

V. Demand Plan



**Northern Virginia
Regional Workforce Demand Plan**

**For the period
July 2014 through June 2015**

Submitted to the
Virginia Community College System
Commonwealth of Virginia

September 2, 2014

**Northern Virginia Workforce Investment Board
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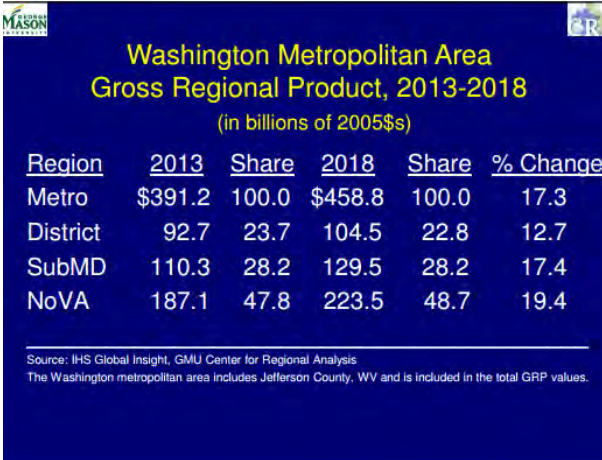
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A. Introduction

The Northern Virginia regional economy is primarily comprised of the jurisdictions included in Northern Virginia Regional Workforce Area (#11). Dr. Stephen Fuller, a prominent economist at George Mason University who has specialized in monitoring the Greater Washington Regional economy, provides a wealth of data that highlights the broader economic climate of the region and specifically that of Northern Virginia. In examining the region's project workforce demand, it is important to address the scope and size of the Northern Virginia economy within the Greater Washington Region.

As reflected in Chart 1, the Northern Virginia Gross Regional Product (GRP) is the largest economy among jurisdictions within Greater Washington, with the 2013 Northern Virginia GRP share estimated at nearly 48% of the region, nearly double the District of Columbia and 71% greater than suburban Maryland. That gap among the State jurisdictions is expected to remain at least through 2018.

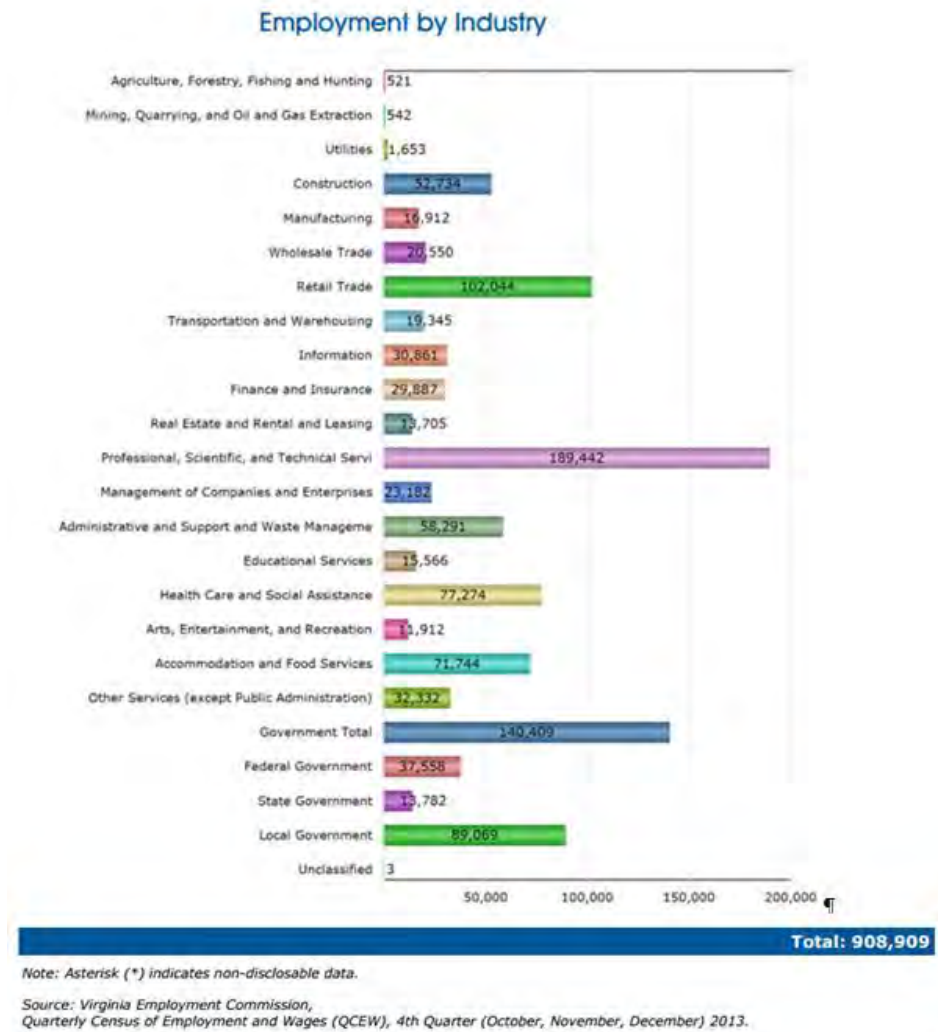


<u>Region</u>	<u>2013</u>	<u>Share</u>	<u>2018</u>	<u>Share</u>	<u>% Change</u>
Metro	\$391.2	100.0	\$458.8	100.0	17.3
District	92.7	23.7	104.5	22.8	12.7
SubMD	110.3	28.2	129.5	28.2	17.4
NoVA	187.1	47.8	223.5	48.7	19.4

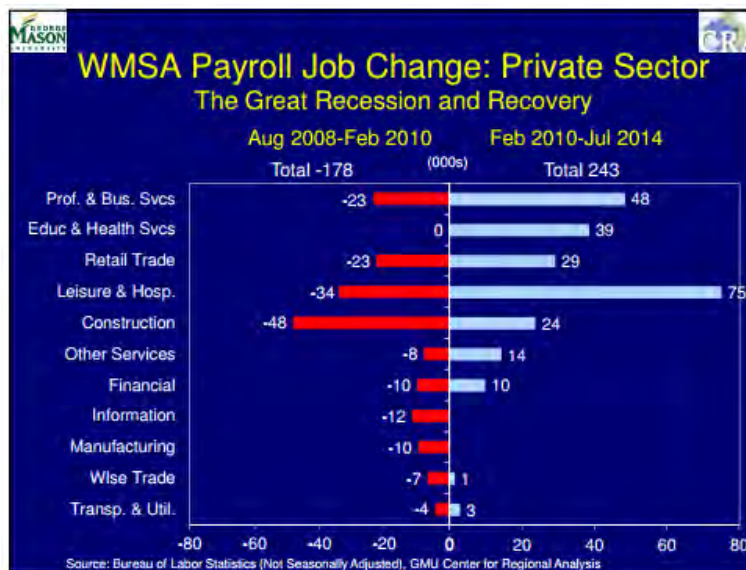
Source: IHS Global Insight, GMU Center for Regional Analysis
The Washington metropolitan area includes Jefferson County, WV and is included in the total GRP values.

The Northern Virginia employment composition is primarily driven by five industry types, including Professional and Business Services (which includes Information Technology occupations), Health Care, Retail Trade, Food and Hospitality and Construction. Significant employment levels in Federal, State and Local Government is not counted as an employment focus of the Northern Virginia Workforce Investment Board.

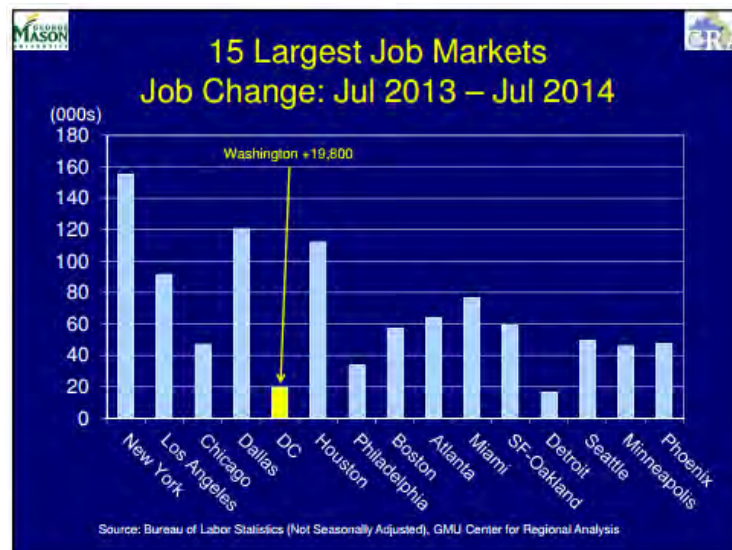
The following chart reflecting Northern Virginia occupational data from December 2013 is developed from data provided through the Virginia Employment Commission Local Community Profile. The five targeted industry types include 493,238 jobs or 54% of the entire local workforce area employment profile.



The Northern Virginia regional economy's recovery from the economic downturn and the Great Recession has been moderate and uneven. As of June 2014, local unemployment is at 4.5%, with a civilian labor force totaling 1,136,916. As reflected in the GMU Center for Regional Analysis chart below, the Greater Washington Region lost 178,000 jobs during the August 2008 – February 2010 period and has gained back 185,000 jobs during the subsequent recovery period of February 2010 through March 2014. The chart highlights the industry sector job losses and job gains.



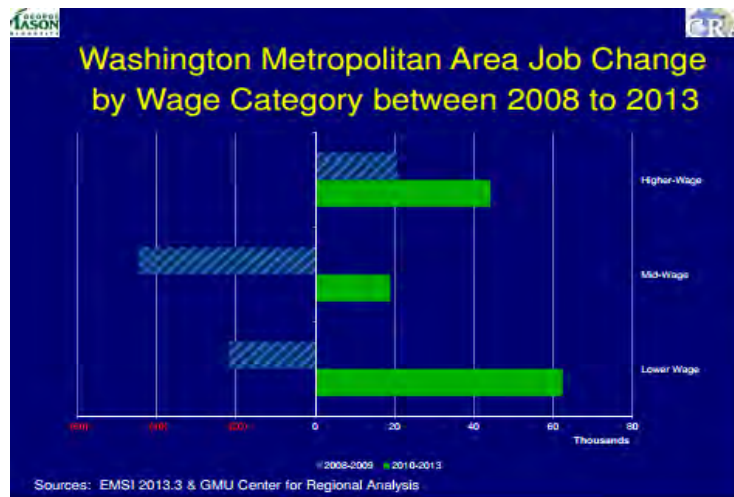
Current Northern Virginia job growth is not keeping pace with past year accomplishments, where the region was one of the top job producing economies in the nation. Job growth in private sector industries are being offset by job losses in Federal Government employment and through Federal Government contractors. The following chart compares the Greater Washington region with fourteen similar regional job markets throughout the United States.



In an interview with The Washington Post on August 27, 2014, Anirban Basu, chief executive of Baltimore-based Sage Policy Group noted, “I think we can conclude that the Washington-area economy continues to recover, but the recovery is no longer taking place as quickly as it is in other parts of the country.” He continued by noting that’s “likely to continue to be the trend going forward”. Two charts by George Mason University are further evidence of that slow job growth, or actual job declines in major employment categories; Professional and Business Services along with Federal Government Employment. Both charts (below) highlight substantial job losses over the past year (Professional and Business Services) or three years (Federal Government).



Reflecting the uneven regional economic growth patterns during the Recovery, GMU economists have identified much of the new job changes by wage category that have resulted in the majority of new jobs being created at the mid-wage or lower wage levels. This uneven type of job recovery has placed tremendous challenges on job seekers previously working in higher wage professional positions to find and retain employment in their prior industry and occupation. Job demands for higher wage professionals has generally slackened and job competition has grown significantly.



Given national and state economic growth projections, Northern Virginia annual regional economic growth rates are estimated to be moderate over the next several years, through 2018. The following GMU Center for Regional Analysis chart highlights the primary industry growth sectors for the Greater Washington Region, for the period 2013-2018. The projected industry growth sectors correlate with the targeted industries of the Northern Virginia Workforce Investment Board, highlighting the impact of a targeted industry job on the local economy.

Principal Sources of Job and GRP Growth in the Washington Area, 2013-2018
(in thousands)

Growth Sectors	Job Change	% of Total Job Change	Average Value Added per Job*
Prof. & Bus. Ser.	144.5	48.8	\$158,211
Construction	51.9	17.5	\$91,482
Education/Health	35.2	11.9	\$59,938
Hospitality Services	27.1	9.1	\$43,036
State and Local	19.6	6.6	\$60,099
Retail Trade	13.6	4.6	\$60,981
Sub-Total	291.9	98.5	\$93,347
Overall Total	296.4	100.0	\$135,544

Sources: IHS Global Insight, GMU Center for Regional Analysis * in 2005\$

Even considering the limited growth of the Northern Virginia economy, along with the State and national economy, during FY 2014 and early FY 2015, regional economists and labor market academicians continue to project significant Northern Virginia and Greater Washington employment hiring requirements within the next three years (through 2017) and the next eight years (through 2022). These hiring requirements follow from continued business expansion through normal economic growth along with the anticipated replacement of positions open through likely retirements. The chart below highlights these hiring requirements (new versus replacement) for the period ending 2017 and the period ending 2022.

The economists project, assuming normal economic conditions and growth, that by 2017, the Greater Washington economy will need to fill 364,000 net new jobs and to replace 477,000 existing jobs, totaling nearly 842,000 jobs. By 2022, the Greater Washington economy will need to fill 283,000 net new jobs and to replace 455,600 existing jobs, totaling nearly 739,000 jobs. The Northern Virginia share of these annual job growth projections are substantial.

Year	Total Jobs	Net New (% Change)	Replacement (% Change)	Openings (% Change)
2012	3,927,775			
2012 - 2017	4,291,969	364,194 9.3%	477,530 12.2%	841,724 21.4%
2017 - 2022	4,575,445	283,476 6.6%	455,621 10.6%	739,097 17.2%

Sources: EMSI Complete Employment - 2013.2, GMU Center for Regional Analysis

B. Identified Skills Needed by the Top Northern Virginia Industry Sectors

To meet the growing demand of Northern Virginia's top industries to fill the hundreds of thousands of new jobs that are projected over the next five to ten years, Area #11 has identified the top skills that local employers are seeking. These skills apply to multiple industries and are representative of the skills that the *SkillSource* One-Stop Employment Center staff must assess job seekers for to ensure they are meeting the demands of area businesses. The table below shows the top 10 advertised skill groups found in job openings advertised online in Northern Virginia as of August 18, 2014.

Rank	Advertised Skill Group	Job Openings
1	Customer Service Skills	8,884
2	Interpersonal Skills	8,680
3	Basic Skills	6,891
4	Systems Engineer Skills	2,742
5	Business Development Skills	2,168
6	Risk Analyst Skills	2,099
7	Database Administrator Skills	1,919
8	Data Analyst Skills	1,886
9	Web Developer Skills	1,800
10	Software Engineer Skills	1,603

Source: Virginia Employment Commission LMI, August 2014

Occupations within the Science, Technology, Engineering and Mathematics (STEM) occupations, particularly within IT, are growing at more than 6% annually and add hundreds of positions a year within Northern Virginia; furthermore, occupations that demand IT-related skills are found in more than 77 distinct industries within the region (Virginia Employment Commission). STEM occupations are projected to grow at the fastest rate of all industry clusters – almost 4% annually between 2010 and 2020. This will create more than 218,000 new positions; by 2018, the majority of STEM jobs will be in Computing (71%). By that time, the Center for Regional Analysis at George Mason University projects that 145,000 positions in Professional Business and Technical Services will be located in the Greater Washington region and available to skilled workers. Due to the STEM-related nature of many of the region's occupations, job seekers are required to have some sort of knowledge and skill-level of IT tools, programs and software platforms, ranging from basic Microsoft Office software programs to Linux operating systems. The table below shows the top 10 tools and technology skills needed in job openings advertised online in Northern Virginia as of August 18, 2014.

Rank	Advertised Detailed Tools and Technology	Advertised Tools and Technology Group	Job Openings
1	Polygraph	Physiological recorders	2,257
2	Linux	Operating system software	2,253
3	UNIX	Operating system software	1,646
4	JavaScript	Web platform development software	1,417
5	PowerPoint	Presentation software	1,187
6	Python	Object or component oriented development software	803
7	jQuery	Web platform development software	579
8	DNS	Computer servers	469
9	Trucks	Light trucks or sport utility vehicles	464
10	Microsoft Word	Word processing software	457

Source: Virginia Employment Commission LMI, August 2014

Job seekers within the Northern Virginia region are highly educated. Approximately 44% of long-term unemployed jobseekers in the region hold Bachelor's Degrees or higher, significantly higher than the 19% national average, with nearly 70% coming from STEM-focused industries. Without having some type of education and necessary skills, it can be very difficult to obtain employment in the region, as the majority of employers are looking for a skilled workforce to fill

their job openings. The table below shows the minimum education level required for job openings advertised online in Northern Virginia as of August 18, 2014. The majority, over 53% of job openings, required at least a Bachelor's Degree.

Rank	Minimum Education Level	Job Openings	Percent
1	No Minimum Education Requirement	1,112	9.63%
2	High School Diploma or Equivalent	2,928	25.36%
3	1 Year at College or a Technical or Vocational School	11	0.1%
4	2 Years at College or a Technical or Vocational School	4	0.03%
5	3 Years at College or a Technical or Vocational School	3	0.03%
6	Vocational School Certificate	65	0.56%
7	Associate's Degree	588	5.09%
8	Bachelor's Degree	6,135	53.13%
9	Master's Degree	622	5.39%
10	Doctorate Degree	75	0.65%
11	Specialized Degree (e.g. MD, DDS)	5	0.04%

Source: Virginia Employment Commission LMI, August 2014

C. Skills of the Local Workforce and Skills Gaps Within Top Northern Virginia Industry Sectors

The Northern Virginia region is experiencing substantial growth in the Professional Business and Technical sector, particularly STEM occupations, and the demand for skilled workers continues to escalate in these industries. The Northern Virginia economy is projected to grow by 39% over the current decade.

The table below shows the industries with the highest job openings advertised online in Northern Virginia as of August 18, 2014.

Rank	Industry	Job Openings
1	<u>Professional, Scientific, and Technical Services</u>	14,828
2	<u>Retail Trade</u>	6,230
3	<u>Health Care and Social Assistance</u>	3,981
4	<u>Accommodation and Food Services</u>	3,190
5	<u>Administrative and Support and Waste Manageme</u>	3,130
6	<u>Manufacturing</u>	3,096
7	<u>Information</u>	2,510
8	<u>Finance and Insurance</u>	2,058
9	<u>Educational Services</u>	1,786
10	<u>Arts, Entertainment, and Recreation</u>	708

Source: Virginia Employment Commission LMI, August 2014

Below is a table that shows the occupations with the highest job openings advertised online in Northern Virginia as of August 18, 2014.

Rank	Occupation	Job Openings
1	<u>Computer Programmers</u>	1,929
2	<u>Retail Salespersons</u>	1,578
3	<u>Computer Systems Engineers/Architects</u>	1,143
4	<u>Registered Nurses</u>	1,115
5	<u>Computer Systems Analysts</u>	808
6	<u>Computer User Support Specialists</u>	752
7	<u>First-Line Supervisors of Food Preparation and Serving Workers</u>	692
8	<u>Managers, All Other</u>	682
9	<u>Software Developers, Applications</u>	676
10	<u>Network and Computer Systems Administrators</u>	673

Source: Virginia Employment Commission LMI, August 2014

To support that growth, the region will require a significant shift to train workers to move from low-skilled jobs to higher-skilled occupations in high-growth industries. Strikingly, 37% of the Washington area workforce in 2020 will not have been in the workforce in 2010 (*Workforce Trends In and Occupational Forecasts for Northern Virginia, 2010-2020*, The Center for

Regional Analysis, George Mason University). According to the GMU report, of the net new jobs projected over this decade, 49% will need a Bachelor's Degree or higher level of education, 47% will require a high school diploma or equivalent plus some level of experience, training or post-high school certificate, and the remaining 4% will require an associate's degree. There are currently not enough skilled job seekers to meet the demand from Virginia's employers. While the demand for skilled workers continues to escalate in these industries, the number of available workers has steadily diminished. Employers seeking workers with the educational and technical skills needed for high-level occupations in the STEM industries have been challenged in Northern Virginia. This data is highlighted in the slides from Dr. Stephen Fuller, as noted in the Introduction.

A July 2014 report by The Brookings Institute by Jonathan Rothwell entitled Still Searching: Job Vacancies and STEM Skills, noted that STEM job openings take twice as long to fill then a non-STEM, lower-skilled vacancy. Furthermore, specific high-value skills requested by employers and common to STEM occupations are particularly scarce relative to demand. The chart below from the Brookings Institute shows that in the Greater Washington region, nearly 50% of job openings require STEM skills and at least a Bachelor's Degree.

Washington-Arlington-Alexandria, DC-VA-MD-WV

CHANGE METRO AREAS

Key Statistics: Job Vacancies and STEM Skills in the Washington Metro Area

These data are from the first quarter of 2013. Ranks are out of the 100 largest metropolitan areas by population (a rank of 1 indicates the largest value).

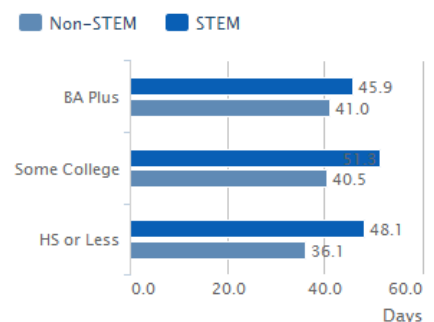
TOTAL NUMBER OF ADS FOR JOB OPENINGS, Q1-2013	AVERAGE AD DURATION (NUMBER OF DAYS)	AVERAGE MARKET VALUE OF ADVERTISED SKILL REQUIREMENTS
47,004 Rank: 2nd	42.9 Rank: 13th	\$63,095 Rank: 3rd
SHARE OF ADS REQUIRING STEM SKILLS	SHARE OF ADS REQUIRING STEM SKILLS AND AT LEAST A BACHELOR'S DEGREE	SHARE OF ADS REQUIRING STEM SKILLS AND A SUB-BACHELOR'S LEVEL OF EDUCATION
55.1% Rank: 3rd	48.8% Rank: 2nd	6.3% Rank: 97th

*Note: Average ad duration is the average number of days a vacancy is posted on the hiring company's website. STEM jobs are those that require high levels of knowledge in science, technology, engineering, or math. STEM knowledge and educational requirements are calculated using data from O*NET.*

Source: Brookings' analysis of data supplied by Burning Glass

Average Number of Days to Fill Job Openings in the Washington Metro Area by STEM Skill and Education Requirements

First quarter of 2013



Note: The duration of job openings typically increases as the level of education and STEM knowledge required to do the job increases.

Source: Brookings' analysis of data supplied by Burning Glass

D. Specific Credentials Required by Top Northern Virginia Industry Sectors

Workforce Area #11 targets ongoing outreach and training efforts on high-growth and high demand occupations within the identified industries relevant to Northern Virginia. By this review, Workforce Area #11 remains assured its workforce and training initiatives are matching workforce supply with business demand. High-growth industry sectors in Northern Virginia reflect a need for qualified workers in Professional, Scientific and Technical Services (including IT), Retail, Health Care, Accommodation/Food Service and Construction occupations.

Area #11 recognizes that effective career pathway programs lead job seekers to attain postsecondary credentials that are valued within the regional labor market. In Northern Virginia, these credentials are applicable in different industry clusters, including the top five industry sectors previously highlighted. For certain industry sectors, particularly IT, stackable credentials allow job seekers to build their qualifications over time and move up their career ladder to potentially upper level positions that pay a higher wage. These credentials build upon one another, with each credential adding more value to the job seeker's resume and salary level.

The table below shows the top 10 advertised detailed certifications found in job openings advertised online in Northern Virginia as of August 18, 2014.

Rank	Advertised Certification Group	Job Openings
1	Certification in Cardiopulmonary Resuscitation (CPR)	544
2	Certified Information Systems Security Professional (CISSP)	485
3	Information Technology Infrastructure Library Certification (ITIL)	461
4	Commercial Drivers License (CDL)	428
5	Basic Life Support (BLS) Certification	311
6	Certified Public Accountant (CPA)	293
7	Security+ Certification	255
8	Cisco Certified Network Associate (CCNA)	205
9	Certified Nursing Assistant (CNA)	168
10	Cisco Certified Network Professional (CCNP)	140

Source: Virginia Employment Commission LMI, August 2014

Area #11 targets its ongoing review of training programs and certifications offered on high-growth and high demand occupations within the identified industries relevant to Northern Virginia. By this review, Workforce Area #11 remains assured its workforce and training initiatives are matching workforce supply with business demand. The table below identifies the top certifications required in each of Northern Virginia's five industry sectors.

Industry	Credentials/Certifications
Business and Professional Services (Includes Information Technology)	<ol style="list-style-type: none"> 1. Certified Public Accountant (CPA) 2. Project Management Professional (PMP) 3. Information Technology Infrastructure Library Certification (ITIL) 4. Cisco Certified Network Associate (CCNA) 5. Certified Information Systems Security Professional (CISSP) 6. Cisco Certified Network Professional (CCNP) 7. Certified Ethical Hacker (CEH) 8. Security+ Certification 9. CompTIA Security+ Certification 10. Microsoft Certified Systems Engineer (MCSE)
Health Care & Social Assistance	<ol style="list-style-type: none"> 1. Registered Nurse (RN and BSN) 2. Basic Life Support (BLS) Certification 3. Certified Nursing Assistant (CNA) 4. Advanced Cardiac Life Support Certification (ACLS) 5. Pediatric Life Support (PALS) 6. Emergency Medical Technician (EMT) 7. National Board for Certification in Occupational Therapy (COTA) 8. Certified Medical Assistant 9. Dental Assistant 10. Pharmacy Technician
Hospitality and Food Services	<ol style="list-style-type: none"> 1. 2. Certified Resume Specialist (CRS) 3. Commercial Driver's License (CDL) 4. GIAC Security Management Certification (GCPM) 5. ServSafe Certification 6. Security Officer
Retail	<ol style="list-style-type: none"> 1. Commercial Driver's License (CDL) 2. Retail Management Certification (through the National Retail Federation) 3. Customer Service Certification (through NRF)
Construction	<ol style="list-style-type: none"> 1. Certification in CPR 2. Commercial Driver's License (CDL) 3. Center for Security and Emergency Management Certification (CACS) 4. American Welding Society (AWS) Certification - Certified Welding Inspector 5. Occupational Health & Safety Technologist 6. NCCER (National Ctr. for Construction Education and Research) Certification 7. NATE Service Technician Specialty Certif. (Commercial Refrigeration Service)

In the Northern Virginia region, Cyber Security certifications are high in-demand, with CISSP training being one of the most frequently requested training by job seekers. Security + and CompTIA and Oracle training are a close second and third. Top Health Care training and certifications include more entry-level occupations, such as a Certified Nursing Aide, Dental Assistant and Medical Assistant. Lastly, in the past few years, Area #11 has seen a significant increase in the number of job seekers seeking Project Management Professional (PMP) training, particularly with Area #11's veterans' programs, encouraged by employer demands for that certification.. The table below reflects Area #11's ITA distribution by industry.

In Northern Virginia, the value of an Individual Training Account funded through WIA Formula funding shall not exceed \$3,500. A priority is placed on short-term certification, so nearly all training activities do not exceed eight to nine months in duration. For FY 2013, through March 2014, Workforce Area #11 has obligated over \$900,000 for 380 Adult/DW and Youth Program ITAs.

Individual Training Account (ITAs) by Industry

July 1, 2013 - June 30, 2014

ITAs / Industry	Obligated Funds	Additional Training Expenses****	WIA YOUTH		WIA Adult/DW/VASAVOR/J4VETS/RR Veterans		Total
			Number	Percent	Number	Percent	
Accounting/Finance	\$19,853		0	0.00%	9	2.72%	9
Clerical / Administrative (Professional Services	\$174,987		3	6.12%	73	22.05%	76
Construction / Trade	\$8,936		1	2.04%	5	1.51%	6
Education*	\$23,837		2	4.08%	8	2.42%	10
Healthcare	\$229,541		32	65.31%	72	21.75%	104
Hospitality / Services	\$5,486		1	2.04%	3	0.91%	4
Literacy Activities**	\$6,604		7	14.29%	10	3.02%	17
Technology	\$322,259		2	4.08%	113	34.14%	115
Transportation***	\$94,956		1	2.04%	31	9.37%	32
Others/Vocational Training	\$13,746	\$90	0	0.00%	7	2.11%	7
TOTAL	\$900,206	\$90	49	100.00%	331	100%	380

*Teachers/Instructors, Teacher Assistants, Librarians, Archivists and Curators, etc...

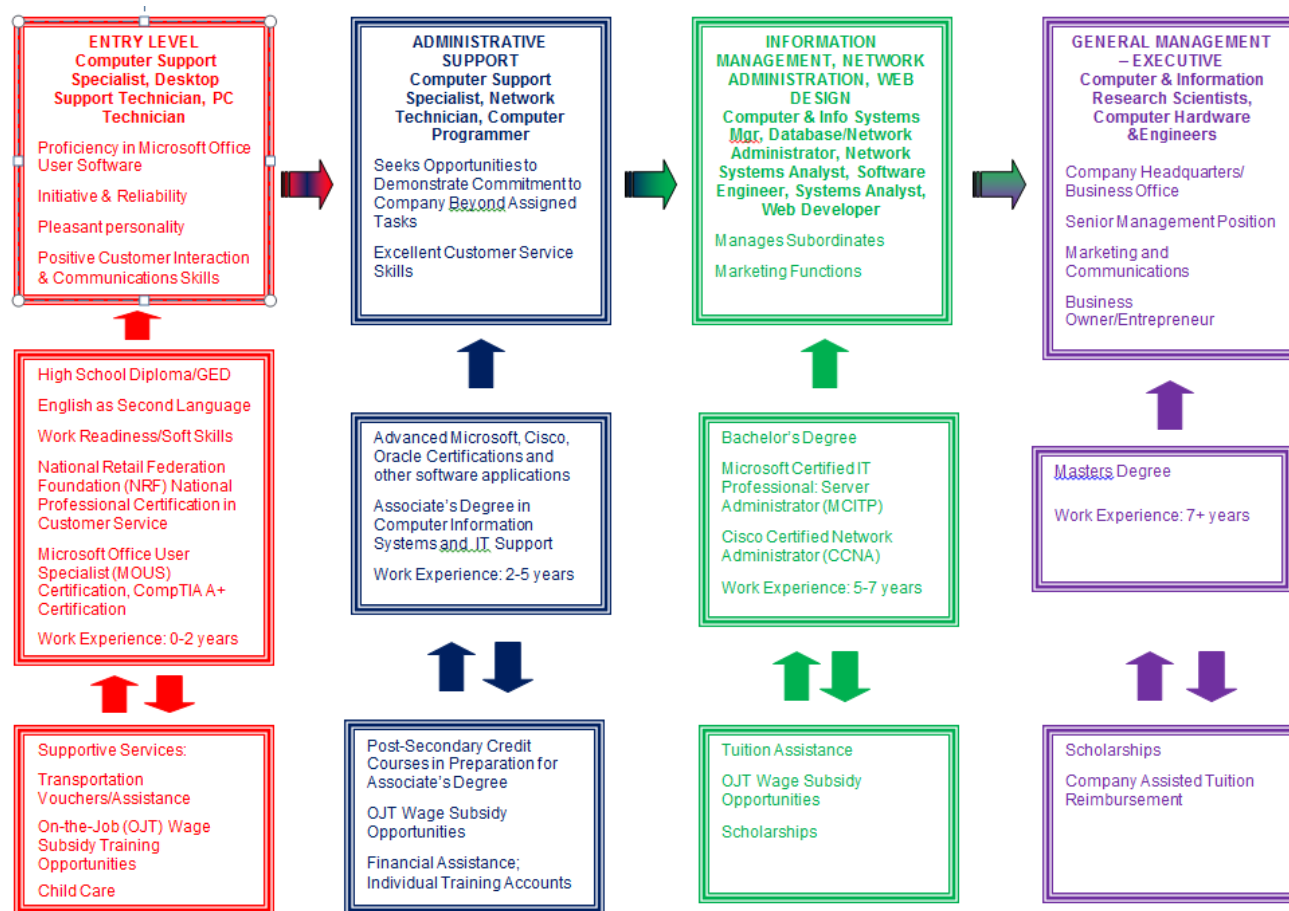
**ABE, ESL, Basic Computer, Literacy Skills Training, etc.

***Truck Drivers, School Bus Drivers, CDL, etc...

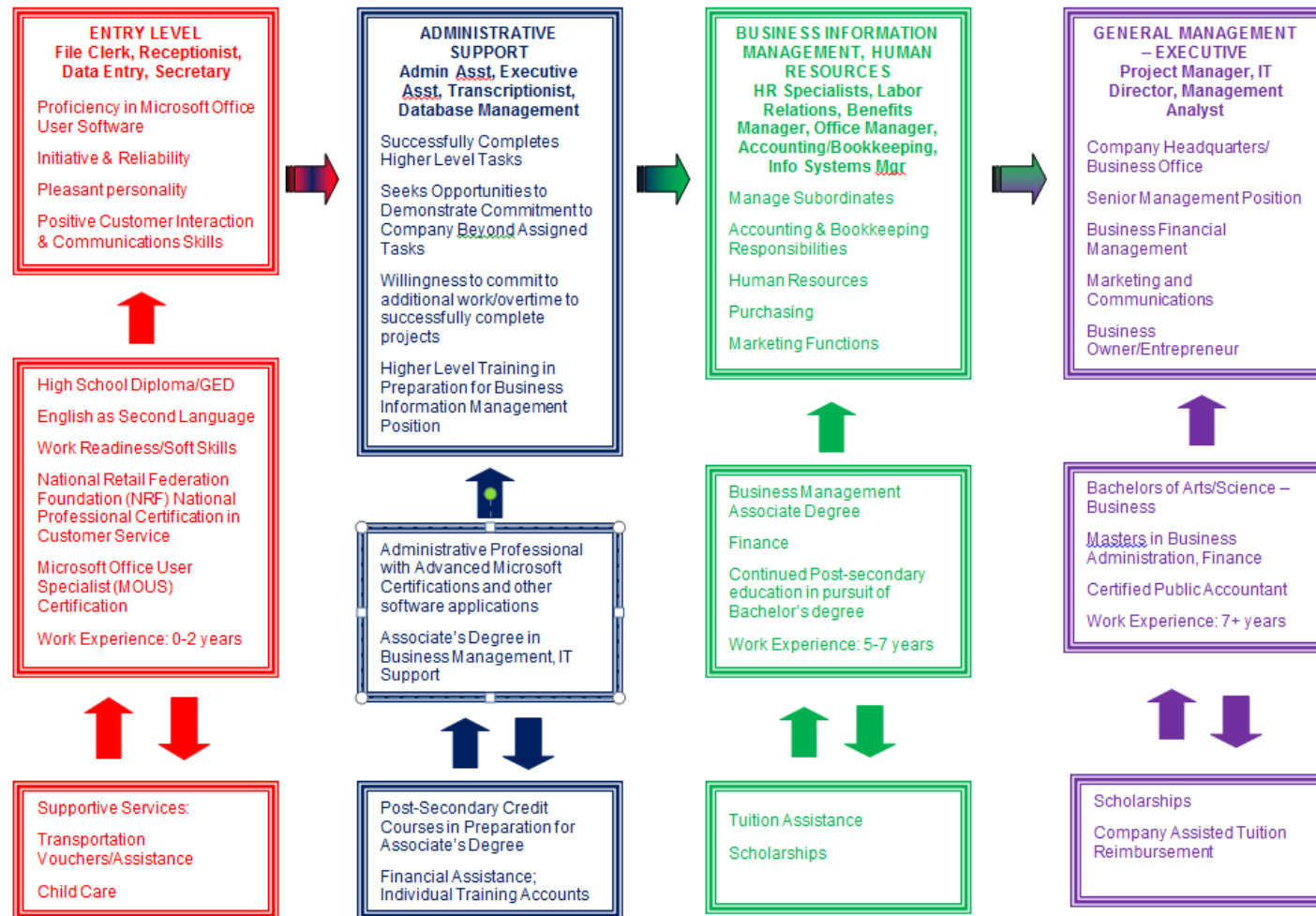
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E. Describe/Illustrate the Top Five Northern Virginia Career Pathways

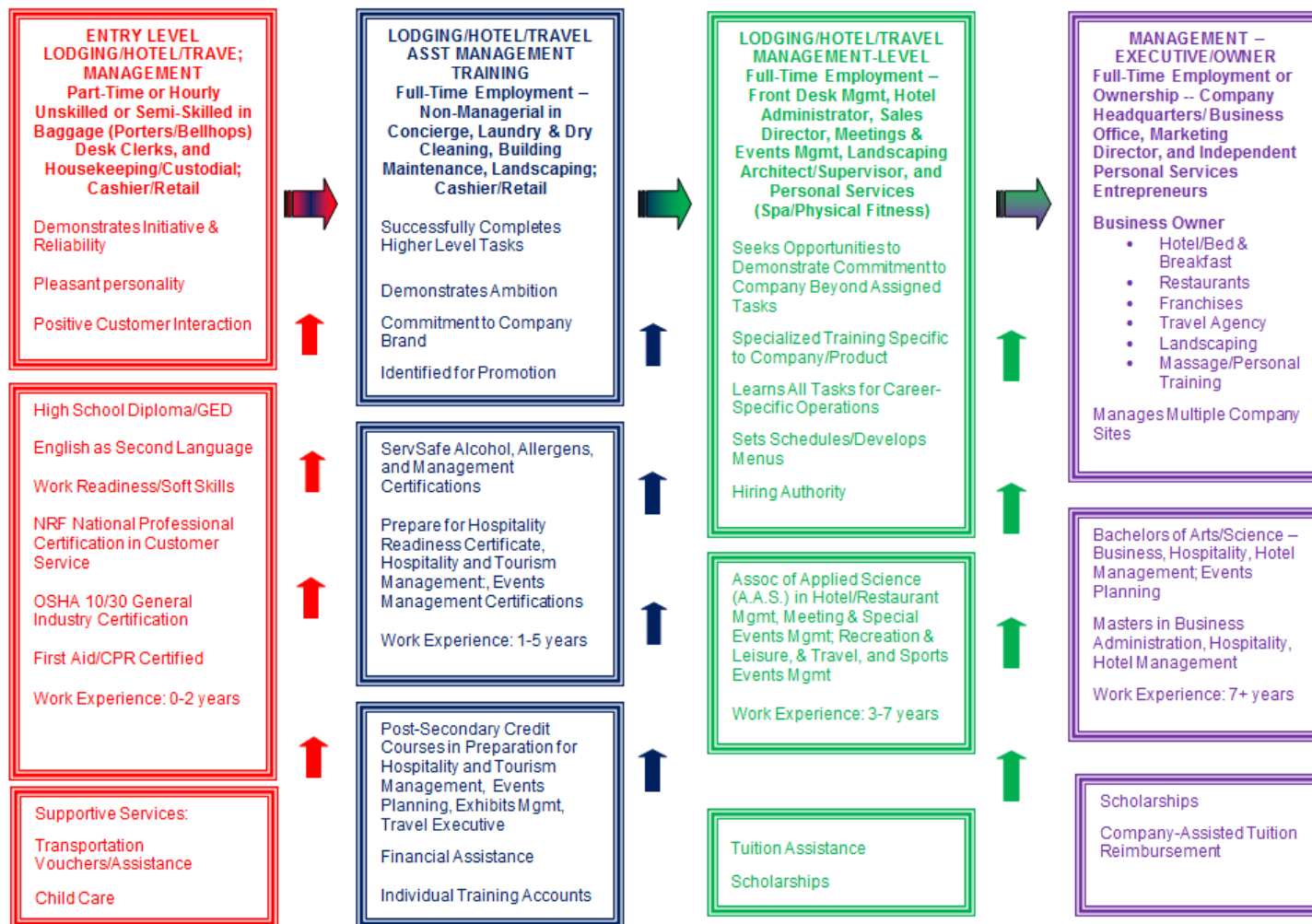
1. Information Technology (IT) Career Pathway – Through multiple stackable credentials, the IT sector offers the ability for a job seeker to advance along a pathway from an entry-level position as a Computer Support Specialist to eventually an advanced or management position as a Systems Administrator or Engineer. As of August 2014, the Northern Virginia region leads the Commonwealth in the number of job openings available in this industry sector and the 2nd largest growing sector in the Northern Virginia region.



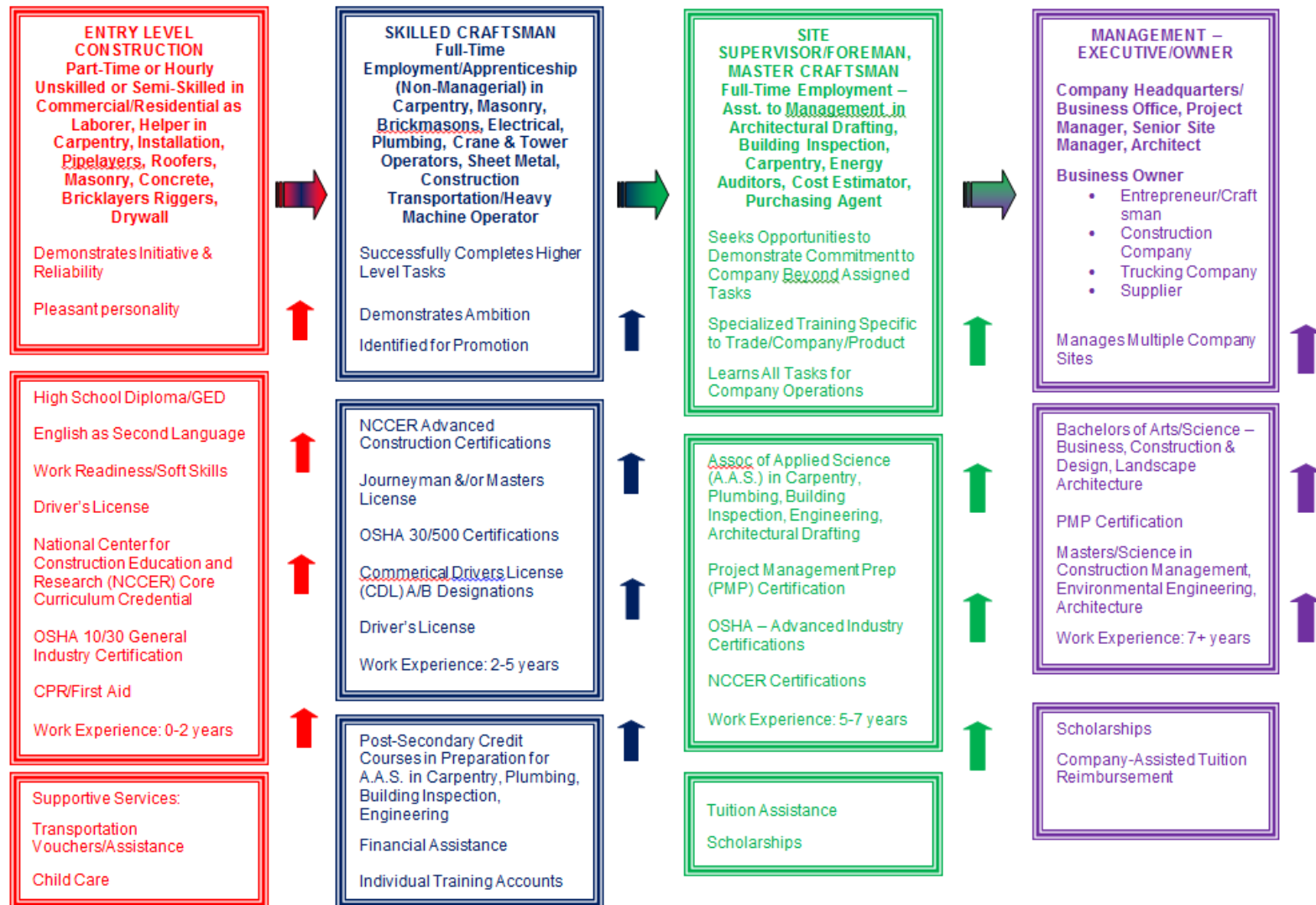
2. Administrative Career Pathway - Through multiple stackable credentials, as well as post-secondary education, Administrative occupations offers the ability for a job seeker to advance along a pathway from an entry-level position as a Receptionist to eventually an advanced or management position as an Office Manager or Project Manager. As of August 2014, the Northern Virginia region leads the Commonwealth in the number of job openings available in this industry sector and the 4th largest growing sector in the Northern Virginia region.



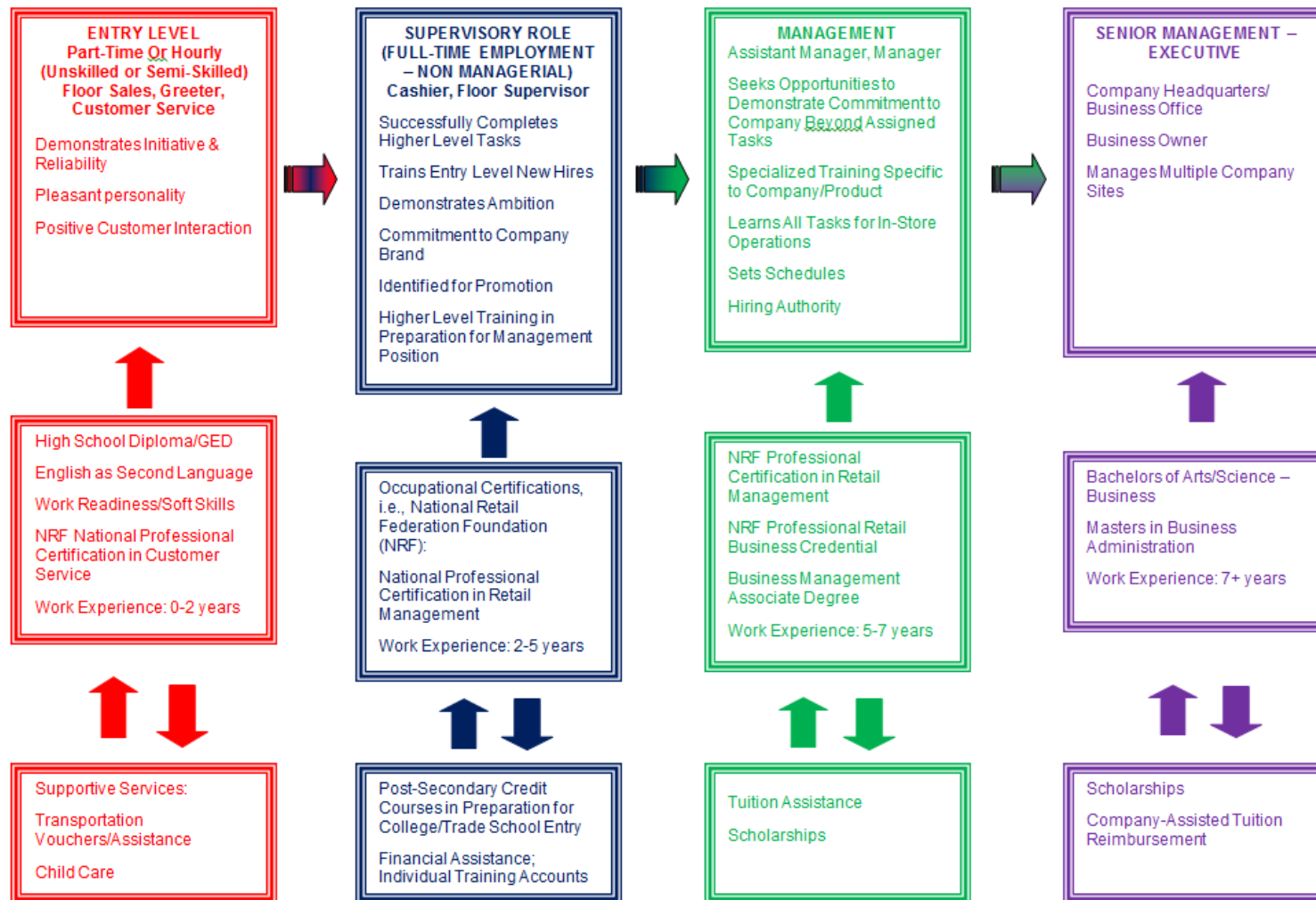
3. Hospitality Career Pathway– Lodging / Hotel / Travel Management - Through multiple credentials, Hospitality occupations offers the ability for a job seeker to advance along a pathway from an entry-level position as a Hotel Desk Clerk to eventually an advanced position as a Sales/Events Management Director or even Business Owner. As of August 2014, the Accommodation and Food Service industry is the 3rd largest growing sector in the Northern Virginia region.



4. Construction Career Pathway - Through multiple credentials, Construction occupations offers the ability for a job seeker to advance along a pathway from an entry-level position as a Laborer to eventually an advanced position as a Craftsman or even Business Owner. As of August 2014, the Construction industry is the 6th largest growing sector in the Northern Virginia region.



5. Retail Career Pathway - Through multiple credentials, Retail occupations offers the ability for a job seeker to advance along a pathway from an entry-level position as a Greeter to eventually an advanced position as an Assistant Manager or a management position at the Company Headquarters. As of August 2014, the Accommodation and Food Service industry is the largest growing sector in the Northern Virginia region.



6. Food Service Career Pathway - Through multiple credentials, Food Service occupations offers the ability for a job seeker to advance along a pathway from an entry-level position as a part-time Restaurant Hostess to eventually an advanced position as a Supervisor or a management position at the Company Headquarters. As of August 2014, the Accommodation and Food Service industry is the 3rd largest growing sector in the Northern Virginia region.

