DETROIT, MICHIGAN, REGIONAL PROFILE

PART OF A SERIES OF GREENFORCE INITIATIVE
REAL-TIME LABOR MARKET INFORMATION REGIONAL PROFILES

OCTOBER 2012

Greenforce
INITIATIVE
Advancing Greener Careers and Campuses

Jobs for the Future (JFF) and National Wildlife Federation (NWF) are partners in the **Greenforce Initiative™**, an effort to strengthen the capacity of community colleges to green the skills of our modern workforce.

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National Wildlife Federation has a 20-year history of working with colleges and universities through its Campus Ecology program to improve their overall green educational programming and onsite sustainability. Its student outreach programs, campus consulting, climate action competition, and educational events and resources reach about 1,000 campuses each year.

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Jobs for the Future aligns education with today's high-demand careers. With its partners, JFF develops policy solutions and new pathways leading from college readiness to career advancement for struggling and low-income populations in America.

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Connecting individuals to promising jobs is a complex task. The ability to access actionable current labor market information is critical to designing and strengthening training programs that lead to employment. This profile presents labor market information for the **DETROIT-WARREN-LIVONIA, MI METROPOLITAN STATISTICAL AREA,** covering Lapeer County, MI; Livingston County, MI; Macomb County, MI; Oakland County, MI; St. Clair County, MI; and Wayne County, MI.

Included here are basic demographic, workforce, and employment indicators for the region. Using the U.S. Department of Labor's green definitions and Standard Occupational Codes, the report also shows occupational projections and job postings activity for the "green" sector. The Bureau of Labor Statistics and O*NET define the green economy as economic activity related to reducing the use of fossil fuels, decreasing pollution and greenhouse gas emissions, increasing the efficiency of energy usage, recycling materials, and developing and adopting renewable sources of energy. O*NET describes the "greening" of occupations as the extent to which green economy activities and technologies increase the demand for existing occupations, shape the work and worker requirements needed for occupational performance, and generate unique work and worker requirements.

This report is part of a series of regional profiles prepared for the Greenforce Initiative, a two-year project of the National Wildlife Federation and Jobs for the Future to spur innovation in the role of community colleges to meet the demand for a skilled workforce with sustainability skills in key career and technical occupations. The reports are intended to spur discussions about industry sectors that should be considered for program development, while demonstrating areas of reasonable opportunities. With support from the Bank of America Charitable Foundation, the Greenforce Initiative:

- Strengthens workforce development through sustainability skills education and practices at community colleges;
- Enables lower-skilled and other adults to advance their sustainability and science, technology, engineering, and math (STEM) skills; and

- Assists adults in accessing jobs and career pathways in high-demand occupations within their local communities.

More than 100 community college partners in Illinois, Michigan, North Carolina, Texas, Virginia, and Washington are serving an estimated 8,000 lower-skilled and nontraditional workers.

This report is based upon data from multiple sources. For designing workforce development programs, it is important to use a mix of data to identify growth opportunities. Still, inherent risks exist in the attempt to draw inferences from mixed data sets, so it is critical that readers use this report as a resource and context for deeper engagement with education and workforce partners, especially employers and industry representatives. It is not intended to resolve all questions.

Ongoing monitoring of labor trends is one step toward finding jobs for unemployed workers and students. Data-driven decisions can help improve program outcomes and employability. Because green jobs occur across many industries, it is beneficial to consider the largest bases of opportunity in “traditional” jobs and sectors, and to think about how to enhance sustainability skills training for those jobs and sectors in a manner that increases the marketability of program completers.

A SNAPSHOT OF THE REGION

Table 1 provides basic demographic information about the region. The Detroit MSA decreased 3.7 percent since 2000. Additionally, the per capita personal income decreased 7.9 percent over 10 years, when adjusted for inflation. There were 9.5 million people in the area in 2011, with 4.8 million actively participating in the labor force and an average annual unemployment rate of 9.8 percent. The economic downturn makes it especially important to monitor the effects of key demographic drivers and shifts, such as income distribution, aging population, educational attainment rates, and migration patterns.

Table 1.
Basic Demographic Information:
People and Income Overview, Detroit-Warren-Livonia, MI

Population, 2011	4,285,832
Growth since 2000	-3.70%
Growth since 1990	0.90%
Land Area	388,850
Population Density, 2011	1,102.2
% Reporting One Race Only*	1
% Reporting Only African American*	22.80%
% Reporting Hispanic (of any race)*	3.90%

Households*	1,682,111
Labor Force, 2011	2,069,920
Unemployment Rate, 2011	13.50%
Per Capita Personal Income, 2010	$37,927
10-year Growth in Per Capita Personal Income, adjusted for inflation	-7.90%
Poverty Rate, 2010	16.6
High School Diploma or More, Adults 25+*	87.40%
Bachelor's Degree or More, Adults 25+*	27.00%

* U.S. Bureau of the Census, American Community Survey five-year estimate

Source: *Stats Indiana, 2012*

Table 2 provides a regional industry overview, displaying all industries in the MSA by size, growth, and earnings.

Table 2.
Regional Industry Overview

	2011 JOBS	2016 JOBS	5-YEAR CHANGE	2011 EARNINGS
Educational Services	41,048	47,549	16%	$32,898
Mining, Quarrying, and Oil and Gas Extraction	4,181	4,682	12%	$35,917
Health Care and Social Assistance	301,911	334,728	11%	$51,642
Administrative and Support and Waste Management and Remediation Services	172,843	188,082	9%	$37,117
Arts, Entertainment, and Recreation	43,003	46,769	9%	$31,201
Finance and Insurance	112,147	121,101	8%	$67,395
Professional, Scientific, and Technical Services	210,028	225,708	7%	$79,968
Real Estate and Rental and Leasing	102,102	109,109	7%	$24,115
Other Services (except Public Administration)	108,377	113,739	5%	$30,966
Accommodation and Food Services	151,639	156,761	3%	$19,114
Transportation and Warehousing	74,190	76,021	2%	$62,511
Management of Companies and Enterprises	39,640	40,430	2%	$134,524
Information	32,660	32,560	0%	$69,481
Retail Trade	226,432	224,765	-1%	$31,962
Construction	91,669	90,823	-1%	$57,598
Wholesale Trade	88,038	87,029	-1%	$88,042
Government	205,193	200,995	-2%	$69,392

Agriculture, Forestry, Fishing and Hunting	6,385	5,804	-9%	$27,513
Manufacturing	208,196	180,064	-14%	$89,507
Utilities	6,323	5,205	-18%	$147,792

Source: EMSI

Industries projected to grow fastest over five years:

- Educational services (16 percent)
- Mining, quarrying, and oil and gas extraction (12 percent)
- Health care and social assistance (11 percent)

Largest Industries, 2011:

- Health care and social assistance (301,911 jobs)
- Retail trade (226,432 jobs)
- Professional, scientific, and technical services (210,028 jobs)

Industries with the highest average earnings:

- Utilities ($147,792)
- Management of companies and enterprises ($134,524)
- Manufacturing ($89,507)

JOB POSTINGS FOR THE GREEN SECTOR

Employers posted 256,340 jobs between July 1, 2011 and June 30, 2012. Of these, 4,667 (1.82 percent) were green jobs. The following charts present summary information for green opportunities in the region.

Table 3 demonstrates that most green job ads during the period of analysis were concentrated in professional, scientific, and technical services (12.5 percent); credit intermediation and related activities (9.6 percent); transportation equipment manufacturing (8.2 percent); hospitals (5.3 percent); and ambulatory health care services (5 percent). no other industry provided more than 5 percent of green occupations.

Table 3.
Distribution of Green Job Postings by Industry, July 2011-June 2012

	JOB OPENINGS	% OF TOTAL GREEN JOBS
Professional, Scientific, and Technical Services	584	12.51%
Credit Intermediation and Related Activities	447	9.58%
Transportation Equipment Manufacturing	384	8.23%
Hospitals	249	5.34%
Ambulatory Health Care Services	235	5.04%
Administrative and Support Services	201	4.31%
Waste Management and Remediation Services	129	2.76%
Rail Transportation	116	2.49%
Real Estate	107	2.29%
Educational Services	102	2.19%
Utilities	90	1.93%
National Security and International Affairs	72	1.54%
Insurance Carriers and Related Activities	68	1.46%
Specialty Trade Contractors	67	1.44%
Computer and Electronic Product Manufacturing	65	1.39%
Machinery Manufacturing	50	1.07%
Chemical Manufacturing	48	1.03%
Construction Of Buildings	43	0.92%
Support Activities For Transportation	42	0.90%
Sporting Goods, Hobby, Book, and Music Stores	41	0.88%
Electrical Equipment, Appliance, and Component Manufacturing	41	0.88%
Executive, Legislative, and Other General Government Support	40	0.86%
Miscellaneous Manufacturing	40	0.86%
Truck Transportation	34	0.73%

Source: Burning Glass Labor Insight

Table 4 breaks down green jobs by category. More than 70% percent of all green jobs posted are in the energy efficiency and pollution reduction, removal, and remediation sectors combined.

Table 4.
Green Jobs, by Category, July 2011-June 2012

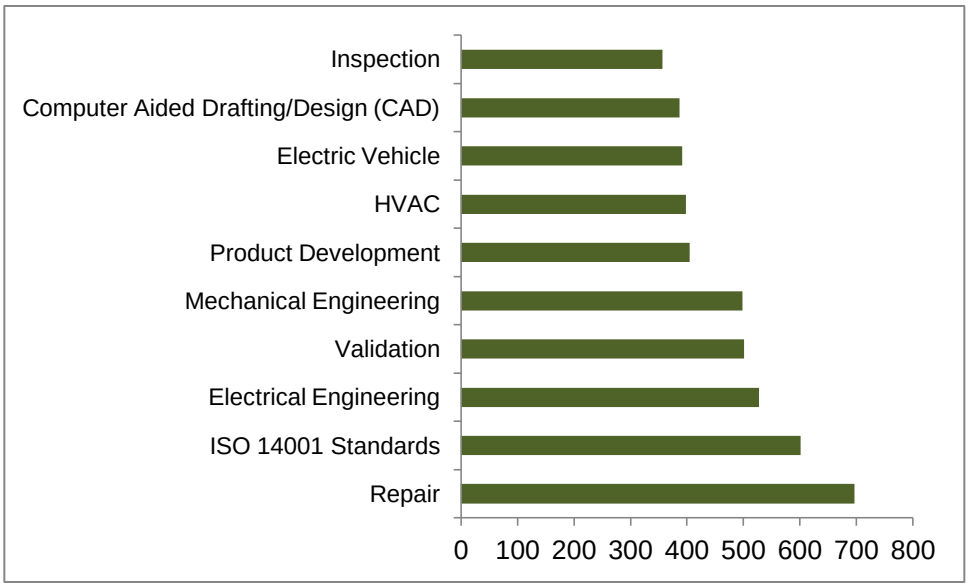
	JOB OPENINGS	% OF TOTAL GREEN JOBS
Energy Efficiency	1,722	36.90%
Pollution Reduction, Removal, and Remediation	1,700	36.43%
Environmental Regulation and Enforcement	338	7.24%
Research and Development	307	6.58%
Environmental Regulation and Remediation	298	6.39%
Natural Resource Conservation	213	4.56%
Green Building and Installation	208	4.46%
Renewable Energy: General	193	4.14%
Green Research	152	3.26%
Renewable Energy: Wind	59	1.26%
Renewable Energy: Solar	57	1.22%
Environmental Promotion and Advocacy: General	43	0.92%
Environmental Promotion and Advocacy: Green Energy Trading	31	0.66%
Environmental Promotion and Advocacy: Education and Training	8	0.17%

Source: Burning Glass Labor Insight

SUSTAINABILITY SKILLS MATTER

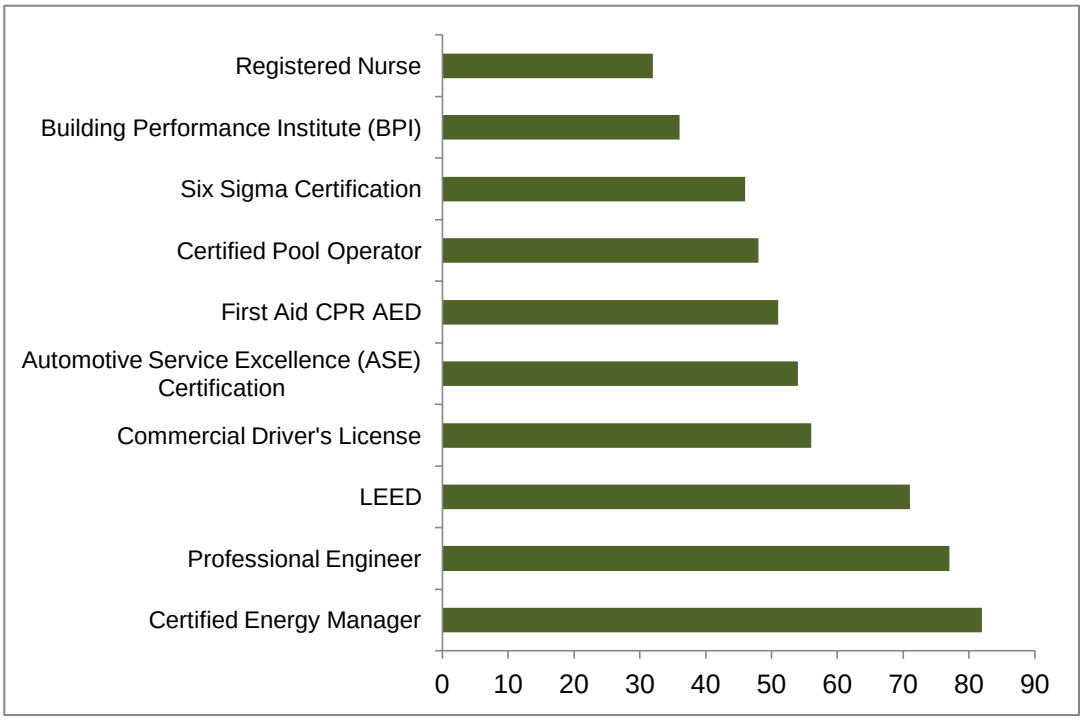
Skills and certifications associated with job openings can help demonstrate the background that companies expect successful job applicants to have when they apply for openings. These data provide critical insights for training investment decisions. The data suggest that employers in the region are requesting the following “green” skills:

Figure 1.
Top 10 "Green" Skills, July 2011-June 2012



Source: Burning Glass Labor Insight

Figure 2.
Top 10 "Green" Certifications, July 2011-June 2012

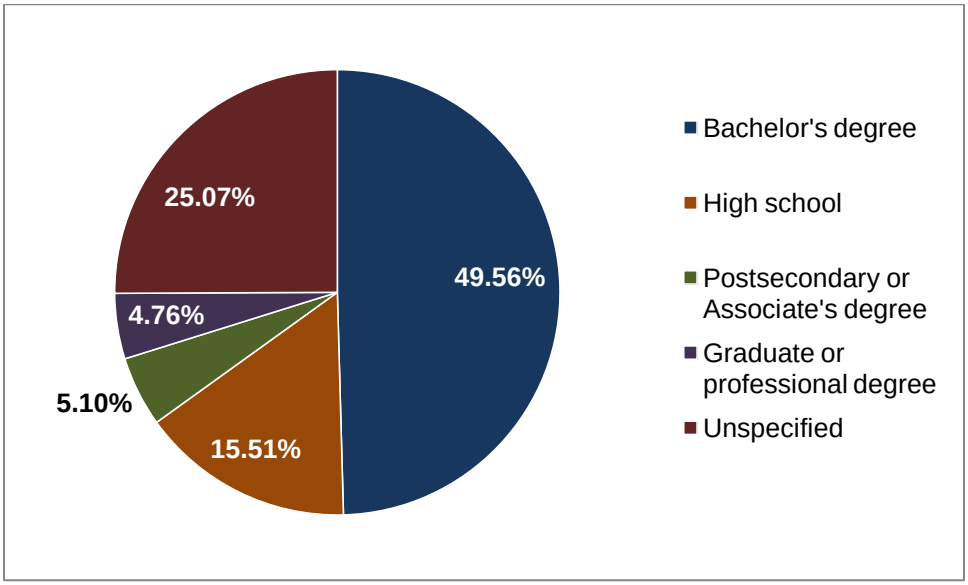


Source: Burning Glass Labor Insight

Data from job postings on education and experience requirements are critical complements to traditional labor market information data (Figures 3 and 4).

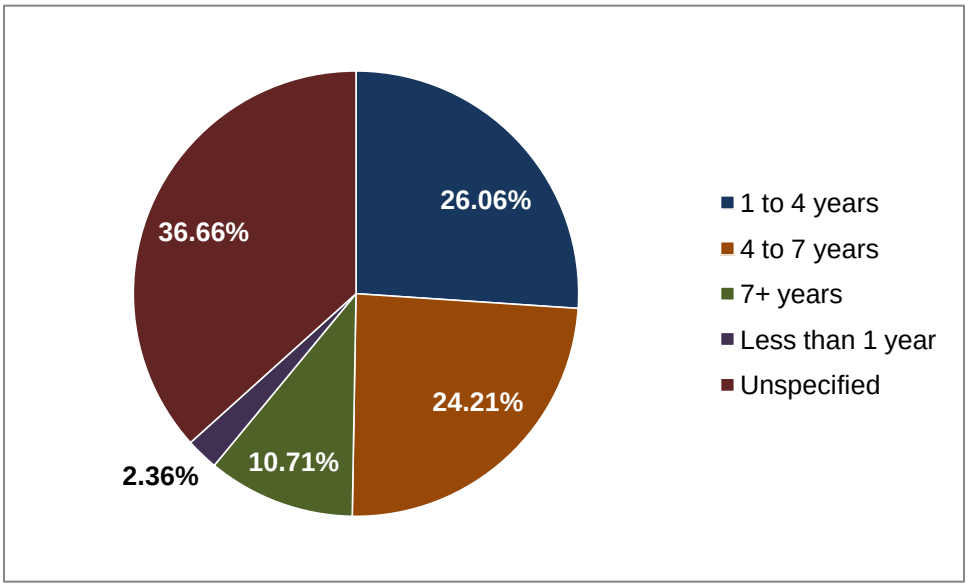
- √ In the Detroit MSA, 50 percent of jobs requested a Bachelor's degree, while 25 percent were unspecified in educational requirements. Over 20 percent of positions required an Associate's degree or less.
- √ 37 percent of job postings specified no experience requirements, 26 percent required 1 to 4 years experience, and 24 percent required 4 to 7 years experience.

Figure 3.
Education Requirements, July 2011-June 2012



Source: Burning Glass Labor Insight

Figure 4.
Green Jobs Experience Requirements, July 2011-June 2012



Source: Burning Glass Labor Insight

POSITIONS TO WATCH: MORE TRAINING NEEDED

Tables 5 and 6 show the largest occupations and the fastest-growing ones. Based on this information, we can identify some occupations that have strong employment demand opportunities.

- √ Within green occupations, the strongest position is truck drivers, heavy and tractor-trailer. The large number of job postings (over 3,000) and growth potential indicates need for further training.
- √ Several other top occupations with a level of "green" are very broad; these include managers, customer service representatives, and sales positions.
- √ Regulatory Affairs Managers offers some growth potential; there were 31 job postings for this sub-occupation, while the broader occupation had only 19 regional completions (Compliance Officers).
- √ However, even in these growth areas, program leaders should collect more detailed information from employer partners or other knowledgeable workforce actors about the training that is needed. Some of the positions, which are expected to expand longer term, might have more limited employment demand in the short term, given the current supply of trained workers. More data should be collected on trainings.

Table 5.
Largest Green Occupations, 2011

	2011 JOBS	2016 JOBS	% CHANGE	JOB ADS	2011 MEDIAN HOURLY WAGE	REGIONAL COMPLETIONS (2010)	EDUCATION LEVEL	O*NET CATEGORY
Laborers and freight, stock, and material movers, hand	30,586	29,304	-4%	2,502	$11.83	0	Short-term on-the-job training	Increased Demand
Customer service representatives	28,197	30,008	6%	4,454	$16.34	0	Moderate-term on-the-job training	Increased Demand
Managers, all other	27,868	30,472	9%	1,849	$20.51	3,381	Work experience in a related field	Emerging
Truck drivers, heavy and tractor-trailer	24,319	25,883	6%	3,345	$18.75	1	Short-term on-the-job training	Enhanced
Team assemblers	18,624	16,759	-10%	82	$17.36	0	Moderate-term on-the-job training	Increased Demand
Carpenters	13,378	12,937	-3%	167	$18.23	0	Long-term on-the-job training	Increased Demand
Production workers, all other	12,577	11,780	-6%	1,167	$20.51	0	Moderate-term on-the-job training	Emerging
Construction laborers	12,471	12,680	2%	350	$16.65	0	Moderate-term on-the-job training	Enhanced

Table 6.
Fastest Growing Green Jobs, 2011-2016

	2011 JOBS	2016 JOBS	% CHANGE	JOB ADS	2011 MEDIAN HOURLY WAGE	REGIONAL COMPLETIONS (2010)	EDUCATION LEVEL	O*NET CATEGORY
Service unit operators, oil, gas, and mining	34	38	12%	5	$12.11	0	Moderate-term on-the-job training	Enhanced Skills

Compliance officers, except agriculture, construction, health and safety, and transportation	3,665	4,043	10%	206	$24.51	19	Long-term on-the-job training	Emerging Occupations
Geological and petroleum technicians	176	193	10%	31	$15.09	0	Associate's degree	Enhanced Skills
Managers, all other	27,868	30,472	9%	N/A	$20.51	3,381	Work experience in a related field	Emerging Occupations
Installation, maintenance, and repair workers, all other	4,544	4,905	8%	1,539	$16.17	0	Moderate-term on-the-job training	Emerging Skills

Source: EMSI

Hottest Green Sub-baccalaureate Prospects, Last 90 Days

The "hottest green" sub-baccalaureate prospects are jobs in demand in the region between July 13, 2012 and October 10, 2012. Listed are the top occupation titles that correspond to the Bureau of Labor Statistics Standard Occupation Codes, along with the number of job postings.

- ✓ Maintenance and Repair Workers, General (15)
- ✓ Installation, Maintenance, and Repair Workers, All Other (10)
- ✓ Mechanical Engineers (9)
- ✓ First-Line Supervisors of Production and Operating Workers (8)
- ✓ First-Line Supervisors of Retail Sales Workers (7)
- ✓ Inspectors, Testers, Sorters, Samplers, and Weighers (6)
- ✓ Electrical and Electronic Engineering Technicians (5)
- ✓ Health Technologists and Technicians, All Other (5)
- ✓ Stationary Equipment and Boiler Operators (5)

POSITIONS TO WATCH: MORE CAUTION URGED

Table 7 shows occupations that are projected to decline between 2011 and 2016. Although these occupations are shrinking in the Detroit MSA, they continue to show strong posting numbers, with more than 100 job postings, July 2011-June 2012. This suggests that, while training in these occupations might continue in the short term, the demand in these occupations should be watched closely and programs should likely be scaled down over time.

- √ Drilling and boring machine tool setters, operators, and tenders, metal and plastic
- √ Engine and other machine assemblers
- √ Cutting, punching, and press machine setters, operators, and tenders, metal and plastic

In addition, our analysis above suggests that training in several other occupations should also be scaled down due to an apparent overabundance of trained jobseekers. This training may be better redirected elsewhere.

- √ Aircraft structure, surfaces, rigging, and systems assemblers: 224 regional completions, only 2 job postings.
- √ Industrial production managers: In addition to being a declining occupation, there were more than twice as many 2010 completions as there were job postings July 2011-June 2012.
- √ Engine and other machine assemblers: 446 regional completions, compared with 195 job postings. *(See Table 7.)*

Table 7.
Declining Green Jobs, 2011-2016

DESCRIPTION	2011 JOBS	2016 JOBS	% CHANGE	JOB ADS	2011 MEDIAN HOURLY WAGE	REGIONAL COMPLETIONS (2010)	EDUCATION LEVEL	O*NET CATEGORY
Drilling and boring machine tool setters, operators, and tenders, metal and plastic	1,010	774	-23%	159	$16.40	7	Moderate-term on-the-job training	Increased Demand
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	6,572	5,464	-17%	359	$20.02	7	Moderate-term on-the-job training	Increased Demand
Engine and other machine assemblers	1,290	1,067	-17%	195	$22.06	446	Short-term on-the-job training	Increased Demand
Electrical and electronic equipment assemblers	1,930	1,706	-12%)	51	$12.92	3	Short-term on-the-job training	Increased Demand
Millwrights	1,843	1,623	-12%	32	$33.68	450	Long-term on-the-job training	Increased Demand
Industrial production managers	4,802	4,231	-12%	1,364	$49.53	3,177	Work experience in a related field	Increased Demand

REGIONAL NON-GREEN COMPARISON

This section of the report examines three questions:

- What are the most commonly requested skills?
- What training do workers seeking jobs need?
- How do non-green skill and certification requirements compare to green requirements?

Table 8 demonstrates the distribution of openings by occupation family. Computer and sales related occupations account for 25 percent of all job postings in the region. Table 9 illustrates the associated specialized and baseline skill requirements for these occupations. The data reveal commonalities and differences between green and non-green requirements. The education (Figure 5) and certification (Table 10) requirements show 57 percent of employers are requesting a Bachelor's degree while 37 percent request an Associate's degree or less. Employers are seeking candidates with health care, truck driving, and project management certificates.

Table 8.
Regional Job Distribution by Occupation Family, July 2011-June 2012

OCCUPATION FAMILY	JOB ADS	PERCENTAGE JOBS
Computer and Mathematical	34,670	14.0%
Sales and Related	27,175	11.0%
Office and Administrative Support	27,105	11.0%
Architecture and Engineering	21,812	8.8%
Business and Financial Operations	20,950	8.5%
Management	19,658	8.0%
Healthcare Practitioners and Technical	19,537	7.9%
Production	14,973	6.1%
Transportation and Material Moving	9,870	4.0%
Installation, Maintenance, and Repair	9,771	4.0%

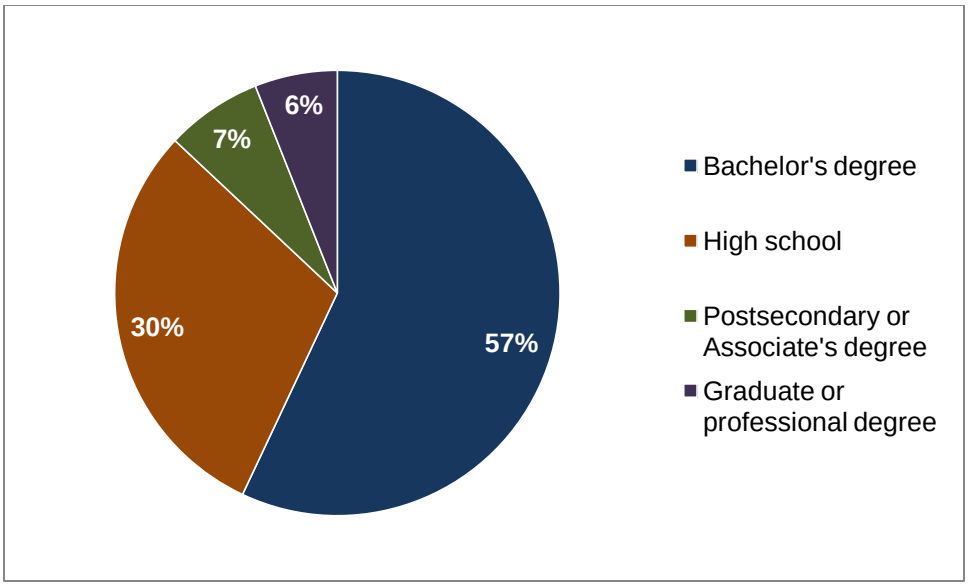
Table 9.
Specialized and Baseline Skills, July 2011-June 2012

SPECIALIZED SKILLS	BASELINE SKILLS
Sales	Communication Skills
Accounting	Training
Repair	Organizational Skills
Scheduling	Writing
Purchasing	Leadership
Computer Aided Drafting/Design (CAD)	Problem Solving
SQL	Microsoft Excel
Mathematics	Customer Service
Oracle	Planning
Validation	Microsoft Office

Table 10.
Top 10 Certifications, July 2011-June 2012

DESCRIPTION	JOB OPENINGS
Registered Nurse	6,184
Project Management Certification (e.g., PMP)	1,804
First Aid CPR AED	1,651
CDL Class A	1,413
Commercial Driver's License	1,386
Certified Public Accountant	1,276
Basic Cardiac Life Support Certification	1,010
Licensed Physician	1,010
Six Sigma Certification	801
Insurance License	780

Figure 5.
Education Requirements, July 2011-June 2012



HOW COMMUNITY COLLEGE PROGRAMS CAN USE THIS INFORMATION

This report indicates that sustainability skills matter for employers. It is worthwhile and relevant for community college career and technical programs to consider how they might integrate such skills into occupations with demand in their regions. Students can also benefit from understanding how their chosen profession is both affected by and impacts sustainability concerns (e.g., waste reduction, cost and resource efficiencies). To aid in this integration, community college programs might use the information in this report to:

- √ Assess your programs against the demand data provided to determine if there is still opportunity or if you should consider scaling back your training.
- √ Engage with employers and other workforce actors to determine if this data reflects the current reality as they see it and explore opportunities for collaboration to strengthen program alignment with regional demand.
- √ Conduct a dynamic skills audit to determine if your career pathways are addressing all the skills, competencies, and certifications that employers are seeking.

Through our Champion Networks, the Greenforce Initiative will be working with community college partners in our selected regions to address these key areas of focus and assist with the use of this information in the high demand occupations noted above. If you are interested in being a part of this network, please contact us for more information.

DATA NOTES

Completers data in this report come from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

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