Active affordable and quality housing organizations include Habitat for Humanity, Total Action for Progress, New River Valley Community Action, and United Way of SWVA.

Behavioral Health

The national ratio of people per mental health provider is 340:1. All GOVA2 counties and independent cities except Montgomery County and the City of Roanoke have higher ratios, ranging 423:1 to 3964:1.[6] Blue Ridge Behavioral Healthcare and New River Valley Community Service are just two organizations providing services.

1, 2 Lightcast Datarun 2023.3
5 US Dept of Labor. 2023 National Database of Childcare Prices
6 University of Wisconsin. County Health Rankings and Roadmap 2023
7 2020 5-Year American Community Survey. Table B25070

Shared Occupations[1]

Shared occupations are occupations which are in high demand across different industries. The table below lists the top 15 shared occupations across GOVA Region 2. Average annual openings and turnover rate are good measures of how much demand there is for each respective occupation.

The highlighted rows draw special attention to (a) occupations which don't require a four-year bachelor's degree but rely more on technical skills and (b) occupations which highlight the demand for supervisory or managerial skills. This region is losing age groups and talent that would take middle management jobs. We compared adjusted cost of living (COL) hourly wages between GOVA2 and other 10 other MSAs such as Raleigh NC, Charlottesville VA, Richmond VA, and Jacksonville FL. **Adjusted COL wages for white collar middle management jobs in GOVA2 are paid $2-$4 less per hour compared to other MSAs. Blue collar middle management positions are paid $1-$2.30 less per hour compared to other MSAs.**

Technical Skills Managerial Occupations

Description	2021 Jobs	2021-2028 % Job Change	Avg. Annual Openings	2022 Turnover Rate
Registered Nurses	7,946	9%	619	27%
General and Operations Managers	5,567	14%	633	46%
First-Line Supervisors of Office and Administrative Support Workers	3,818	(0%)	428	56%
Accountants and Auditors	2,754	5%	272	41%
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,559	15%	335	38%
First-Line Supervisors of Production and Operating Workers	2,262	12%	290	44%
Industrial Machinery Mechanics	1,904	9%	210	32%
Electricians	1,830	8%	243	52%
First-Line Supervisors of Mechanics, Installers, and Repairers	1,605	5%	168	44%
Human Resources Specialists	1,577	9%	179	68%
Software Developers	1,564	27%	182	30%
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1,500	13%	202	64%
Computer User Support Specialists	1,478	7%	138	42%
Machinists	1,399	8%	187	42%

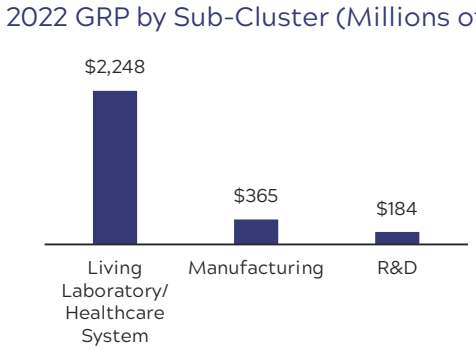
1 Lightcast Datarun 2023.2

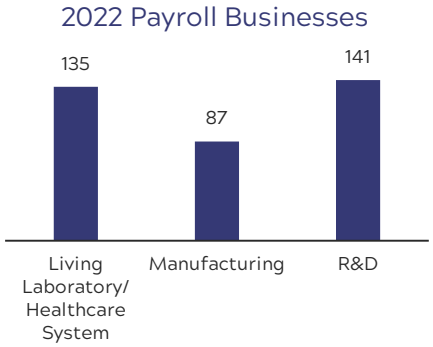
Life Sciences & Biotechnology

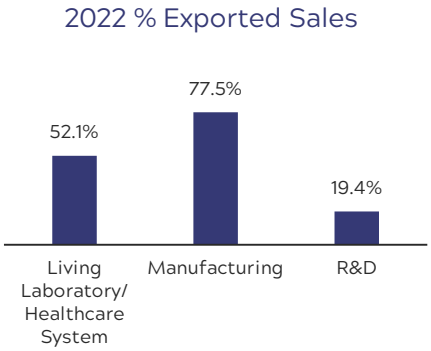
The area Life Sciences and Biotechnology cluster is rooted in a history of research, development, and entrepreneurship. The work focuses on disease prevention and treatment, health and aging, veterinary medicine, and plant sciences. The cluster is nestled on a strong foundation of higher education research assets such as the Fralin Life Science Institute with over 120 affiliated faculty, Fralin Biomedical Research Institute at Virginia Tech Carilion with over 500 faculty, students, and staff, and Radford University Carilion. With these and other assets including the City of Roanoke's Biotech Project, Roanoke Innovation Corridor, RAMP, VTC Ventures, and workforce programs like that at Virginia Western Community College, the cluster has drawn large businesses interests to the region, such as Johnson & Johnson, and has fostered as many as eight new life science startups since 2010. From this research and through partnerships, the region has built a private cluster employing over 27,000 individuals with average earnings of $80,710 per job and contributing $2.8 billion to GRP. This cluster comprises 1) pharmaceutical, biological product, and medical device manufacturers; 2) private research and development firms in life sciences, bio- and nanotechnology; and 3) a living laboratory for public and private research and education entities across the healthcare system; these include primarily hospitals and nursing and continuing care facilities that serve those in the region but also draw over fifty percent of their users from outside GOVA region 2. Companies include but are not limited to Abbot Laboratories, Acomhal Research, Bauch & Lomb, BEAM Diagnostics, Carilion Clinic Innovations, CytoRecovery, Intuit Surgical, Landos Biopharma, Luna Innovations, Novozymes Biological, Solstas Lab Partners, P1 Technologies, and Tiny Cargo.

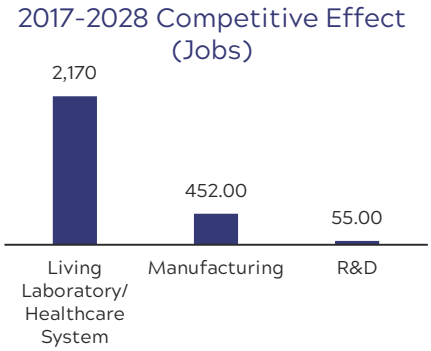
Cluster and Subcluster Performance

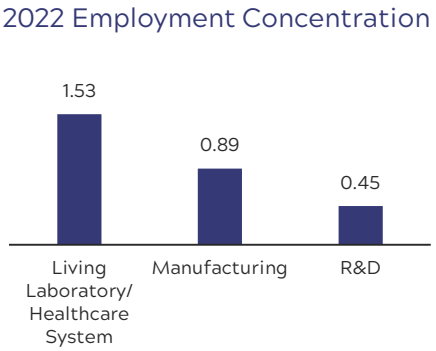
Life Sciences & Biotechnology is the largest of the target clusters in terms of GRP ($2.80B). There were a total of 363 payroll businesses with the vast majority (276) being found in Living Laboratories / Healthcare Systems and R&D.











Cluster and Subcluster Jobs

Subcluster	2017 Jobs	2022 Jobs	2028 Jobs	Job Change 2017-2022	Projected Change 2022-2028
Living Laboratory/ Healthcare System	23,365	23,619	26,010	1.1%	10.1%
Manufacturing	1,309	1,562	1,971	19.3%	26.2%
R&D	933	1,234	1,350	32.3%	9.4%

1 Lightcast Datarun 2023.2

Life Sciences & Biotechnology

Top Ten In-Demand Occupations

Compared to other MSAs, most of these occupations pay $1-$4.50 less in hourly adjusted COL wages. This is particularly true for Industrial Engineers and Chemists. GOVA2 does pay higher adjusted COL wages for Biological and Medical Scientists.

SOC	Description	Jobs in Region (2022)	Jobs Change (22-28)	Avg. Annual Openings	2022 Turnover Rate	Avg. Earnings	Workers Over 55 (2022)	Typical Entry Level Education
49-9041	Industrial Machinery Mechanics	2,239	13.0%	304	35%	$57,090	32.1%	HS diploma or equivalent
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,680	8.5%	256	64%	$48,221	32.6%	HS diploma or equivalent
17-2112	Industrial Engineers	1,203	14.3%	122	26%	$94,350	30.7%	Bachelor's
29-2018	Clinical Laboratory Technologists and Technicians	1,119	7.0%	119	36%	$50,809	24.6%	Bachelor's
19-4021	Biological Technicians	469	8.3%	82	56%	$48,232	16.2%	Bachelor's
51-9011	Chemical Equipment Operators and Tenders	267	12.1%	56	36%	$56,195	23.2%	HS diploma or equivalent
17-3026	Industrial Engineering Technologists and Technicians	360	7.7%	55	44%	$63,361	30.2%	Associate's
19-1029	Biological Scientists, All Other	283	-1.8%	39	36%	$95,537	20.0%	Bachelor's
19-1042	Medical Scientists, Except Epidemiologists	213	24.3%	26	26%	$99,232	19.3%	Graduate
19-2031	Chemists	170	13.9%	23	40%	$79,546	26.4%	Bachelor's

Needed Skill Sets

In-Demand Occupations without enough annual program completions

Industrial Machinery Mechanics, Chemical Equipment Operators and Tenders, Inspectors, Testers, Sorters, Samplers, and Weighers

Top Knowledge	Top Skills	Top Abilities
• Mathematics • Chemistry • English Language • Engineering and Technology • Mechanical	• Critical Thinking • Reading Comprehension • Monitoring • Science • Writing	• Oral Comprehension • Oral Expression • Written Comprehension • Inductive Reasoning • Problem Sensitivity

Top Certificates or Credentials

- Nursing: Nurse Aid, LPN, RN
- LIMS and SAP software
- ASCP Certification
- CAD Software
- CDL and Forklift Certification

1 Lightcast Datarun 2023.2

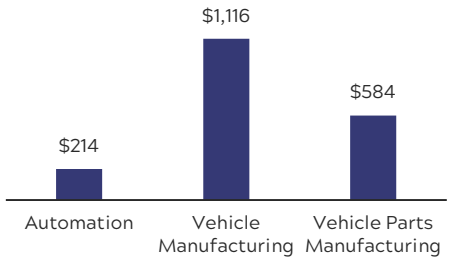
Transportation & Autonomy

Today's economy relies on rapid delivery of goods, as evidenced by strained supply chains during the COVID pandemic, which cost manufacturers between $10,000 and $100,000 per minute of unplanned production stoppage.[1] Truck freight demand grew 6.0% in 2020, fueled by the shift to E-commerce.[2] The World Economic Forum projects freight demand to triple by 2050.[3] GOVA Region 2 is situated to address this growing demand, boasting one of the largest collections of truck manufacturing plants nationally (Mack, Volvo, and Morgan-Olsen) with a collection of regional parts manufacturers and growing expertise in automation and alternative fuels/energy. Volvo, one of the three largest truck manufacturers, has its flagship facility here, where they manufacture full-size electric trucks. Daimler, another Big 3 truck manufacturer, purchased the region's largest autonomy firm, TORC Robotics, to spur development of autonomous trucks. This region hosts the only commercial drone delivery service in the U.S. by Wing, supplier firms like Eldor Powertrains, and innovative startups like TROVA, specializing in truck battery conversion. Other companies helping to innovate this cluster include CAC Tech Services Inc, Inmotion, Luna Innovations and Moog.

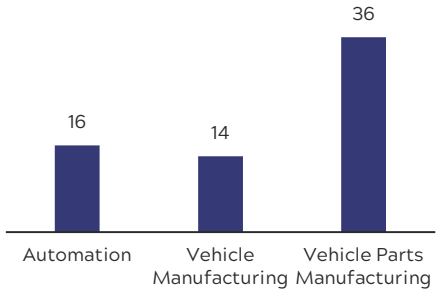
Cluster and Subcluster Performance

Transportation & Autonomy is the 2nd largest of the target clusters in terms of GRP ($1.91B). There were a total of 65 payroll businesses with the majority (36) being found in Vehicle Parts Manufacturing.

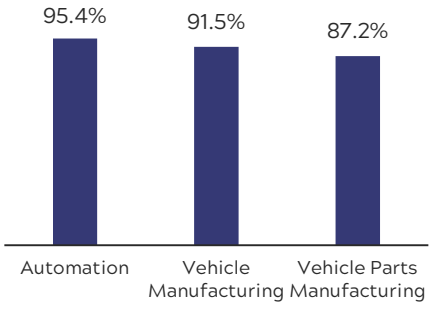
2022 GRP by Sub-Cluster (Millions of $)



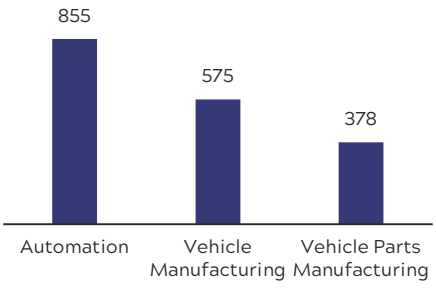
2022 Payroll Businesses



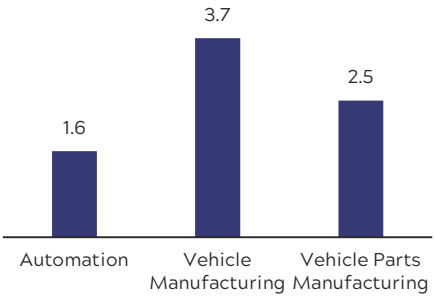
2022 % Exported Sales



2017-2028 Competitive Effect (Jobs)



2022 Employment Concentration



Cluster and Subcluster Jobs

Subcluster	2017 Jobs	2022 Jobs	2028 Jobs	Job Change 2017-2022	Projected Change 2022-2028
Automation	947	1,488	1,803	57.2%	21.2%
Vehicle Manufacturing	2,981	4,228	4,734	41.8%	12.0%
Vehicle Parts Manufacturing	4,058	4,732	4,877	16.6%	3.1%

1 Thanou, E & A. Matopoulos (2021). "Improving efficiency of material flows in an automotive assembly plant: A case study." *CIRP Journal of Manufacturing Science and Technology 35 (2021) 959-967.*
2 FTR Transportation Intelligence (September 2021). "C-Suite Synopsis for September 2021." *State of Freight Insights*. Retrieved from: https://today.ftrintel.com.
3 Thanou, E & A. Matopoulos (2021). "Improving efficiency of material flows in an automotive assembly plant: A case study." *CIRP Journal of Manufacturing Science and Technology 35 (2021) 959-967.*

Transportation & Autonomy

Top Ten In-Demand Occupations

Engineering, Buyers and Purchasing Agents, and Managers are paid $5-$11 less in hourly adjusted COL wages in GOVA2 compared to other MSAs like Raleigh NC. Middle-skilled workers tend to be paid about $1 less in adjusted hourly wages.

SOC	Description	Jobs in Region (2022)	22-'28 Jobs Change	Avg. Annual Openings	2022 Turnover Rate	Avg. Earnings	'22 Workers Over 55	Typical Entry Level Education
51-4121	Welders, Cutters, Solderers, and Brazers	1,518	11.3%	233	44%	$49,439	21.8%	HS diploma or equivalent
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	1,456	7.7%	221	68%	$54,541	27.5%	HS diploma or equivalent
13-1111	Management Analysts	1,466	12.4%	182	33%	$115,674	38.2%	Bachelor's
47-2152	Plumbers, Pipefitters, and Steamfitters	1,152	-0.3%	153	49%	$50,571	23.3%	HS diploma or equivalent
13-1028	Buyers and Purchasing Agents	1,149	1.4%	139	46%	$63,753	35.3%	Bachelor's
17-2112	Industrial Engineers	1,203	14.3%	122	26%	$94,349	30.7%	Bachelor's
43-5061	Production, Planning, and Expediting Clerks	735	12.5%	106	52%	$51,768	28.7%	HS diploma or equivalent
17-2141	Mechanical Engineers	635	11.3%	59	24%	$82,003	26.7%	Bachelor's
11-3051	Industrial Production Managers	482	17.2%	54	25%	$115,985	32.6%	Bachelor's
13-1081	Logisticians	332	23.4%	47	34%	$72,330	21.6%	Bachelor's

Needed Skill Sets

In-Demand Occupations without enough annual program completions

Logistician, Production/Planning/Expediting Clerk, Machinery Maintenance Worker, Millwright, Foundry Mold and Coremaker, Tool and Die Maker, Welder, First-Line Supervisors of Transportation and Material Moving Workers

Top Knowledge	Top Skills	Top Abilities
•Math •Design •Engineering & Technology •Mechanical •Admin & Management	•Critical Thinking •Reading Comprehension •Active Listening •Monitoring •Judgement & Decision Making	•Oral Comprehension •Oral Expression •Deductive Reasoning •Written Comprehension •Near Vision

Top Certificates or Credentials

•AutoCAD
•SAP Manufacturing
•Program Language (Java, C+, SQL)
•CDL License
•Certified Welding Inspector
•Fork Lift Cert.

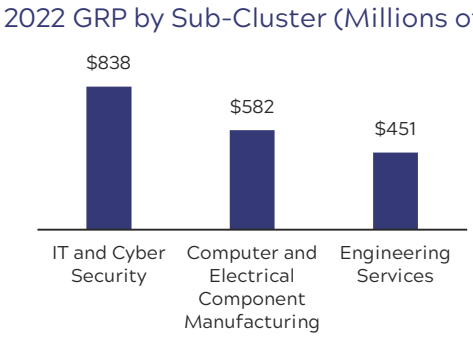
1 Lightcast Datarun 2023.2

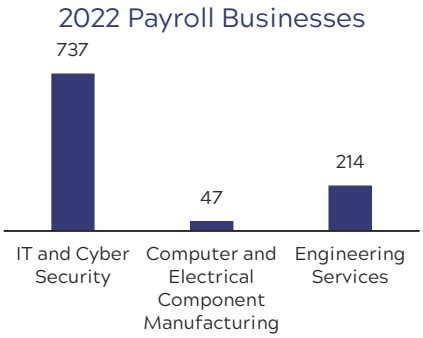
IT, Engineering, & Emerging Tech

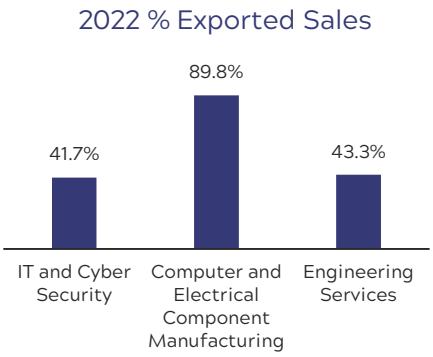
GOVA Region 2's IT, Engineering, and Emerging Tech cluster has strengths in IT services, manufacturing of computer and electrical components, and professional engineering services. Much of these private sector strengths are supported by public sector, particularly university, strengths. These industries support the maintenance and development of emerging software and hardware technologies from cybersecurity and blockchain to artificial intelligences, machine learning, alternative energy, and component systems. Not only do these businesses and related occupations develop and grow this cluster, but they also support the growth of other target clusters and industries across Region 2. Companies include but are not limited to 1901 Group, AECOM, Apex Systems, BAE Systems, Biznet Technologies, Bullish, CAC Tech Services, Corning, Exelaration, GE Digital, Harris Corporation, Hurt & Proffitt, Innovation Wireless Tech, KlariVis, MicroHarmonics, MODEA, MOVA Technologies, New River Computing, Peraton, and TRC.

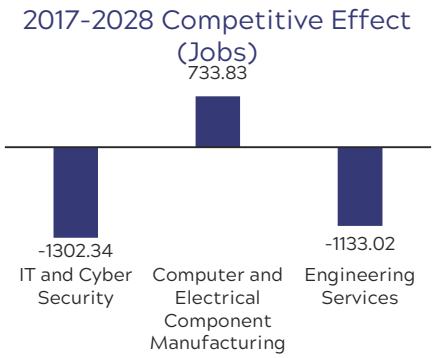
Cluster and Subcluster Performance

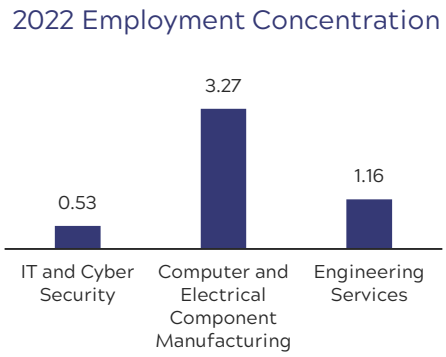
IT and Emerging Tech is the 3rd largest of the target clusters in terms of GRP ($1.87B). There were a total of 998 payroll businesses with the vast majority (737) being found in IT and Cyber Security.











Cluster and Subcluster Jobs

Sub-Cluster	2017 Jobs	2022 Jobs	2028 Jobs	2017-2022 Change	2022-'28 Projected Change
IT and Cyber Security	5,334	5,604	6,037	5.1%	7.7%
Computer and Electrical Component Manufacturing	3,996	4,579	5,099	14.6%	11.3%
Engineering Services	3,469	3,166	3,015	-8.7%	-4.7%

1 Lightcast Datarun 2023.2

IT, Engineering, & Emerging Tech

Top Ten In-Demand Occupations

Other than Computer User Support Specialist, most listed IT positions are paid $3-$4.50 less in adjusted COL hourly wages. Systems Managers and Mechanical Engineers are paid $7-$11 less in adjusted hourly wages compared to other MSAs like Raleigh NC, Richmond VA, and Charlottesville VA.

SOC	Description	Jobs in Region (2022)	Jobs Change (22-28)	Avg. Annual Openings	2022 Turnover Rate	Avg. Earnings	Workers Over 55 (2022)	Typical Entry Level Education
15-1252	Software Developers	1,935	17.6%	217	33%	$108,626	16.0%	Bachelor's
51-4041	Machinists	1,353	10.7%	193	43%	$53,667	33.2%	HS diploma or equivalent
15-1232	Computer User Support Specialists	1,463	8.9%	149	42%	$57,113	17.7%	Some college, no degree
17-2112	Industrial Engineers	1,203	14.3%	122	26%	$94,349	30.7%	Bachelor's
15-1211	Computer Systems Analysts	1,023	7.3%	106	34%	$93,587	22.3%	Bachelor's
15-1244	Network and Computer Systems Administrators	762	4.6%	65	35%	$86,423	17.9%	Bachelor's
11-3021	Computer and Information Systems Managers	569	21.0%	65	31%	$138,297	23.7%	Bachelor's
17-3023	Electrical and Electronic Engineering Technologists and Technicians	401	5.6%	60	39%	$62,167	34.9%	Associate's
17-2141	Mechanical Engineers	635	11.3%	59	24%	$82,003	26.7%	Bachelor's
17-2051	Civil Engineers	526	7.7%	51	24%	$88,969	31.7%	Bachelor's

Needed Skill Sets

In-Demand Occupations without enough annual program completions
Machinist

Top Knowledge	Top Skills	Top Abilities
• Computers & Electronics • Engineering & Technology • Math • Design • Customer and Personal Service	• Reading Comprehension Critical Thinking • Active Listening • Complex Problem Solving • Math	• Oral Comprehension • Oral Expression • Written Comprehension • Deductive Reasoning • Inductive Reasoning, Near Vision, Written Expression

Top Certificates or Credentials
• AutoCAD • CompTIA Cert. • Programming Languages (C+, Java, SQ, Python) • Cisco Network Professional Cert. • Project Management Professional (PMP) Certification

1 Lightcast Datarun 2023.2

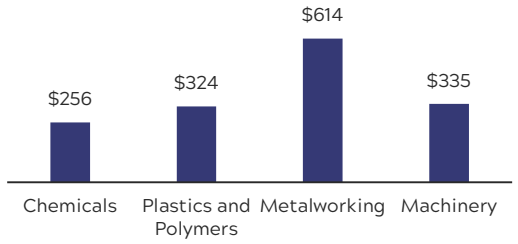
Materials and Machinery Manufacturing

Three important trends have highlighted the need for advanced materials and machinery manufacturing in the United States: 1) the decades-long calls for reshoring manufacturing through more automation, 2) the COVID-19 pandemic's exposure of the fragility of the nation's manufacturing supply chain, and 3) increasing calls for lighter, sustainable, and eco-friendly materials. GOVA Region 2 has a long history of producing materials, parts and machinery for their downstream manufacturing partners both in and outside the region. From creating new polymers that offer lightweight materials that reduce fuel costs in transportation, food packaging that preserves freshness and reduces waste, and membranes that reduce energy consumption in water and air purification, to applying 3D printing technologies in machine shop work to save on time and material costs, advancing this industry poses a distinct opportunity for significant regional growth and industry leadership. Subclusters of regional significance include: 1) Chemical, 2) Plastics and Polymers, 3) Metalworking, and 4) Machinery Manufacturing. Examples of cluster companies are AkzoNobel, Bentech, Belvac Production Machinery, Celanese, Cooper Steel, Framatome, Hollingsworth & Vose, Liebehr, MELD, Mersen, P1 Technologies, Patrick Enterprises, Precision Steel Manufacturing Corp, Steel Dynamics, TekniPlex, Tessy Plastics, Thomas Industrial Fabrication, and Wolverine Industrial Materials.

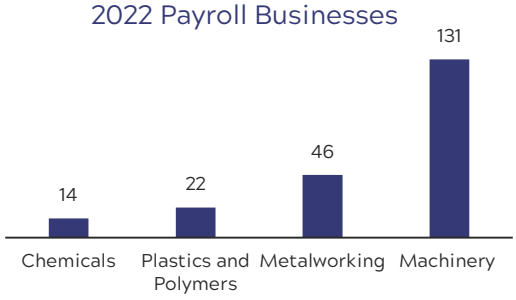
Cluster and Subcluster Performance

Materials and Machinery Manufacturing is the smallest of the target clusters in terms of GRP ($1.52B). There were a total of 212 payroll businesses with the vast majority (131) being found in Machinery Manufacturing.

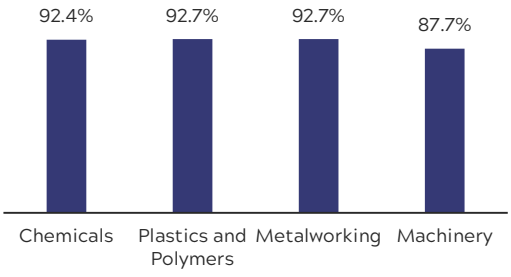
2022 GRP by Sub-Cluster (Millions of $)



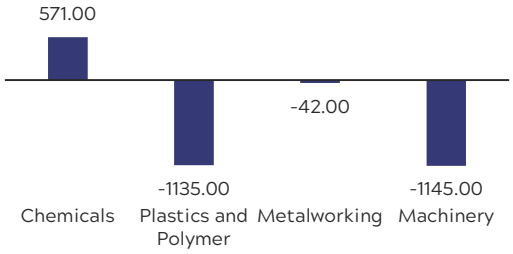
2022 Payroll Businesses



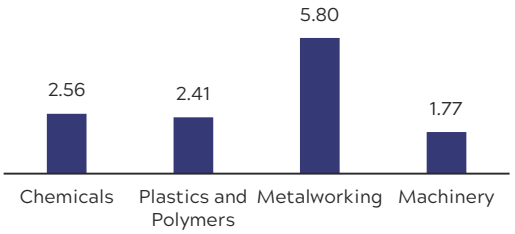
2022 % Exported Sales



2017-2028 Competitive Effect (Jobs)



2022 Employment Concentration



Subcluster Jobs

Sub-Cluster	2017 Jobs	2022 Jobs	2028 Jobs	Job Change 2017-2022	Projected Change 2022-2028
Chemicals	309	726	959	135.4%	32.0%
Plastics and Polymers	3,483	2,633	2,758	-24.4%	4.8%
Metalworking	3,617	3,690	3,905	2.0%	5.8%
Machinery Manufacturing	3,624	2,781	3,036	-23.3%	9.2%

1 Lightcast Datarun 2023.2

Materials and Machinery Manufacturing

Top Ten In-Demand Occupations

Many of the listed occupations are paid better or on par compared to other MSAs. There is a $1-$2/hr difference among supervisors, welders, mechanics, and clerks, where GOVA2 workers are paid relatively less. Buying and Purchasing Agents are paid $4.50/hr less in adjusted COL wages.

SOC	Description	Jobs in Region (2022)	22-'28 Jobs Change	Avg. Annual Openings	2022 Turnover Rate	Avg. Earnings	'22 Workers Over 55	Typical Entry Level Education
49-9071	Maintenance and Repair Workers, General	3,707	10%	443	49%	$44,456	35%	HS diploma or equivalent
51-1011	First-Line Supervisors of Production and Operating Workers	2,374	12%	307	43%	$66,801	30%	HS diploma or equivalent
49-9041	Industrial Machinery Mechanics	2,239	13%	260	35%	$57,090	32%	HS diploma or equivalent
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,680	8%	243	64%	$48,221	33%	HS diploma or equivalent
51-4121	Welders, Cutters, Solderers, and Brazers	1,518	11%	207	44%	$49,439	22%	HS diploma or equivalent
51-4041	Machinists	1,353	11%	178	43%	$53,667	33%	HS diploma or equivalent
51-9111	Packaging and Filling Machine Operators and Tenders	1,020	10%	143	69%	$41,394	22%	HS diploma or equivalent
13-1028	Buyers and Purchasing Agents	1,149	1%	123	46%	$63,754	35%	Bachelor's degree
43-5061	Production, Planning, and Expediting Clerks	735	13%	103	52%	$51,769	29%	HS diploma or equivalent
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	578	8%	71	46%	$45,349	21%	HS diploma or equivalent

Needed Skill Sets

In-Demand Occupations without enough annual program completions

Maintenance and Repair Worker, First-Line Supervisors of Production and Operating Workers, Industrial Machinery Mechanic, Welder, Machinist, Production/Planning/Expediting Clerk, Tool and Die Maker

Top Knowledge	Top Skills	Top Abilities
• Math • Design • Engineering & Technology • Mechanical • Admin & Management	• Critical Thinking • Reading Comprehension • Active Listening • Monitoring • Judgement & Decision Making	• Oral Comprehension • Oral Expression • Deductive Reasoning • Written Comprehension • Near Vision

Training and Credentials

- Welding, Certified Welding Inspector
- HVAC
- Construction Trades
- Industrial Technology/Technician programs
- CDL License
- AutoCAD
- SAP Manufacturing
- Program Language (Java, C+, SQL)

1 Lightcast Datarun 2023.2

Target Cluster Strategies

Life Sciences & Biotechnology

GOALS	● Talent development, retention and attraction ● Scale up cluster through advanced technologies, firm growth, and ecosystem development ● Encourage entrepreneurship and business development ○ Invest in site and infrastructure development
PRIORITIZED STRATEGIES AND ACTIVITIES	● Implement talent retention and attraction programs, particularly for scientists and managerial professions, centered on local universities and regions that may currently draw talent from this region (e.g. North Carolina) ● Promote better regional and national marketing for the region's life science and biotechnology cluster identity ● Develop clear career pathways from entry through senior level employment to illustrate a lifetime of career opportunities in the region's life sciences cluster. ● Increase technician and non-degree training ● Identify, implement, and support innovative strategies for worker retention ● Develop accessible and affordable childcare programming to increase talent participation in industry cluster ● Catalyze technology adoption and development among cluster businesses (e.g. software, diagnostic devices, biopharmaceuticals and catalogued university IP). ● Develop Entrepreneur-In-Residence and Investment Seminar programs for the life sciences to grow and attract knowledge and expertise in the region. ● Identify and implement programming that reduces the cost of entry for beginning life science businesses; for example, mapping existing unused and underused lab spaces that could serve as subsidized labs and workspaces with flexible configurations or developing new, affordable spaces ● Building/attract regulatory expertise in the life sciences (e.g. FDA expertise).
COMMON OUTCOME AND IMPACT METRICS	● # of jobs created/filled ● # of businesses served ● # of students trained ● # of new internships created ● # of credentials awarded ● # of new apprenticeships created ● # of upskilled employees ● # of students in dual enrollment programs ● # of new programs/credentials implemented ● # of new businesses created ● # of mentors engaged ● # of entrepreneurs engaged ● # of existing businesses expanded ● # of jobs created/filled ● # of businesses served ● # of new internships created ● # of existing jobs retained ○ # of acres advanced to higher tier per Virginia Business Ready Sites Program ○ # of acres impacted/developed ○ # of linear feet of water infrastructure ○ # of linear feet of gas infrastructure ○ # of linear feet of sewer infrastructure ○ # of prospects (active company visits) ○ # of miles of middle mile broadband completed ○ # of businesses attracted ● # of businesses retained ● Revenues increased ● Total capital raised ● # of existing businesses expanded ● # of jobs created/filled ● # of businesses served ● # of new internships created ● # of jobs retained ● # of businesses attracted

Target Cluster Strategies

Life Sciences & Biotechnology

PARTNERS FOR COLLABORATION	**Life Science & Biotechnology Programs** • Community colleges and universities • Blue Ridge Partnership for Health Science Careers (BRPHSC) • Carilion Clinic • Central Virginia Community College Health Science programs • City of Roanoke Biotech Project • Fralin Biomedical Research Institute at Virginia Tech Carilion • Fralin Life Sciences Institute • Lewis-Gale • Radford University Carilion • The Central Virginia Community College CTE Academy • VA Bio • Virginia Western Community College Health Science programs • Virginia Tech Carilion • Virginia Tech Corporate Research Center **Economic and Workforce Development Organizations:** • Local and county economic developers and workforce boards • Lynchburg Regional Business Alliance • Onward New River Valley • Regional Entrepreneurship Initiative • Roanoke Regional Partnership - Recovery Project • Roanoke Regional Small Business Development Center • Roanoke-Blacksburg Technology Council (RBTC) • The Advancement Foundation (TAF) • VA Small Business Development Center • Verge Alliance: RBTC and RAMP • Veteran Support Network • Virginia Economic Development Partnership • VTOP, Alliance, and other support organizations
GOVA REGION 2 PROJECTS	• Amherst LYH Region Site Readiness • Building a Regional Health Sciences Talent Pipeline • Capital Ecosystem Development • Developing a Destination for Talent • Flexible Laboratory Space Assessment • GO Virginia Region 2 Talent Collaborative • Lynchburg Site Readiness • Project Eagle+ • Regional Accelerator and Mentoring Program (RAMP) • Strengthening Entrepreneur's Impact • Talent Pathways Initiative • Wood Haven Road Water and Sewer Infrastructure Enhancement • Workforce Training and Regional Capacity for Rapid High Throughput COVID-19 Testing

Target Cluster Strategies

Transportation & Autonomy

GOALS	● Talent development, retention and attraction ● Scale up cluster through advanced technologies, firm growth, and ecosystem development ○ Invest in site and infrastructure development ● Encourage entrepreneurship and business development
PRIORITIZED STRATEGIES AND ACTIVITIES	● Develop <u>clear career pathways from entry through senior level employment</u> to illustrate a lifetime of career opportunities in the region. ● Increase <u>technical, engineering and industry-driven training</u> among in-demand occupations. Connect with programs advocating for industry recognized credentials (e.g. VDOE CTE Curriculum) ● Identify, implement, and support innovative strategies for <u>worker retention</u> ● Prioritize <u>upskilling programs in electrification and automation</u> ● Create a <u>corridor strategy</u> for cluster development ● Strengthen and <u>diversify the cluster supply chain</u> to mitigate business cycle effects ● Catalyze <u>technology commercialization and adoption</u> among cluster businesses (e.g. automation and electrification), including cataloguing university IP. ● <u>Attract additional heavy vehicle manufacturing</u> to the region. ● Encourage adoption of automation technology among transportation and logistics companies, especially automated driving ○ Develop <u>testing facilities</u> beyond the VTTI Smart Road and other infrastructure to support technology and business development
OUTCOME AND IMPACT METRICS	● # of jobs created/filled ● # of businesses served ● # of students trained ● # of new internships created ● # of credentials awarded ● # of new apprenticeships created ● # of upskilled employees ● # of students in dual enrollment programs ● # of new programs/credentials implemented ○ # of acres advanced to higher tier per Virginia Business Ready Sites Program ○ # of acres impacted/developed ○ # of linear feet of water infrastructure ○ # of linear feet of gas infrastructure ○ # of linear feet of sewer infrastructure ○ # of prospects (active company visits) ○ # of miles of middle mile broadband completed ○ # of businesses attracted ● # of businesses retained ● Revenues increased ● Total capital raised ● # of existing businesses expanded ● # of jobs created/filled ● # of businesses served ● # of new internships created ● # of jobs retained ● # of businesses attracted ● # of new businesses created ● # of mentors engaged ● # of entrepreneurs engaged ● # of existing businesses expanded ● # of jobs created/filled ● # of businesses served ● # of new internships created ● # of existing jobs retained

Target Cluster Strategies

Transportation & Autonomy

PARTNERS FOR COLLABORATION	**Transportation & Autonomy Programs:** • Community colleges and universities • ASE Auto Servicing Excellence (credentialing body for auto technicians) • Advanced Vehicle Dynamics Lab • Center for Automotive Fuel Cell Systems • Center for Energy Research and Education (CERE) Industry Labs • MidAtlantic Aviation Partnership (MAAP) • Mountain Gateway Community College • Virginia Smart Road • Virginia Tech Transportation Institute (VTTI) **Economic and Workforce Development Organizations:** • Lynchburg Regional Business Alliance • Onward New River Valley • Regional Entrepreneurship Initiative • Roanoke Regional Partnership - Recovery Project • Roanoke Regional Small Business Development Center • Roanoke-Blacksburg Technology Council (RBTC) • The Advancement Foundation (TAF) • VA Small Business Development Center • Verge Alliance • Veteran Support Network • Virginia Business Ready Sites Program (VBRSP) • Virginia Economic Development Partnership • Virginia Tech Corporate Research Center • V-TOP, Alliance, and other support organizations • Workforce boards
GOVA REGION 2 PROJECTS	• Amherst LYH Region Site Readiness • Capital Ecosystem Development • Developing a Destination for Talent • Enhancing the Region through New Technology for Unmanned Systems • GO Virginia Region 2 Talent Collaborative • Helping Local Employers Prepare the Existing and Future Workforce for Industry 4.0 • Lynchburg Site Readiness • Regional Accelerator and Mentoring Program (RAMP) • Strengthening Entrepreneur's Impact • Talent Pathways Initiative • The Central Virginia Community College CTE Academy • Wood Haven Road Water and Sewer Infrastructure Enhancement

Target Cluster Strategies

IT, Engineering, & Emerging Tech

GOALS

- Talent development, retention and attraction
- Encourage entrepreneurship and business development
- Scale up cluster through advanced technologies, firm growth, and ecosystem development
- Invest in site and infrastructure development

PRIORITIZED STRATEGIES AND ACTIVITIES

- Develop clear career pathways from entry through senior level employment to illustrate a lifetime of career opportunities in the region.
- Identify and implement strategies for attracting and retaining remote workers in the region.
- Identify, implement, and support innovative strategies for worker retention.
- Implement talent retention and attraction programs centered on local universities and regions currently drawing talent from this region.
- Catalyze technology adoption and development among cluster businesses (e.g. AI, machine learning, augmented and virtual realities, cobots, data sciences and analytics, and existing catalogued university IP in the region).
- Identify cluster needs among SBIR Phase I and II recipients in the region.
- Streamline methods of commercializing university intellectual property.
- Increase technical, engineering and industry-driven training among in-demand occupations.
- Improve IT career awareness and advanced level computer science programming among K-12 students, particularly in underserved communities.
- Increase amount or accessibility to quasi-industrial, flexible spaces for small cluster businesses
- Have higher education institutions prioritize or highlight regional employers in their career fairs and other employment events.

OUTCOME AND IMPACT METRICS

- # of jobs created/filled
- # of businesses served
- # of students trained
- # of new internships created
- # of credentials awarded
- # of new apprenticeships created
- # of upskilled employees
- # of students in dual enrollment programs
- # of new programs/credentials implemented
- # of acres advanced to higher tier per Virginia Business Ready Sites Program
- # of acres impacted/developed
- # of linear feet of water infrastructure
- # of linear feet of gas infrastructure
- # of linear feet of sewer infrastructure
- # of prospects (active company visits)
- # of miles of middle mile broadband completed
- # of businesses attracted

- # of new businesses created
- # of mentors engaged
- # of entrepreneurs engaged
- # of existing businesses expanded
- # of jobs created/filled
- # of businesses served
- # of new internships created
- # of existing jobs retained
- # of businesses retained
- Revenues increased
- Total capital raised
- # of existing businesses expanded
- # of jobs created/filled
- # of businesses served
- # of new internships created
- # of jobs retained
- # of businesses attracted

Target Cluster Strategies

IT, Engineering, & Emerging Tech

PARTNERS FOR COLLABORATION	**IT, Engineering, & Emerging Tech Programs:** • Community Colleges and universities • Additive Materials Manufacturing Partnership Labs (AMPL) • Center for Energy Research and Education (CERE) Industry Labs • Center for Intelligent Material Systems and Structures (CIMSS) • Center for Packaging and Unit Load Design (CPULD) • Commonwealth Cyber Initiative SWVA • CS/ROOT (supporting computer science entrepreneurs) • Exelaration • GMU Mason Enterprise • VA Small Business Development Center • VT Foundry Institute for Research and Education (VT FIRE) • XLR8 STEM Academy **Economic and Workforce Development Organizations:** • Local economic developers and workforce boards • APEX Center for Entrepreneurship • Advancement Foundation • Blacks in Technology SWVA • Lynchburg Regional Business Alliance • Onward New River Valley • Regional Entrepreneurship Initiative • Roanoke Regional Partnership - Recovery Project • Roanoke Regional Small Business Development Center • Roanoke-Blacksburg Technology Council (RBTC) • The Advancement Foundation (TAF) • Verge Alliance: RBTC, RAMP • Veteran Support Network • Virginia Business Ready Sites Program (VBRSP) • Virginia Economic Development Partnership • Virginia Tech Corporate Research Center • V-TOP, Alliance, and other support organizations
GOVA REGION 2 PROJECTS	• Amherst LYH Region Site Readiness • Capital Ecosystem Development • Central Virginia Training Center • Developing a Destination for Talent • Experiential Learning in Tech Employment (ELITE) • GO Virginia Region 2 Talent Collaborative • Helping Local Employers Prepare the Existing and Future Workforce for Industry 4.0 • Lynchburg Site Readiness • Regional Accelerator and Mentoring Program (RAMP) • Strengthening Entrepreneur's Impact • The Central Virginia Community College CTE Academy • Wood Haven Road Water and Sewer Infrastructure Enhancement • Workforce and Entrepreneurship Initiatives in a Regional Makerspace

Target Cluster Strategies

Materials and Machinery Manufacturing

GOALS

- Talent development, retention and attraction
- Scale up cluster through advanced technologies, firm growth, and ecosystem development
- Encourage entrepreneurship and business development
- Invest in site and infrastructure development

PRIORITIZED STRATEGIES AND ACTIVITIES

- Implement talent retention and attraction programs, particularly for engineering and middle management professions, centered on local universities and regions that may currently draw talent from this region (e.g. North Carolina)
- Develop clear career pathways from entry through senior level employment to illustrate a lifetime of career opportunities in the region.
- Identify, implement, and support innovative strategies for worker retention
- Increase technical, engineering and industry-driven training among in-demand occupations
- Develop and market a cluster identity
- Strengthen and diversify the cluster supply chain to mitigate business cycle effects
- Catalyze technology adoption among cluster businesses (e.g. innovative materials, additive manufacturing technologies, and other green and automation technologies), including identifying and catalogue regional university IP.

OUTCOME AND IMPACT METRICS

- # of jobs created/filled
- # of businesses served
- # of students trained
- # of new internships created
- # of credentials awarded
- # of new apprenticeships created
- # of upskilled employees
- # of students in dual enrollment programs
- # of new programs/credentials implemented
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- # of acres advanced to higher tier per Virginia Business Ready Sites Program
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- Revenues increased
- Total capital raised
- # of existing businesses expanded
- # of jobs created/filled
- # of businesses served
- # of new internships created
- # of jobs retained
- # of businesses attracted

Target Cluster Strategies

Materials and Machinery Manufacturing

PARTNERS FOR COLLABORATION	**Materials and Machinery Manufacturing:** • Community colleges and universities • Additive Materials Manufacturing Partnership Labs • Center for Energy Research and Education (CERE) Industry Labs • Center for Intelligent Material Systems and Structures (CIMSS) • Center for Packaging and Unit Load Design (CPULD) • Kroehling Advanced Materials Foundry • Liberty University • Onward NRV Manufacturing Leadership Summit (twice a year) • The Central Virginia Community College CTE Academy • VT Foundry Institute for Research and Education (VT FIRE) **Economic and Workforce Development Organizations:** • GO Virginia Region 2 Talent Collaborative • Lynchburg Regional Business Alliance • Onward New River Valley • Regional Entrepreneurship Initiative • Roanoke Regional Partnership - Recovery Project • Roanoke Regional Small Business Development Center • Roanoke-Blacksburg Technology Council (RBTC) • The Advancement Foundation (TAF) • VA Small Business Development Center • Verge Alliance • Veteran Support Network • Virginia Business Ready Sites Program (VBRSP) • Virginia Economic Development Partnership • Virginia Tech Corporate Research Center • VTOP, Alliance, and other support organizations • Workforce boards
GOVA REGION 2 PROJECTS	• Amherst LYH Region Site Readiness • Capital Ecosystem Development • Central Virginia Training Center • Developing a Destination for Talent • Helping Local Employers Prepare the Existing and Future Workforce for Industry 4.0 • Lynchburg Site Readiness • Regional Accelerator and Mentoring Program (RAMP) • Strengthening Entrepreneur's Impact • Wood Haven Road Water and Sewer Infrastructure Enhancement • Workforce and Entrepreneurship Initiatives in a Regional Makerspace

PROJECT DEVELOPMENT

Every Region 2 project recommended by the Region 2 Council and approved by the GO Virginia state board should be consistent with the strategies and goals outlined by the Region 2 Growth and Diversification Plan. Creating an easily understandable guide is a priority with the 2023 Growth and Diversification Plan Review, for both GO Virginia applicants to design and submit fundable projects and for the Region 2 Council to assess projects. This plan review centers the four priority industry clusters in Region 2 and emphasizes the current GO Virginia projects and future opportunities through the strategies of talent development and attraction, collaborative development of sites and buildings, entrepreneurship and business development, and industry cluster scale-up.

Current GO Virginia Projects

During this process, GOVA Region 2 staff reviewed existing and past projects list in the cluster strategies section of this report. Current projects seem to complement prioritized strategies and address prioritized challenges from past growth and diversification plans. As with past plans, the four main categories that projects align with are talent, cluster scale up, entrepreneurship, and site and infrastructure development.

Opportunities for new TPI Planning Funding

In September 2023, Region 2 was awarded a TPI planning grant to support a 12-month talent pathways planning process for the Life Sciences and Biotechnology and Transportation Manufacturing and Autonomy clusters. The following priorities and goals were identified could be addressed through TPI efforts.

Life Sciences & Biotechnology:

- Develop **clear career pathways from entry through senior level employment** to illustrate a lifetime of career opportunities in the region's life sciences cluster.
- Implement **talent retention and attraction programs**, particularly for scientists and middle management professions, centered on local universities and regions that may currently draw talent from this region
- Increase **technician and non-degree training**

Transportation Manufacturing & Autonomy:

- Develop **clear career pathways from entry through senior level employment** to illustrate a lifetime of career opportunities in the region.
- Implement **talent retention and attraction programs**, particularly for engineering and middle management professions, centered on local universities and regions that may currently draw talent from this region
- Increase **technical, engineering and industry-driven training** among in-demand occupations

FUTURE PLANNING/G&D PLAN EFFORTS:

The 2023 Growth and Diversification Plan Review is an opportunity for the Region 2 Council to reflect on the 2021 plan, restate a commitment to the four priority industry clusters, plan goals and strategies, and update regional economic data, so that this living document contributes to strong project development. This plan review builds on the success of the past six years with the GO Virginia program. The plan continues to offer a case for action grounded in a thoroughly researched and deliberated understanding of the economy and labor markets in Region 2.

Between June – October 2023, Region 2 support staff facilitated the plan review through three main actions: 1) analysis of changes in regional and industry cluster economic data through secondary sources (Lightcast, O*NET, US DOL, American Community Survey), 2) engagement and input from with industry cluster leaders and regional stakeholders through focus groups, and 3) integration of priorities from industry cluster leaders and review by Region 2 Council Members.

Analysis of Changes in Regional and Industry Cluster Economic Data
Between June-August 2023, the support organization led a data analysis of regional economic data and industry cluster data. Particular attention was paid to updating wage data, skills gap analyses, and regional trends impacting workforce participation. Region 2 council members were involved in the plan review throughout the process. Region 2 council members reviewed updated regional economic data at the July 24th council meeting. This 2023 revised analysis saw most socioeconomic, labor, and industry data reverting to pre-COVID levels or continuing on the same trend trajectory from before COVID. One newer trend observed was the population demographics by age. Where the region previously lost professionals in the late 20s and 30s, that demographic group has seem increases. Meanwhile, early to mid-20s and mid-career professionals (40-55 years) are leaving the region.

Engagement with Industry Cluster Leaders and Regional Stakeholders
In September 2023, four focus groups were held in Fairlawn (Pulaski County), Lynchburg, and Roanoke to solicit feedback from industry cluster leaders and regional stakeholders. Each focus group was co-chaired by 2 regional council members. In total, 68 participants registered to share feedback through the focus groups. Focus groups were facilitated in a hybrid format, with the option to participate either in-person or via Zoom. Focus group participants were asked to identify high-impact priorities for GO Virginia projects within their industry cluster. These priorities were integrated into a survey which was circulated in October 2023 for additional stakeholder input.

Integration of Priorities and Review by Region 2 Council Members
Stakeholder input led to revisions and strengthening of the industry cluster descriptions, and identification of the industry cluster strategies and partners for collaboration outlined on pages 15-22 of this plan. Region 2 council members participated in focus groups and reviewed a final draft of this plan review at the Oct 19 council meeting. Moving forward, the council plans to establish working groups to better seed and develop GOVA projects, monitor priority strategies, and identify future steps that may serve to hone the plan and council activities. Certain next steps identified at the October 19th meeting were:

- Form ongoing working groups for each target industry cluster
- Identify opportunities to catalogue IP from regional universities that could support target clusters' scale-up
- Review data capturing the current state of remote workers in the region
- Explore ways of building childcare infrastructure as a strategy for worker retention and attraction
- Continue to expand programming that retains and attracts workers to the region (including those that left previously).

How to apply for a GO Virginia Region 2 grant

STEP 1: BRAINSTORM IDEAS

Gather together friends, neighbors, colleagues, and fellow innovators to brainstorm ideas that could generate prosperity in our region. Find and review formal application at **https://cece.vt.edu/GOVAR2/RequestforProposals.html**

STEP 2: PRIORITIZE

1. Does the project fit within one of these four growth industries?

- **IT and Emerging Technology**
- **Transportation and Autonomy**
- **Materials and Machinery Manufacturing**
- **Life Sciences and Healthcare**

2. Does it have the potential to bring high-paying jobs to the region? ☐ Yes ☐ No

3. What is the budget for your idea?

4. What kind of return on investment would your community or the state expect to see?

5. Does our region have an already skilled workforce to fill those jobs? Is there training locally to create a skilled workforce?

STEP 3: CHOOSE WHICH GRANT TYPE IS RIGHT FOR YOU

A Planning Grant
Regional focused planning project, groundwork for a Per Capita grant

- Funding: $100,000
- Total Match: 1:1 *
- Partner Engagement: 2+ localities
- Duration of Project: 1 year

B Per Capita Implementation Grant
Regionally focused implementation projects

- Funding: Over $100,000
- Total Match: 1:1 *
- Local Match: 20% of total match*
- Partner Engagement: 2+ localities
- Duration of Project: 2 years

C State Competitive Grant
Multi-region implementation projects between 2 or more GO Virginia regions

- Funding: Over $1,000,000
- Total Match: 1:1
- Partner Engagement : 2+ regions
- Local match: Required. 2+ localities
- Duration of project: 2 years

*Match waivers are available to request a reduction of Total Match and a reduction or waiver of Local Match

STEP 4: BE PREPARED TO SHOW THE FOLLOWING IN YOUR APPLICATION

A Collaboration **B Applicant Eligibility** **C Matching Funds** **D Return on Investment Estimate**

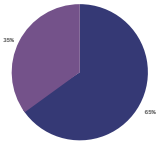
Public/private entities can show evidence of financial participation by collaborating with localities and must meet a minimum threshold. Grant funds should offer broad community benefits and are not to be used as economic development incentive payments or to promote the activities of a single entity.

STEP 5: KEY CONSIDERATIONS FOR YOUR APPLICATION

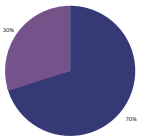
A Threshold Components

Make sure your project covers all five points.

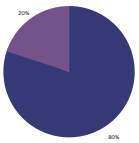
B Economic Impact (35 %)



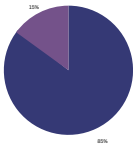
C Regional Collaboration (30 %)



D Project Readiness and Capacity (20 %)



E Project Sustainability (15 %)



STEP 6: SUBMIT YOUR APPLICATION

For questions and assistance on project development, email Quina Weber-Shirk (quina@vt.edu).

Letters of interest should be submitted via email to Quina Weber-Shirk (quina@vt.edu).

To access the application form, visit https://cece.vt.edu/GOVAR2/RequestforProposals.html.

For more information, please contact:

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