



Cities across America are “testing the waters” with the new and emerging green collar jobs industry. Washington, DC is no exception. The city is leading the way with more certified or registered green buildings and projects. Based on a green job demand analysis of the District, 22,283 jobs have already been classified “green,” with 3,167 more pending experts’ determinations. The city, the report contends, could produce more than 169,000 green jobs between 2009 and 2018.



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GREEN – THE NEW BUZZ WORD!

The word “green” is taking on a new meaning. Likened to terminologies such as “energy efficiency,” “ecosystem,” and “environmentalism,” many believe that green collar jobs will eventually compete with, if not replace, many blue collar jobs. That said, it is important to note that the green collar industry is still evolving and any available information, including the sources* used to inform the content of this publication, is, at the very least, presumptive. As we write, green jobs analysts are identifying and classifying occupations in various disciplines as green. One thing remains clear, however, green jobs are generating a considerable amount of excitement and cities across America, including the District of Columbia, are vying for the title of “trend setter” and “leader” of the green economy.

*The sources used to inform the content of this publication include the District of Columbia Green Collar Jobs Demand Analysis Final Report. The Louis Berger Group, Inc. in association with ESOP Advisors, Inc. and Green Builders Council, DC/Momentum Analysis. Sept. 2008; Greening of the World of Work: Implications for O*NET – SOC and New and Emerging Occupations. Diedorff Erich C.; Norton Jenifer J.; Drewes Donald W.; and Kroustalis Christina M. North Carolina State University. Rivkin, David; Lewis Phil; National Center for O*NET Development.

It has not yet been determined whether green jobs will be classified as an industry or occupations within an industry. For the purpose of this guidebook, we have used the term “green jobs” and “green jobs industry” interchangeably.



GREEN COLLAR JOBS – GOOD FOR THE ENVIRONMENT. GOOD FOR YOU.

A green collar job is one that results in the restoration of the environment, the conservation of natural resources, and the mitigation of pollution. Work that involves installing green roofs, weatherization of windows and doors, dismantling and recycling computers, and auditing the energy use of an office building are examples of green collar work as are occupations such as green carpenters; green plumbers; landscapers; water purification and management; waste management specialist; park and recreation specialist; low impact design technicians; and green painters. Salaries for green jobs workers are expected to be higher than those of regular blue collar jobs. This is particularly true for the construction trades since many of the occupations will require additional training to achieve environmentally sustainable practices. The amount of increase, however, has not yet been determined by the U.S. Department of Labor.

WHERE ARE THE GREEN JOBS IN THE DISTRICT?

Local job analysts predict that, with the enactment of the Green Building Act of 2006 and the Clean and Affordable Energy Act of 2008, more green jobs will be created in the District. Currently, the construction trades, architecture and engineering, and the federal government are the main industries where green job opportunities are plentiful. According to the D.C. Green Job Demand Analysis Report, there are approximately 5,491 green jobs in the construction trade, 4,747 in architecture and engineering, and 5,300 federal jobs within the District, based on the mission of agencies such as the Environmental Protection Agency. The District Government currently employs approximately 300 green collar workers at the Department of Public Works, the Department of the Environment, and the Department of Parks and Recreation.

Other green jobs in the District can be found in the private sector where there are approximately 1,672 jobs among environmental and conservation and wildlife organizations. Loan officers at local banks that offer Energy Efficient Mortgages (EEM) are classified as green jobs, the job demand analysis states, as well as those who repair, sell, or rent bicycles. Restaurants that adhere to environmental guidelines related to energy, water efficiency, conservation, alternative energy usage, recycling and composting, sustainable food, and pollution prevention are also classified as part of the green industry in the District.

TOP 15 WASHINGTON D.C. IN DEMAND OCCUPATIONS IN CONSTRUCTION

Occupations	Min. Training & Education level	Annual Median Salary*
Construction Helpers/ Laborers	Moderate-term, on-the-job training; high school diploma	\$29,400 - \$30,800
Landscape Architect	Bachelor's Degree; moderate-term, on-the-job training	\$83,900
Brick Masons and Block Masons	Long-term, on-the-job training; high school and vocational certification	\$55,200
Carpenters	Long-term, on the job training; high school diploma and vocational certification	\$49,600
Construction Trade Supervisors	Long-term, on the job professional experience in related occupations	\$70,100
Electricians	Vocational schooling, related on-the-job experience or an Associate Degree; Bachelor's Degree may be required	\$58,900
Plumbers, Pipefitters and Steamfitters	Long-term, on the job training; high school diploma/GED	\$54,900
Cement Masons and Concrete Finishers	Moderate-term, on-the-job training; high school diploma	\$40,000
Painters – Construction & Maintenance	Moderate-term, on-the-job training	\$40,000
Welders	Post secondary vocational certification; high school diploma	\$55,400
Architect	Bachelor's Degree; long-term, on-the-job training	\$73,000
Project Manager – Construction	Bachelor's Degree	\$79,600
Civil Engineer	Bachelor's Degree	\$83,000
Surveyor	Bachelor's Degree	\$51,600
Construction & Building Inspectors	Work experience in a related occupation; some college	\$66,700

Source: 2007, Department of Labor Bureau of Labor Statistics, Occupational Employment Statistics, 2007.

*It is projected that the salaries of the green version of many of these occupations will increase, due to the additional training that is required





GREEN SKILLS FOR OCCUPATIONS IN THE CONSTRUCTION TRADE

In the District of Columbia, the green collar jobs industry offers employment opportunities to both skilled and unskilled workers. The D.C. Green Collar Job Demand Analysis Report found that thirty-seven percent of the green job opportunities in the construction trades required little or no preparation and, consequently, barriers to enter the field are at a minimum. However, forty-two percent of the jobs will require some higher level of training and preparation to be considered green occupations. Below are some examples:

Occupations	Green Skills/Knowledge
Construction laborers/helpers	Knowledge of green building materials, site considerations and passive building design, construction operations to reduce environmental impact, window benefits and technologies, sustainable construction technologies that enhance resistance to disaster.
Landscaping and groundskeepers	Knowledge of paving technologies-permeable, porous paving, heat island effect LEED®** points, High albedo and reflectance, shade planting, irrigation system and low impact planting strategies, surface water management, site lighting, natural pest control techniques.
Brick masons and block masons (and helpers)	Knowledge of using of porous pavements to reduce stormwater runoff, know how to reduce a building non-roof heat island effect, harvest site energy (using passive solar designs) and decrease the size of the building HVAC system, and optimize energy performance.
Carpenters	Proficient in green building materials, site considerations and passive building design, construction operations to reduce environmental impact, window benefits and technologies, sustainable construction technologies that enhance resistance to disaster.
Construction trade supervisors	Knowledge of effective management for green construction and waste management.
Electricians (including photo voltaic panel installers)	Proficient in day lighting and artificial lighting, impact of electricity use on the environment and on size of mechanical system design, compact fluorescents and other efficient light sources, LEED®** rating system, sizing of system- peak loads.
Plumbers, pipefitters and steamfitters	Must understand and utilize environmental impacts of plumbing design, construction and occupant uses, waste removal – waterless urinals, dual flush toilet, composting toilets, water collection – condensate, rain water cisterns, gray water, water efficiency.
Cement masons and concrete finishers	Knowledge of building reuse, construction waste management, recycled content, regional materials, landscape and exterior design to reduce heat islands, stormwater management: rate and quantity, reduced site disturbance, minimum energy performance.

**LEED (Leadership in Energy and Efficiency Design) is the Green Building Rating System developed by the U.S. Green Building Council, which provides the nationally accepted benchmark for the design, construction, and operation of high performance green buildings.

GREEN JOB CERTIFICATIONS

Below is a list of certification programs available to workers interested in developing proficiency in selected green occupations.

- **Home Builders Institute (HBI)** offers a **Residential Construction Academy Series**, a training program based on national standards set by the residential construction industry for essential workplace skills in the areas of carpentry, electrical, HVAC, plumbing, facilities maintenance, and masonry, and includes green, sustainable construction techniques. Visit Home Builders Institute: www.hbi.org or Residential Construction Academy. www.residentialacademy.delmar.cengage.com.
- **North American Board of Certified Energy Practitioners® (NABCEP)** offers Entry Level Certificate Program. Visit www.nabcep.org/certificates/entry-level-certificate-program.
- **Building Performance Institute (BPI)** certification areas are Building Analyst, Air Conditioning and Heating, Building Envelope, and Multifamily. BPI certification for contractors and auditors includes written and field practical examinations. Visit www.bpi.org.
- **Green Advantage® Certification for commercial and residential practitioners** is an environmental certification for building-related practitioners, primarily contractors, subcontractors, and trades people. The exam covers green building industry issues such as green building materials, siting, and design. Visit www.greenadvantage.org.
- **National Association of Home Builders (NAHB): Certified Green Professional (CGP)** designation recognizes builders, remodelers, and other industry professionals who incorporate green building principles into homes without driving up the cost of construction. NAHB recently released the “National Green Building Standard” for all residential construction work, approved by the American National Standards Institute (ANSI); it is intended to be an alternative, not a replacement, for LEED for Homes (LEED-H). Visit www.nahb.org.
- **The North American Board for Certified Energy Practitioners (NABCEP)** offers solar Photovoltaic and Solar Thermal Installer Certifications. Small Wind Certification is currently under consideration. Visit <http://www.nabcep.org/certification>.
- **The National Association of the Remodeling Industry’s (NARI) Green Certified Professional (GCP)** recognizes and identifies remodelers who apply green or sustainable principles to their remodeling projects. Visit www.nari.org.
- **Build-It-Green – The Certified Green Building Professional (CGBP)** Visit www.builditgreen.org/cgbp.
- **Green Building Certification Institute’s (GBCI) Leadership in Energy and Environmental Design (LEED) Professional Accreditation.** Visit Green Building Certification Institute: www.gbci.org or visit U.S. Green Building Council: <http://www.usgbc.org>.

DID YOU KNOW?

- Many of the U.S. Department of Labor-funded workforce training programs now include a green building component.

- **The Association of Energy Engineers** offers a number of certifications, including a Certified Energy Manager exam. You do not have to be an engineer to take this certification. Visit <http://www.aeecenter.org>.

NOTE: There are certifications for EPA HVAC and **Building Professional**, which allow workers to be energy efficiency services technician in heating, ventilation, and air conditioning industry. **Building Performance Institute (BPI)** and **Green Advantage®** are both developing entry-level green certifications.

The **Occupational Safety and Health Administration (OSHA)** issues 40 hazardous waste operations and 10 site safety certificates. Each allows an individual to become a hazardous waste handler and an asbestos abatement mechanic.

The Clean Air Act section 608 requires that individuals working on air conditioning and ventilation systems receive EPA Refrigerant Certification. **Air Conditioning Contractors of America (ACCA)** offers EPA Refrigerant certification training program and tests.

The **National Electrical Contractors Association (NECA)** **National Association of Home Builders** offers **Home Builders Institute (HBI)** curriculum for **Workforce Training & Employment**, which is an apprenticeship program in residential construction offered to targeted populations.

GREEN COLLAR JOBS ARE COMMUNITY SERVING WORKFORCE OPPORTUNITIES

Green Business Sector	Services offering Green Collar Jobs	Types of Available Entry-Level Green Collar Job	Advanced Green Collar Work
Energy	Energy Retrofits HVAC, Solar Installation Water Conservation Whole Home Performance	Customer Service, Evaluation, Installation, Construction, Maintenance, Repair	Energy Partner Journeyman, Solar Electrician Service Technician, Project Manager
Water	Water Conservation, Adaptive Grey Water Reuse	Installation, Construction, Maintenance, Repair	Journeyman, Project Manager
Green Building	Construction Demolition & Removal	Construction, Carpentry, Demolition, Hauling, Driving	General Contractor, Project Manager
Woodworking	Custom Architecture, Cabinetry, Furniture, Repairs	Assembly, Sanding, Finishing, Carpentry, Installation	Journeyman, Head Carpenter
Green Space	Parks & Open Space, Landscaping	Planting, Maintenance Tree, Cutting/Pruning	Project Manager, Head Gardner
Food	Urban Agriculture Farmer's Markets Specialty Foods Production Baking	Growing, Packaging, Delivery Set-up/Tear down, Selling, Brewing, Roasting, Packaging, Baking, Mixing, Cleaning	Production Manager Market Manager, Floor Manager, Head Baker
Non-Toxic Printing	Commercial Printing Services	Binding, Post-Press, Delivery	Press Op, Pre-Press
Non-Toxic Cleaning	Residential & Commercial Cleaning	Cleaning, Customer Service	Team Leader
Waste Stream Diversion	Materials Recycling, Material Re-use	Collection, Sorting, Driving, Loading, Salvaging, Warehouse, Packaging and Composting	Warehouse Manager, Floor/Department Manager

Source: Pinderhughes 2007



Susan Gilbert, Program Manager/Business Services

Workforce Development Bureau

609 H Street, N.E.

Washington, DC 20002

Note: The statistics in this publication may change with receipt of additional information.

Notice of Non-Discrimination

In accordance with the D.C. Human Rights Act of 1977, as amended, D.C. Official Code Section 2-1401.01 et seq., (Act) the District of Columbia does not discriminate on the basis of actual or perceived: race, color religion, national origin, sex, age, marital status, personal appearance, sexual orientation, familial status, family responsibilities, matriculation, political affiliation, disability, source of income, or place of residence or business. Sexual harassment is a form of sexual discrimination, which is prohibited by the Act. In addition, harassment based on any of the above-protected categories is prohibited by the Act. Discrimination in violation of the Act will not be tolerated. Violators will be subject to disciplinary action.

The Department of Employment Services is an Equal Opportunity Employer/Provider. Auxiliary aids and services are available upon request to persons with disabilities.